

Meaningful Daily Activity and Chronic Pain

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ABSTRACT

When assessing chronic pain patients (CPP) a series of measures are routinely used to evaluate the severity of symptoms including: pain, psychological distress, disability, illness perception, positive affect and current treatments to manage chronic pain (CP). Clinicians also routinely administer measures of daily activity to determine what activities are being performed and determine how CP inhibits daily functioning, however the meaningfulness of daily activities is not evaluated. The aim of this research was to determine whether CPP who engaged in meaningful daily activity (MDA) reported less severe pain, disability and psychological distress. To test this observation a model of MDA was proposed and tested. One hundred and eight CPP (31 men, 77 women) completed measures of pain, disability, psychological distress, illness perception and dispositional optimism. MDA scales were developed for this study, the Daily Activities Questionnaire (DAQ-R) and the Meaningful Daily Activities Questionnaire (MDAQ-R).

The research hypothesis that CPP who participate in more MDA experienced less severe Psychological Distress was confirmed. However, the hypothesis that CPP who participate in more MDA reported less severe Pain and Disability was not supported.

Hierarchical regression analyses were calculated to test the MDA research model. In total, when all other variables were controlled for 58.0% (46.0% adjusted) of *Pain* and *Disability* was predicted by: marital status ($\beta = .22$), work status ($\beta = .24$), DAQ-R 2 Work Health Spirituality and Caring ($\beta = .30$), DAQ-R 4 Home Maintenance ($\beta = -.27$) and the Psychological Distress factor ($\beta = .51$). Whereas the variance in *Psychological Distress* 76% (68% adjusted) when all other variables were controlled for was predicted by positive affect (Dispositional Optimism, $\beta = -.30$) and the Pain and Disability factor ($\beta = .26$). Also 59.0% (47.0% adjusted) of *Dispositional Optimism* when all other variables were controlled for was predicted by the Psychological Distress factor ($\beta = -.52$).

In summary the frequency of performing Home Maintenance tasks were negatively related to Pain and Disability whereas performing more Work, Health, Spirituality and Caring tasks was positively related to Pain and Disability. Dispositional Optimism was a negative predictor of Psychological Distress. This observation was important because the impact of Psychological Distress on CPP was evident in the observed positive prediction of Pain and Disability; also negative prediction of Dispositional Optimism, Daily Activity and Meaningful Daily Activity. This finding would suggest that a measure of Dispositional Optimism or a measure of MDA should be routinely administered to CPP along with measures of negative affect (depression, anxiety, hopelessness) when clinicians are establishing treatment goals for CPP.

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DECLARATION

Victoria University Doctor of Philosophy Student Declaration

“I, Jane Catherine Mulcahy, declare that the PhD thesis entitled *Meaningful Daily Activity and Chronic Pain* is no more than 100,000 words in length, including quotes and exclusive of tables, figures, appendices, bibliography, references and footnotes.

This thesis contains no material that has been submitted previously, in whole or in part, for the award of any other academic degree or diploma. Except where otherwise indicated, this thesis is my own work”.

Signature

Date 21 July 2011

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ABBREVIATIONS

ABS	Australian Bureau of Statistics
ACR	American College of Rheumatology
AIHW	Australian Institute of Health and Welfare
AUD	Australian dollars
BHS	The Beck Hopelessness Scale
CBT	cognitive behavioural therapy
CES-D	Center for Epidemiological Studies Depression Scale
CLI	central life interest
CP	chronic pain
CPP	chronic pain patient
CPCI	Chronic Pain Coping Inventory
CSQ	Pain Coping Strategies Questionnaire
CT	cognitive therapy
CUA	cost unit analysis
DA	daily activity
DALY	disability-adjusted life year
DAQ	Daily Activity Questionnaire
DAQ-R	Daily Activity Questionnaire – Revised
FAI	The Frenchay Activities Index
FM	Fibromyalgia
GBD	global burden of disease
GDP	gross domestic product
GP	general practitioner
HADS	The Hospital Anxiety and Depression
HADS A	Hospital Anxiety and Depression Scale – Anxiety
HADS D	Hospital Anxiety and Depression Scale – Depression
HRA	Hierarchical regression analysis
IASP	International Association for the Study of Pain
IMPACT	Initiative on Methods, Measurement, and Pain Assessment in Clinical Trials
IPQ-R	Illness Perception Questionnaire – Revised
LBP	low back pain
LOT	Life Orientation Test
MDA	meaningful daily activity
MDAL	Meaningful Daily Activity List
MDAQ	Meaningful Daily Activity Questionnaire

ABBREVIATIONS continued

MDAQ-R	Meaningful Daily Activity Questionnaire – Revised
MPQ	McGill Pain Questionnaire
NHS	National Health Survey
NSAID	non- steroidal anti-inflammatory drugs
NWC	Number of words chosen
OECD	Organisation for Economic Co-operation and Development
PCA	principal component analysis
PCP	Personal construct psychology
PDI	Pain Disability Index
PIL	Purpose in Life Test
PMP	Personal Meaning Profile
PPI	Present Pain Intensity
POI	Personal Orientation Inventory
PRI	Pain Rating Index
PVAQ	The Pain Vigilance and Awareness Questionnaire
PWB	Perceived Well-being Scale
QALY	quality adjusted life years
SAV	Self-Actualization Value scale
SD	standard deviation
SONG	Seeking of Noetic Goals Test
VAS	visual analogue scale
TAC	Transport Accident Commission
WHO	World Health Organization
VWCA	Victorian WorkCover Authority
WHYMPI	West Haven Yale Multidimensional Pain Inventory
YLD	years lost due to disability
YLL	Number of deaths x standard life expectancy at age of death

CHAPTER ONE: OVERVIEW OF THESIS

“The more focus and interest we have on pain, the better. However, the focus has to be scientifically solid and evidence based. This is particularly important for an experience like pain, subjective and variable as it is, and in principle not measurable by any physiological method”.

(Troels Jensen Incoming IASP Presidents Address, 11th World Congress on Pain, Sydney, 2006)

1.1 Patients Subjective Experiences of Chronic Pain

Pain is subjective and is therefore experienced differently by different people. Even when people have the same pathology or injury they can perceive their pain and pain symptoms in a number of different ways. It is therefore plausible that the management or course of pain differs from patient to patient. This is also an opinion supported by Dennis Turk (1993), he proposed that “pain can only be accessed via the patient’s self report and overt communication of their personal pain experience. Pain is a dynamic and subjective experience with some people being discouraged and demoralised by pain and others adjusting and adapting to their pain” .

The inspiration for this research project came from the litany of negative and positive experiences I personally have heard uttered by many CP sufferers I have seen in my psychology practice. To illustrate these personal narratives of pain experiences, the clinical notes of the researcher’s chronic pain patients (CPP) were reviewed. The following negative responses depict themes of personal experiences reported by some CPP over a six week period. Individual CPP cannot be identified from any of these statements, as they were the most often used phrases by the majority of patients and were not unique to a specific patient and similar statements to these are often cited in the narrative pain literature.

“The pain is horrible it never goes away”.

“I know I have to live with it”.

“It has changed my life”.

“I can’t do the things I used to do around the house” “I can’t work or go out”.

“I have nothing to look forward to”.

“I feel sad; empty; useless”.

“My life has no purpose or meaning anymore”.

In contrast to these negative responses to CP, some CPP reported a more optimistic attitude towards their current pain condition. Positive attitudes toward CPP pain management strategies and adjustment to CP are reflected in the following quotes.

“I have learned to pace myself so as I can continue at work”.

“My employer has modified my work station and I am finding it easier now”.

“Hydrotherapy has helped me to keep moving and helps with the pain”.

“When I am with my family and grandchildren I don’t feel the pain so much”.

In these personal accounts, positive themes such as self regulation, receiving support, personal statements on the effectiveness of treatment and the importance of social connections were identified. These personal characteristics and behaviors have previously been associated with positive outcomes such as self-efficacy, optimism, hope and enthusiasm.

However these themes were diametrically opposed to the suffering, despair, fear, disruption, pessimism, sadness and lack of purposeful activity reported by some CP patients. A further association was observed between individual CPP doing things that they valued and the degree to which they reported that the severity of pain symptoms interfered less with their life.

1.2 Postulated Clinical Schemas of Chronic Pain Patients' Subjective Experiences

From the subjective experiences reported by a clinical sample of CPP there appeared to be an emerging bipolar continuum between the positive and negative experiences of CPP. This observation was of particular interest, as there did not appear to be a consistent relationship between the reported positive or negative experiences of CPP who experienced similar pain severity, duration, and cause.

The clinical impressions of CPP oscillating between positive and negative responses to their pain, and possible relationships between specific factors have been schematically depicted in Figure 1. While not an exhaustive representation of all the interactive processes that may occur in relation to positive and negative CPP perceptions, Figure 1 serves as a preliminary model that represents some of the effects that CP has on clinical sample of CPP.

These observed differences between individuals' experiences of CP appeared to be somehow related to functional roles performed and whether or not they believed their life had meaning. The functional goals identified included performing domestic chores, home maintenance, caring for family members and friends, health related activities, and occupational limitations, recreation, leisure and social activities.

This variation in CPP responses to CP was of particular interest because patients with the same organic cause of pain, who received identical treatment for their CP, often displayed markedly different treatment efficacy and outcomes. These differences in CPP levels of functioning and pain symptoms were most often noted in the patients' reported severity of symptoms, illness perception, coping strategies, and the extent to which there was a marked interference with emotional, social, vocational and domestic life functions.

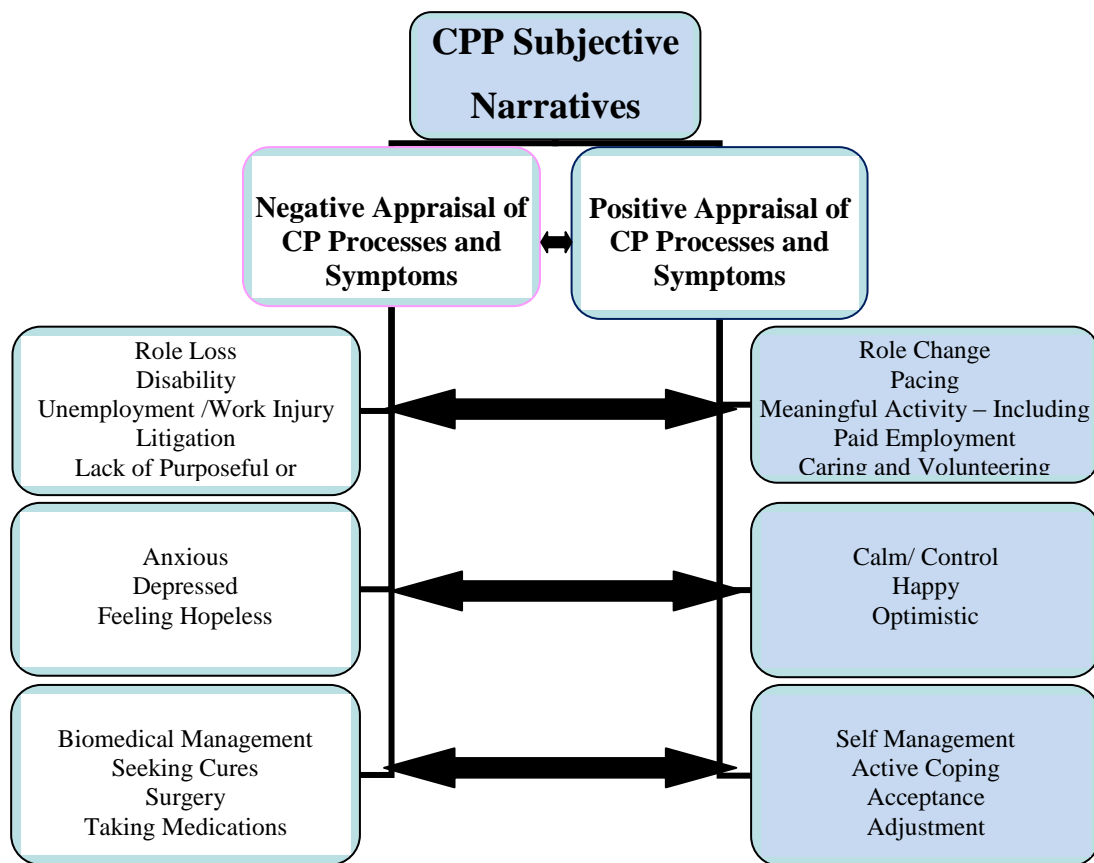


Figure 1. Schematic Representation of Chronic Pain Patients Subjective Personal Narratives

The clinical symptoms and responses to CP depicted in Figure 1 highlights some of the essential elements of coping with CP conditions. Changing life tasks and activities, altered mood, and developing coping strategies, have previously been identified as being important in understanding how some CPP adapt, cope and lead meaningful lives, while others cannot accept their condition, and do not appear to participate in personally meaningful activities.

1.3 A Journey from Acute Pain to Chronic Pain Patient

There are distinctions made between acute and CP. Acute pain is experienced immediately after an accident, injury of illness and most often will be ameliorated by treatment. Chronic pain is the pain that is experienced when acute pain has endured for longer than the time that is usually expected for healing to occur; there is a transition from an acute pain state to a CP state.

While acute pain can be ameliorated with a combination of analgesics, physical therapy, time or surgery, CP does not follow the same course. With CP conditions the pain remains, despite various treatments that are attempted to manage the condition. Treating CPP is consequently a complex process that involves the collaboration of primary care physicians, specialist medical practitioners, physical therapists, psychologists and other alternative and complementary therapists. The range of medical and allied health practitioners that treat CP is to some extent an indication of the complex approaches adopted for the treatment of this medical disorder.

The persistence of CP remains a matter of curiosity and causes some frustration for health practitioners, as pain symptoms are not always related to the organic origin of the original pain condition. In CP there is no clear course of symptom onset, nor is there any certainty that a particular treatment that has been effective in the management of pain severity, functional status, or psychological distress in one patient will be effective for another person with a similar condition. What has been found to be a further problem is identifying what treatments will be most beneficial for what patients, with what conditions? The prevailing model of self regulation in the management of chronic health issues and the current application of evidence based practice in medicine and health care has further highlighted these issues.

1.4 Exploring the Theoretical Basis of Clinically Observed Chronic Pain Symptoms

Clinical psychological practice can frequently identify overt aspects of client presentations minimally addressed in the current theoretical and research literature. A clinical example of this is the observation that those patients, who perceived they performed meaningful daily activities, also reported less severe symptoms of pain, functional disability and psychological distress. These CPP also reported they used less prescribed and non

prescribed drugs and other treatments. However, there did not appear to be any conclusive evidence to substantiate or repudiate this viewpoint in the current pain research literature.

The current thesis is an exploration of the subjective experiences of CP, based on the clinical observations of individual CPP who have been treated by the researcher. The study also attempts to conceptualize these individual experiences of patients within the broader psychological frameworks presented by pain researchers. To perform these analyses there were five major research tasks undertaken.

Firstly the researcher reflected on the reported CP experiences of a sample of CPP previously treated, and then the reported symptoms that are generally proposed as being consistent with a chronic pain disorder were represented in a diagrammatic form, also reflecting the feedback from the chronic pain patients (Figure 1).

Secondly a literature review was conducted to explore chronic pain patients' symptoms, treatments, outcomes, and participation in daily activities. The factors identified in the narrative experiences of CP depicted in Figure 1 were then considered in relation to the existing body of theory and clinical research that has been conducted with chronic pain patients.

In this review of the literature, chronic pain and acute pain were defined. Chronic pain was considered within a social and economic context and a broad overview of the epidemiology and the human and fiscal costs associated with CP was also undertaken. The physical, vocational and emotional symptoms of CP were identified and the theoretical models that have evolved as a result of previous CP research were then reviewed.

The specific models reviewed were the gate control model of pain proposed by Melzack and Wall, and the biopsychosocial model developed by Loeser (1982). As well as these traditional models of pain to conceptualize chronic pain processes and symptoms, additional models were considered.

Additional theoretical models considered were: illness perception and self regulation (H. Leventhal, Nerenz, & Steele, 1984; Petrie & Weinman, 1997; Pimm & Weinman, 1998; Scharloo & Kaptein, 1997); fear avoidance and behaviour (Norton & Asmundson, 2003; Pilowsky, 1993; Waddell, Newton, Henderson, Sommerville, & Main, 1993); and coping strategies (Arnstein, Caudill, Mandle., Norris, & Beasley, 1999; Folkman, Lazarus, Gruen, & DeLongis, 1986). In previous research, these models have been presented by researchers to assist clinicians in their understanding of how chronic pain patients symptoms are perceived, maintained or ameliorated (Crisson & Keefe, 1988; Morley, 1997).

The quest of many CP clinicians and researchers has been to understand why some patients are able to manage their pain, maintain a rewarding and meaningful life, and experience minimal interference with life and psychological distress, [whereas](#) others cannot (Merskey, Loeser, & Dubner, 2005; Novy, Nelson, Hetzel, Squitierl, & Kenington, 1998). The inability of a chronic pain patient to continue with the activities of life that were previously taken for granted, prior to developing a chronic pain condition (CPC), led them often to reevaluate their life values, goals and personal identity. For example, those patients who have experienced severe, debilitating CP symptoms have reacted to this condition and have permanently changed their lives by ceasing employment, taking opioid medication, giving up family and occupation roles and receiving income replacement such as a disability allowance WorkCover or unemployment benefits (Jackson, Lezzi, & Lafreniere, 1996). As a result of these changes that are experienced in physical, social, occupational and emotional life domains, chronic pain patients also have changed perceptions of themselves (S. A. Harris, Morley, & Barton, 2003; Niemeier, Kennedy, McKinley, & Cifu, 2004).

It has also been reported that as a result of the changes that chronic pain patients experience they also experience a loss of personal identity, roles and goals, most often resulting in confusion, interruption and lack of direction, goals and motivation for the future

(B. W. Smith & Zautra, 2004). This altered identity experienced by CP patients appears to be related to a lack of purpose or meaning in life. The existential quest for meaning in life appears to be a challenge for CP patients. This notion was also alluded to recently by Professor Daniel Carr in PAIN: Clinical Updates in 2009, where he stated: “ I cannot think of a better subject than pain as a means to link objective measurement with existential experience” (2009, p. 4).

The concept of meaningfulness and meaning or purpose in life required further consideration in relation to pain and specifically CP management and severity of symptoms experienced by patients. A model was developed on the basis of this review that reflected the possible relationships between meaningful daily activity and chronic pain (**Figure 8**). In the research literature, it has been reported that some chronic pain patients experience a distinct lack of positive and worthwhile values, goals and motivations (Jensen, Nielson, & Kerns, 2003; Kerns, Jensen, & Nielson, 2006). This negative disposition toward the future has an adverse impact on chronic pain patients lives, and emphasised the clinical need for a more extensive review of values, goals, motivation and pursuit of worthwhile activities, tasks, and roles. Especially in reference to the impact of meaningful daily activity (MDA) on the patients’ reported severity of other related CP symptoms.

In the third stage a Pilot Study was performed to identify what activities chronic pain patients participated in, to determine what they found meaningful and to document how often they engaged in meaningful activities. Stage four involved testing the items that were identified in the Pilot Study and developed for inclusion in a measure of meaningful daily activity.

In stage four, the concepts of daily activity (DA) and meaningful daily activity (MDA) were operationalised by selecting or devising measures of daily activity and meaningful daily

activity. The DA and MDA measures were then administered to a general population sample and the psychometric properties of the measures were established.

Both the MDA Questionnaire (MDAQ-R) and DA Questionnaire (DAQ-R) were then used in stage five of the study to test whether or not there was an association between meaningful daily activity and chronic pain symptoms as proposed in the research model depicted in Figure 8.

The first model focused on daily activities and predicted/hypothesized that the frequency of engaging in a range of daily activities is related to chronic pain patient's severity of CP symptoms. By contrast, the second model predicted that chronic pain patients perceived meaningfulness of their various daily activities would be significantly associated with the severity of CP symptoms.

This introductory chapter emphasises the clinical stance that has been employed in conducting this research, emphasising the subjective experience of chronic pain and how patients' perspectives towards their condition and the management strategies they employ vary considerably. There is also a considerable disparity between patients who experience the same pain conditions and the ramifications of their chronic pain on how they live and manage their chronic pain. The following chapter will review the literature and locate this clinical observation within a theoretical framework.

CHAPTER TWO: LITERATURE REVIEW

Preface to Literature Review

At times the Literature Review may appear to be somewhat dated. The historical and current references throughout this thesis are consistent with the sequential stages of the research project. There were four separate and sequential stages of the research project over a ten year period. The first stage was conducting a Literature Review during 1998 and 1999. In stage two a Pilot Study was undertaken to identify activities that CPP performed. During the Pilot Study (1999-2000) a list of items for a meaningful daily activity (MDA) and Daily Activity (DA) measure was compiled by CPP. In the third stage of the research project (2001-2003) the items identified by CPP in the Pilot Study were refined and these items were included in the measures of Meaningful Daily Activity Questionnaire (MDAQ) and Daily Activity Questionnaire (DAQ). The MDAQ and DAQ were administered to members of the general population in Study One. In stage four, the final stage of data collection, the MDA/DA research model was tested on a CP population (2004-2005).

The current research literature has been incorporated into the discussion, Chapter 6. It is also noteworthy that the current research being examined for the PhD candidature commenced in 1999 and periods of Leave of Absence were taken by the candidate for family and significant health issues for all of 2003, March to October 2005, February to August 2007 and February to July 2007.

Introduction

There are six themes explored in this literature review: (1) Chronic pain characteristics and symptoms (2) Theoretical models of pain (3) The concept of meaningfulness (4) Participation in daily activities (5) Measuring meaningful daily activity and (6) How meaningful daily activity is associated with CP symptoms and behaviours.

2.1 Overview of Chronic Pain

2.1.1 Defining Chronic Pain

Pain has been defined by the International Association for the Study of Pain (IASP) as “an unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage”. It is also described as always being an unpleasant experience and is “therefore an emotional experience” (Merskey, et al., 2005, p. 210). The IASP definition of pain acknowledged the physical and psychological components of pain and the complexity of the interrelationship between the components. Turk and Nash (1996) also suggested that pain involved “conscious awareness, selective abstraction, appraisal, ascribed meaning, and learning” (p. 325) and that pain is best viewed as a perceptual rather than a sensory process. These definitions identify the physical, psychological and cognitive processes of pain.

Pain is also classified according to duration or chronicity and there is a distinct difference between acute and chronic pain. Chronic pain has characteristics that are different from acute pain (AP) regarding the severity of pain and other symptomatology (ANZCA, 2005; Loeser, 1991). Dwarakanath (1990) suggested that acute pain “plays a biological role; it warns the patient that something is wrong and prompts him to seek help” (p. 3), whereas CP may be described as pain that “outlasts the natural course of the disease or injury, loses its biological importance, and serves no useful function” (p. 8).

Pain has also been diagnosed as “chronic” according to the length of time (duration) that has elapsed since the onset of pain (Andersson, 2004; IASP, 1997; Loeser & Treede, 2008). CP as defined by Cailliet is “pain that has persisted a month beyond the usual course of an acute injury or disease” (1993, p. viii). However the IASP in the *Classification of Chronic Pain* (1994) proposed that there are differing methods used by researchers and clinicians to diagnose CP. Some pain specialists would suggest that pain is considered to be

chronic if it persists for longer than three months and others consider that pain should persist for six months to be classified as chronic. Another view on the classification of CP is that pain becomes chronic when the pain persists beyond the “normal time of healing” (Merskey, 1979). It is however generally agreed by those in the clinical field that three months duration is a convenient division between acute and CP of a non-malignant origin (Merskey, 1979; Merskey & Bogduk, 1994). The IASP also note that for research purposes the duration of pain experienced by a patient to be included as a participant in a CP study is often six months.

Loeser (1991) also differentiated between treatments and outcomes for acute and CP. Acute pain is deemed to be the result of tissue damage and requires immediate treatment for the tissue damage. The pain is alleviated through analgesics and anaesthetics and the patient is able to return to normal activities. CP however is generally not responsive to medication and the patient often does not fully return to pre pain activity. CP has also been described as “destructive, and leading to physical and psychological disabilities that medical practitioners find difficult and costly to treat” (Dwarakanath, 1990, p. 8). This perplexing dilemma regarding the treatment of CP has prompted considerable research to discover why pain continues and how to alleviate it (Gatchel, 2005; Turk et al., 2008). Figure 2 depicts how acute and chronic pain conditions are different and how acute pain patients return to normal activity and CP patients do not.

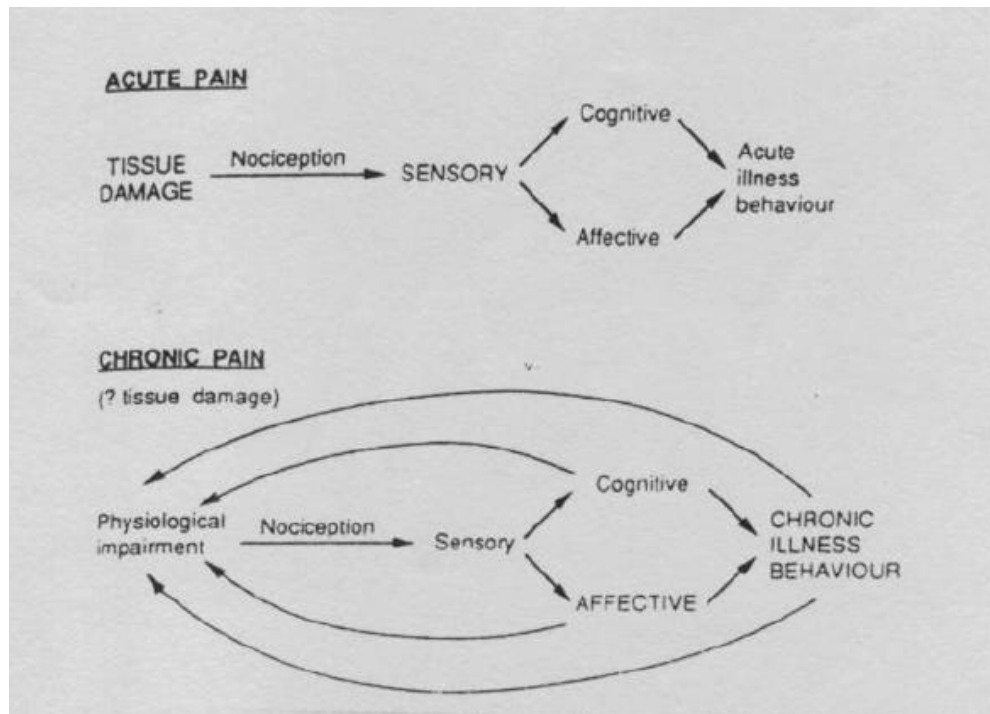


Figure 2. Acute and Chronic Low Back Pain and Illness Behavior.

From "A Fear-Avoidance Beliefs Questionnaire (FABQ) and the role of fear-avoidance beliefs in chronic low back pain and disability," by G. Waddell, M. Newton, I. Henderson, D. Sommerville and C.J. Main, 1993, *Pain*, 52, p. 165. Copyright 1993 by International Association for the Study of Pain. Reprinted with permission of the authors.

Figure 2 depicts the model that was proposed by Waddell, Newton, Henderson, Sommerville and Main (1993). The model clearly identified the relationships between sensory, cognitive, and affective factors, and the subsequent illness behaviours emanating from these factors. This model also depicted the increasingly complex interrelationship between the variables attributed to, or leading to CP behaviour as compared to the factors attributed to acute pain behaviour. The main difference between acute and chronic pain in the comparative model is the feedback loop from chronic illness behaviour to physiological impairment. Also physiological impairment in a CP condition is not necessarily conditional upon the presence of any identifiable tissue damage as is the case in acute pain. The model also depicted the contribution of sensory, cognitive and affective factors on illness behaviour

and how in the CP experience cognitive, affective, and illness behaviour factors, are seen to be causal in relation to the continuance of illness behaviour and physiological impairment.

Another theory of the sequential development of CP was proposed by Gatchel (1991), as a theoretical model comprising three stages of physical and mental deconditioning, occurring post injury (nociception). These stages are (1) the initial psychological distress that a patient experiences and may include fear, anxiety and worry; (2) development of or exacerbation of psychological problems and psychopathologies such as anxiety, depression and substance abuse and (3) acceptance of a sick role and observed in abnormal illness behaviour. Both of these explanations of the development of CP identify the physical, cognitive and affective components of the disorder and suggest that the resultant illness behaviours observed in CP populations are abnormal. However it is also noted that there are some patients who experience CP who do not develop abnormal illness behaviours, but adapt to CP and devise personal strategies to deal with pain and maintain rather than relinquish roles in the workplace, home and socially.

As the primary contact for pain patients is usually with their general practitioner (primary care physician), the emphasis on conceptualization of types of pain has been predominantly medical in orientation (Gray & Cousins, 1994; Khouzam, 2000; Le Goazlou, Moreau, Letrilliart, & Zerbib, 2005; Loeser & Cousins, 1990; O'Reilly, 1994). Cailliet an anaesthetist, proposed that CP is “a complex synthesis of biological, psychological, behavioral, and neurochemical factors” (1993, p. 19).

There have been also been different categories of CP proposed by clinicians. Portenoy and Kanner (1996) suggested that there were four categories of CP: (1) chronic pain associated with cancer, (2) chronic pain due to progressive medical diseases other than cancer, (3) chronic pain associated with nonprogressive or slowly progressive disease, and (4)

chronic idiopathic pain. Three of these categories of CP are biomedical classifications of pain.

Idiopathic pain, however, differs from other forms of pain in that it “persists in the absence of an identifiable organic substrate or is believed to be excessive for the organic processes extant” (Portenoy & Kanner, 1996, p.11). It has also been postulated that psychological factors contribute to idiopathic pain (Ring, Kadzielski, Malhotra, Lee, & Jupiter, 2005), particularly when there is no apparent pathological cause of pain. Low back pain and migraine are often cited as examples of idiopathic pain (Agostoni et al., 2004; Kiester & Duke, 1999; Selekler & Budak, 2004; Waddell, 2004; Yuh-Jen, Jong-Ling, Jiing-Feng, Shiang-Ru, & Shuu-Jiun, 2004).

Thus CP is a complex medical condition (Breivik & Bond, 2004; Seres, 2003). Clinical description of CPP is guided by the IASP manual, *Classification of Chronic Pain* providing practitioners with common terminology, definitions and a comprehensive classification of the various CP syndromes (Merskey, 1979; Merskey & Bogduk, 1994). Prevalent indicators of a CP condition are that the duration of the condition is unpredictable (Andersson, 2004; Boersma & Linton, 2005) and that pain restricts activities and leads to disability (Peters, Vlaeyen, & Weber, 2005). In addition to these signs and symptoms CP is often accompanied by psychological distress such as irritability and depression (S. King, 2005; McWilliams, Cox, & Enns, 2003; McWilliams, Goodwin, & Cox, 2004; Weaver, Kvaal, & McCracken, 2003).

The manner in which a CP patient's activities are restricted in physical, psychological, vocational and social role functioning has also been a matter of considerable interest to both researchers and clinicians (Arena, 2002). Melzack and Wall (1988) proposed that CP progressed to a “pain syndrome - a medical problem in its own right” where patients were “beset with a sense of helplessness, hopelessness and meaninglessness. And patients reported

that “The pain becomes evil” (p. 36). This definition acknowledged physical and psychological components of pain and their interrelationship. Thus CP is a complex composition of sensory, psychological and cognitive processes involving a dynamic interrelationship that can vary between individuals but always causes a significant interruption to the life of the patient.

The International Association for the Study of Pain (IASP) has provided definitions and guidelines to clinicians and researchers in the field of pain medicine since it was established in 1975. Firstly, by publishing a journal ‘*Pain*’, and secondly, by providing definitions of pain terms (Merskey, 1979). The *Classification of Chronic Pain* was published by the IASP Press in 1994 (Merskey & Bogduk, 1994) Merskey provided a Five Axis Classification system for diagnostic purposes in CP medicine. The five Axes were: Axis I Regions; Axis II Systems; Axis III Temporal Characteristics of Pain; Axis IV Patients’ Statement of Intensity and Axis V Etiology. This numeric coding system using Axes has a parallel in the Diagnostic and Statistical Manual of Mental Disorders (American Psychiatric Association, 1994) used by mental health practitioners to diagnose psychiatric disorders.

In addition to IASP, many medical and allied health scientists and practitioners are engaged in the study of pain and in particular CP. Physicians, general practitioners, neurologists, anaesthetists, surgeons, psychiatrists, psychologists and pharmaceutical companies have been extensively researching the management of pain for several decades. Typical examples of these research studies are found in the substantive volumes of edited works that have been published by Loeser, Butler, Chapman & Turk (2001) and Wall & Melzack (1999). These publications explore many of the causative, diagnostic and treatment issues that are related to the diagnosis and treatment of various pain conditions. The common theme amongst these specialist pain authors is their desire to identify the causative and management principles of CP to alleviate the suffering caused by CP to their patients.

2.1.2 Chronic Pain Symptoms

Measures of pain severity and symptoms are subjective self reports made by the patient and are influenced by their previous pain experiences. For example, the severity and duration of previous pain episodes, how successful treatments have been, whether or not the patient is presently focusing on or distracted from pain all contribute to perceptions of current pain severity (Boersma & Linton, 2006; Crombez, Eccleston, Baeyens, & Eelen, 1998; Ragab & DeShazo, 2008; Ruhlman & Karoly, 2007). Some of the subjective measures used in research and practice to measure self reported pain intensity, include, Visual Analogue Scales (Price, McGrath, Rafii, & Buckingham, 1983); Verbal Rating Scales; Numerical Rating Scales (Drukteinis, 1996); Behavioural Rating Scales, Behavioural Observations (McCahon, Strong, Sharj, & Cramond, 2005) and Pain Drawings (Hildebrandt, Franz, Choroba-Mehnen, & Temme, 1988).

Other measures of pain that explore the affective components of pain are the McGill Pain Questionnaire (MPQ) and the West Haven Yale Multidimensional Pain Inventory (WHYMPI) (Kerns, Turk, & Rudy, 1985; Melzack, 1975). A detailed account of these measures, may be found in Jensen and Karoly's (1992) review chapter, on self-report scales and procedures for assessing pain sensation in adults, see also Skevington (1996). In a series of papers published by the IMMPACT committee of the IASP, in the *Pain* journal, the authors have also acknowledged the need to assess affective components of pain when conducting clinical trials (Dworkin et al., 2005; Dworkin et al., 2009; Dworkin et al., 2010; Haythornthwaite, 2010; Turk et al., 2003; Turk et al., 2006; Turk, et al., 2008).

In the research literature cited by the IASP it has been generally acknowledged that there are multiple symptoms of CP (Dworkin, et al., 2005). Also the severity of CP symptoms is either exacerbated or reduced by attention to or distraction from pain (Roelofs, Peters, McCracken, & Vlaeyen, 2003). Patients' individual interpretations of what pain means

(David A Fishbain et al., 2003) and the strategies used to cope with the pain (Cipher & Clifford, 2003). Hence an adequate assessment of CP symptoms needs to include a range of measures (Dworkin, et al., 2005) such as the McGill Pain Questionnaire (MPQ), a measure of sensory pain to explore the affective dimensions of pain as well as pain severity. As well as determining the sensory and affective impact of CP, it is also necessary to establish how much CP interferes with daily activities. Behavioural or functional assessment measures are also necessary to establish the interference that CP causes for a patient (Koho, Aho, Watson, & Hurri, 2001; Litcher-Kelly, Stone, Broderick, & Schwartz, 2004).

The administration of symptom and outcome measures to CP patients is a standard procedure and patients are often required to complete multiple hardcopy or online surveys prior to attending pain specialists' appointments or clinics for the first time. The measures used are general, location or disease specific and information is obtained about a patient's pre treatment symptoms and responses to treatments via these self report measures, as well as clinical examinations and interviews (Turk & Melzack, 2001).

2.1.3 Prevalence of Chronic Pain

Harstall and Ospina (2003) reviewed 13 international studies published between 1991 and 2002 about the prevalence of CP. The review concluded that the pooled prevalence estimate (male and female) of pain varied in the general population from 10.1 % for widespread pain of more than three months duration in Israel (N= 2,210), to 55.2 % pain of greater than three months duration in Sweden (N=1,609).

It was noted by the review authors that establishing comparative prevalence rates for CP from study to study was exceedingly difficult, as the studies used differing methods of defining CP. For example the American College of Rheumatology (ACR) definition of unilateral widespread pain is the diagnostic criteria used by physicians to diagnose fibromyalgia (FM). The criteria are widespread unilateral pain and tenderness on palpation at

11 of the 18 tender points associated with fibromyalgia (Wolfe et al., 1990). While the IASP definition of CP is pain that has persisted for a duration of longer than three months (International Association for the Study of Pain, 1986). Also some studies used pain duration of greater than three months while others used the criterion of greater than six months duration. There were also differences in the age groups sampled and the sources of the samples. Other methodological issues were that some studies identified the area of pain, its duration and treatment, while others did not, and the size of the samples varied from 410 in a Canadian telephone interview (Birse & Lander, 1998) to 17,496 in a computer assisted telephone interview in Sydney, Australia (Blyth et al., 2001). Therefore, the comparison of prevalence rates from country to country in this review was not valid and an overall prevalence of CP internationally could not be reliably ascertained due to differences between studies in age, site of pain, and sampling methods.

Verhaak, Kerssens, Dekker, Sorbi & Bensing (1998) also conducted a review of CP prevalence studies conducted between 1986 and 1994. The reported prevalence rates for CP varied between 2% and 40%, with a median CP prevalence point of 15% of the adult population. As in the study by Harstall and Ospina (2003), considerable variation was observed in research methods, CP definition, aspects of pain that were surveyed and the reporting of demographic and comorbidity characteristics of the samples. However, unlike the review by Harstall and Ospina, this review reported more detail about how demographic factors influenced the prevalence of CP.

Verhaak et al. (1998) highlighted the difficulty of determining the actual prevalence of CP as the studies used various definitions of CP, the clinical populations varied and different countries had varying degrees of affordability and access to health care. Chronic pain statistics could only be calculated in countries where such records were kept and statistics were available and accessible. Health epidemiological data is readily accessible in

Scandinavia and also some European countries, hence the higher number of epidemiology studies that are reported in Denmark, Sweden, Europe and the United Kingdom.

Epidemiological studies in Denmark have reported that there is a higher incidence of pain conditions in women than in men. The prevalence of chronic non-malignant pain was 19% for the population, 16% males and 21% females (Eriksen, Jensen, Sjorgren, Ekholm, & Rasmussen, 2003). In the Spanish population the prevalence of pain lasting for more than three months was 23.4% and the most common causes were arthritis, rheumatism, and migraine (Catala et al., 2002). In Scotland, the prevalence of CP of at least three months duration in general practice patients was 14.1% (L. L. Smith, 2001). Verhaak et al. (1998) found that of the international studies reviewed, the prevalence of chronic benign pain disorder among adults in published research ranged from 2% to 40%.

When the current research study commenced in 1999, collecting similar epidemiological data in Australia was difficult because there was limited access to statistics on primary care patients and other health service utilization apart from data that was collected by the Australian Bureau of Statistics. The Australian Bureau of Statistics (ABS) conducts population censuses and the data collected from these censuses may be obtained by members of the public, however statistics on the prevalence of CP in Australia is not available.

ABS publications and other Government Departments and agencies that have prepared papers regarding Australian health statistics have focused on diseases that were identified as causing the most concern to health care administrators and planners (Australian Institute of Health and Welfare (AIHW), 2005, 2008c; Begg et al., 2007; M. F. Harris & Zwar, 2007; National Health Priority Action Council (NHPAC), 2006). The reports that have been published provide information about the cause of injuries, categories of diseases, morbidity, prevalence of illnesses, and the associated social and economic costs, of various illnesses and injuries (Australian Bureau of Statistics, 2002a, 2003a, 2003d, 2009b; Australian Institute of

Health and Welfare (AIHW), 2004b, 2008a, 2008b; Mathers, Vos, Stevenson, & Begg, 2001).

Throughout the course of this research project access to information about health and illnesses in Australia has improved, but this information does not necessarily relate specifically to the prevalence, costs or treatments provided for CP. For example statistics are readily available about the specific services provided in relation to the general practice activity of Australian primary care physicians or General Practitioners. These general practice publications itemize the reasons for patients' visits, the treatments prescribed, and the referrals per visit for each patient. However, while there are details about the rate per 100 encounters of various medical conditions, including all combined musculoskeletal conditions (16.1 per 100) there are no combined statistics available for patients who present to their GP's suffering from conditions that may cause benign CP (Britt et al., 2009). In Australian general practice specific details are available about the medications prescribed at each visit. While this information reflects the practice of prescribing pain medicines such as paracetamol (2.3 per 100 encounters), codeine (1.9 per 100) and opioids (3.3 per 100) the reason for a GP prescribing the medication is not necessarily attributed to a condition that causes CP (Britt, et al., 2009).

Also National Health Surveys conducted in Australia over the past two decades have not captured data on CP as a disease in its own right. The SF 36 Australian version and accompanying interviews used to collect health information from the general community in the most recent National Health Surveys asked two questions about pain in two separate items on the survey (Australian Bureau of Statistics, 2009b).

"How much bodily pain have you had in the last 4 weeks?" The possible responses were from "1= *none*" to "6= *very severe*" on a six point scale.

“During the last 4 weeks, did pain interfere: *not at all, a little bit, moderately, quite a bit or extremely* with your normal work (including both work outside the home and housework)?” The possible responses were from “1= *not at all*” to “5= *extremely*” on a five point scale. But the survey did not collect information on specifically CP conditions, as CP was not identified as one of the long term conditions (asthma, cancer, cardiovascular disease, arthritis, osteoporosis, diabetes and hearing and sight losses) targeted in these surveys (Australian Bureau of Statistics, 1997, 2001g, 2003c, 2006, 2009b). The Australian Bureau of Statistics National Health Survey unit was contacted by telephone on 7 December 2009 to determine whether or not there were items devoted to identifying the prevalence of CP in the general community in the 2007 National Health Survey. Information verbally provided by that office was that the only questions relating specifically to pain were the two items previously identified and data relating to these questions is only available upon request to the ABS at a fee for service determined by the ABS, with the data normally taking two weeks to be supplied.

From ABS data obtained, in the 2007-2008 Australian National Health Survey, 31.9% of the population experienced no pain, 39.1% very mild pain, 19.3% moderate pain and 9.7% of Australian experienced severe or very severe pain. The degrees to which pain interfered with daily activities were greatest for those persons who reported the highest levels of pain. Of those persons who experienced severe or very severe bodily pain 38.6% also reported profound or severe activity limitation and 4.0% reported no disability or restrictive long term health condition. Whereas 11.5% of persons who had no pain had profound or severe activity limitation and 43.4% also reported no disability or restrictive long term health condition (Australian Bureau of Statistics, 2010b).

Government agencies in Australia have collected information about Australians who experience bodily pain and the extent to which pain interferes with activity, but they have not

yet provided a standardized method of identifying the prevalence and impact of CP in the general community. There is only limited information available about clinical populations with CP (Australian Bureau of Statistics, 1997; Australian Institute of Health and Welfare (AIHW), 2007; Britt et al., December 2005; Epidemiology and Surveillance Branch Public Health Division New South Wales Health Department, 1999).

To date, there has only been one study undertaken to identify the prevalence of CP in the Australian general population. This epidemiological study was conducted in New South Wales, by Blyth et al. (2001) on 17,543 participants, identifying 17.1% of males and 20% of females reported experiencing CP. Demographics associated with CP were: female gender, lower socio economic status and higher prevalence of pain of 65 to 69 year old males and 80 to 84 year old females. These demographic observations are consistent with the international prevalence statistics available in Canada, Great Britain, Scandinavia, and the USA (Currie & Wang, 2004; Eriksen, et al., 2003; Harstall & Ospina, 2003; Rustoen et al., 2004; Verhaak, et al., 1998).

2.1.4 Cost of Chronic Pain

The financial and personal costs associated with CP constitute a substantial health burden (Pizzi et al., 2005; B. H. Smith et al., 2001; Thomsen, Sorensen, Sjogren, & Eriksen, 2002; van Leeuwen, Blyth, March, Nicholas, & Cousins, 2006; Woolf & Pfleger, 2003). The significance of health expenditure on benign or non-malignant CP is evident, in the extensive economic reviews that have been commissioned by the World Health Organization, Governments, Government Agencies and health service providers in Australia, America, Canada, the United Kingdom, Northern Europe and Scandinavia. Despite the extensive CP surveys that have been undertaken internationally it is difficult to make direct cost comparisons between countries. Because the various countries where CP health surveys have been conducted will have varying health policies and methods of calculating the costs of

health services provided. Some health services used by CP patients, including medications, surgical procedures, prosthesis and mobility aids may or may not be provided or subsidised by the government health care services of that country. There are also some diagnostic services that are available to diagnose and treat CP that may not be ordered or prescribed by doctors in Australia for persons who do not have private health insurance, or who are having their health care costs paid for by a third party, such as an employer in the case of work related injury.

Historically when making international financial cost comparisons, the US dollar, pound or Euro is the currency used by pain researchers and other countries need to convert the costs to their own currency to make a direct comparison. Also international monetary exchange rates are not static and exchange rates impact on the costs of the provision of health care services. In 2002 a study was conducted in Sweden (Ekman, Jonhagen, Hunsche, & Jonsson, 2005) to calculate the annual direct costs of low back pain (LBP). The total costs of LBP per patient were reported in Euros and US dollars (3,100 Euros and 2,900 US dollars). This cost comparison between Sweden and the United States cannot be fully appreciated unless we are able to make a direct comparison between the currencies used at the time the study was conducted (2002).

Another problem experienced by researchers when calculating the costs of CP is that many illnesses cause CP. There is no one disease that captures the costs of CP. For example, over the past decade a substantial portion of the Australian health budget has been allocated chronic musculoskeletal pain, and is attributed to various musculoskeletal conditions including arthritis (rheumatoid and osteo); osteoporosis; back pain; slipped disk; trauma and accidents; neuropathic disorders; degenerative non cancerous diseases; amputation; and surgery. It is however very difficult to determine the actual costs of individual causes of CP. However, there is strong evidence from the data collected that costs associated with arthritis

has been rapidly rising (Access Economics Pty. Limited, July 2007; Australian Institute of Health and Welfare (AIHW), 2004b). Also the prevalence of arthritis has increased from 13.9% in 2001 to 14.5% in 2008 (Australian Bureau of Statistics, 2010a).

Mathers and Penm (1999), estimated that the Australian total expenditure in 1993-94 for various musculoskeletal conditions was AUD \$3,002 million. Of this expenditure \$700 million (23%) were related to back problems; osteoarthritis was \$624 million; and soft tissue, muscular and tendon disorders were \$519 million. While total direct costs for musculoskeletal conditions in the USA in 1995 were \$88.7 billion, consisting of: hospital \$33.7 billion (36%), physician (17%), drugs (35%), nursing home (21%), non health (12% - transportation, household help, alterations to home), administrative (5%) and other costs (4%). The indirect costs associated with musculoskeletal conditions for the same period was estimated to be \$ 126.2 billion.

In two reports prepared for the Arthritis Foundation of Australia, by Access Economics (Access Economics Pty. Limited, July 2007, March 2001), the estimated total cost of arthritis in 2001 was almost \$9 billion, equivalent to 1.4% of gross domestic product of Australia (GDP). The 2004-2005 Australian Government Health expenditure on health services for all musculoskeletal conditions (including arthritis) was \$4 billion AUD. By 2007 the total costs of arthritis were \$23.9 billion, consisting of health costs \$4,845.3, financial costs \$12,212.4 and costs of suffering were \$11,729.0 (million AUD) (Access Economics Pty. Limited, November 2007). In addition to the significant health system costs and patients' personal costs attributed to arthritis there are significant costs to the economy and to industry. The 2007 financial cost projections of annual loss of earnings due to work separation and early retirement due to arthritis was \$3,764.6 million AUD (Access Economics Pty. Limited, November 2007).

Chronic pain has a substantial financial impact on the economy and the individual CP patient. These costs are reflected in allocated costs of health services to CP in national health budgets; patients' lost earnings; and the flow on costs to employers and industry in lost productivity and absenteeism of employees with CP conditions. There are significant costs associated with CP absenteeism of employees with CP. This increased absenteeism of employees with CP is an international phenomenon. During 2000 from a sample of full time Danish employees ($N=10,066$) there were 17% of CP compared to 10% of the control group who reported absences due to illness (Eriksen, et al., 2003).

The actual losses associated with CP to the economy are not only due to absenteeism but have been more often attributed to employees not being able to perform the required duties of the prescribed job whilst at work. For example from a large sample of 12,701 male and 16,201 female American employees surveyed from 2000 to 2002 there was an estimated lost productivity attributed to common pain conditions (headache, arthritis, and back pain) of 6.2 (US billion dollars) and 76.6% of this cost was attributed to health related reduced performance of employees while they were at work. Over a two week period there were 6.48% of males and 8.82% of females who reported pain related lost productive time of two hours of more (Stewart, Ricci, Chee, Morganstein, & Lipton, 2003).

In Australia, the 1997 NSW Health Survey, estimated that there were 9.9 million workdays absent due to CP at a cost of AUD \$1.4 billion per annum (Epidemiology and Surveillance Branch Public Health Division New South Wales Health Department, 1999). While a more recent study conducted in Australia by van Leeuwen et al (2006) concluded that when reduced effectiveness was incorporated in this economic analysis the number of work days lost was 36.5 million at a cost of AUD \$5.1 billion per annum. The cost of lost productivity due to CP was \$3.5 billion for males and \$1.6 billion for females (van Leeuwen, et al., 2006). The possible reasons for higher lost productivity costs for Australian males than

Australian females were attributed to several factors. Females work less hours per week (29.4 females, 40.6 males), the number of days lost per annum was less for females (29.6 females, 36.7 males), more pain-related reduced effectiveness workdays for males (26.9) than females (21.4); and the average hourly salary of females in Australian dollars was lower than it was for males (16.14-16.76 females, 17.69-18.26 males).

It has also been noted by researchers who have conducted surveys on the costs of pain and illness to the economy that there is no adequate means of identifying the real cost of pain to the community. Because there are no means by which the value of performing household chores and caring for others can be estimated when there is no monetary value attributed to the unpaid work that is performed in the community (Pizzi, et al., 2005; Stewart, et al., 2003). The time lost to pain by persons who are not in the paid workforce cannot be accurately estimated, but we cannot underestimate the impact of CP on persons who are not performing paid work. In a Danish study that was conducted in 2006 to explore the costs associated with work productivity and activity impairment of non-malignant CP patients there were some interesting comparative findings reported for working as opposed to non working CP patients. Those CPP who were working reported from the total hours available to work 41.1% of work time was lost due to CP and 31 minutes in every hour at work was not productive due to CP. Whereas CPP who were not in paid work reported they were impaired by 71.0% and 42 minutes of every hour that was available for their non work activities were lost due to CP (Kronborg, Handberg, & Axelsen, 2009).

CP sufferers also utilize more health care services (Haetzman, Elliott, Smith, Hannaford, & Chambers, 2003; Verhaak et al., 2000) and consequently use more of the national health budget (Australian Institute of Health and Welfare (AIHW), 2004b). A study conducted by Blyth, March, Brnabic and Cousins (2004) in NSW found that CPP who reported pain-related disability also reported that they visited their primary care physician or

GP more often, were admitted to hospital more frequently and used more emergency department services more often than persons without CP. This higher cost of healthcare service provision to CP patients is also reflected in Denmark where it has been found that CP patients visit health professionals 28% more often than the general population, particularly GP's, where of the total GP visits 33% are from the General Population and 66% are CP patients (Eriksen, et al., 2003).

This higher cost of healthcare service provision to CP patients is also reflected in the studies that have been conducted to estimate the costs of various treatments for CP. An Italian study estimated that the average annual medical costs of treated chronic musculoskeletal pain per patient were € 275 (Garattini, Koleva, Motterlini, & Cornago, 2007). These costs were predominantly attributed to hospital admissions (24.6%), GP consultations (24.2%), drugs for pain (17.5%) and diagnostic procedures (9.2%).

In 2004 to 2005 arthritis and musculoskeletal problems were the fourth leading cause of health expenditure in Australia, costing AUD \$ 4.0 billion, or 7.5% of the healthy system expenditure for that year (Australian Institute of Health and Welfare (AIHW), 2008a). The cost of CP is constantly increasing and in 2007 the allocated costs to the Australian health system for combined CP conditions was AUD \$7 billion comprising inpatient services (31.4%), outpatient services (18.8%), aged care (4.9%), medical services (14.8%), allied health (8.4%), pharmaceuticals (8.2%) research (.7%) and unallocated costs (12.8%) (Access Economics Pty. Limited, November 2007).

Because CPP health care costs are high and future projections of these costs are significantly greater than current health budget allocations to CP there have been analyses undertaken by clinicians, health economists, epidemiologists and statisticians to identify what CP treatments have been found to be most effective. The effectiveness of various CP interventions has most often been determined by using a comparative cost analysis, where the

type of treatment is compared with the cost and effectiveness of treatment per patient (Dagenais, Roffey, Wai, Haldeman, & Caro, 2009). CP treatment comparisons that have been undertaken most often have included patients who have been primarily managed by their GP, with or without additional treatments. The additional treatments that CP patients are most often referred to are diagnostic services, physical therapy, to a neurosurgeon or orthopaedic surgeon, multidisciplinary pain management centres and, to a lesser extent, a psychiatrist or psychologist and other complimentary or alternative therapies.

The primary focus of comparative cost analysis research has been on how to improve the outcomes of treatment and decrease the capital expenditure on CPP (Australian Institute of Health and Welfare (AIHW), 2004b; Dagenais, et al., 2009). This reduction in costs also aims to reduce the associated costs of CP such as loss of productivity due to pain (Collins et al., 2005; Hemp, 2004; Kronborg, et al., 2009). Productivity costs may be readily accessed through work days lost due to illness (Westman, Linton, Öhrvik, Wahlén, & Leppert, 2008), and these statistics are routinely collected by employers, healthcare providers and government agencies (Australian Bureau of Statistics, 2001j, 2006, 2007a, 2009b; Loeppke et al., 2009).

It is however more difficult to determine how treatments for CP have or have not facilitated the employee's ability to perform social, emotional and vocational tasks that are personally meaningful or important (Bullington, Nordemar, Nordemar, & Sjostrom-Flanagan, 2003; Johansson, Hamberg, Westman, & Lindgren, 1999; Richardson, Ong, & Sim, 2007). These daily activities cannot be observed by HR statistics or health care utilization costs.

2.1.5 Chronic Pain and the Global Burden of Diseases

Due to the increasing international health demands in economically, socially and medically disparate countries, in 1990 the World Bank commissioned a global study to assess the burden of 107 diseases. Causes of CP and co morbidities associated with CP included in

the study were musculoskeletal diseases (rheumatoid arthritis and osteoarthritis), intentional and unintentional injuries (self inflicted, war and violence; road traffic accidents and falls), depression and disability, in eight major geographic regions of the world (Murray & Lopez, 1997a, 1997b). This study classified countries according to the geographical regions used in the Disease Control Priorities Project (Jamison et al., 2006).

Calculation of the Global Burden of Disease (GBD) incorporated the actual costs (both present and projected) and included variables such as mortality and loss of health due to disease, injuries and risk factors (World Health Organization, 2009a, 2009c). Also this approach to estimating costs of various illness has been used by government health agencies and politicians to allocate resources for future services, by applying current GBD formulas and estimating the projected costs to manage diseases in the future (World Health Organization, 2008, 2009c). The GBD study also introduced the term disability-adjusted life year (DALY) to quantify the burden of diseases, injuries and risk factors. The DALY statistic is based on the years of life lost from premature death and years of life lived in less than full health because of an illness or injury. As a consequence of this initial study, a new method of calculating the costs of illness was established.

This method of evaluating health costs identified that there are health losses associated with the mortality and morbidity that results from diseases and injuries, and this was a stimulus for further epidemiological studies to be conducted by other agencies and governments internationally (Mathers, et al., 2001; Simmons & Wright, 2004).

In part the Australian statistics available are a result of the international endeavours fostered by WHO to collect data relating to health and illness that can be readily interpreted by a broad range of health planners and health economists worldwide (Begg, et al., 2007). Therefore standardized classifications and methods have been necessary to achieve this aim. The most recent Australian health surveys and statistics collected by the ABS and primary

care practitioners reflect this WHO methodology, in that the classification of diseases are in accordance with the International Classification of Diseases (ICD-10) (Mathers et al., 2003). Within this common classification of diseases there is no separate category for CP. There are, however, Global Burden of Disease categories of *Musculoskeletal Diseases* (M00-M99) including rheumatoid arthritis, osteoarthritis, gout, low back pain and other musculoskeletal disorders, *Injuries* (V01-Y89) and many other conditions that may cause CP (World Health Organization, 1992).

The ABS, AIHW and medical authorities do not routinely collect general Australian population statistics on the burden of CP. Statistics are, however, collected on various medical conditions identified by WHO Burden of Disease papers and studies that cause or perpetuate CP (Australian Institute of Health and Welfare (AIHW), 2006a, 2008a). This health information identifies the number of persons who are diagnosed with a specific disorder and the costs associated with that disorder. The impact of an illness on the national economy, is calculated by determining the direct health costs, productivity losses, household costs, disability adjusted life years (DALY), years of life lost (YLL), years lost due to disability (YLD) and disability weighting DALYs (Australian Bureau of Statistics, 2004a, 2004b, 2004d, 2004h; Mathers, et al., 2001; World Health Organization, 2009b).

There are no specific statistics collected on the combined prevalence of CP caused by all illnesses and injuries in Australia. Although the magnitude of the costs associated with CP is reflected by CP being included as a one of the major chronic health issues Australia faces. Chronic pain has been identified as a chronic disease that will become an increasingly significant Burden of Disease in the Australian Health System (Australian Institute of Health and Welfare (AIHW), 2008c; National Health Priority Action Council (NHPAC), 2006). In 2002, ten percent of Australians reported suffering from a chronic disease (Australian Institute of Health and Welfare (AIHW), 2002). Also in the 2000 to 2001 Australian health

budget 22% (\$10,929, million) of the budget was allocated to the provision of health care services for persons with chronic diseases such as: oral health (6.7%), heart disease (2.9%), arthritis (2.4%), depression (2.0%), cerebrovascular disease (1.8%), diabetes (1.6%) and asthma (1.4%) (Australian Institute of Health and Welfare (AIHW), 2006a). Because chronic diseases utilized 22% of the 2000 to 2001 Australian National Health Budget, chronic diseases were regarded as a priority health focus (National Health Priority Action Council (NHPAC), 2006).

The Australian Burden of Disease is not equally distributed across all illnesses and all age groups. The major portion of the Burden of Disease in Australia has been attributed to eight illnesses. These illnesses in order of the Burden of the Disease as measured in disability adjusted life years (DALY) were: cancer (19%); cardiovascular disease (18%); mental disorders including depression, anxiety and alcohol abuse (13%); neurological disorders (12%); chronic respiratory disorders (7%); injuries (7%); diabetes (5%) and musculoskeletal disorders (4%) (Begg, et al., 2007). Therefore, if injuries and musculoskeletal disorders are combined, at least 11% of the Australian Burden of Disease may be conservatively estimated to be diseases that cause CP.

Chronic illnesses and the prevalence of disorders are also influenced by the age of the person. In Australia during the period 2004 to 2005, the most commonly reported long-term conditions for 33-44 year old adults were: short sightedness (21.6%); back pain and disk problems (21.6%); hay fever and allergic rhinitis (20.3%); long sightedness (14.4%) and chronic sinusitis (11.6%). While in 45-54 age group long-sightedness (52.2%), short-sightedness (30.5), back pain and disk problems (22.5%), arthritis all types (20.0%), and hay fever and allergic rhinitis (19.2%) were the most common long term conditions (Australian Institute of Health and Welfare (AIHW), 2008b).

Another important consideration is that Australian adults with mental and behavioural problems, have been found to have a higher incidence of co morbid illnesses, compared to the total population (Australian Bureau of Statistics, 2003b). These comorbidities have included diseases of the musculoskeletal system and connective tissue (47.7% compared with 30.4%) diseases of the circulatory system (21.2% compared to 16.4%), having sustained an injury event in the last month that required some action (16.8% compared to 11.7%), asthma (17.0% compared to 11.0%) and diabetes (3.6% compared with 2.9%) (Australian Bureau of Statistics, 2001h).

Due to the high prevalence of comorbid diseases and associated health costs, Australia, like the rest of the world, has a strong strategic focus on promoting and maintaining good health (I. A. Scott, 2008) and minimising the risks of disease onset (Australian Institute of Health and Welfare (AIHW), 2002; Rodgers et al., 2004; Waxman, 2004; World Health Organization, 2009a). This strategic policy is aimed at achieving optimal health outcomes over the entire life span (Burton, Walsh, & Brown, 2008; Department of Veterans Affairs, 2008). The strategic goals that have been proposed to achieve these desirable health outcomes are:

1. A healthy start to life supported by the *National Agenda for Early Childhood*;
2. Ageing well supported by the Government's *National Strategy for Ageing*;
3. Preventative healthcare supported by the Government's *Focus on Preventative Initiative*, and
4. Strengthening Australia's social and economic fabric

(Australian Institute of Health and Welfare (AIHW), 2008c; NHMRC, 2007).

2.1.6 Chronic Pain, Disability and Interference with Daily Activities

Disability may be defined as “restrictions in the ability to perform socially defined roles and tasks expected of an individual, e.g. an ability to work or participate in family social

functions” (Beattie, 1997, p. 30). The degree to which a patient is functionally limited or disabled by pain may not be exclusively determined by pain itself. Factors such as beliefs about illness, and how family members respond to the illness are also influential in determining the extent to which a patient is disabled by their pain condition (Foster et al., 2008; McCracken, 2005; Romano, Jensen, Turner, Good, & Hops, 2000). Also the cost of disability has been incorporated in the calculation of health Budgets (World Health Organization, 2009b).

Measuring the extent of interference CP patients experience in their daily life as a result of CP is complex and health professionals rely on the self report of patients as well as physical examinations and behavioural observations to estimate disability status. To have some form of standardized assessment of patients, measures of disability have been developed. These measures consist of self report measures that require patients to make written responses to a survey, and structured clinical interviews and observations, or tests conducted by health professionals. Some measures are designed to measure a general level of disability in certain domains of daily activity while other measures are intended to measure disease or injury specific disability or interference (V. Johnston, Jimmieson, Jull, & Souvlis, 2008; Keating, 2002).

The measures that have been developed are used by physical therapists to assess patients’ level of functional disability and also to determine the outcome of therapy, as this practice is required for physiotherapists treating WorkCover patients (Victorian WorkCover Authority, 1996). The Oswestry Questionnaire (Hudson-Cook, Tomes-Nicholson, & Breen, 1989) is a self report measure that assesses eight areas of functioning: personal care, lifting, walking, sitting, standing, sleeping, social life and travelling. The Pain Disability Index (PDI) (Tait, Chibnall, & Krause, 1990) measures seven areas of functioning: family and home responsibilities, recreation, social activity, occupation, sexual behaviour, self care, and basic

life support activity. These seven items are rated on a Likert Scale, with numerical and verbal descriptors, ranging from (0) *no disability* to (10) *total disability*. The PDI was selected by the Victorian WorkCover Authority as a measure of disability because it is brief and unambiguous for the participants and provides an absolute numerical score for each category of activity. The PDI is not restricted to the assessment of primarily, physical capabilities, as are the: Quebec Back Pain Disability Scale (Kopec, Esdaile, & Abrahamowicz, 1995); the Oswestry (Fairbank, Couper, Davies, & Obrien, 1980), and the Roland-Morris Questionnaire (Roland & Fairbank, 2000; Roland & Morris, 1983).

The meaning of pain and the cause of pain are also important factors to be considered when assessing disability (Foster, et al., 2008). For example, if CP is caused by an injury such as a road traffic accident, an industrial work related accident, or an illness such as rheumatoid arthritis or osteoarthritis, this may have some bearing on the severity of disability perceived and reported by a patient (Larrabee, 2003a). For example, the severity of disabilities a person with rheumatoid arthritis reports, may be lower than either the anticipated or observed level of disability of their health professional. Also the level of disability reported by some patients may seem extremely high to physicians and other health professionals when the reported level of disability is equated with the level of organic pathology of the patient (Ciaramella et al., 2004; Waddell, Pilowsky, & Bond, 1989; Waddell & Turk, 2001).

There does not, however, appear to be a definitive level of disability that is consistent for all patients who experience the same pathology (Kurtze, Gundersen, & Terje, 1999; M. R. MacDonald, 2008). This may partly be explained by previous research that has identified age, education, employment status and socioeconomic status as mediating variables in the severity and onset of disability as a result of CP (Saastamoinen, Leino-Arjas, Laaksonen, & Lahelma, 2005; Teasell & Bombardier, 2001). Also self efficacy of patients has been found to mediate

disability, CP patients with higher self efficacy have been observed to experience less severe disability because of their pain (Arnstein, 2000; Barry, Guo, Kerns, Duong, & Reid, 2003; Sardá Jr, Nicholas, Asghari, & Pimenta, 2009).

2.2.7 Patient Disposition: Hopelessness, Optimism and Chronic Pain

Another psychological dimension that is important when considering the symptomatology and treatment of CPP is hopelessness. Hopelessness, unlike depression and anxiety, is not a psychiatric disorder. However hopelessness is related to pessimism (Beck & Weissman, 1974) and has been associated with suicidal intent and completed suicide (Beck & Steer, 1989; Durham, 1982; Joiner, Brown, & Wingate, 2005; Niméus, Träskman-Bendz, & Alsén, 1997; Tang, 2006). It is therefore a realistic reaction for CPP who have experienced losses in occupation, income, self esteem and social relationships to experience a certain degree of hopelessness or helplessness regarding their ability to manage and predict their future health and life prospects (Burns, Glenn, Bruehl, Harden, & Lofland, 2003).

Hopelessness has been identified as a factor that is related to the degree of control patients believe they have over their symptoms. There are some instances where patients diagnosed with Fibromyalgia (FM), who believed they had control over their CP condition, future employment prospects and quality of life, experienced less severe symptoms (Nicassio, Schuman, Radojevic, & Weisman, 1999; Palomino, Nicassio, Greenberg, & Medina, 2007). Whereas in other instances, FM patients believed they did not have control over their pain, future employment or leisure, and they felt helpless and pessimistic about their prognoses and future lives (Soderberg & Lundman, 1999).

Patients who feel powerless or helpless have more severe CP symptoms, including hopelessness, depression and anxiety (Tang, 2006). The general positive impact of optimistic attitudes towards life on health status was observed in a sample of 447 general American outpatients who were monitored over a 30 year period. Of patients monitored from 1960 to

1990, SF-36 scores of pessimistic patients identified the health status of pessimists was worse than optimists (Maruta, Colligan, Malinchoc, & Offord, 2002).

In contrast, a CPP ability to view their future with some degree of certainty or optimism is related to their life orientation or schema (Morley, Davies, & Barton, 2005). For example a CPP who views their life as not being hopeless, is more optimistic regarding their future (Arnoff, 2000; Hellstrom, Jansson, & Carlsson, 2000; Hirsch, Wolford, LaLonde, Brunk, & Morris, 2007). In contrast to this positive life orientation, a life schema where hopelessness is dominant is perceived to be a life without meaning or purpose, where there is little hope or optimism towards future life, work, health and relationships (Orbach, Mikulincer, Gilboa-Schechtman, & Sirota, 2003).

Optimism is a diametrically opposed schema to hopelessness, and the positive thinking and constructs associated with a positive life orientation (optimism) are perceived to enhance wellbeing, rather than negative psychopathology (Achat, Kawachi, Spiro, DeMolles, & Sparrow, 2000; Carver, Reynolds, & Scheier, 1994; Lazarus, 1999). Optimism is a positive construct that affects mental and physical health and portrays a sense of hope and well-being (de Ridder, Fournier, & Bensing, 2004; Fournier, de Ridder, & Bensing, 2002a; Ironson et al., 2005; Scheier & Carver, 1993; Snyder, 2002; Snyder, Feldman, Taylor, Schroeder, & Adams, 2000). The severity of CP symptoms has also been found to be affected by optimism (Affleck et al., 2001; Fournier, et al., 2002a; Treharne, Lyons, Booth, & Kitas, 2007).

It would therefore seem consistent with this schema that CPP who are optimistic would have some intrinsic worth or meaning in their daily lives. However, CPP who have high hopelessness regarding their current life circumstances are far less inclined to have meaningful worthwhile activities in their daily lives.

CPP who have reported feeling hopeless or helpless appear to have a worse prognosis than patients who feel optimistic and in control of their CP (Fredrickson, 2003). The

dispositional optimism of a CPP may also influence a patient's ability to relieve pain and return to pre injury activities. However the relationship between optimism, pessimism, causes of pain, work injury, litigation, and future employment options do not appear to have been simultaneously explored. This is an interesting observation when CP is often related to injury and CPP may also be involved in personal injury litigation.

2.1.8 Chronic Pain and Emotional Distress

Depression and anxiety are common manifestations of distress that are observed in a CP population (Pridmore, 2005). In the research literature it has been observed that there is an association between CP and demographic variables including gender, marital status, social support and ethnicity (Riley, Robinson, Wade, Myers, & Price, 2001; Riley et al., 2002; Trief, Carnike, & Drudge, 1995). Functional disability, work status, duration of a pain condition, site of pain, financial hardship, being engaged in litigation and being on some form of income replacement due to CP also affects levels of psychological distress of CPP (Corbiere, Sullivan, Stanish, & Adams, 2007; Melzack, Katz, & Ellen Jeans, 1985; Munce, Stansfeld, Blackmore, & Stewart, 2007; Weaver, et al., 2003).

There is however some controversy in the research literature regarding the timing of the onset of psychopathology of CPP. The onset and duration of anxiety and depression is considered to be a consequence of CP (S. King, 2005; Le Pine & Briley, 2004). Other researchers proposed that either personality variables or other psychopathology existed prior to the onset of pain and is in part responsible for the progression from acute to CP (Ardias & Toraman, 2002; Hopwood, Creech, Clark, Meagher, & Morey, 2007; Linder, Poston, Haddock, Foreyt, & Ericsson, 2000).

Psychopathologies are very often diagnosed as coexisting disorders with CP and mental health issues and psychopathologies are chronic diseases in their own right. The specific psychopathologies that are the focus of clinical attention are effective, anxiety and substance

use disorders. These disorders are a matter of concern for health providers and planners in all countries (Hu, 2004; World Health Organization, 2008).

In 2007 (Australian Bureau of Statistics, 2008f) the Australian prevalence of all combined mental disorders over a 12 month period was 8.2% (males 8.7%, females 7.8%). There were variations in the prevalence of various mental disorders for males and females and some persons may have had more than one mental disorder. Anxiety disorders accounted for most of the mental health disorders (14.4%) and comprised of: panic disorder (2.6%), agoraphobia (2.8%), social phobia (4.7%), generalised anxiety disorder (2.7%), obsessive-compulsive disorder (1.9%) and post-traumatic stress disorder (6.4%). The prevalence of anxiety disorders for males and females also varied according to whether or not a mental disorder coexisted with a physical condition. The prevalence of an anxiety disorder for males and females with a physical condition was 12.7% and 21.7% respectively and for males and females without a physical condition the prevalence for anxiety were males 9.3% and females 13.2%. Anxiety disorders were more prevalent in females than males and this difference was greater for females with a coexisting physical condition.

Affective disorders accounted for 6.2% of the prevalence of all mental health disorders and comprised of: depressive episodes (4.1%), dysthymia (1.3%) and bipolar affective disorder (1.8%). The prevalence of affective disorders for males and females also varied according to whether or not an affective disorder coexisted with a physical condition. The prevalence of an affective disorder for males and females with a physical condition was 6.9% and 8.9% respectively and for males and females without a physical condition the prevalence were lower (males 4.0% and females 5.0%). Affective disorders were more prevalent in females than males (Australian Bureau of Statistics, 2008f).

Substance use disorders accounted for the lowest prevalence of all mental health disorders 5.1%, and comprised of: harmful alcohol use (2.9%), alcohol dependence (1.4%),

and drug use disorders (1.4%). The prevalence of substances use disorders for males and females also varied according to whether or not substance use coexisted with a physical condition. The prevalence of a substance use disorder for males and females with a physical condition was 7.1% and 3.4% respectively and for males and females without a physical condition the prevalence were males 6.9% and females 3.1%. Males had higher prevalence of substance use disorders regardless of coexisting physical conditions, being almost twice that of females (Australian Bureau of Statistics, 2008f).

It has been observed that there are differences in the prevalence of mental health disorders for persons with coexisting physical conditions and mental health disorders in the Australian population. The mental health survey conducted in Australia did not identify the types of physical conditions involved. It is quite likely that some persons with physical conditions may have also experienced CP but this cannot be verified from the data collected.

Chronic pain sufferers experience higher levels of clinical depression than the general population. Although the prevalence appear to vary according to the cause of the pain and whether or not the current pain experienced is the result of a motor vehicle accident or a work related injury or (Demyttenaere et al., 2006; Gatchel, 2004; K. S. Ong & Keng, 2003; Von Korff et al., 2005).

To further test this observed relationship between CP and depression a survey was conducted by Currie and Wang (2004) in order to find the prevalence of major depression in persons with CP, compared with persons with no pain. Between September 2000 and November 2001, participants were recruited from the general Canadian population and were invited to complete a computer-assisted personal telephone interview. From a sample of 118,533 participants who completed the interview 107,933 (91%) were pain free and 10,600 (9%) had chronic back pain. In this sample 5.9% of pain free persons had experienced a major depressive episode in the preceding 12 months compared to 19.8% of persons with

chronic back pain (Currie & Wang, 2004). Other important findings of this study were that persons with major depression were likely to be in a low income group rather than a high income group, were younger, unmarried and less educated. There was also an interesting finding regarding gender, in that being male and having back pain increased the risk of major depression. Also when known risk factors were controlled for, chronic back pain was the strongest predictor of major depression. However pain severity was a better predictor of disability than major depression.

Psychological distress has also been found to be related to sensory pain, pain behaviour (Arntz, Dreessen, & De Jong, 1994; Currie & Wang, 2004; Keefe, Dixon, & Pryor, 2005; Turk, et al., 2003), decreased activity and functional disability (Alschuler, Theisen-Goodvich, Haig, & Geisser, 2008).

Fisher and Johnston (1996) designed a study to examine the cognitive and emotional variables that are likely to mediate the relationship between pain and disability. They hypothesized that “increased anxiety would increase disability and that decreasing anxiety would decrease disability (Fisher & Johnston, 1996, p. 209)”. Results indicated that pain-related disability increased as a result of increased anxiety, although there was no change in the observed range of musculoskeletal functioning. More recent studies have also confirmed that clinical anxiety affects CP symptoms in a negative manner (Otis, Keane, & Kerns, 2003).

The relationship between CP and psychological distress has been found to be a matter of some importance for practitioners treating CPP and consequently has generated research into this relationship (Merskey, 2005; Tsang et al., 2009; Turk, et al., 2003). The higher prevalence of comorbid depression, anxiety and hopelessness among CPP has been generally recognized by health providers, rehabilitation consultants and workers' compensation providers (Drukteinis, 1996; Gatchel, 2004; Greenwald & Farnham, 2000; Weaver, et al.,

2003). While there is an acknowledged relationship between CP and Psychological Distress, there are varied opinions about how psychological distress occurs.

A need to establish the degree of severity of psychological distress has been found to be important for research and clinical practice which aims to link pain and disability. Most often, the measures that are used for both research and practice are self-report questionnaires and structured clinical interviews (Turk & Burwinkle, 2005). Both the results of measures and interviews have then been interpreted according to the appropriate scoring methods for the instrument, and/ or the DSM III or IV diagnostic criteria. It is important that the extent of Psychological Distress experienced by a patient is determined (Turk, et al., 2003), as the extent to which a patient is functionally disabled by pain is exacerbated by Psychological Distress (Litcher-Kelly, et al., 2004; Westman, et al., 2008), as depicted in Figure 4.

Regardless of the etiology of depression or anxiety there is an established association between depression and anxiety and the severity of other CP symptoms, including pain and disability (Dickens, Jayson, Sutton, & Creed, 2000; Ericsson et al., 2002; McWilliams, et al., 2003; Morley, De C Williams, & Black, 2002). For CPP, gender and other demographic variables also affect anxiety and depression, which in turn affects the severity of pain symptomatology (Poleshuck, Giles, & Tu, 2006). Of particular significance is the evidence that exists relating to CPP who also have other pre-existing factors that are related to suicide.

2.1.9 Individual Characteristics that Impact on Chronic Pain

Gender

In the research literature, female CPP are often reported to experience more severe pain, identify more pain locations, have a higher prevalence of Psychological Distress and to be more disabled as a result of their CP (R. R. Edwards, Augustson, & Fillingim, 2003; Peul, Brand, Thomeer, & Koes, 2008; Riley, et al., 2001). The efficacy of various pain

management strategies has also varied according to gender. In post clinical intervention, women have often reported less reduction in pain severity, disability and greater psychological distress (Mullersdorf & Soderback, 2000; Peul, et al., 2008; Werner, Steihaug, & Malterud, 2003).

There are however some studies that examined the impact of anxiety and depression on CP symptoms that have not confirmed these variations in pain symptoms. In one study males who had higher pain related anxiety scores pre intervention had more severe pain and interference and lower levels of daily activities than males with lower pain related anxiety, or females (R. R. Edwards, Augustson, & Fillingim, 2000; R. R. Edwards, et al., 2003). While in another study pain related emotions (anxiety and depression) were more strongly related to pain and frustration for males than females (Riley, et al., 2001). In yet another study (Keogh, McCracken, & Eccleston, 2006) on the effect of anxiety or depression on disability, interestingly gender alone did not predict disability. Females with higher depression scores also had more severe disability than men who experienced higher scores on depression. Another finding was that males with higher depression took more medications than females with higher depression. However anxiety did not predict disability for either males or females. Having an understanding of what males and females experience in relation to life interruption and distress caused by CP is important when determining the most effective form of treatment for males and females who experience CP (Le Resche, 2006).

Marital Status

Marital status is also an important factor when considering CP (Cano, Gills, Heinz, Geisser, & Foran, 2004; Romano, et al., 2000). There are varying reports about the effects of marital status in the research literature, marital status has been found to affect CP treatment outcomes and symptoms and needs to be controlled for in clinical trials (Hunter, 2001). The extent of functional disability experienced by persons who are married or in a relationship

appears different compared to single persons (Cano, 2004) in that people who live alone are seen to be less disabled than those who are married. This variation in reported disability status may be related to the need for a single person to be self reliant and perform daily activities that may be done by a partner or child for a married person. In one study psychological distress was found to be higher for persons who were divorced, living alone or widowers than for persons in a relationship (Gatchel, Mayer, Kidner, & McGeary, 2005; Parslow & Jorm, 2000; Steptoe, Owen, Kunz-Ebrecht, & Brydon, 2004). To some extent this may be accounted for by social support being more likely to be available to persons in a relationship and social support has been found to mediate the severity of adverse health and psychological events or situations that occur over the course of a person's life (Thoits, 1987). Coping strategies that enhance esteem, advice and assistance have been shown to promote the individual's sense of well-being and willingness to adhere to medical treatment regimes (Grant, Long, & Willms, 2002; C. Pollard & Kennedy, 2007).

Employment Status, Level of Education, Occupation and Socioeconomic Status

Employment status has been found to affect well-being (Cullen & Hodgetts, 2001; E. Harris, Webster, Harris, & Lee, 1998). The specific symptoms that appear to be associated with underemployment or unemployment are mental health (Comino et al., 2003; Haugli, Steen, Laerum, Nygard, & Finset, 2003; Rantakeisu & Jonsson, 2003), disability (Patel, Greasley, & Watson, 2007; Wynne-Jones, Dunn, & Main, 2008) and pain (Blyth, March, Nicholas, & Cousins, 2003; Rahman, Ambler, Underwood, & Shipley, 2004). Unemployment and losses associated with the extrinsic and intrinsic rewards obtained from working including financial security and access to financial and medical resources, affect the severity of depression and anxiety (Feather & Davenport, 1981; E. Harris, et al., 1998; Rantakeisu & Jonsson, 2003).

In a study conducted by Jackson et al. (1996) it was found there were psychosocial effects resulting from unemployment on CP symptoms. An association was also observed between unemployment and psychological distress of CP patients (Averill, Novy, Nelson, & Berry, 1996; Jackson, Lezzi, & Lafreniere, 1997) and unemployment has been found to exacerbate the severity of CP symptoms.

The level of education attained is related to CP symptoms and adjustment to pain (Roth & Geisser, 2002; Saastamoinen, et al., 2005). It is, however, of some concern that there is very little published research material that has specifically explored the positive or negative effects of education on the severity of CP symptoms

This is an important consideration because CP patients who are less educated have lower levels of literacy and are restricted in the range of treatments and resources they are able to access than persons who have higher levels of literacy (Foltz et al., 2005; Kickbusch, 2001). Literacy and education have also been strongly associated with the incomes and occupations of CPP (Hunter, 2001), although this view does not seem to be sufficiently tested to justify a more general theoretical link between: education, pain, disability and psychological distress, including anger, fear avoidance, depression, anxiety, and hopelessness.

Unemployment and education have also been identified by researchers as variables that have affected physical and mental health disorders (Artazcoz, Benach, Borell, & Cortes, 2004; Christensen, Schmidt, Kriegbaum, Hougaard, & Holstein, 2006; Comino, Harris, Silove, Manicavasagar, & Harris, 2000). Unemployment and losses associated with the extrinsic and intrinsic rewards obtained from working - including financial security and access to financial and medical resources - affected the severity of depression and anxiety (Feather & Davenport, 1981; E. Harris, et al., 1998; Rantakeisu & Jonsson, 2003).

In the general health literature a link between socioeconomic status (occupation, income and education) and mental health has been more widely explored (Parslow & Jorm, 2000). Also according to the Australian Health Surveys that have been performed economic status of Australians influences the respondents' ratings of their health. High income and high education are demographic factors that contributed to high socioeconomic status and both of these factors have been reported to influence the perceived health status of Australians.

A further example of income and socioeconomic status being important in health status is the World Health Organization classification of the global burden of major diseases according to socioeconomic status (income) for participating nations. The income classifications are high, medium and low income and according to the country classification they have different diseases that constitute the major health costs for the country. Australia is classified as a high income country and the top seven conditions contributing to the burden of disease. As stated in the Australian Year Book 2009-2010 the illnesses contributing the highest monetary burden in 2004-05, expressed in \$million AUD are; Cardiovascular disease (5942), Mental disorders (4128), Arthritis and other musculoskeletal diseases (3956), Cancer (3787), Injuries (3405), Respiratory disease (3310) and Diabetes Mellitus (989).

Income has been identified as being particularly important in relation to males who are potentially at risk of suicide and may also have comorbid psychiatric disorders such as substance abuse and psychosis (Darke, Ross, Lynskey, & Teesson, 2004; Hsiang-Ching, Pearson, & Xinhua, 2003; Vilhjalmsson, Sveinbjardottir, & Kristjansdottir, 1998).

Impact of Work Injury on Chronic Pain

The perceived cause of CP influences the severity of CP symptoms (Lame, Peters, Vlaeyen, Von Kleeef, & Patijn, 2005). For example when CP is the outcome of an accident or injury sustained at work, the individual's general health status, pain symptoms, level of functioning and work status are affected (Ciccone & Just, 2001; Drukteinis, 1996; Dush &

Simons, 1994; Feuerstein & Theborge, 1991). This impact on health and behaviour is more pronounced when the patient is also litigating (Blyth, March, Nicholas, et al., 2003; Larrabee, 2003a; Tait, Chibnall, & Richardson, 1990; Waddell, 2004). Whereas CPP who attribute the cause of their pain to ageing, hereditary or lifestyle factors, a disease or changes in behaviour or environment, are less likely to perceive that their health status is poor or to be severely affected by CP (Arntz & Claassesens, 2004; Hill, Dziedzic, Thomas, Baker, & Croft, 2007; E. A. Leventhal & Crouch, 1997; Macfarlane, 2008; Petrie & Weinman, 1997).

These differences in symptoms were initially identified by physicians and surgeons treating CPP with work related musculoskeletal injuries (McGuirk & Bogduk, 2007). The emphasis of this clinical research has predominantly focused on work, physical and emotional health status and outcomes of the surgical interventions and procedures (Bernstein, 2001; Ragab & DeShazo, 2008), physical therapies (Hovig et al., 2002) and medications prescribed for CPP (Blyth, March, & Cousins, 2003; McCracken, Hoskins, & Eccleston, 2006). The outcomes of these interventions for injured workers have been determined by how successful treatments have been in returning injured workers to work (Corbiere, et al., 2007). The efficacy of interventions for injured workers with CP has also been determined by the cost of treatments (Blyth, et al., 2004; Chapman, Jamison, Sanders, Lyman, & Lynch, 2000); number of sick days (How-Ran, Tanaka, Halperin, & Cameron, 1999; Pizzi, et al., 2005) and the employers' overall costs that have been incurred (van Leeuwen, et al., 2006). The work related injuries most often researched are consistent with the anatomical areas of the body that are most often associated with work injury or trauma. For example, low back pain (Drukteinis, 1996; Waddell, 2004), shoulder pain (Bongers, 2001), neck pain (V. Johnston, et al., 2008; Mercado, Carroll, Cassidy, & Cote, 2005) and arm and knee pain (Buckle, 1997; Henderson, Kidd, Pearson, & White, 2005).

Treatments for CPP with a work related injury is often not the same as those treatments prescribed for patients who present with CP and have not sustained a work injury (Calvey & Jansz, 2005; Roberts-Yates, 2003). This difference may be due to the method of treating injured workers focusing on rehabilitation and return to work (Guy & Short, 2005; Linton, Boersma, Jansson, Svard, & Botvalde, 2005; Victorian WorkCover Authority, 1996; Vowles, Gross, & Sorrell, 2004). The usual method of treatment for patients who are not work injured is predominantly the medical management of CP symptoms (Adams, Plane, Fleming, Mundt, & Saunders, 2001; Barkin & Barkin, 2001; Blyth, et al., 2004; Tan, Alvarez, & Jensen, 2006; Turk, 2005). However, in both patient groups medical and allied health care is managed by a medical practitioner.

Apart from treatment at emergency departments in hospitals and hospitalization, Primary Care Physicians (PCP) or General Practitioners (GP) conduct the ongoing medical case management of injured workers in Victoria. The most often supplied treatment provided to an injured worker at a GP consultation, is treatment and medication, time off work/resting, and dressing wounds. Medical referrals made, are predominantly to orthopaedic and other surgeons, psychiatrists, and to allied health professionals including: physiotherapists; psychologists; and rehabilitation consultants (National Occupational Health and Safety Commission, 2000, November 2000).

Physiotherapy and hydrotherapy are accepted forms of rehabilitation, routinely used to treat injured workers, to assist recovery and facilitate an early return to work (Chown et al., 2008; Tonkin, 2003; Victorian WorkCover Authority, 2005). The Victorian WorkCover Authority also funds these forms of physical therapy and details of these treatments are provided for employers, return to work officers, claim managers at insurers, health providers and injured workers, on the Victorian WorkCover Authority web page (<http://www.workcover.vic.gov.au>). The high use of physiotherapy in the management of

WorkCover cases is reflected in the 2001/02 expenditure of the VWCA (\$M). Apart from medical treatments provided by doctors \$61.7, and hospitalizations \$29.7 (private hospitals), \$7.7 (public hospitals), the most significant payments for services provided to injured workers was for physiotherapy \$24.8, followed by chemists \$18 and psychologists \$9.3 (National Occupational Health and Safety Commission, 2000, November 2000).

Some important considerations for clinicians who are managing and treating work injured CPP are these patients find their symptoms (pain, disability and psychopathologies of depression and anxiety) to be most distressing (Calvey & Jansz, 2005; Corbiere, et al., 2007; Roberts-Yates, 2003). These distressing physical, emotional and behavioural symptoms experienced by CPP result in significant impairment in all major areas of functioning (Vowles & Gross, 2003) and cause them to use multiple health services to manage their pain symptoms (Blyth, et al., 2004; Pizzi, et al., 2005; Stice & Moore, 2005).

Also Australian injured workers have reported that how they are managed in the WorkCover system is a negative experience. In a study conducted in South Australia (Roberts-Yates, 2003), 85 workers (57% male, 43% female) aged between 25 and 65 years who had sustained a work injury were interviewed about how their claim and injury was managed. The stakeholders identified in this study were the worker, insuring agent, the employer, treating medical experts, rehabilitation providers, work colleagues, friends and family. There were financial, interpersonal, vocational, medical and emotional issues highlighted by the participants. The specific issues cited as an impediment to their rehabilitation were financial frustrations such as erratic payment of benefits that caused injured workers anxiety and left them unable to meet their immediate living expenses. Also the way injured workers perceived they were treated was a problem. Workers stated that case managers were indifferent and workers received disrespectful communication from service providers. Also the stigma associated with being registered as a work injured person was

demoralising. Another problem for workers was a lack of trust from employers, co-workers and some professional service providers regarding the authenticity of the worker's injury and the symptoms they were experiencing as a result of the injury. From the patients' subjective reports cited in this study, it would appear that the current Australian system of rehabilitation of injured workers does not facilitate recovery and return to work.

2.1.10 Current Management of Illnesses Causing Chronic Pain in Australia

Preventative medicine strategies and community campaigns to promote behaviours that facilitate better health are key components in Australian health management. Preventative strategies include identifying risk factors for developing diseases and promoting behaviour changes to minimise risks of disease where possible (Rodgers, et al., 2004). The Australian Institute of Health and Welfare (2002), identified a framework for the surveillance and monitoring of chronic disease in *Chronic Disease and Associated Risk Factors in Australia* 2001. The risks of chronic disease, socio-cultural determinants of disease, chronic disease national health priority areas, mortality, morbidity and disability outcomes of chronic disease, were depicted in a model (refer to Figure 3). The risks are identified as being behavioural, biomedical and socio demographic. Some of these risks can be modified or somewhat compensated for. But there are also non modifiable factors such as age, gender, indigenous status, ethnic background, family history and genetic makeup of the individual (Australian Institute of Health and Welfare (AIHW), 2002).

In summation the current focus on chronic disease is one of monitoring chronic disease and reducing risks for developing chronic illnesses. Figure 3 is a schematic representation of the Australian approach to chronic disease surveillance and monitoring. Of note is the omission of a separate category of CP as a disease in its own right (Breivik & Bond, 2004).

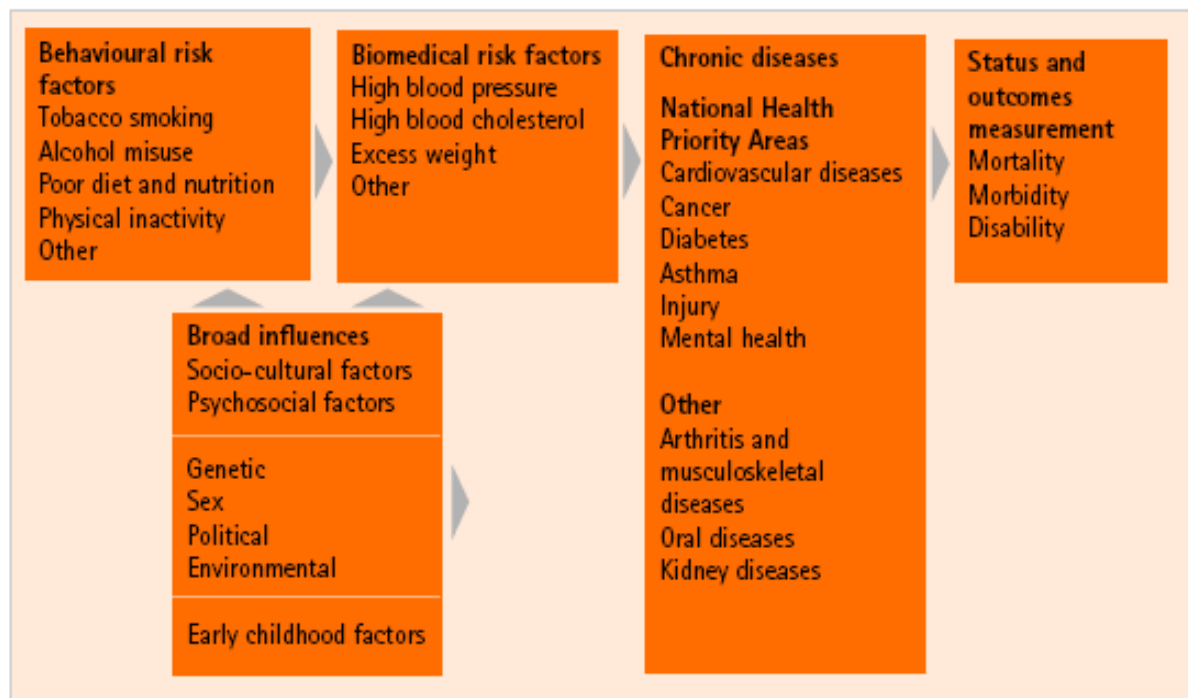


Figure 3. Australian Chronic Disease Associated Risk Factors 2001

From “Chronic Disease and Associated Risk Factors in Australia 2001” by Australian Institute of Health and Welfare. Copyright 2002, p.11, by AIHW. Reprinted with permission of the author.

In the current literature review behavioural risk factors and biomedical risk factors have not been addressed nor have all of the comorbid chronic diseases been reviewed. Only those diseases that have been identified as being associated with CP have been considered such as injury and musculoskeletal diseases. This is because the focus of the current study is CP not all chronic illness and related issues. Mental health has been considered in relation to how CP symptoms may be exacerbated by CP, or how CP may cause mental illness. And disability has been considered as an outcome of CP not as a condition in its own right.

2.2 Theoretical Approaches to Pain

2.2.1 Chronic Pain as an Emerging Domain of Theory and Research

Researchers and clinicians have identified that there are many sensory, affective and behavioural symptoms that are attributable to CP. In particular the degree to which a patient experiences mild, moderate or severe sensory pain symptoms has been extensively explored.

The explanation of how a patient senses, perceives, interprets, and reports or demonstrates the severity of their pain has been the centre of much clinical research over the past 30 years. The International Association for the Study of Pain have published a book, edited by Harold Merskey, John Loeser and Ronald Dubner (2005) that provides an historical account of the progress of pain research and practice over a 30 year period, from 1975 to 2005. In this publication some of the significant pain topics that are reviewed include the Gate Theory of Pain, physiology and anatomy, nociceptive pathways, descending modulation of pain pharmacology, neuropathic pain, pain sensation, epidemiology, anatomical causes of pain, and psychiatric conditions related to pain disorders. The major models included in this book and are used to locate research methodologies will now briefly be considered in turn.

A combined biomedical and psychological approach was proposed in Melzack and Wall's (1965), Gate Control Theoretical Model of pain perception. They proposed that the sensation of pain was interpreted in relation to the impact of sensory, motivational, and central control determinants of pain (Melzack & Wall, 1988). Melzack and Wall's model had a considerable impact in the field of pain research, leading to a shift in focus from the then prevailing biomedical interpretations of nociception and the origins of pain, to how central control processes are modulated via a Gate Control system. Pain was viewed as a process rather than a multisynaptic afferent system. This concept of a gate being able to open or close in part explained how a patient's perception of their painful stimuli can exacerbate, maintain, reduce, or ameliorate the sensation of pain. The various theoretical models that have evolved as a result of the early Gate Control Theoretical Model of pain have enhanced the understanding of pain, for both practitioners and researchers alike. Cognitive and psychological factors identified by researchers as controlling the perceived severity of pain have been accepted by physicians and health professionals as playing a significant role in the diagnosis and treatment of pain (Kugelmann, 1997).

It has now generally been acknowledged that psychological processes impact on sensory pain (Dworkin, et al., 2005; Gamsa, 1994; Gatchel & Turk, 1996; Geisser, Robinson, Keefe, & Weiner, 1994; Jackson, et al., 1997; Melzack & Wall, 1988; Turk & Gatchel, 2002; Turk & Holzman, 1986; Turk & Okifuji, 2000). Cognitive functions are influential in the perception of pain and decreases in sensory pain can occur as a result of cognitive restructuring (Ehde & Jensen, 2004).

There is supportive evidence from clinical research that experimental interventions implemented to positively affect mood or emotions also reduce pain perception (Meagher, Arnau, & Rhudy, 2001; Weisenberg, Raz, & Hener, 1998). In contrast to the effect of positive mood on pain, experimental manipulations that have been conducted to negatively affect mood and emotion have minimally exacerbated pain (Zelman, Howland, Nichols, & Cleeland, 1991). The effect of these experimentally controlled stressors on the perceived level of sensory pain reported by participants supports a premise that in some instances a relationship has been observed between evoked emotion and sensory pain.

Furthermore depressed or anxious CPP, or those patients who catastrophise about their pain have been found to experience more severe pain symptoms in some instances (R. R. Edwards, Bingham, Bathon, & Haythornthwaite, 2006; Main & Waddell, 2004; Michael & Burns, 2004), but in other studies there have been no significant differences observed (David A Fishbain, 2002).

However, it should also be noted that the emphasis of pain researchers has varied according to the purpose of their inquiry or study. For example, if the researcher was conducting a study or developing a conceptual model of pain, or professional clinical practice as a general practitioner, nurse, pharmacist, physician, psychiatrist, psychologist, physiotherapist, occupational therapist, rehabilitation consultant, social worker, surgeon, or vocational counsellor, then the theoretical and clinical approaches to the investigation of pain

will be in accordance with the researcher's professional domain. (C. Brown, 2004; Chapman, et al., 2000; Straus, 2002; Tan, et al., 2006). For example, a physical therapist would be most likely to examine physical techniques to manage or ameliorate pain, whereas an orthopaedic surgeon would be more concerned with surgical techniques and post operative medication to manage pain.

2.2.2 Biopsychosocial Model of Chronic Pain

The biopsychosocial model developed by Dr John Loeser (1982), a neurological surgeon, represented the characteristics of pain intended to be a medical management strategy for doctors treating CP patients. Nociception, consistent with a biomedical approach to pain is the basis of this model, and is defined as “the activation of unmyelinated or finely myelinated (A delta and C fibres) axons by thermal, chemical or mechanical energy sufficient to threaten the integrity of the cell” Loeser proposed that with regard to a model of pain that. “It is now clear that nociception is a specific sensory modality, just like vision, smell or light touch” (Loeser & Cousins, 1990). Nociceptors respond to damage or injury and transmit pain signals. Pain that is experienced as a consequence of nociception leads to an affective response and is depicted as suffering in this model. The concentric progression from nociception, to pain, suffering and ultimately pain behaviour, is seen to occur in sequential stages.

The suffering Loeser refers to is the negative affective dimension of the pain experience that interferes with the patient's normal functioning and activities. Loeser and Cousins (1990) proposed that suffering also can be attributed to “depression, fear, anxiety or feelings of isolation” (p. 209). As a pain condition progresses the suffering that is associated with the pain condition eventually manifests in specific pain behaviours, including physical behaviours such as bracing, limping and using aids (Richards, Nepomuceno, Riles, & Suer, 1982). Other consequences of pain are psychological distress (Dickens, Jayson, & Creed,

2002), taking medications (McCracken, et al., 2006), withdrawing from paid employment and economic hardship (Patel, et al., 2007), not participating in leisure activities and reduced social contact (Guo, Yang, & Malkin, 2007; Lee, Chronister, & Bishop, 2008; G. Macdonald & Leary, 2005).

It has also been suggested that pain behaviours represent the external indication that a patient is suffering from a CP condition (Koho, et al., 2001; McCahon, et al., 2005; Weaver, et al., 2003). Progression from experiencing pain and interpreting it as hurt or harm to experiencing mental and physical deconditioning as a result of responses to pain developing illness behaviours is consistent with fear avoidance and the stages of CP.

In the initial model, Loeser (1982) emphasized the fact that nociception, pain, and suffering experienced by patients was subjectively assessed, as these processes of the pain experience cannot be objectively observed and measured by the physician. However, pain behaviour that may be directly observed by the treating physician is significant in the diagnosis and management of CP conditions. Observable behaviours and symptoms enable clinicians to identify organic pathology and subsequently prescribe appropriate remedial treatment. However, patient's subjective reports of symptoms are not as clear cut in that patient's descriptions of their symptoms may be vague or inaccurate and they may find it difficult to communicate with the treating clinician (Davidhizar & Giger, 2004; D. J. Jones, O'Connell, Gound, Heller, & Forehand, 2004; Wish Garrett, Grant Dickson, & Klinken Whelan, 2008).

2.2.3 Fear Avoidance Model of Chronic Pain

To expand further on the role of chronic illness behaviour in relation to physiological impairment of CPP, depicted in Figure 4, an extension of this model was developed by Waddell et al. The *Fear Avoidance Model* of low back pain components represented in Figure 4, proposed how coping strategies and fear avoidance beliefs can affect the severity of

low back pain patients' psychological distress, disability/work loss, and physical impairment (Waddell, et al., 1993).

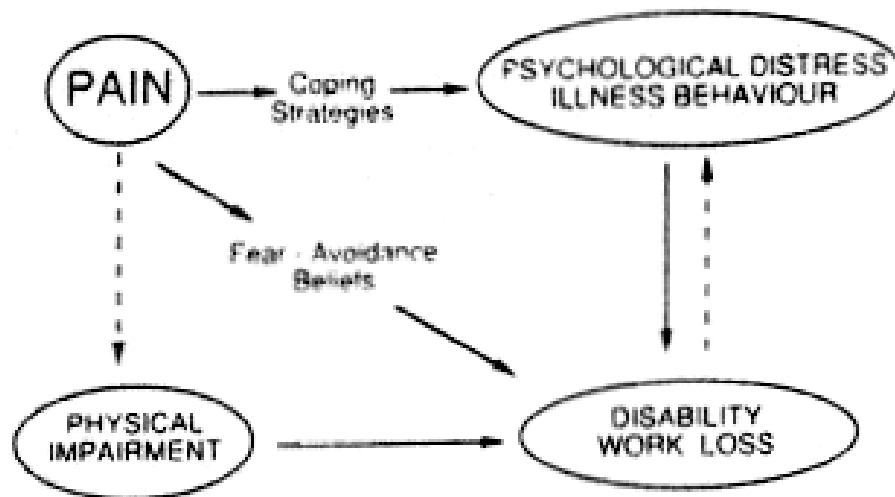


Figure 4. Impact of Fear Avoidance: Major Cognitive, Affective and Physical Pathways.

From "A Fear-Avoidance Beliefs Questionnaire (FABQ) and the role of fear-avoidance beliefs in chronic low back pain and disability," by G. Waddell, M. Newton, I. Henderson, D. Somerville and C.J. Main, 1993, *Pain*, 52, p. 165. Copyright 1993 by International Association for the Study of Pain. Reprinted with permission the of the authors.

As this model was primarily developed for use in the medical management of patients with chronic low back pain, it emphasised the need for physicians to consider the impact of fear avoidance beliefs, such as patients avoiding activities they believed would cause or exacerbate pain. This was important, as avoidance of activity for persons with chronic low back pain resulted in disability and work loss. The consequence of disability and work loss negatively impacted on psychological health and caused reactive illness behaviour. Coping strategies used by chronic low back pain patients were also associated with psychological distress and illness behaviour. The model implies that if coping strategies are not effective the patient will experience psychological distress and exhibit illness behaviour, resulting in disability and work loss, which leads to further illness behaviour and psychological distress.

Also the physical impairments that result from chronic low back pain contribute to disability, work loss, and then to further psychological distress and more illness behaviours.

To operationalise fear avoidance beliefs a Fear Avoidance Beliefs Questionnaire (FABQ) (Waddell, et al., 1993), was constructed. The questionnaire consisted of 16 items; each item evaluated how much physical activity, or work, affected or would affect the patient's chronic low back pain. Two measures of fear avoidance were obtained from the FABQ: fear-avoidance beliefs about work and fear-avoidance beliefs about physical activity. Although Waddell et al. acknowledged that there was an association between illness beliefs and psychological distress, illness behaviours and disability, these associations were not assessed in the measure. The FABQ was developed for patients with chronic low back pain and was not intended as a measure of fear avoidance behaviour for all CP conditions. Nor was it intended as a measure of psychological distress, disability or illness behaviour.

2.2.4 Information/Control Action System Model of Chronic Pain

Another model proposed by Karoly (1985) and presented in Figure 5, depicted the sensation of pain as an information control/action system based on the three levels namely sensations, meaning, and action (as cited in Karoly & Jensen, 1987). This model represents the relationships between the sensations of pain and how a CPP attributes meaning to, perceives, communicates and regulates pain. Karoly's model also depicts the influence of pain communication on pain regulation and then subsequently on attention to the sensation of pain. The model proposed that pain is regulated via how the individual ascribes meaning or perceives pain, which in turn affected pain communication and pain regulation. Depending on what the pain has come to mean to the patient, the action that results from this meaning or perception is either pain communication or pain regulation. The communication or pain regulation subsequently affects attention to pain and pain severity.

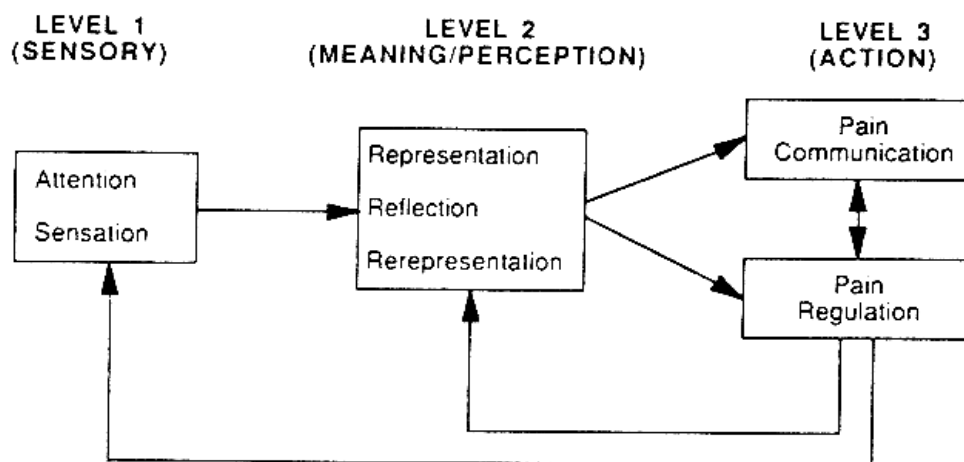


Figure 5. A Model of Recurrent Pain as an Information Control/Action System.

From "The Assessment of Chronic Pain," by P. Karoly and M.P. Jensen, 1987, p. 22. Copyright 1987 by Pergamon Press. Reprinted with permission of the author.

The models considered in Figures 2, 5 and 6 illustrate the proposed relationships that exist between the sensory experiences of pain, the interpretation of that pain and how the pain is seen to precipitate or exacerbate actions and behaviours including psychological distress, illness behaviour, physical impairment and disability. There was some significant support for the existence of certain chronological sequences and feedback loops occurring as a result of an acute pain condition, which, over the course of time, may result in a CP condition.

The figures (1, 2, 4, 5 and 6) diagrammatically represent the involvement of cognitive processes in the pain experience. In particular, the cognitive behavioural strategies of attention and avoidance to pain are pertinent to this study. Suls and Fletcher (1985) proposed that avoidant strategies divert attention by denying or distracting the stressful stimulus, while attentional strategies cause the patient to focus on the source of pain, by reappraising or seeking information about their pain.

2.3 Chronic Pain Symptoms and Coping Strategies

2.3.1 Leventhal's Model of Health and Coping

Of particular relevance to the current research topic is the quality of the relationships identified between sensory, cognitive and affective processes in the pain experience, especially the cognitive processes such as representation and reflection that mediate pain by influencing whether or not pain is attended to at a sensory level. For example, while some form of trauma, injury, or disease, is most often the original cause of sensory pain, the resultant symptoms, actions and behaviours vary from patient to patient. The model by Leventhal brings together the factors of interest to this researcher, a psychologist, and is supported by previous models or is at least consistent with them.

Leventhal's model (Figure 6) is consistent with a cognitive behavioural therapy approach (CBT) depicting cognition as mediating the effectiveness of coping responses and leading to affective responses such as fear, depression and hopelessness (H. Leventhal, et al., 1984). This model also highlighted the role of appraisal, particularly in relation to how the patient perceived the diagnosis, prognosis, treatment outcomes and the long term consequences of their pain condition. The complexity of these cognitive processes and the impact they have on psychological well-being including depression, helplessness and fear and health representations, is central to understanding how CP patients perceive and respond to their pain. There is also a resultant impact on their daily activities, emotional well-being and attitude towards life (H. Leventhal & Nerenz, 1988). After a long duration of pain the CPP experiences a strong health threat representation because they have not cured or controlled their pain and are frustrated by their inability to control their pain currently or in the future. Therefore coping responses may very likely include avoidant behaviours and emotional representations of fear, depression and helplessness.

The proposed Coping Model recognized that helplessness is an emotional response experienced by patients as a consequence of failed attempts to cure or manage their illness. It was however interesting that while Leventhal's model highlighted the importance of illness perceptions and the methods that are used to cope with the threats that an illness represents and the accompanying negative emotional responses experienced by patients, the model does not consider how positive traits or emotions, such as happiness or optimism, may impact on illness perception. Optimism as a factor that has impacted on health was identified by health researchers prior to the development of Leventhal's Model of Coping (Scheier & Carver, 1985). In more recent research studies and health surveys, optimism or a positive attitude towards health and illness, has been cited as having a positive effect on health behaviours and outcomes and is important when considering chronic illness and individual patient's health coping behaviours (Bedi & Brown, 2005; Ironson, et al., 2005; Iwanaga, Yokoyama, & Seiwa, 2004).

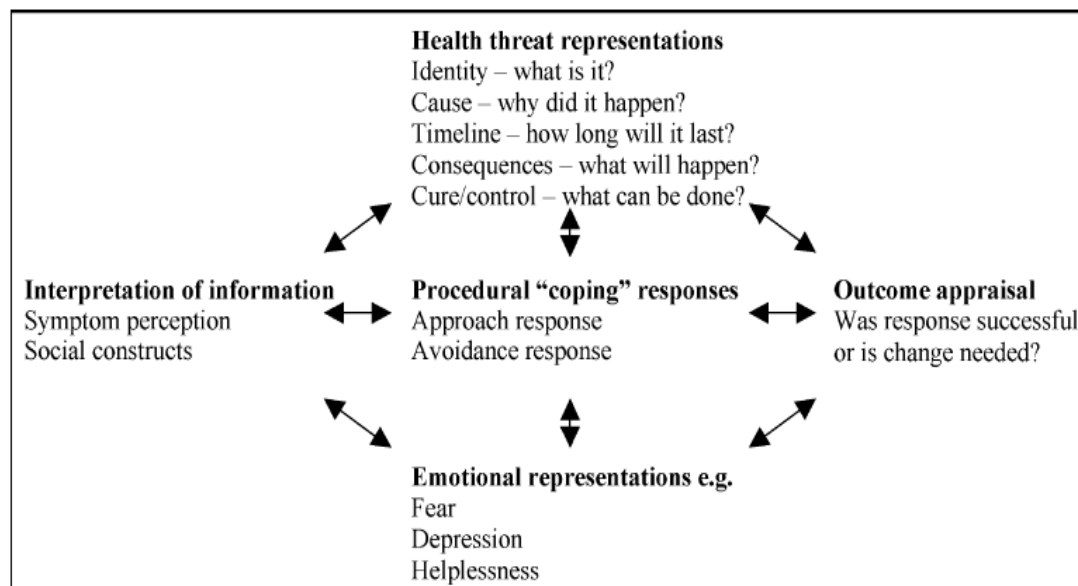


Figure 6. Leventhal's 1984 Model of Health and Coping.

From "Using the Self-regulatory Model to Cluster Chronic Pain Patients: The First Step Towards Identifying Relevant Treatments" Pain 52 by Hobro, N., Weinman, J. & Hankins, M., 2004, p. 277. Copyright 2004 by International Association for the Study of Pain. Reprinted with permission of the author.

Chronic pain symptom severity is affected by the way the patient interprets the sensation of pain and this in turn also affects the degree to which pain interferes functionally with a patient's life. Also the CPP ability to perform daily tasks may be affected by cognitive factors. It is therefore important to consider how cognition impacts on the sensation of pain and the interference that the patient's perception and evaluation of this sensory perception has on their social, emotional and vocational functioning.

The models of pain previously described attribute a role to central processing and appraisal of pain. Cognitive appraisal of pain has a significant impact on the severity of pain symptoms. In particular, the cognitive appraisals and processes that were depicted in Figures 1, 2, 4, 5 and 6 suggest there is a connection between the severity of pain/illness symptoms and a patient's positive or negative appraisal of their CP symptoms (Figures 1, 5, and 6). Cognition is also associated with the severity of affective distress (Figures 1, 2, 4, and 6), illness behaviour (Figures 1, 6) and impairment or disability (Figures 1, 2 and 3).

These differences are often observed in clinical practice (Roth & Geisser, 2002; Roth, Geisser, Theisen-Goodvich, & Dixon, 2005; Werner & Malterud, 2005). Individual patients who have the same diagnosis and prognosis do not experience the same symptoms and the degree of interference with daily activities varies considerably (Foster, et al., 2008; Lame, et al., 2005; Otis, Macdonald, & Dobscha, 2006; Villemure & Bushnell, 2002).

2.3.2 Attention, Distraction and Coping

Attention, distraction and appraisal are cognitive processes that exacerbate or reduce the severity of CP symptoms. Attention as defined by Soslo (1991) is the "concentration of mental effort on sensory or mental events" (p. 5). Attention is considered influential in the perceptual processes of detecting and interpreting the sensory stimuli of pain. The way a patient attends to and interprets pain is significant in that this perceptual process is deemed to

influence the pain sensation (Crombez, 2006; Keogh, Ellery, Hunt, & Hannel, 2001; Keogh, Hatton, & Ellery, 2000).

Moreover, if pain becomes a central overwhelming focus, pain itself can become the most meaningful factor in the patient's life (Arntz & Claassesens, 2004; David A Fishbain, et al., 2003; Paulson, Danielson, & Soderberg, 2002). All other activities and relationships are influenced by the general meaningfulness of pain, rather than vocational, family or leisure activities that could have been meaningful prior to the onset of the CP (S. A. Harris, et al., 2003; Soderberg & Lundman, 1999). Meaningfulness involves the cognitive interpretation of what the pain means and how this pain intercepts cognitive and affective dimensions of a patient's life (Brewer & Karoly, 1989; Eccleston & Crombez, 1999).

These hypotheses have been tested by McCracken (1997) who conducted a study to determine whether or not attention to pain influenced the perception of pain severity, psychological distress and other pain behaviours however did not include a measure of pain meaning. To measure attention The Pain Vigilance and Awareness Questionnaire (PVAQ) was specifically developed (Roelofs, et al., 2003). The measure consisted of 16 items to assess: awareness, consciousness, vigilance, and observation of pain. The findings of this research indicated that persons with chronic low back pain who report greater attention to pain also report higher pain intensity, psychosocial disability and pain-related health care utilization (McCracken, Spertus, Janeck, Sinclair, & Wetzel, 1997, p. 271). As identified in this study the concept of attending to or focusing on pain, is central to understanding how a CP patient who focuses on MDA rather than pain, is distracted from their pain. However, McCracken's study did not identify a range of activities that were meaningful and could be evaluated in a further study to substantiate these findings.

This cognitive behaviouristic perspective of pain proposes that a patient who is attentive to pain will be influenced by their pain perception in several ways. The patient will:

“(a) be less influenced by other aspects of their environment, (b) engage in fewer productive and satisfying activities supported by prevailing non-pain circumstances, (c) fail to accrue the psychological and physical benefits of these activities, and they will (d) suffer more distress and disability” (Keogh, et al., 2000, p. 273). Contrary to this viewpoint, there are researchers who identify emotional, behavioural, and individual characteristics that affect the severity of CP symptoms in addition to attention to and distraction from pain (Asmundson, Kuperos, & Norton, 1997; Hadjistavropoulos, Hadjistavropoulos, & Quine, 2000; D. A. Jones, Rollman, White, Hill, & Brooke, 2003; Roelofs, Peters, & Vlaeyen, 2002).

Diverting attention is a means of reducing perceived pain severity suggested by numerous pain authors and researchers (Arntz, Dreessen, & Merckelbach, 1991; Crombez, 2006; Eccleston, 1995; Harvey & McGuire, 2000; Valet et al., 2004). Diverting attention has been identified as one method of coping with CP and was included as a subscale in the Pain Coping Strategies Questionnaire (CSQ) (Rosenstiel & Keefe, 1983). There were seven reliable subscales in the CSQ: Diverting Attention, Reinterpreting Pain Sensations, Coping Self-Statements, Ignoring Pain Sensations, Praying or Hoping, Catastrophizing and Increasing Activity Level. Diverting Attention as a subscale, of the CSQ is comprised of items from both Diverting Attention (cognitive) and Increased Activity (Behavioural) subscales. Swartzman, Gwadry, Shapiro and Teasell (1994) in their examination of the factor structure of the CSQ, proposed that as Diverting Attention includes items from both the cognitive and behavioural coping strategies, cognitive and behavioural distraction comprises one rather than two coping strategies. This single factor view of distraction and diverting attention from pain may require further confirmation as the study is limited by the items included in the CSQ subscales, the pain characteristics of the samples investigated and cannot be seen to be representative of all cognitive behavioural coping strategies.

A different approach to coping strategies was taken when items were identified for inclusion in the Chronic Pain Coping Inventory (CPCI) (Romano, Jensen, & Turner, 2003), and in this measure subscales included: Guarding, Resting, Asking for Assistance, Relaxation, Task Persistence, Exercise, Seeking Social Support and Coping Self Statements. There was no distraction or diverting attention subscale in the measure. The CPCI emphasised behavioural coping strategies used by CPP rather than the cognitive strategies that were measured in the CSQ.

The current status of coping theory and research has been presented in a review by Folkman and Moskowitz (2004). In this review the theoretical advances that have been made in cognitive coping theory have been evaluated and identify coping as an active search for meaning and positive emotion. Whereas, positive “meaningful events are linked to positive emotion precisely because they reaffirm what one values and help one to focus on those values while coping with the ongoing stressful event” (Folkman & Moskowitz, 2004, p. 766). Contemporary coping theory encompasses a broader interpretation of how a patient deals with the stressors of CP than measured in the CSQ or CPI, beyond cognitive interpretation of the pain experience and pain behaviours.

Both attention (cognition) and activity (behaviour) are important factors in understanding pain severity and symptomatology. Pain perception involves cognitive systems such as pattern recognition, attention, and memory of previous pain experience (Solso, 1991). And pain behaviours such as attending medical appointments, taking medication, taking sick leave, resting, avoiding activities, guarding, grimacing and using aids to perform daily activities provide some insight into the impact CP has on the patient’s life (Petrie & Broadbent, 2003; Rief, Ihle, & Pilger, 2003).

A patient’s perception of their CP, including what has caused the current painful condition and how it interrupts or causes interference in their life is important in the

management or exacerbation of pain symptoms (Arntz & Claassesens, 2004; Foster, et al., 2008; Petrie & Weinman, 1997). Hence a patient's view of the illness that causes CP, inconvenience, and loss, affects the severity of pain symptoms and the prognostic outcome of treatments (Macfarlane, 2008).

2.3.3 Adjustment to and Acceptance of Pain

Acceptance or Commitment Therapy (ACT) is a form of therapy that has evolved from traditional cognitive therapy or CBT and has been used to treat CPP (Hayes, Strosahl, & Wilson, 1999). "Acceptance" is the term that describes the willingness of a CPP to experience pain or other distressing events without trying to control or reduce the pain. "Value-based action" is where CPP actions are focused on achieving personally meaningful outcomes via their endeavour, rather than concentrating on actions to reduce unpleasant pain experiences. However, this approach to therapy does not challenge thoughts and behaviours and restructure cognitions as is the case in CBT (Bennett, 1994; Jensen, Turner, & Romano, 2001; McCracken & Turk, 2002).

CPP who have a higher acceptance of their CP also have better physical, emotional and social functioning; they use less healthcare services and medication and are more likely to be actively engaged in paid work (McCracken, 1998, 1999; McCracken & Eccleston, 2003; McCracken, Spertus, Janeck, Sinclair, & Wetzel, 1999; Viane et al., 2003). This ACT approach to understanding functionality and CPP symptoms is in stark contrast with the fear avoidance approach to CP where the patient avoids behaviour and activities that they fear will elicit or exacerbate pain, ultimately resulting in disability, distress and compromised work status (McNeil & Rainwater Iii, 1998; Vlaeyen & Linton, 2000; Waddell, et al., 1993).

2.4 Exploring Meaningfulness

2.4.1 Definitions and Components of Meaning and Meaningfulness

Meaning, in the popular vernacular, may be generally defined as “having intention or purpose” (Oxford English Dictionary, 1994, p. 522). While the definition of meaningful is: “(a) Full of meaning or expression; significant and (b) Amenable to interpretation; having a recognisable purpose or function” (Oxford English Dictionary, 1994, p. 522). Concepts such as intention, purpose, significance and cognitive processes are relatively central to these definitions of meaning and meaningfulness (Ball & Orford, 2002; Crandall & Rasmussen, 1975; McGregor & Little, 1998).

These general definitions of “meaning” and “meaningfulness” differ significantly from the concept and interpretations of meaning proposed by the various schools of psychiatry, psychology, sociology and philosophy including: existentialism (Buber, 1970; Frankl, 1959/1963/1984; R. May, 1958 ; Sartre, 1971; Yalom, 1980), phenomenology (Binswanger, 1975; Schutz, 1972), symbolic interactionism (Manis & Meltzer, 1967), humanism (Rogers, 1951) and psychoanalysis (Freud, 1949; Power & Brewin, 1997).

Interpretation and meaning are essential elements to the counselling process and how meaning, meaningfulness, or a meaningful life is viewed by the individual receiving counselling is significant (Heiland et al., 2002). The perceived lack of meaning in life is also important in psychotherapy (Corey, 2005; Janoff-Bulman & Frantz, 1997; Ruffin, 1984).

2.4.2 Psychotherapeutic Approaches to Constructing Meaning or Meaningfulness in Life

Corey suggests that: “A distinctly human characteristic is the struggle for a sense of purpose in life”. Psychotherapy often explores how meaning is constructed (Reker, 2000; Wong, 1998b; Yalom, 1980) or transforming meaning (Brewin & Power, 1999) and this is especially the case where individuals have created maladaptive or irrational beliefs about

their life and relationships and are not able to function because of these irrational beliefs (Ellis, 2001). Counselling psychology textbooks prescribed to undergraduate and postgraduate students emphasise the importance of employing/utilizing techniques to challenge false beliefs and meanings (Beck, 1963) and to replace these maladaptive thoughts with more rational or adaptive thoughts, to enable clients to have more freedom to participate more fully in all facets of life

Schools of counselling and psychotherapy vary in their precise emphasis on meaning and interpretation of meaningfulness in the therapeutic encounter. To locate meaning within the major counselling theories of psychoanalysis, cognitive therapy and existential therapy, a basic view of meaning construction is required.

Meaning - Psychoanalytical

Freud introduced a theory of development based on irrational forces, unconscious motives and biological or instinctual drives. Personality was postulated to consist of three components, the Id, Ego and Superego (Freud, 1961). Defense mechanisms were identified as a means of unconsciously coping with the anxiety produced by the conflicts that occur between the Id, Ego, and the Superego. Erikson expanded on Freud's psychosexual approach to human development and proposed there were eight life psychosocial stages that present conflicts throughout a person's life and these crises or conflicts need to be resolved for the individual to achieve growth and reduce anxiety (Erikson, 1959a).

The techniques that are predominantly used in psychoanalytical counselling include: (i) *free association*; (ii) *interpretation and meaning of a client's behaviour*; (iii) *dream analysis*; (iv) *analysis and interpretation of resistance* and (v) *analysis and interpretation of transference*. *Free association* is where a therapist identifies hidden meaning/s; *interpretation and meaning of a client's behaviour* relates the past to the client's current behaviour and *dream analysis* is a therapeutic technique where unconscious motives (dreams), wishes,

needs and fears are explored. *Analysis and interpretation of resistance* is a process where the therapist provides feedback about what is causing resistance and allows the client's unconscious defense mechanisms to become conscious, whereby they experience less anxiety and are more satisfied with their life. *Analysis and interpretation of transference* allows clients to express feeling, thoughts, beliefs or needs that have been previously unconscious because of internal conflicts causing defense mechanisms to render these emotions thoughts and behaviours as unconscious.

This psychoanalytical approach to meaning is predominantly related to how past developmental experiences affect current behaviour and how the past shapes a client's current meaning and behaviour. Therapeutic interventions (i-v) are used to challenge behaviour that is counterproductive to the patient's well-being and meaning may be construed in this context. To gain further insight into these therapeutic techniques and how meaning is viewed in therapy, the major works of Freud (Freud, 1949, 1955) and Erikson (Erikson, 1950, 1959a, 1959b) may be consulted.

Meaning- Cognitive and Behavioural

Cognitive therapy (CT) and behavioural therapy (BT) and cognitive behavioural therapy (CBT) focuses on current behaviour/s and assesses a client's functioning in the present. This assessment information is then used to develop appropriate treatment goals and strategies to achieve desired outcomes. Because of the focus on tangible goals and achievable outcomes CT, BT and CBT psychotherapy and counselling techniques are often used to facilitate changes in health behaviours, to manage various illnesses, including CP, hypertension and diabetes (McCracken & Turk, 2002; Morley, 2004; Spurgeon, Hicks, Barwell, Walton, & Spurgeon, 2005).

There are a range of techniques developed by cognitive therapists to achieve the goals identified by client's who are being counselled. These include rational emotive behaviour

therapy (Ellis, 1994), social learning theory (Bandura, 1969, 1977), cognitive therapy (Beck, 1967, 1976), cognitive behavioural modification (Meichenbaum, 1977), relaxation training, and self management or self-directed behaviour (Bandura, 2005; Flinders Human Behaviour and Health Research Unit 2006)

Outcomes of cognitive therapies are most often tangible and established by the client with the assistance of the therapist (Bandura, 1969; Beck, 1976; Dyck, 1993; Ellis, 2001; Meichenbaum, 1977, 1985, 1986). The intrinsic meaning of a therapeutic outcome to a client is the achievement of a desired positive goal or outcome. Such as: being able to reduce the amount of medication required to manage pain, reduce blood pressure from high to normal range, or resume an enjoyable or meaningful activity, that has been avoided because of illness, or experience less psychological distress (Hamilton, Karoly, & Zautra, 2005; Surwit et al., 2002).

Meaning- Existentialism

Corey in the text “*Theory and Practice of Counselling and Psychotherapy*” suggests that: “A distinctly human characteristic is the struggle for a sense of purpose in life” (2005, p. 141). He further elaborated on how this can be achieved for clients in therapy when clients are asked to answer existential questions such as: Why am I here? What do I want from life? What gives my life purpose? Where is the source of meaning for me in life?

Frankl’s (1968; 1959/1963/1984, 1986) central concept is to communicate that there is meaning to one’s life. This construction of personal meaning was predominantly based on his personal experiences and observation of those who did and did not survive as prisoners in Nazi death camps. From his personal observations of these prisoners, Frankl subsequently developed a schema to account for how prisoner’s derived personal meaning from coping with their pain and suffering and this theoretical and cognitive account of human suffering was the basis of *logotherapy*. The word “logos” may be translated from the Greek as “study,

word, spirit, God, or meaning” and “logotherapy” is “therapy through meaning”. According to Frankl (1946), in *Man’s Search for Meaning*, logotherapy is the “striving to find a meaning in one’s life” and is “the primary motivational force in man” (Frankl, 1959/1963/1984, p. 121). The underlying philosophical stance of the therapy is that a human’s will to meaning is the root of human motivation. If man does not have a will to meaning then it is proposed that there is an existential vacuum where the individual does not perceive meaning in their life and feels there is a meaningless hole or emptiness in their existence. If there is no meaning in a person’s life he/she will strive to find meaning, and according to Frankl, there are three approaches to finding meaning; including an examination of our: i) experiential values, (ii) creative values and (iii) attitudinal values.

Experiential values are when an individual experiences “something” or “someone” they value (or love). An example of this is the love and nurturing a mother feels towards her child and when she encourages and supports her child to master a task such as striving towards and achieving a personal goal (attaining a tertiary qualification or being selected in an elite sporting team). As a result of their attaining this desired goal the child develops meaning in their life and the mother derives personal meaning from her role in enabling the child’s attainment of meaning. This is because firstly she loves (values) the child and secondly she has enabled someone she loves (values) to attain meaning in their life and thereby she derives meaning from facilitating enabling her child’s attainment and meaning in life.

Creative values are essentially “doing a deed”, an activity whereby the individual derives some meaning from that activity. Initially Frankl proposed that creativity was related to the act of creating and often included activities such as producing art, music, writing and inventions. Contemporary examples of creative pursuits may include digital creative artwork, volunteering, hobbies, medical research, technological inventions and possibly caring for others who need help.

Attitudinal values are described by Frankl in *Man's Search for Meaning* (1963) as personal characteristics or traits a person has such as compassion, bravery and a sense of humour. Personal characteristics influence the meaning a person ascribes to their current life circumstances and determines their ability to cope with adverse life events. Frankl also discussed the meaning that an individual derives from suffering and that if a personal situation does have meaning the suffering can be endured with dignity. Conversely a negative attitude towards illness may be observed when a person is seriously ill and carers, friends or medical staff may not allow the patient to maintain dignity throughout their suffering and illness, this may result in the patient m feeling ashamed of their pain and feeling sad. This concept of the intrinsic importance of attitudinal values in construction of personal meaning is highlighted in *Man's Search for Meaning* where Frankl states that "everything can be taken away from a man but one thing: the last of human freedoms—to choose one's attitude in any given set of circumstances, to choose one's own way." (Frankl, 1959/1963/1984, p. 104)

Another perspective on logotherapy is from Clinebell (1966), who proposed that there are three ways to detect meaning: 1. Doing something worthwhile, 2. Experiencing an event such as a sunset or a relationship, and 3. Taking a constructive attitude toward even the worst event. Both Frankl and Clinebell recognised the spiritual aspect of meaning, whether it be spirituality such as religion as identified by Frankl (1969), or religion and the spiritual experience of nature as expanded on by Clinebell (1996). Both authors also commented on the necessity for man to have some purpose or will to live. Without this, as was noted by Frankl's prisoners in concentration camps without some sense of "will to meaning" prisoners did not have "a will to live" and did not survive the arduous deprivation experienced in the camps he wrote of in *Man's Search for Meaning* (Frankl, 1959/1963/1984, 1969, 1978).

A central concept in most psychotherapy is that meaning is generally defined by the individual client or patient. Meaning or meaningfulness is associated with the activities and

behaviours that are valued (Ball & Orford, 2002), whether or not these activities are conscious or unconscious, are being pursued or participated in and whether or not there is any likelihood of achieving these identifiable meaningful life goals or pursuits (Brewin & Power, 1997; Moss, 1992; Power, 1997). There is less evidence in the literature that describes how clinicians can measure or identify what is and is not meaningful or purposeful for a client or patient.

2.4.3 Measuring Meaningfulness or Purpose in Life

Historically meaningfulness and meaning focused psychotherapy was based on the original works of Frankl (1959/1963/1984, 1969, 1978) and the premises and techniques of logotherapy were expanded on by Maddi (1967, 1998), Batista (1973), Yalom (1980), Reker and Peacock (1981; 1987) and Wong (1997). Yalom identified the search for meaning as one of four essential elements of existence, the other three being death, freedom, and existential isolation (Yalom, 1980).

Meaningfulness and purposefulness in life have also been linked to psychopathologies including depression and anxiety (Feldman & Snyder, 2005; Mascaro & Rosen, 2005, 2008; Moore, 1997; Zika & Chamberlain, 1992) and has also been associated with the severity of symptoms and efficacy of treatments of chronic and acute health conditions (Hellen, 2000; B. W. Smith & Zautra, 2004; Whitehead, 2003). Therefore meaningfulness is an important area of assessment when treating patients who have either a psychological or a physical illness. Based on the association between meaningfulness and both mental and physical health, a measure to assess the meaningfulness or lack of meaningfulness of a patient's life would be a useful diagnostic measure for clinical populations.

Purpose in Life Test

The Purpose in Life (PIL) test was developed by Crumbaugh and Maholick (1964) to measure the condition of existential frustration described by Frankl as the existential vacuum and also to determine whether or not *noogenic neurosis* was different to other forms of neurosis that had previously been identified.

Frankl in *Man's Search for Ultimate Meaning* (2000) stated: "If asked for a brief explanation, I would say that the existential vacuum derives from the following conditions. Unlike animals, man is not told by drives and instincts what he must do. Now, knowing neither what he must do nor what he should do, he sometimes does not even know what he basically wishes to do. Instead, he wishes to do what other people do – which is conformism – or he does what other people wish him to do – which is totalitarianism (Frankl, 2000, p. 94)". Individuals who experience existential vacuum may or may not experience clinical symptoms. If they do experience clinical symptoms it is referred to as a *noogenic neurosis*.

The PIL was an attitude scale designed to measure the extent to which a person experienced a "purpose in life". Twenty five items were included in this pilot measure and each of the items was rated on a seven point scale. The items were identified from a literature search on existentialism, logotherapy and a theoretical based assumption as to what would distinguish patients from non patients. Items in this measure were intended to be a scale within a scale. One of the items was "I am usually" and the response options were rated from 1-7, with 1 *being completely bored*, 4 *being neutral* and 7 *exuberant, enthusiastic* (Crumbaugh & Maholick, 1964). This measure has more recently been criticised because it does not exclusively measure meaning. There are items in the PIL apart from meaning, fear of death and freedom (Yalom, 1980) that are viewed as being indirect measures of depression (Dyck, 1987; Schulenberg, 2004).

In 1977 Crumbaugh developed a complementary scale to the PIL, the Seeking of Noetic Goals Test (SONG) to measure how strongly individuals were motivated to seek noetic goals (Crumbaugh, 1977). This measure was based on Frankl's premise that "*noetic*" was the spiritual or inspirational and aspirational aspect of the mind. While this "*noetic*" premise may include religion or religious practises, spiritual inspiration is not restricted to formal religion or religious beliefs. And the "*will to meaning*" is a process of finding a purpose in life and is essentially the primary motivating human force (Frankl, 1969).

The PIL is a measure of purpose or meaning in life and the SONG was developed to measure how motivated individuals are to achieve meaning or purpose/s in life and the actual perceived meaning they have in their life (Schulenberg, 2004). The SONG measure consisted of 20 items that were rated on a seven point Likert scale of quantitative adverbs, with 1 being *never*, 4 *sometimes*, to 7 *constantly*. Examples of statements included in the SONG were: "I think about the ultimate meaning of life", "I am restless" and "I feel that some element which I cannot quite define is missing from my life". The measure was administered to patient and non-patient populations and patients had a higher negative significant relationship with the PIL than non patients did, also a lower SONG score represented a higher score on the PIL and higher meaning in life. The SONG also was helpful in determining the effectiveness of logotherapy in the treatment of alcoholics, the SONG mean scores were 88 at intake and 83 at exit (-4.87). The utility of using the PIL and SONG in combination for logotherapy patients was supported by Crumbaugh although further testing of this association was required (Crumbaugh, 1977).

Life Regard Index

The Life Regard Index (LRI), was a measure of positive life regard and explored how the LRI was related to meaning in life. Battisa and Almond (1973) based the measure on a phenomenological theoretical stance. The measure was developed in an attempt to answer the

questions “What is the nature of an individual’s experiences of his life as meaningful?” and “What are the conditions under which an individual will experience his life as meaningful?” (Battista & Almond, p. 409).

Battista and Almond proposed that the development of positive regard was related to “the fit between the values, goals, needs, and roles of the individual and the values, goals, needs, and roles of the social structure within which he lives” (1973, p. 419). In considering meaning and positive regard the authors used a meta-theoretical perspective, including: philosophical and relativistic; psychological; transactional; and phenomenological theoretical approaches. These authors postulated that there were six factors that impacted on the development of positive regard: “(1) Current absolute goal-position relative to life-goal position. (2) Current rate of progress toward life-goal. (3) Comparison of present goal-position and rate of progress with previous goal-positions and rates of progress. (4) Goal-position at present relative to predicted goal-position for the present at past times. (5) Anticipated goal-position and rates and of change in the future. (6) The direct effect of levels of positive life regard in the past” (Battista & Almond, 1973, pp. 421-422).

The LRI evaluates the kind of life conceptualization a person has and the extent to which they have achieved their life goals. There were 28 items in the measure and the items were rated on a five point scale. There were four subscales identified in the measure (i) Positive Framework Items (7 items), (ii) Negative Framework Items (7 items), (iii) Positive Fulfilment Items (7 items) and (iv) Negative Fulfilment Items (7 items). Examples of items in each subscale (i) to (iv) respectively include “I feel like I have found a really significant meaning for leading my life”, “I just don’t know what I really want to do with my life”. “I have passion in my life”. “I don’t really value what I’m doing”.

Items assessed perceived meaningfulness and determined whether or not a person had developed strategies to fulfil these goals (e.g. “I have some aims and goals that would

personally give me a great deal of satisfaction”). Whereas Fulfilment Items identified whether or not the individual believed they either had fulfilled their goal/s, or were actively engaged in pursuing or fulfilling the life goals they had identified. For example “When I look at my life I feel the satisfaction of really having worked to accomplish something”. The revised version (PIL-R) also consisted of 28 items and there were three response options: *Do not agree*, *No opinion* and *Agree*. The measure was trialled on Stanford University medical students (Debats, 1990).

In the study reporting on the development of the LRI (Battista & Almond, 1973) the Self-Actualization Value scale (SAV) of the Personal Orientation Inventory test (POI) (Shostrom, 1963) and the PIL (Crumbaugh & Maholick, 1964) were administered to two groups of medical students, 14 with the highest total life regard scores and 16 students with the lowest total life regard scores. These students were also interviewed on life-goals and satisfaction with their medical course and interviewers identified 14/14 of the high-meaning-in-life group and 14/16 of the low-meaning-in-life group.

This measure has been reviewed for test-retest reliability, internal consistency factor structure (Chamberlain & Zika, 1988a; Debats, 1990; Debats, van der Lubbe, & Wezman, 1993) and the measure was revised (LRI-R) by Debats (1990). For a comprehensive review of the measure refer to *Measurement of Personal Meaning: The Psychometric Properties of the Life Regard Index* (Debats & Drost, 1998).

Personal Meaning Profile

Reker, Peacock and Wong (1987) used an implicit theoretical approach to develop the Personal Meaning Profile (PMP). There were four studies conducted to develop the measure. Study one was an exploratory study and a list of 102 personally meaningful items was formulated. The 102 items were generated from the responses of 60 participants recruited from the community who predominantly had a university education, “who were asked to

describe their own conceptions of the attributes or characteristics of an ideally meaningful life” (Wong, 1998a, p. 112). Study two instructed participants to identify the ideal versus current self-ratings of meaningful life for the 102 items generated in study one. In study three the age differences in implicit theories of meaningful life were explored, and in study four, the psychometric properties of a measure of personally meaningful life was tested.

This PMP was devised to demonstrate how personal meaning mediates well-being as assessed on the Perceived Well-being Scale (PWB) developed by Reker and Wong (1984). This measure has also been used to explore the observation that individuals who perceive that their life is not meaningful are less happy and motivated than those who perceived their life to be meaningful. Individuals who found their life not to be meaningful were also more likely to suffer from depression and other affective mood disorders.

The PMP has been further refined and the current version is a 57 item questionnaire. Respondents are instructed to “describe potential sources of a meaningful life” by rating the items on a seven point Likert type scale “to what extent each item characterizes your own life”. The PMP identifies seven distinct factors: (i) Achievement (16 items), (ii) Relationship (9 items), (iii) Religion (9 items), (iv) Self-transcendence (8 items), (v) Self-acceptance (6 items), (vi) Intimacy (5 items) and (vii) Fair treatment (4 items). Items from each of the seven PMP factors included: (i) I engage in creative work, (ii) I care about other people, (iii) I am at peace with God, (iv) I believe I can make a difference in the world, (v) I have learned that setbacks and disappointments are an inevitable part of life, (vi) I have a good family life and (vii) I have found that there is rough justice in this world.

Instructions to persons completing the PMP were: “The following statements describe potential sources of a meaningful life. Please read each statement carefully and indicate to what extent each item characterizes you own life” (Wong, 1998a, p. 138). By circling a number from 1 to 7, where 1 represents *not at all*, 4 *moderately* and 7 *a great deal*. The

potential sources of a meaningful life that were rated in this study were not representative of the broader community and what they find is a meaningful life. The level of education of the participants recruited to develop this measure was high because most of the participants had a university education. This would not be representative of the broader community.

It is a generally accepted standard that when clinicians and researchers are developing a self report measure that the level of literacy required to complete the measure should be around year seven (12 years of age) to be accessible to a broader cross section of the community (Streiner & Norman, 2007). There was no reading age reported for this measure. A further sampling issue in this study was that education is closely related to occupation and SES, these demographic variables would influence what a person finds personally meaningful and the resources that may be available to them to pursue activities they find personally meaningful (Cerin & Leslie, 2008; Fernandez-Ballesteros, Zamarron, & Ruiz, 2001). For example, if a person had a limited education and was not literate, they could not read and they could not engage in reading, although they may value reading as a worthwhile or meaningful activity to manage their health, they could not participate in this activity (Australian Bureau of Statistics, 2008d; Kickbusch, 2001).

A comprehensive account of the development of the PMP was provided by Wong *Implicit Theories of Meaningful Life and the Development of the Personal Meaning Profile* (Wong, 1998a).

2.5 Exploring Participation in Daily Activities

2.5.1 Scope of Daily Activities

Activities can be classified as being related to work, leisure, domestic chores, or personal care (Peat, Thomas, Handy, & Croft, 2004). At work, the tasks performed by employees and the perception they have of their role, have received considerable attention in the disciplines of organizational psychology, sociology and human resource management

(Isaksen, 2000; Westenholz, 2006). The amount of time spent at work is also dependent on the industry, occupation, motivation and the economic and psychosocial factors that impact on the individual in their occupation and culture (Chan, Lai, Ko, & Boey, 2000; Slottje et al., 2008; Wieclaw et al., 2006).

Further exploration of the various social, economic, and political factors embodied in paid employment have highlighted the extrinsic and intrinsic rewards obtained from being in paid employment and noted how complex these associations are for individuals (Sanne, Mykletun, Dahl, Moen, & Tell, 2003). An employee may or may not perceive that the various activities they perform at work are meaningful or non meaningful (D. R. May, Gilson, & Harter, 2004). In some instances persons who experience CP have found their work to be meaningful and derived a sense of personal satisfaction and reward from their employment (extrinsic or intrinsic). Therefore if they are no longer able to perform their usual work they may consequently experience a void in their daily activities (Truchon, Côté, Fillion, Arsenault, & Dionne, 2008). There is also considerable evidence to suggest that persons who are not in paid employment experience more psychopathology (anxiety, depression, substance abuse) than those persons who are working (Booth, Johnson, & Granger, 1999; Comino, et al., 2000; Feather & Bond, 1983; Feather & Davenport, 1981). Not being employed and being depressed or anxious is also somewhat exacerbated by sustaining a work injury. Particularly for those person who experience chronic illness such as CP (MacKinnon, Noh, & Miller, 1998).

Leisure is also an important activity for maintaining health and well-being. Factors that have been identified as being influential in an individual's participation in leisure activities include age, gender, socioeconomic status, health status, mobility and ethnicity (Aitchison, 2001; Barnett, 2006; Cerin & Leslie, 2008; Clarke, Liu-Ambrose, Zyla, McKay, & Khan, 2005; Iwasaki & Bartlett, 2006). For example older Australians participate in less strenuous

physical activity and women participate in less leisure and physical activity than men (Australian Bureau of Statistics, 2007b; Fullagar, 2003). Also Australian non English speaking migrants in 2006 were less likely to be involved in sports and recreation groups and clubs, but more often involved with religious or spiritual groups than migrants from English-speaking countries and people born in Australia (Australian Bureau of Statistics, 2008b, June 2009).

Leisure as an activity is becoming an important factor in, western countries, primarily due to the increased time spent away from paid employment because of unemployment, underemployment, retrenchment, enforced early retirement, illness and domestic chores (Australian Bureau of Statistics, 2001c, 2004i, 2005; L. E. Waters & Moore, 2002). In some industries the changes that have occurred in the number of hours spent performing work tasks, may be predominantly attributed to advances in technology and economic factors (Stebbins, 1996). For example in Australia the number of unskilled or semi-skilled positions available in 2006 (excluding technicians and trades workers) was 9.2% of the total persons employed. In part, this may be attributed to the manufacturing industry being significantly reduced over the past decade. Many industries, including textile, leather, clothing and footwear manufacturing is now conducted in China (Australian Industry Group, August 2006), consequently leaving a number of Australians who worked in these industries without a skill set that allows them access to employment in the industry and occupation they previously worked in (Australian Bureau of Statistics, 2001d, 2002d).

Therefore leisure has become far more important particularly for the young, unemployed, elderly, and disabled (L. E. Waters & Moore, 2002). Ian Patterson, in his paper entitled *Serious Leisure as an Alternative to a Work Career for People with Disabilities* (1997), explored the role of serious and casual leisure. In this article he also expounded on the work of Dubbin (1992) who proposed that central life interests (CLI) of the individual

encompass aspects of a person's life that energise physical, intellectual and positive emotions.

It is further suggested by Patterson (1997), that serious leisure is an alternative to work for people with disabilities. As outlined by Stebbins (1982, 1992) there are three distinct categories of serious leisure: amateurism; hobbyist pursuits (collectors, makers and tinkers, activity participants, and players of sports and games), and career volunteering (management and board work, service volunteers, political and civil spheres). Stebbins classifications of serious leisure may be used to explore the intrinsic meaning of leisure activities. Of particular interest is the comparison made by the author between the benefits derived from work and serious leisure. Suggesting that the benefits derived from serious leisure such as "self-actualisation, self-enrichment, self-expression, recreation or renewal of self, feelings of accomplishment, enhancement of self-image, social interaction and belongingness, and lasting physical products of the activity" (Stebbins, 1992, p. 7) are similar to the benefits derived from paid work.

In contrast to serious leisure, casual leisure as defined by Stebbins (1992) is seen to be "immediately intrinsically rewarding, relatively short lived pleasurable activity requiring little or no specific training for its enjoyment" (p. 5). Included in this type of leisure is play, relaxation (physical), passive entertainment, active entertainment, social interaction and sensory stimulation. Stebbins (1992) proposed that as a consequence of predominantly casual leisure activities being the central life interest/s to the individual may result in the patient living in what he terms a "spiritual wasteland" (p. 19).

Expanding on this concept, Patterson (1997) suggested that serious leisure can "... provide the remedy to help solve the social problem of meaninglessness or empty leisure. For many people with disabilities who have large amounts of free time at their disposal, serious

leisure is a work-like activity in the sense that it is challenging and valued by someone (i.e. the public), it also contains a status system and generates a set of colleagues” (p. 22).

The notion of leisure being beneficial to the well-being of persons with physical and mental health issues has been more recently explored and there is an apparent relationship between engaging in leisure activities and the severity of negative symptoms associated with illness (Hutchinson, Loy, Kleiber, & Dattilo, 2003; Lloyd, King, McCarthy, & Scanlan, 2007). There are also well documented instances of the benefits associated with physical leisure activities as preventative health behaviour (Abu-Omar & Rütten, 2008; Fullagar, 2003; Teychenne, Ball, & Salmon, 2008).

Domestic chores and caring for others are also activities that occupy many hours per day. This is especially evident for women who are predominantly caring for family members and performing unpaid domestic work in the family home (Australian Bureau of Statistics, 2001c; Strazdins & Broom, 2004; Warren, 2003). As a result of the demands on women’s time their opportunity to participate in paid employment and leisure outside of the family home has also been restricted (Australian Bureau of Statistics, 1999; Gjerdingen, McGovern, Bekker, Lundberg, & Willemssen, 2000; Kay, 2000; Raisborough, 2006). It has also been noted that Australian women have also been historically inhibited in their occupation, career and leisure activities by the impact of caring for family members and the performance of domestic unpaid work (Australian Bureau of Statistics, 2001c, 2008a, 2008e, June 2009).

However there are more women who participate in some areas of serious leisure, such as volunteer work. In Australia during 2006, 22% of women were regular volunteers compared with 19% of men. The groups that women most often regularly volunteered for were sporting organisations (26%), education and training organisations (26%), religious organisations (22%) and community or welfare organisations (20%). Less than 3% were volunteers in each of art and heritage organisations, health services, environmental or animal

welfare organisations. However 52% of males who volunteered regularly did so for a sport and physical recreation organisation (Australian Bureau of Statistics, 2008g).

It has been widely accepted by Australian health planning and policy developers that participation in work, social activities, active and passive leisure is an important factor in maintaining mental and physical health (Australian Bureau of Statistics, 2004c; Australian Institute of Health and Welfare (AIHW), 2004a; Department of Veterans' Affairs & Department of Health and Ageing, November, 2005; Lloyd, et al., 2007). However, there are barriers to participation in leisure activities that have been attributed to gender, age, family obligations, domestic chores, socioeconomic status, education, health status, work status and physical or psychological impairment (Australian Bureau of Statistics, 1995, 2001f, 2007b; Brown & Bauman, 2000; Cerin & Leslie, 2008; Fullagar, 2003; Patterson, 1997; Westbrook, 1997). An association has been made with health status and the access to and participation in various daily activities. While daily activities are important to the health status of Australians a global measure of daily activity does not appear to be used in clinical practice.

2.5.2 Measures of Participation in Daily Activity

Having identified that there are different types of daily activity it is necessary then to consider how participation in these various activities can be measured. A measure of participation in DA contributes another dimension to clinical assessment. Especially if a patient is able to provide some indication of the meaningfulness of the activities they currently engage in and also how often they engage in meaningful activities. This would however seldom be the focus of clinical attention.

Predominantly measures of DA have been administered to clinical populations to determine which activities can and cannot be performed by the patient and what assistance is required to perform these activities (Duong, Kerns, Towle, & Reid, 2005; Green, Forster, &

Young, 2001). Often measures of daily activity focus on disability status rather than looking at the frequency and range of activities a well person who is not ill, aged, or disabled does.

Daily activities are often referred to in the research literature as Activities of Daily Living (ADL) and are routinely used in medical and physical therapy practices, rehabilitation centres, aged care facilities and medico legal assessments (Oakley, Khin, Parks, Bauer, & Sunderland, 2002). Activities are dependent on the age of the patient and their specific illness. For example the Katz *Basic Activities of Daily Living Scale* includes self care tasks of bathing, dressing, toileting, transferring, continence and feeding. Whereas the *Instrumental Activities of Daily Living* scale includes the ability to use a telephone, go shopping, prepare food, housekeeping, laundry, mode of transport, responsibility for own medication and ability to handle finances (Lawton & Brody, 1969). Both of these scales are used to assess older persons and are not readily transferable to younger persons or those who do not have moderate to severe mental and/or physical limitations. An example of a disease specific list of ADL is the Huntington's disease Activities of Daily Living. This measure encompasses a wide range of daily activities including personal care, household care, work and money, social relationships, and communication (Blyma, Rothlind, Hall, Folstein, & Brandt, 1993).

Another measure to assess the daily tasks performed by older persons is The Frenchay Activities Index (FAI) developed by Holbrook and Skilbeck (1983). This measure was designed to measure three groups of daily activities: domestic chores, leisure/work, and outdoor activities. This measure was developed for use with a population of elderly persons that had experienced a sudden disabling illness, such as a stroke. The items included in this measure were chosen to be reflective of the age of the patient, and included normal living activities. The FAI is verbally administered and consists of 15 items such as: preparing meals, washing dishes, washing clothes, cleaning, shopping, social activities, walks, hobbies, sport,

travel, outings, gardening, house maintenance, books, and employment. This activity index comprises age appropriate activities for the elderly.

The West Haven Yale Multidimensional Pain Inventory (WHYMPI) (Kerns, et al., 1985) was devised to measure the activities of CPP. Patients who develop CP conditions or disabling illnesses, regardless of their age and their pre-illness participation in activities, are frequently administered tests that do not necessarily have any real significance to them. For example, a 27 year old, who earns their income as a professional elite athlete, who is currently suffering from a disabling CP condition, may not find items on these general DA measures salient to their central life interest.

Measures that consider the activities of non clinical populations include measures of physical activity, leisure participation, social support and contact, employment and health behaviours that may impact on the onset of chronic illness in the future (Australian Bureau of Statistics, 1999, 2004c, 2004i; Australian Institute of Health and Welfare (AIHW), 2002; Brown & Bauman, 2000; Fullagar, 2003; Jackson, et al., 1996). Positive health behaviour (activity) is currently associated with frequent participation in physical activity, eating a balanced diet and managing the balance between work, relationships and leisure (Trenberth, 2005; Waxman, 2004). Negative behaviours (activities) are identified as being risk factors for the onset of chronic diseases and these activities include excessive use of alcohol and substances, smoking tobacco, insufficient sleep, poor nutrition and work related stressors (Australian Institute of Health and Welfare (AIHW), 2002; Ezzati, Lopez, Rodgers, Vander Hoorn, & Murray, 2002; Rodgers, et al., 2004).

2.6 Exploring the Meaningfulness of Daily Activity

2.6.1 Locating a Measure of Meaningful Daily Activity

Searches were performed on Psych Literature, and Medline, using the following terms: measures, meaning, meaningfulness, meaning in life, life regard, activity and importance for

all years up to and including 2002/2003. The purpose of this search was to check whether or not an existing measure of MDA could be located.

The criteria for suitability of a measure was that the instrument identified the personal worth and values the individual patient ascribed to the reported daily activities they currently performed. It was also proposed that this measure of MDA should provide information about (i) how time is occupied, (ii) how the individual views their daily activities, and (iii) which activities they find meaningful or important. This measure would then be used to establish what aspects of their lives CP patients find meaningful and/or important.

All of the measures located in the searches were then considered in relation to the above criteria. There were no suitable measures of MDA identified from the Psych Lit and Medline searches. This prompted further searches for measures of Quality of Life disability and functioning as the possibility of quality of life disability and functionality measures, including items that also measured the meaning and importance patients placed on their various daily activities which was assumed to be more plentiful. There were additional measures located in these searches that identified whether or not a CPP was capable of performing various activities such as WHYMPI activities subscale (Kerns, et al., 1985) and the Pain Disability Index (Tait, Chibnall, & Krause, 1990). However the measures that were located in the subsequent searches were not suitable as they did not contain any useful items that tapped the construct of MDA.

In both research and clinical management of CPP there are a number of measures currently being used to assess functional activity, Psychological Distress, pain severity, and quality of life (Turk, et al., 2003), but there is no standardized assessment measure to determine the meaningfulness and importance of DA. Gill and Feinstein (1994) in their review of Quality of Life Instruments would seem to confirm this viewpoint. While there are

measures of quality of life and measures of specific activity levels, there does not appear to be a measure that allows a patient to identify the activities they perform on a daily basis or to indicate how meaningful they find these activities.

A measure that allows the individual to identify which activities are meaningful and important to them and how often they participate in these activities may also be useful to clinicians in identifying treatment goals for therapy. The patient's perception of their life is important when clinicians are establishing the goals, objectives and outcome measures of therapy (Scharloo & Kaptein, 1997; Scharloo et al., 1998).

Daily Activities

Specific measures were located that identified the extent to which a person with CP was capable of performing various activities. The West Haven Yale Multidimensional Pain Inventory (WHYMPI) - Section 3 Activities (Kerns, et al., 1985); Quebec Back Pain Disability Scale (Kopec, et al., 1995); Oswestry Low Back Pain Disability Questionnaire (Fairbank, et al., 1980); Roland Morris Activity Scale (Roland & Morris, 1983); and the SF - 36 Functional Limitation Profile, items 3, 4, 5, 6 and 8, (Ware & Sherbourne, 1992). All of these measures examined the extent to which the activities of a CPP are limited by CP. However, the emphasis of these measures was on the physical limitations experienced by the patient, not on how meaningful or important those activities were to the patient.

General DA of specific populations including CPP, have identified different activities comprising an important or meaningful part of patients' daily experiences. For example, De Gagnè, Milkail and D'Eon (1995) found that the General Activity Subscale of the WHYMPI was the least reliable subscale of the instrument (Mikail, Du Breuil, & D' Eon, 1993). They attributed this observation to a distortion "of the relationship among patients' ratings of life interference and those activities that may be meaningful to them" (De Gagne, et al., 1995, p. 200).

Specifically, the relevance of the items used in the WHYMPI and other activity measures formulated for CPP have been too restricted in their range of activities. For example, activities that were important prior to the onset of a pain condition may have included work, sport, clubs, hobbies which are not included in the Activity Subscale, whereas activities deemed unimportant to the patient were included in the measure. De Gagnè et al. (1995), proposed “to reduce the source of error in the meaningfulness and base rates of activity, a measure should take into account the following factors: (1) the importance of an activity for a given individual; and (2) the extent to which the individual engaged in the activity prior to the onset of pain” (p. 200).

2.6.2 Meaningful Daily Activity and Health Status

Global and population specific questionnaires have been designed to assess whether a patient has the capacity and ability to perform their usual activities and whether DA is affected by their physical or mental health (Hadorn & Hays, 1991). These measures are particularly useful when determining the outcome of treatments used in physical rehabilitation and pain management (see Cutler, Fishbain, Rosomoff, & Rosomoff, 2003; Jenkinson, 1994).

The activities a person is required to perform are dependent on cultural, social, economic and demographic factors such as: gender, age, marital status, ethnicity, occupation, work status, physical limitations, psychological health and general health (Baker, Cahalin, Gerst, & Burr, 2005; Eason, Masse, Tortolero, & Kelder, 2002). Instruments that measure the types of activities performed by specific populations are mainly concerned with the performance of required physical, occupational and role tasks, rather than establishing the perceived meaning a patient ascribes to these activities (White & Strong, 1992).

However, one Australian study by Feather and Bond (1983) related how the use of time and participation in structured, purposeful activity, affected the self- esteem of employed and

unemployed graduates. The authors devised a list of 17 items to measure graduates' use of time and used this measure along with measures of Employment Importance, Self-Esteem (Backman, O'Malley, & Johnston, 1978) and the Beck Depression Inventory (Beck & Beck, 1972). The results of this study suggest that "those who used their time purposefully and in a structured way (whether they were employed or unemployed) were more likely to report higher self-esteem and less depressive symptoms" (Feather & Bond, 1983, p. 250).

The use of spare time and the psychological well-being of unemployed and employed young people was also investigated by Winefield, Tiggemann and Winefield (1992). In this study the authors asked participants to rate how much of their spare time was spent engaged in each of the following: "1. Doing nothing in particular; 2. Watching TV; 3. An activity by yourself, i.e. stamp collecting, cooking, reading, fiddling with cars; 4. An activity with other people, e.g. sport, disco" (Winefield, et al., 1992, p. 309). Results of this study indicated that, time spent in activities with other people, was most often correlated negatively with the negative measures of well-being. Of particular significance was the finding that for the unemployed, time spent doing nothing and watching TV was most often positively correlated with negative measures of well-being (low self esteem, depressive affect, negative mood, and hopelessness). This finding would suggest that the involvement in activities, particularly those involving other people, have an effect on the psychological health of employed and unemployed young Australians. There were no findings reporting any differences between males and females in this study.

More recent studies have also reinforced the importance of daily activities such as employment, structured or purposeful activities and mental and physical well-being (Comino, et al., 2003; Dooley, Prause, & Ham-Rowbottom, 2000; Haugli, et al., 2003). This would suggest that employment is generally considered to be a meaningful or important activity and not being in employment has adverse effects on the health status of those persons who rate

employment as an important or meaningful activity (Halvorsen, 1998; Rantakeisu & Jonsson, 2003).

2.7 Clinical Perspectives of Meaningful Daily Activity

2.7.1 Personal Meaning in Counselling

The components of personal meaning in meaning –centred counselling as defined by Wong include cognition, emotion and motivation. This interpretation of meaning is diagrammatically represented by Wong (1998b) in Figure 7 where the cognitive schemas of personal meaning are related to beliefs and motivational aspects such as goal striving and purpose and also emotional consequences such as feeling good and feeling fulfilled.

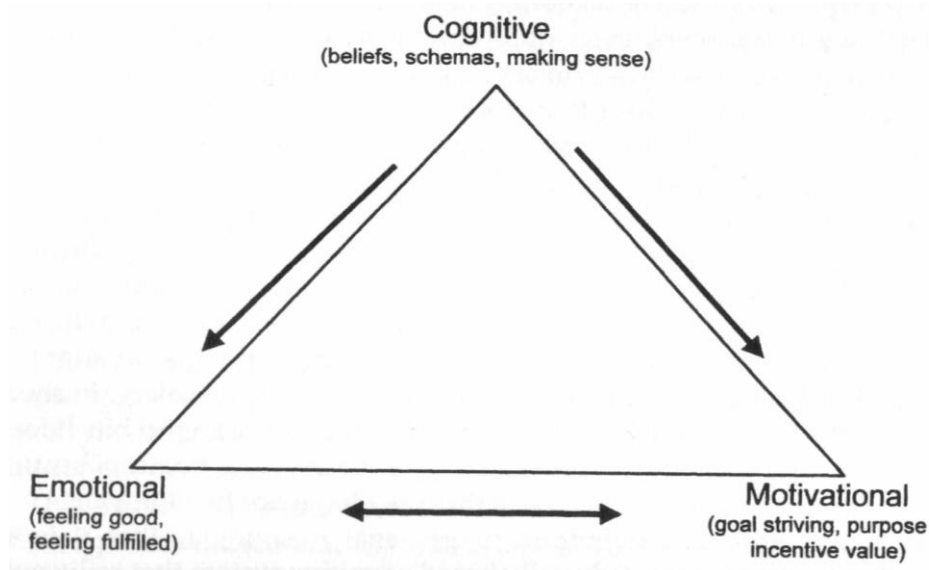


Figure 7. Components of Personal Meaning.

From “The Human Quest for Meaning: A Handbook of Psychological Research and Clinical Applications” by P. T.P. Wong and P.S. Fry (Eds.), 1998, p. 405. Copyright 1998 by Lawrence Erlbaum Associates. Reprinted with permission of the author.

Wong proposes there is a triad of relationships that are the essential elements of patients' experience of constructing personal meaning. This triad represents the origin of all personal construction of meaning being a cognitive process, whereby (1) cognitive schemas and beliefs → motivational goals, purpose and incentive, (2) cognitive schemas and beliefs → emotional feeling good. The emotional and motivational outcomes of cognitive processes are interactive (3) emotional feeling good ↔ motivational goals, purpose and incentive. Cognitive interpretation of pain requires the CPP to make sense of their pain and to incorporate their pain into a schematic framework within their belief system. This interpretation then impacts on emotional and motivational construction of personal meaning.

2.7.2 Personal Constructs

Personal construct psychology (PCP) is another theoretical approach to the personal meaning of individuals. George Kelly in his original publication made a distinction between actual life events and the constructions of those events as viewed by the individual who experienced the event/s (Kelly, 1955). Kelly proposed that individuals use constructive alternativism to make sense of their environment (Kelly, 1955, 1991a, 1991b). This process necessitates the use of personal constructs, to attribute or ascribe personal meaning to life events. Using these personal constructs, the individual may then attribute a sense of order and relevance to their social, cognitive and emotional existence. Burr and Butt (1992) further suggest that events in life do not have one specific single meaning because individuals potentially have an infinite number of meanings they can attribute to a specific event. The way in which a person attributes meanings to specific contexts is consistent with the theoretical premise of personal construct psychology.

For example, pain, is not the “cause” of the subsequent symptomatology, suffering and distress. Personal construct theory would argue that it is the meaning of pain and pain

symptomatology to the individual that causes him/her to perceive and experience distress and disability (Bonarius, 1971; Kelly, 1991a, 1991b).

The way that meaning is constructed is important, especially the meaning a CPP attributes to their pain and how pain affects their various daily activities (Bullington, et al., 2003; David A Fishbain, et al., 2003). For example pain may be perceived as a physical sensation that has caused significant losses, including freedom, independence, occupation, income and social relationships (S. A. Harris, et al., 2003). Women with fibromyalgia (FM) expressed a loss of freedom, threat to integrity and a struggle to achieve relief and understanding. The authors also suggested that it is important for clinicians who treat women with FM to respect their human dignity and empower women to manage their symptoms and to live with the illness (Soderberg & Lundman, 1999). In a Swedish sample of males with FM the men's experiences of CPP were negative changes in their body, personality and relationships. The men in this study also expressed they struggled for a tolerable existence (Paulson, et al., 2002).

In contrast to this somewhat negative meaning of pain, a CPP who accepts their pain would appear to have a less negative perception of their pain experience and would adapt more proactively to cope with their pain (McCracken, 1999). It would appear that CPP who to some extent self manage their pain have less adverse or severe symptoms and experience less role losses due to pain and less interruption in DA (Jensen, Nielson, Turner, Romano, & Hill, 2003).

2.7.3 Incorporating Meaningful Daily Activity into Psychological Clinical Practice

Reker and Wong (1988) proposed that there were three basic components of meaning: cognitive, motivational and affective. Reker, Peacock, Wong and Fry (1987) developed a personal meaning profile (PMP) to determine how meaningful individuals perceived their life to be. The 102 items included in the original version of this test were generated from the

responses of 60 participants recruited from the community who predominantly had a university education. Participants were “asked to describe their own conceptions of the attributes or characteristics of an ideally meaningful life” (Wong, 1998a, p. 112).

A measure that can reliably assess the meaning of activity for a specific patient will enhance the clinicians’ understanding of how the patient perceives their illness and how their illness is seen to interfere with their life (Fife, 1995; Gordon, Feldman, & Crose, 1998; Johansson, et al., 1999). This measure of daily activity may also be used to identify how a specific clinical population differs from a non-clinical population in relation to what activities are found to be most meaningful. Furthermore, if a clinician is able to identify the meaningful aspects of a person’s life that they are currently able to participate in and what meaningful aspects of their life they are not able to participate in, this may enable the clinician in consultation with the patient, to identify and formulate future goals for treatment.

The aim of psychologists who work in the field of CP management is to improve the quality of life of the patient. In order to alleviate the physical and psychological pain that is experienced by the patient, a treatment plan is formulated so as the psychologist may establish how a patient may best be managed. During this treatment planning a thorough assessment of the organic, cognitive and emotional components of the pain experience is undertaken (Keefe, Abernethy, & Campbell, 2005; Turk & Burwinkle, 2005; Turk & Gatchel, 2002).

A new perspective has been identified in relation to the formulation of CP treatment plans. This interpretation is related to how the reported meaningfulness of DA appears to mediate the severity of CP symptoms. The mediating effect of meaningfulness on CP symptoms will be the focus of this research study. The focus will involve firstly developing two measures, one of DA and the other of MDA, and secondly exploring the impact of

meaningful and non MDA on Pain Severity, Psychological Distress, Illness Perception, and Functional Disability.

To address these issues it is important to determine what activities CPP usually participate in and how meaningful they find these activities. However, to ensure that a measure of MDA is not biased towards specific clinical populations, such as back pain for instance, it is necessary to recruit a non clinical sample from the general population to standardize a measure of MDA.

2.8 Formulating a Conceptual Model of Meaningful Daily Activity and Chronic Pain

2.8.1 Psychological factors and meaningful daily activity

The construct of MDA is not the same as perceived meaningfulness of life. Perceived meaningfulness of life does not tap or measure MDA. A measure to determine what activities are perceived to be meaningful is required, to explore how MDA mediates the experiences of CPP symptomatology.

Also of particular significance to researchers and clinicians, is the way in which the meaningfulness of a particular activity is seen to be influential in either distracting from, or focusing on pain and other pain related symptomatology for individual CP sufferers. Depending on the type of activity a patient finds meaningful and how often they engage in this activity, the impact of this attentional focus may produce either negative or positive consequences.

From the research material located and reviewed to locate a MDA measure, there was some evidence to support a relationship between emotional distress, DA and meaningfulness of life activities (Ball & Orford, 2002; Compton, 2000; Ebersole, 1998; Mascaro & Rosen, 2005). These associations were not fully explained in the research literature. To explore the proposed associations between pain, psychological distress and meaningfulness of DA, further research is required. In future, research focussing on pain symptoms and MDA needs

to consider whether CPP who perceive their DA to be meaningful experience less severe pain and illness behaviours and less Psychological Distress than CPP who do not perceive their DA to be meaningful.

Meaningfulness as a concept for persons with CP encompasses a very broad range of sensations, thoughts, behaviours, and emotions. These multiple meanings include pain itself, the range and efficacy of treatments (past, present and future), the extent to which pain has caused interference with daily functioning and independence, economic and personal losses associated with pain and how these meanings cause emotional reactions to CP and become yet another meaningful association with the pain.

The theoretical explanations and clinical interpretations of symptoms, and techniques used to treat CPP are not restricted to a single form of psychotherapy. CBT is often used as a brief method of psychotherapy to treat CP symptoms (Currie, Wilson, & Curran, 2002) and identify self management strategies for CPP (D'Ortona, 2005; Turk, 2002). Other psychotherapeutic methods such as positive psychology (Fredrickson, 2003) and existentialism have a potential role in the treatment of CPP, although this appears to have been untested in the research literature. Positive interpretations of symptoms and health and Dispositional Optimism have however been identified as significant factors when evaluating the severity of symptoms and treatment outcomes of other chronic illnesses, including HIV (Ironson, et al., 2005; Mayers, Naples, & Nilsen, 2005) and diabetes (Fournier, de Ridder, & Bensing, 2002b). However, there does not appear to be theoretical and research material relating positive psychology to CP symptoms and efficacy of treatment.

2.8.2 Exploring the Associations between Meaningfulness of Daily Activity, Dispositional Optimism, Cause of Pain and Patient Characteristics and Chronic Pain Symptoms

The current research emerged from the Positive and Negative appraisals identified in the patient narratives as depicted in Figure 1 and a review of the literature relating to positive and negative appraisals of the symptomatology of CPP.

To identify the essential components of interest to include in this study a schematic diagram or model was developed (Figure 8). This model illustrates the possible relationships that may exist between MDA, DA, Dispositional Optimism and cause of pain, individual patient characteristics and CP symptoms including: Pain Severity, Psychological Distress, and Functional Disability. Figure 8 was based on Figure 1 and relevant components that were identified in the schematic pain models previously reviewed. Namely, the physiological impairment as a consequence of CP and illness behaviours represented in Figures 2 and 4, combined with the central influence of pain on psychological distress (Figures 4 and 6), illness behaviour, disability, work loss and physical impairment identified in Figure 4, and the meaning/perception of pain or illness depicted in Figures 5 and 6.

The essential difference between the research model as depicted in Figure 8 and those previously discussed is the emphasis on Dispositional Optimism, the individual patient's daily activities or tasks and the meaningfulness of their activities such as domestic chores, work, casual and serious leisure. The inclusion of casual and serious leisure and pain related tasks in measures of activity and meaningful activity for CPP will enable the researcher to identify the specific activities CP sufferers find meaningful. To date there has not been a measure of MDA used by clinicians with CPP.

In summary, a theoretical research model (Figure 8) has been proposed to test the associations between CPP ratings of their MDA or frequency of participation in DA, Dispositional Optimism, Cause of Pain and reported severity of CP symptoms. Depending on

the study outcomes, this clinical information may then be used by to establish clinical goals for treating CPP.

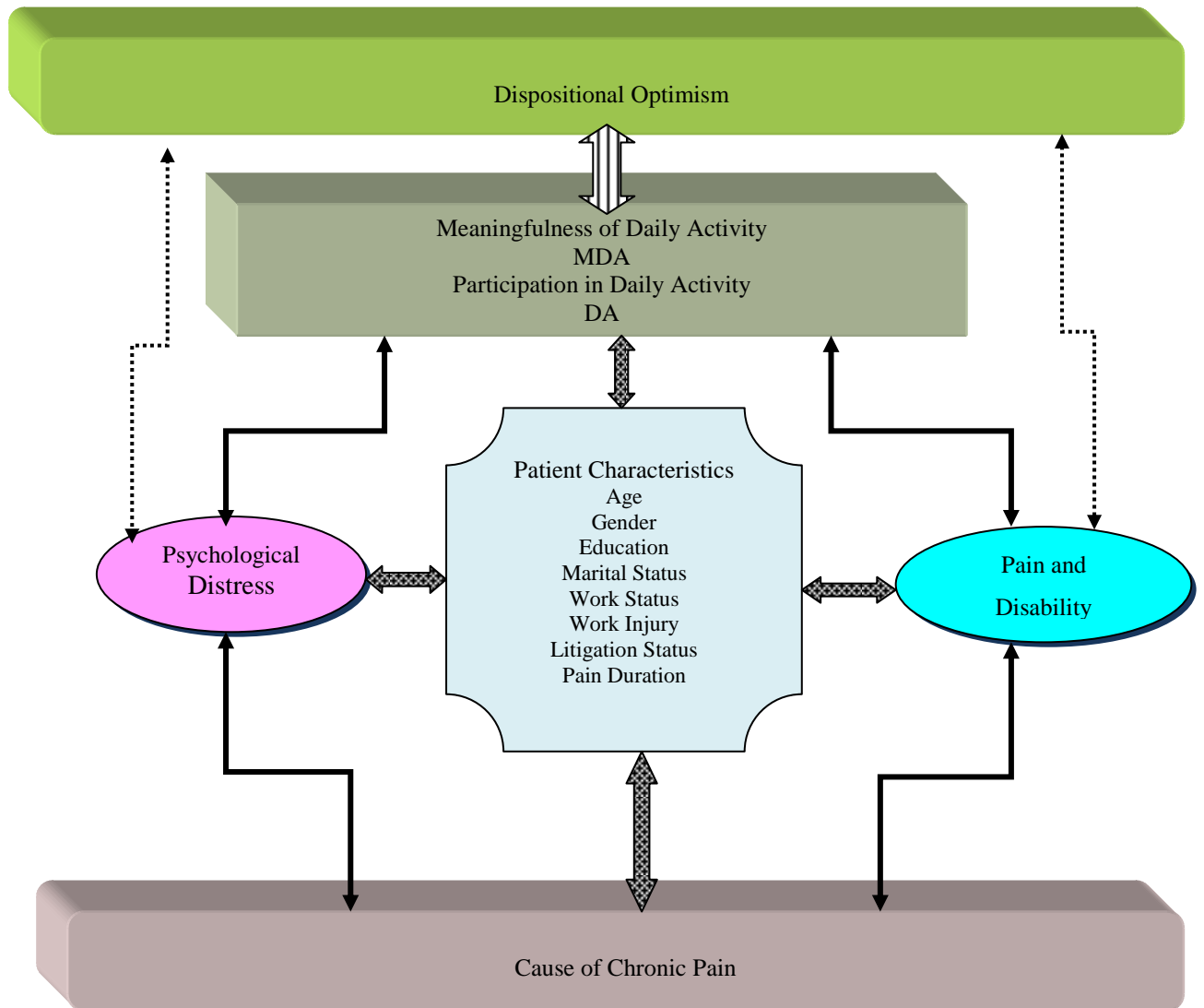


Figure 8. Proposed Associations between Dispositional Optimism, Meaningful Daily Activity (MDA), Daily Activity (DA), Cause of Chronic Pain, with Psychological Distress and Pain and Disability.

2.9 Research Aims and Hypotheses

Thus this thesis will investigate two related major research questions:

- (1) How can the concepts of DA and MDA be investigated and measured?
- (2) Do chronic pain patients who perceive they frequently engage in various DA they rate as being meaningful (MDA), report less severe pain, less functional disability, and less Psychological Distress (depression, anxiety and hopelessness)?

Aims

To explore the possible associations between MDA, DA, Dispositional Optimism, Cause of CP and CP symptoms depicted in Figure 8. The following aims were identified:

1. To conduct a Pilot Study on a CP population to identify the frequency of performing various daily activities (DA) and the meaningfulness of daily activities (MDA).
2. To develop reliable measures of daily activity (DA) and meaningful daily activity (MDA).
3. To test a research model that relates meaningfulness of daily activity (MDA) and frequency of daily activity (DA) to Dispositional Optimism, Cause of Ppain, Pain Severity, Psychological Distress (depression, anxiety, and Hopelessness) and Functional Disability in a sample of chronic pain patients.

The measures of MDA (MDAQ) and DA (DAQ) will be used to test whether MDA and DA mediate the negative consequences of a CP condition. The projected patterns of relationships between the variables are depicted in Figure 8.

Research hypotheses

The specific hypotheses have been separated into symptom specific sections, relating to the effect of either MDA, or DA, on psychological distress, functional disability, and pain.

Hypothesis 1

A CPP who obtains higher scores on the MDAQ will have lower scores on measures for depression, anxiety and hopelessness.

Conversely, a CPP who obtains higher scores on the MDAQ will not have lower scores on measures for depression, anxiety and hopelessness.

Hypothesis 2:

A CPP who obtains higher scores on the DAQ will have lower scores on measures for depression, anxiety and hopelessness.

Conversely, a CPP who obtains higher scores on the DAQ will not have lower scores on measures for depression, anxiety and hopelessness.

Hypothesis 3:

A CPP who obtains higher scores on the MDAQ will have lower scores on measures for pain severity and functional disability.

Conversely, a CPP who obtains higher scores on the MDAQ will not have lower scores on measures for pain severity and functional disability.

Hypothesis 4:

A CPP who obtains higher scores on the DAQ will have lower scores on measures for pain severity and functional disability.

Conversely, a CPP who obtains higher scores on the DAQ will not have lower scores on measures for pain severity and functional disability.

CHAPTER THREE: PILOT STUDY, EXPLORING A GLOBAL MEASURE OF MEANINGFUL DAILY ACTIVITY

Today, man's will to meaning is frustrated on a worldwide scale. Ever more people are haunted by a feeling of meaninglessness which is often accompanied by a feeling of emptiness- or, as I am used to calling it, an "existential vacuum".

(Victor Frankl, 1949)

3.1 Introduction and Aims

The review of the literature pertaining to MDA measurement did not locate a suitable measure of MDA for use in this research. As a result of this, a Pilot Study was conducted to generate items for inclusion in a global measure.

Criteria that were considered to be important for the measures of MDA included the following: (1) the time, location and type of activity engaged in; (2) who else participated in the activity; (3) how meaningful the activity was considered to be to the patient and (4) which daily activities were performed more frequently by the patient. A measure of MDA would then be used to identify what type of activity a patient finds to be most meaningful and how often they perform the activity.

While a measure of MDA was not located, various aspects of DA were identified in the literature as being important in the lives of clinical and non clinical populations. Some of these activities included active and passive recreation (Klyczek, Bauer-Yox, & Fiedler, 1997; Stebbins, 1996), both paid and unpaid work (Feather & Bond, 1983), medical appointments and personal care. Measures of activity were available for various clinical populations, particularly for handicapped and elderly populations (Bond, Clark, Smith, & Harris, 1995; Pettipther & Mansell, 1993; Scheid & Anderson, 1995). However no measures were located that combined the type of activity being performed with how intrinsically meaningful that

task was to the patient. For this reason a Pilot Study was undertaken to generate items for inclusion in a self report measure of MDA to use with a clinical population in this research study.

The first step towards achieving this outcome was to generate items for inclusion in a MDA measure, to assess the frequency of participation in various daily activities and also provide a numeric rating for the meaningfulness of these identified daily activities. It was decided that participants should write the actual task they were performing over a 24 hour period to avoid restricting their responses to a predetermined category such as domestic chores, home maintenance or leisure. It was also assumed that giving participants the opportunity to list all of their daily activities would generate a larger pool of potential items to include in a subsequent MDA measure. Consequently a Meaningful Daily Activity List (MDAL) was developed and used in this Pilot Study (refer Appendix A5).

The focus of this Pilot Study was:

- To generate a list of daily activities that chronic pain patients performed each day over a seven day period.
- To identify what daily activities were performed the frequency of performing the various activities, how meaningful and how important these activities were to chronic pain patients.
- To gather information about where chronic pain patients spend their day and with who they engage in either health and rehabilitation, work, leisure or care activities.
- The purpose of this study is to identify areas of daily activity that are important or meaningful to chronic pain patients so that items can be developed for inclusion in a Meaningful Daily Activity measure (Study One).

3.2 Method

3.2.1 Participants

A convenience sample of eighteen adult volunteers, aged between 18 and 65 years who agreed to fill in the MDAL daily recording sheet for a period of seven consecutive days was recruited from a physical therapy practice in the western suburbs of Melbourne. The physical therapy practice was multidisciplinary and included physiotherapy, hydrotherapy, and counselling services. There were no other inclusion criteria apart from being aged between 18 and 65 years and having experienced pain for at least six months. Characteristics of the Pilot Study Chronic Pain Participants are summarised in Table 1.

All patients were invited to participate and 18 agreed to complete the recording sheets for one week.

Table 1. Characteristics of the Pilot Study Chronic Pain Participants

Demographic Characteristics	Chronic Pain Sample Source			
		Hydrotherapy (n=6)	Counselling (n=5)	Physiotherapy (n=7)
Gender	Male	4	4	4
	Female	2	1	3
Mean Age years		48.67	39.60	54.00
Marital Status	Married	6	1	6
	Single	0	3	1
	Divorced/ Separated	0	1	0
Employment Status	Full Time	2	5	6
	Part Time	0	0	1
	Unemployed	1	0	0
	WorkCover	3	0	0
Completed MDAL Recording Task	Yes	3 (50%)	0	7 (100%)
	No	3 (50%)	5 (100%)	0

3.2.2 Measure: Meaningful Daily Activity List (MDAL)

The MDAL was used in this Pilot Study. Participants were required to fill out the MDAL for a period of seven consecutive days. The reason for choosing a seven day cycle was to establish cyclic behaviours and activities that participants experienced during a week. While not all of these activities are performed on a weekly basis it is a reasonably representative sample of the most often performed activities.

On the MDAL there were spaces for participants to record 24 sequential daily activities from morning until night. Participants rated each of their sequential daily activities they performed for seven days on the MDAL sheets (1 sheet per day). The MDAL Recording Sheet consisted of 6 columns. These encompassed (1) the time of day, (2) the activity the participant was doing at that time, (3) who, if anyone was with them, (4) where they were doing the activity, (5) how meaningful they found the activity they were performing. In column 5 the participant rated the meaningfulness of their activity on a scale from **0-5**, where **0** is *not meaningful* and **5** *extremely meaningful*. Participants were also asked to rate how important they found the activity that they were performing and the importance of the activity was also rated from **0-5**, with **0** being the *least important* and **5** being *most important*. A copy of the MDAL Recording Sheet may be found in Appendix A5.

3.2.3 Procedure

Ethics approval was obtained from the Human Research Ethics Committee at Victoria University to conduct this research. A copy of this approval may be found in Appendix A 1. Participants were recruited from a multidisciplinary clinical practice consisting of a psychologist and three physiotherapists (conventional physiotherapy, hydrotherapy and manipulative therapy) in Suburban Melbourne. All of the patients (both new and returning) who attended the practice were invited by the receptionist to complete the MDAL for seven consecutive days, and return the completed forms in a sealed envelope, to the receptionist at

the centre. Apart from completing the MDAL there were no other tasks required of the participants. The practice receptionist noted when and to whom the MDAL forms were distributed and also recorded the date that participants returned the MDAL forms. The return rates were variable for the three groups, with 100% of the physiotherapy sample returning forms, 50% of the hydrotherapy sample, and 0% of the counselling participants.

3.3 Results

All of the raw data obtained from the MDAL sheets was entered into a SPSS 18 data base. Frequencies and ratings were calculated for each of the daily activities participants recorded, the meaningfulness of activities, the importance of activities, where participants performed activities, and the persons who were present while activities were performed were also calculated for each of the participants.

3.3.1 Daily Activities Performed by Participants

There were 45 activities identified by those participants who completed the MDAL recording sheets. These items were reduced to 35 activities, as 10 of these items were similar and were combined (refer Appendix A 6). The first 12 sequential daily activities performed are summarised in Table 2. Of the 35 activities identified by participants there were three daily activities that were performed by more than 20% of the participants over a 24 hour period. The three activities in order of frequency of participation in the activity were: (1) Sleeping/resting in bed; (2) Eating a meal; and (3) Watching TV, videos, DVD's. Also one of the meaningful activities identified by the pilot study participants: Taking a family member to appointments or activities was not performed during this seven day sample of recording daily activities.

Table 2. Pilot Study: Participants Performing Sequential Daily Activities 1-12 (N=10)

Activity	Sequential Activities 1 - 12											
	1	2	3	4	5	6	7	8	9	10	11	12
	%	%	%	%	%	%	%	%	%	%	%	%
Asleep/resting/in bed	86.6	3	1.5	1.5	6	6.2	4.9	11	16.4	23.9	17.1	35.5
Attend film/concert /other entertainment							3.1	1.6	1.7			
Attending a religious or spiritual service				1.5	1.5							
Attending a sporting event					1.5	1.5						
Attending hydrotherapy		1.5	1.5		1.5			1.7		2.2		
Attending meetings					1.5	1.5	1.6					3.2
Care for a family member											2.9	
Driving		4.5	17.9	13.4	6	16.9	9.8	13.3	14.5	6.5	2.9	6.5
Eating a meal	3	67.2	10.4	13.4	19.4	16.9	23.0	11.7	21.8	23.9	5.7	16.1
Feed & caring for animals							1.7			8.6		
Gardening				1.5			1.6					
Home repairs/maintenance			3	1.5	1.5							
Housework		1.5	10.4	10.4	4.5	1.5		5	5.5	4.3	8.6	6.5
Paid work and working at home		3	3	16.4	11.9	7.7	6.6	3.3		2.2	2.9	
Preparing a meal	1.5	3	3	3	4.5	6.2	9.8	6.7	9.1	6.5	2.9	6.5
Read		1.5	9		1.5	3.1	6.6			4.3		9.7
Shopping food			1.5	3	3	4.6	3.3	3.3				
Shopping other			3	6	4.5	3.1	3.3	1.7				
Shower/dress	7.5	6	7.5	6			1.6		7.3	4.3	8.6	6.5

Table 2. (continued) Pilot Study: Participants Performing Sequential Daily Activities 1-12 (N=10)

Activity	Sequential Activities 1 - 12											
	1	2	3	4	5	6	7	8	9	10	11	12
	%	%	%	%	%	%	%	%	%	%	%	%
Sitting talking with family member/friend		1.5		1.5			3.3	3.3	1.8	4.3	2.9	3.2
Taking family member activity/appointment*												
Taking/collecting children/grandchildren to activities		4.5	4.5			3.1	4.9	1.7		2.2		
Talking on telephone				1.5						2.2		
Travelling on public transport	1.5		4.5	1.5	3				1.8			
Visit family member				1.5	4.5	4.6	3.3	5				
Visiting doctor			1.5	0	3							
Visiting friend/s						1.5	1.6			2.2	2.9	
Visiting other health professional		0	0	1.5	0	0	1.6	1.7	0	0	0	0
Visiting physiotherapist			1.5	0	1	1.5						
Visiting psychologist					1.5	1.5						
Walk/exercise animals					1.5							
Walking/exercising		3	10.4	4.5	9	4.6	4.9	5	1.8	2.2		
Washing car			1.5									
Watching TV, videos, DVD's			4.5	3	3	3.1	1.6	21.7	18.2	8.7	31.4	6.5
Working on a computer /study				6	3	7.7	4.9	1.7			2.9	
TOTAL	100	100	100	100	100	100	100	100	100	100	100	100

* This activity was not performed by any of the participants in daily activities 1-12

3.3.2 Meaningful Daily Activities Identified by Participants

The most meaningful activities that were identified by all 10 participants as being either *moderately meaningful* (score = 3), *most meaningful* (score = 4) or *extremely meaningful* (score = 5) were: (1) Asleep/resting in bed; (2) Eating a meal; (3) Shower/dress; (4) Sitting talking with family member/friend; (5) Watching TV, videos, DVD's and (6) Visit family members.

Table 3. Meaningful Daily Activities Identified by Participants (N=10)

Activity	Participants	
	(n)	%
Asleep/resting/in bed	10	100
Attend film/concert	4	40
Attending a religious or spiritual service	2	20
Attending a sporting event	3	30
Attending meetings	1	10
Care for a family member	6	60
Doctors	3	30
Driving	6	60
Eating a meal	10	100
Feed & caring for animals	1	10
Gardening	1	10
Housework	8	80
Hydrotherapy	3	30
Other health provider	2	20
Paid work & working at home	6	60
Physiotherapy	5	50

Table 3. Meaningful Daily Activities Identified by Participants (N=10 continued)

Activity	Participants	
	(n)	%
Preparing a meal	8	80
Psychologists	2	20
Read	5	50
Shopping food	5	50
Shopping other	7	70
Shower/dress	10	100
Sitting talking with family member/friend	10	100
Taking a family member to activities/appointments	8	80
Taking/collecting children/grandchildren to activities	6	60
Talking on telephone	1	10
Travelling on public transport	4	40
TV, videos, DVD's	10	100
Visit family member	10	100
Visiting friend/s	6	60
Walk/exercise animals	2	20
Walking/exercising	5	50
Work/study on PC	6	60

3.3.3 Importance of Daily Activities Performed by Participants

For each DA participants rated their five most important daily activities from 1 - 5, where 1 was the most important activity and 5 was the fifth most important activity. These mean importance of activity ratings are summarised in Table 4. The most important daily activities as rated 1 “Most Important” by more than 50% of participants, in descending order of numerical rank were:(1) Sleeping/ resting in bed (n=10); (2) Paid work and working at home (n=8) ; (3) Medical appointments (n=7) and (4) Walk/exercise (n=5).

Table 4. Participants Mean Importance Ratings of Five Sequential Activities (N=10)

Activities	Sequential Daily Activities 1 - 5				
	1* <i>M</i>	2* <i>M</i>	3* <i>M</i>	4* <i>M</i>	5* <i>M</i>
Assisting & spending time with children	3	3	1	1	
Caring for a family member			3	1	
Cooking, domestic cleaning, washing and chores	2	2	6	2	10
Driving a family member	2	1			
Driving family member			1	3	
Driving self				3	2
Eating at home	1	1	10	10	7
Eating outside of home			1	1	2
Gardening	1	4	1		
Going to a sporting event				1	
Going to the movies	1	1	1		
Medical/paramedical appointments	7	1	1	3	1
Paid work & working at home	8	8			1
Playing a sport	1	1			
Reading	1	3	1		1
Shopping for food & household supplies	1	5		1	1
Shopping for other goods			5	1	
Shower & dress	2	5		2	
Sleeping/resting in bed	10	3	8	5	4
Study	3	1			
Taking/collecting grandchildren/children activities			1		
Talking on telephone	1	7	1		1
Visiting children	1	2			
Visiting extended family members	1	2	2		
Visiting friends			1		
Visiting parents	3	3			
Walk/exercise	5	5	5	1	
Walking and caring for pets	2	1			
Walking/caring for pets					2
Watching TV/videos/DVD's	2	1	6	10	3
Working on the computer/study			1		

*Note: Importance of activities possible ratings from 1 to 24 with 1 being most important and 24 being least important.

3.3.4 Location Where Participants Performed Daily Activities

There were 13 locations where participants performed their daily activities. At home indoors; home outdoors; at a family member's home; work or university; outdoors or at a recreation venue; shops and other venues outside of the home; indoor leisure & recreation centres; in the car; at a park/beach or gardens; in a medical/paramedical office; on public transport; at a church or other religious venue. The place where most participants stated they performed their daily activities was at home indoors. For a detailed list of the locations where participants performed sequential activities, refer to Table 5.

Table 5. Locations Where Participants Performed Sequential Daily Activities 1-12 (N=10)

Location of Activity	Sequential Daily Activities 1 - 12											
	A1	A2	A3	A4	A5	A6	A7	A8	A9	A10	A11	A12
	%	%	%	%	%	%	%	%	%	%	%	%
Car		6.0	22.4	11.9	10.4	17.2	9.8	11.7	14.5	8.7	2.9	7.1
Church/other religious venue				1.5	1.5							
Family				1.5	3.0	9.4	4.9	5.0				
Friends						1.6				2.2	2.9	
Home indoors	98.5	85.1	44.8	47.8	35.8	32.8	50.8	61.7	81.8	73.9	82.9	85.7
Home outdoors			6.0	3.0	1.5	4.7	3.3	6.7		2.2	5.7	3.6
Indoor leisure & recreation			4.5		6.0	4.7	4.9	1.7		2.2		3.6
Medical/paramedical office		1.5	3.0	1.5	7.5	1.6	1.6	3.3	1.8	2.2		
Outdoor walking or recreation venue		3.0	4.5	3.0	7.5	4.7	6.6	1.7		2.2		
Park/beach/garden			1.5		1.5		1.6				2.9	
Public transport	1.5		6.0	1.5	3.0				1.8			
Shops & other venues outside of the home			4.5	11.9	4.5	9.4	8.2	5.0		4.3		
Work/university		4.5	3.0	16.4	17.9	14.1	8.2	3.3		2.2	2.9	
TOTAL %	100	100	100	100	100	100	100	100	100	100	100	100

3.3.5 Persons Present While Daily Activities Performed

The person or persons present (if anyone) when a participant performed their daily activities (1-16) was reported to be: partner, parent, child or children, co worker, client, other student/s, friend/s, health professional, a family member, pet/s and alone. Most of the activities listed on the MDAL were performed alone (12 out of 16 daily activities) and four out of 16 daily activities were performed in the presence of a partner. Refer to Table 6 for the % of participants who identified various persons being present during a specific DA.

Table 6. Persons Present During Sequential Meaningful Daily Activities 1-12 (N=10)

	Sequential Daily Activities 1 - 12											
	A1	A2	A3	A4	A5	A6	A7	A8	A9	A10	A11	A12
Persons Present	%	%	%	%	%	%	%	%	%	%	%	%
Alone	19.4	48.5	70.1	67.2	59.7	51.6	38.7	45.0	40.7	27.7	44.4	37.0
Child/children	1.5	6.1	6.0	4.5	1.5	1.6	8.1	15.0	5.6	4.3		11.1
Family member/s	1.5	12.1	3.0	4.5	9.0	14.1	11.3	15.0	29.6	21.3		22.2
Friend		1.5	1.5	3.0	1.5	1.6	4.8			6.4		
Grandchild		1.5		1.5			1.6					
Health professional			4.5	1.5	1.5	1.6	1.6	1.7		4.3		
Mother		1.5			3.0	3.1	4.8	3.3	1.9	2.1		
Other worker/client/student			4.5	10.4	11.9	7.8	6.5					
Partner	77.6	28.8	10.4	7.5	11.9	15.6	21.0	20.0	22.2	34.0	30.6	29.6
Pets						3.1	1.6					
TOTAL %	100	100	100	100	100	100	100	100	100	100	100	100

3.3.6 Scoring and Coding MDAL Items

While the MDAL identified individual activities that were found to be personally meaningful, there were too many activities to include in a global self report measure of MDA.

To reduce the number of items in the MDAL the four categories in the WHYMPI activity subscale (Kerns, et al., 1985) was used to group the daily activities. These WHYMPI activities consisted of: (1) Household Chores, (2) Outdoor Work, (3) Activity Away From Home and (4) Social Activity. A list of the eighteen WHYMPI items may be found in Table 7. Those items that were consistently identified as being meaningful activities, regularly performed by the Pilot Study participants, and did not fit into these categories, for example Passive and Active Leisure and Caring for Self and Others were also listed (refer Table 8).

Table 7. WHYMPI Activity Subscale Items (1-18)

WHYMPI Activity Subscale and Items
<i>1. Household Chores</i>
1. Wash dishes.
5. Go grocery shopping.
9. Help with the house cleaning.
13. Prepare a meal.
17. Do a load of laundry.
<i>2. Outdoor Work</i>
2. Mow the lawn.
6. Work in the garden.
10. Work on the car.
14. Wash the car.
18. Work on a needed house repair.
<i>3. Activity Away from Home</i>
3. Go out to eat.
7. Go to a movie.
11 Take a ride in a car.
15. Take a trip.
<i>4. Social Activity</i>
4. Play cards and other games.
8. Visit friends.
12. Visit relatives.
16. Go to a park or beach.

There was some overlap between WHYMPI categories of activity and the additional categories of activity that were identified on the MDAL sheets. The activities that were identified included the following six broad domains of activity

(1) *Health*: Attending appointments such as doctors, hydrotherapy, physiotherapy, psychologists, doing physical exercise routines prescribed by doctors and physical therapists at home, and taking medication.

(2) *Interacting and Caring for Others*: Feeding & caring for animals, taking a family member to activities and appointments or shopping, sitting talking with a family member or friend and talking on the telephone, walking and exercising animals.

(3) *Leisure (active and passive)*: Hobbies, crafts and making things, walking or exercising, watching TV, videos and DVD's, reading, playing computer games and attending spectator sporting events.

(4) *Self Care*: Eating a meal, showering, and dressing, sleeping, resting or lying down in bed or on a sofa.

(5) *Spirituality*: Attending a religious or spiritual service.

(6) *Work & Structured tasks*: Paid work and working at home, travelling on public transport, attending meetings, working or studying on a PC and shopping for products other than food.

Table 8. Classifying Daily Activities – Yes/No (N = 10)

Pilot Study Activities	WHYMPI (1 – 4)					Additional Items	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Asleep/resting/in bed					Yes		
Attend film/concert			Yes				
Attending a religious or spiritual service			Yes				
Attending a sporting event			Yes				
Attending meetings			Yes				
Care for a family member							Yes
Doctors			Yes				
Driving			Yes				
Eating a meal					Yes		
Feed & caring for animals							Yes
Gardening		Yes					
Housework	Yes						
Hydrotherapy			Yes				
Other health provider			Yes				
Paid work & working at home	Yes		Yes				
Physiotherapy			Yes				
Preparing a meal	Yes						
Psychologists			Yes				
Read					Yes		
Shopping food			Yes				
Shopping other			Yes				
Shower/dress							Yes
Sitting talking with family member/friend				Yes			
Taking a family member to activities/appointments							Yes
Taking/collecting children/grandchildren to activities							Yes
Talking on telephone				Yes			
Travelling on public transport			Yes				
TV, videos, DVD's					Yes		
Visit family member				Yes			
Visiting friend(s)				Yes			
Walk/exercise animals						Yes	
Walking/exercising						Yes	
Work/study on PC					Yes		

Legend:

(1)	WHYMPI Household Chores
(2)	WHYMPI Outdoor Work
(3)	WHYMPI Activity Away from Home
(4)	WHYMPI Social Activity
(5)	Passive Leisure
(6)	Active Leisure
(7)	Caring for Self and Others

The aim of the Pilot Study was achieved. A List of Meaningful Daily Activities (MDAL) was generated. The MDAL identified what daily activities a clinical pain population performed over a seven day period, how important and how meaningful each of the activities was, and how frequently the activities were performed.

The activities that participants rated as being most *meaningful* were: visiting family members, self care, eating and sleeping/resting, talking with family members or friends and passive leisure activities such as watching TV and DVD's. While the most *important* activities identified by participants were attending medical appointments, paid work and work at home and exercise. Participants (n=10) reported that the most *frequently* performed daily activities were sleeping/resting; eating a meal; passive leisure; housework or paid work and driving. Some of the activities that participants identified as being important, or meaningful, were not undertaken during the Pilot Study (7 days).

For example participants reported activities such as visiting family members, and exercise, as being important to them, although they did not report that they did these activities on any of the seven days of the Pilot Study observation. Two activities that were reported as being both frequently performed and meaningful were eating a meal at home and sleeping/resting. Other important activities were paid work and work at home (n= 8), attending medical appointments (n= 7), and talking on the telephone (n= 7).

3.4 Discussion

The findings of this Pilot Study, would suggest that there is a difference between those daily activities that participants identified as being meaningful; and activities that were reported to be important. For example, ranking the importance of an activity that had been rated as *extremely meaningful* by the participant was not equally weighted for importance, and meaningfulness. A participant, who rated a specific activity as being *extremely meaningful*, may not have rated this activity as being important, for example attending a

religious or spiritual service. This is relatively consistent with spiritual explanations of the meaning of and in life (Gold & Mansager, 2000; Reker, et al., 1987; Slife, Hope, & Nebeker, 1999).

However, it cannot be established exactly what “meaningful” meant for each of the CPP in this sample because CPP who participated in the study were not asked to define “meaning”, “meaningfulness” or “meaning in life”, nor were they provided with a prescriptive definition of these terms.

There was an apparent discrepancy between the frequency of performing an activity, the importance of this activity, and the meaningfulness of the activity. For the participants in this Pilot Study the frequency of participating in DA was not reflected in rankings of “importance”, or “meaningfulness” of that task.

Therefore, meaningfulness did appear to be tapping another dimension of human DA that was not explained in terms of the importance of the activity, or the frequency of performing that activity. This finding was consistent with the original clinical observation that prompted this research project.

3.4.1 Pilot Study Participants’ Feedback

For some participants the MDAL did not appear to be a valid way of assessing DA. Participants stated that the MDAL was not adequate in that it did not allow them to record their mood or sense of wellbeing, in relation to the activity that they were performing. It was also stated by some participants who experienced CP that “pain stops me from doing things” and “I don’t do things because of the pain”. The concept of meaningfulness was also found to be very depressing for three of the CPP, as they stated that they “did not do anything meaningful any more”.

Participants found it confusing when they were asked to rate the meaningfulness of a particular DA, because meaningfulness was a difficult concept to grasp. Participants did not

find it necessary to rank normal functions such as eating, sleeping, personal care, domestic chores, and other menial or less desirable tasks on a meaningfulness scale. This resulted in quite a significant number of missing items in the participants' responses to "How meaningful was this activity to you?" As the purpose of the MDAL was to identify meaningful daily activities, this was a major concern and required a comprehensive review of the format, wording and coding of responses to a measure of MDA.

It was also noted that there were significant formatting problems with the MDAL. Firstly, there was insufficient space on the MDAL for some of the CPP to record some of the responses or comments they felt were important. These additional responses, included details such as when they took their medication in relation to the activities they were performing, and the severity of their pain while performing the activity. Another difficulty for participants was that one-hour time units did not provide adequate space for recording the activities of some participants who were currently working, or performing a wide variety of tasks over the course of the day.

From the verbal feedback provided by the participants (personal communication) other items such as taking medicine, hugging and intimacy were also found to be meaningful activities, although they were not listed by any of the ten participants who completed the research task on the MDAL sheets. There was a particular need expressed by CP participants for them to report information about the type and dosage of medications taken. Pain, depression or anxiety medication, was also reported as being important for over 50% of the ten participants who completed the MDAL.

3.4.2 Methodological Limitations of Pilot Study

There were a number of methodological problems that were associated with the Pilot Study, particularly in relation to data collection and the coding of the MDAL recording sheets, interpretation and obtaining a reliable global measure of MDA.

Sample size and participants characteristics

The sample size was small and would somewhat limit the reliability of the results obtained without deferring to the published literature in the field. Of the eighteen sets of MDAL forms distributed, ten were completed and returned, a response rate of 55.5%. Of the eight participants who did not complete the written task three patients had terminated treatment, two cancelled their appointments and did not reschedule appointments, two decided they could not “be bothered” performing the task, as they considered the task “too time consuming and difficult”, and one participant was unable to perform the written tasks required in the MDAL. Given that the sample was recruited from three clinical populations, consisting of persons who suffered from psychological distress (counselling), chronic pain (hydrotherapy), or acute pain (physiotherapy) the response rate was relatively consistent with response rates in similar samples.

There was a marked difference between the return rates of the research forms. There was a 100% non response rate in the counselling cohort completed the recording task. Half of the CP sample completed the MDAL forms and the entire acute pain sample (N=7) completed the required research task. While these results are far from satisfactory in the counselling group, both of the other groups are fair (Monette, Sullivan, & DeJong). These variations in the response rates were relatively consistent with expected behaviours of the persons in each of the clinical samples. For example, it was not surprising that persons in the physiotherapy sample, who had experienced acute pain, all worked either full time, or part time, (4 males and 3 females, *M* age 54 years), and six of the seven persons were in a relationship, completed the recording task and returned the forms. These persons had not experienced any long term interruption to their lives, and they were not faced with significant changes that resulted from an injury or pain condition, of a long duration. While in the second group consisting of hydrotherapy patients (4 males, 3 females, *M* age 48.7 years), all of the

patients were married, three persons were on WorkCover income replacement, one person was unemployed, and two persons were working full time (Boersma & Linton, 2005; Ciccone & Just, 2001). The 50% response rate of these hydrotherapy patients is relatively high, because there may have been some issues regarding low mood, and other stressors, such as: WorkCover processes, litigation, and financial problems because of their work status, and reduced income that would have caused them to be less keen to participate in a study (Jackson, et al., 1996).

Counselling patients (4 males, 3 females, *M* age 39.6 years) were all working full time, three persons were single, one divorced and one person was married. The 100% non return rate of this group is somewhat indicative of their clinical status. For example, counselling patients were made up of men and women who were suffering from either, anxiety or depression, or were seeking assistance for a life stage transition or crisis (Drummond, 2003). Consistent with the research literature regarding clinical mood disorders, these persons would not necessarily be either sufficiently motivated, or able, to concentrate on a research task that required them to record the activities they performed for seven days (Farber, Berano, & Capobianco, 2004).

The representativeness of the sample was limited, as those participants who chose not to complete the research task may have identified more or less activities as being meaningful to them or that they frequently performed those activities. Also demographic variables that may have had an impact on the activities performed such as the participants level of education, marital status, general health status, and whether or not they were employed or had suffered a work related injury for which they were receiving compensation, or if they were currently involved in litigation was not collected.

Coding MDAL

The coding of the MDAL was very complex, particularly how to categorize each of the daily activities and generate a numeric score for the frequency of performing an activity. This problem of generating a numeric value was also an issue when coding the location of the activity, the persons present while performing that activity, the importance of the activity and the subjective meaningfulness of the activity to the participant.

This coding issue was a design problem. The risk of limiting the range of activities that could be identified was that it may result in obscuring some of the information about meaningful activities that would enhance the researchers understanding of meaningful activity. However, the degree of openness of the MDAL caused a significant problem in interpretation of the measure. How to categorize each activity and generate a numeric score for the global rating of the meaningfulness was not resolved. The open ended format of the MDAL was not conducive to a numerical coding system. This was further compounded by the fact that the participants had seven separate MDAL sheets for the week, and they were required to rate each of their sequential daily activities which some participants found laborious.. The measure was over ambitious in attempting to devise a numerical score of MDA that also identified (1) the time, location and type of activity engaged in; (2) who else participated in the activity; (3) how meaningful the activity was considered to be to the patient and (4) which daily activities were performed more frequently by the patient.

There was also some inconsistency in the participants' recording of DA. For example, some participants did not record an activity or rate the meaningfulness of that activity. Also participants reported that they rated the same activity as being more or less meaningful according to the time of day; who they were with; where they were; and how they felt generally, particularly in relation to when they had taken medication.

It became apparent that the current measure was not suitable for the purposes of this research study. In fact the data collected was more closely aligned with the material that would be collected in a qualitative study of MDA. The task of coding activities was more like identifying common themes, rather than determining a numerical rating. This phase of the research while being particularly frustrating, did give the researcher a very healthy regard for those researchers who use qualitative research techniques.

In addition, several compliance problems were identified at this stage. These included the reluctance of participants to complete a seven day cycle of responses, the reported exacerbation of depression and anxiety as a result of focusing of meaningful activities over a seven day period and a preoccupation of participants with their general pain symptomatology.

3.4.3 Theoretical Limitations of Pilot Study

There has been very little research conducted about MDA of persons who are aged between 25 and 65 years and who are employed. The literature has tended to explore meaning and meaningfulness within a phenomenological or existential framework rather than as a cognitive or behavioural life domain. As a consequence of this theoretical and research focus, there was no definitive definition of “meaningful daily activity” located in the research literature prior to conducting the Pilot Study with CPP. This inability to find a suitable definition to provide for CPP was a methodological limitation, in that the CPP were not given a clear explanation and examples of what meaningful activity is. The definitions of meaning that were located were either general definitions of meaning, meaning as related to specific clinical populations such as persons with mental illnesses (Kirk, 1984), pertaining to the construction of meaning in life (Bonarius, 1971; De Vogler & Ebersole, 1981; Debats & Drost, 1995), or the meaningfulness of life for terminally ill or elderly persons (Martson, 2001; Moore, 1997). None of these definitions of the construct of meaningful or meaningfulness was appropriate for CPP to identify their “meaningful daily activity”

(Isaacson & Landfield, 1965). Therefore definitions of “meaningful” or “meaningfulness” were not provided to patients because they did not clearly articulate “meaningful daily activity”.

Meaningful activity

Researchers have identified MDA as *productive life pursuits* for various populations considered to be in need of purposeful activity, such as the unemployed (Ball & Orford, 2002; Feather & Bond, 1983; Walker, 2006), to aid in physical rehabilitation (Dolecheck & Schkade, 1999) or to enhance psychological health (Compton, 2000; Moomal, 1999; Zika & Chamberlain, 1992). Also there is some evidence regarding the efficacy of activity for persons who suffer from Alzheimer’s disease, dementia, or post stroke impaired cognitive and physical functioning (Gori, Pientini, & Vespa, 2001; Holbrook & Skilbeck, 1983; Marshall & Hutchinson, 2001).

Another focus of meaningful activity research has been on the existential meaning of life or meaning in life (Langle, 2005). Much of this literature on meaningful activity has been confined to elderly populations (Bar-Tur & Prager, 1996; Hellen, 2000). There is however, very little information on the reported meaningful activities of adults who are aged between 25 and 65 years in the workforce.

Meaningful activity identified by participants in this Pilot Study would appear to be strongly associated with interpersonal contact, self care and health maintenance and passive recreation. This finding is somewhat consistent with previous research, that has identified meaning is uniquely constructed and individuals create their meaning according to personal, cultural, financial and interpersonal factors (Battista & Almond, 1973; De Vogler & Ebersole, 1981; Debats & Drost, 1995; Frankl, 1959/1963/1984; Heiland, et al., 2002).

Predominantly meaningfulness research has focused on mental and physical rehabilitation in the care of the elderly or disabled and persons who are terminally ill (Links

& Frydenberg, 1988; Pettipher & Mansell, 1993; Scheid & Anderson, 1995). The overall construct of meaningfulness in this research area is best interpreted as an intrinsic reward, such as personal pleasure, or satisfaction with an activity as personally defined by that individual (Christiansen, 2000; McGregor & Little, 1998). Meaningful activity cannot be seen as exclusively being measured in terms of the extrinsic hedonistic benefits of participating in a prescribed activity, or functionality, but rather how much meaning that person ascribes to the activity, and the intrinsic worth of that activity to them (Isaacson & Landfield, 1965; Narens, 2002; Ryan & Deci, 2001; Shantall, 1999).

The meaningfulness of an activity is further defined by personal variables such as culture and religion, age, health and work status (Ball & Orford, 2002; Gardner & Taylor, 1968; D. R. May, et al., 2004). This variation in the meaningfulness of an activity according to personal variables was not purposefully examined, however it was observed that persons who were not at work spent more time at home, alone indoors, participating in passive leisure activities such as watching TV. These activities were also rated as being not meaningful. The activities that the non working participants (males and females) found to be most meaningful in their daily activities were self care, such as showering and dressing, visiting medical or paramedical appointments or taking medication. Also female participants varied in their ratings of meaningful activities.

For example, females rated caring for others, housework, cooking, shopping and attending a religious service as being normal activities over the course of a week and they also identified these activities as being moderately to extremely meaningful. In contrast to this, male participants did not identify these tasks as being performed regularly. Only one single male in the sample identified cooking, cleaning and shopping as tasks he performed and also rated these tasks as being moderately meaningful. There appears to be a gender bias in the items which is relatively consistent with the clinical population that the WHYMPI was

developed for, male veterans with CP in the United States of America. The additional items that may have had a gender bias were items related to caring and performing domestic roles, most often performed by females.

3.4.4 Contribution of Pilot Study to Previous Meaningfulness Research

The previous research into the meaningfulness of life or meaning in life has often focused on older persons (Prager, 1997a), or tended to have an existential (Bering, 2003; Langle, 2005) or phenomenological theoretical approach (Moss, 1992; Schutz, 1972). Predominantly the activities that were found to be meaningful for older persons were spirituality and prayer (Martson, 2001; Wong, 1998c). However those persons who had a psychiatric disorder, physical disability, cognitive impairment or disability found structured tasks, purposeful activity, and interpersonal contact (social support) to be most meaningful (Alpar, Onuoha, Killampalli, & Waters, 2002; Aubin, Hachey, & Mercier, 1999; Baker, et al., 2005; Clarke, et al., 2005; Phinney, Chaudhury, & O'Connor, 2007).

In the current Pilot Study, two participants from the physiotherapy sample identified going to a religious service as being meaningful. The reported Australian religious affiliation rate for that period was 74% persons over 18 years, of these persons 23% reported participating in a church or religious activity in the previous three months (Australian Bureau of Statistics, 2001b). The Pilot Study reported participation in religious activity was 20%, and is broadly representative of the Australian population. Both of the persons who reported attending a religious service were female and over 55 years of age. This is also consistent with the Australian Bureau of Statistics data, where it is stated that women were more likely to be affiliated with a religion than men of the same age were.

To compare religious activity of the Pilot Study participants with the majority of research about spirituality and the meaning of participation in religion, is somewhat difficult, as the majority of the cohorts that were recruited for research purposes were persons who

were older than 65 years. In the current sample this is above the age criterion of 25 to 65 years.

There is also some support for the premise that women are most often responsible for domestic chores and caring tasks. In the current Pilot Study gender appears to be an issue in determining what activities are found to be meaningful and who performs domestic and caring tasks in a married or de facto relationship, regardless of the employment status of the partners.

Also work status and health status would appear to influence the range of activities performed and perceived meaningfulness of daily activities of this sample. This finding is also consistent with previous research, identifying the meaning or significance of work and the psychological benefits that are associated with this life activity. A person's health status causes them to value tasks and purposes in life that would possibly not be equally valued by a younger person, a person in good health, or a person whose financial resources allowed them more assistance in their daily functioning, better access to health services and medications.

Another area of interest that was consistent with previous research was the amount of time over the course of the day that is spent in solitary, sedentary or passive activities. This finding is a current health concern of the Australian Government and has been addressed in public awareness campaigns to increase physical activity, in an effort to reduce the prevalence rates of cardiovascular disease, diabetes, arthritis, and depression.

3.5 Pilot Study Summary

The MDAL was not a reliable and valid measure of meaningful daily activity. The effectiveness of the MDAL for use in research was considered, and the measure was found to be unsuitable for the current research project. The measure would need to be substantially modified if MDAL was recommended to test the research model.

The Pilot Study was conducted to discover what daily activities participants found most meaningful. This aim was achieved and a List of 33 Daily Activities by a clinical population performed over a seven-day period was generated. These daily activities along with the feedback from participants regarding additional meaningful daily activities will be used in the next study (Study One) to develop items for a reliable and valid global measure of MDA.

Apart from including the items identified as being meaningful by the Pilot Study participants and identified in the leisure and health outcome literature reviewed, a measure of meaningful activity should also be less demanding than the MDAL. The reading age of the measure should be approximately grade seven (12 years old), and would be able to be coded in a standardized form (Reckase, 1996; Streiner, 2003). Questions should be unambiguous and the material being elicited from participants should not be too contentious (Kline, 1986; Madson, 2005; Solano-Flores, 1993). Minimizing the risk of participants experiencing exacerbated symptomatology is also an important consideration when developing a measure. These criteria were set so as not to overtax the CPP who will complete the measures in the research study (Chapman, Byas-Smith, & Reed, 2002).

CHAPTER FOUR: STUDY ONE: PSYCHOMETRIC PROPERTIES OF MEANINGFUL DAILY ACTIVITY MEASURES

4.1 Introduction and Aims

Having identified the absence of a suitable measure, the MDAQ was designed. Consisting of a range of activities including: Household Chores, Outdoor Work, Activities away from Home, Social Activity, Passive Leisure, Active Leisure and Caring for Self and Others. The MDAL Pilot Study findings concluded that while some activities may be performed frequently, these activities were not necessarily either meaningful or important to an individual. This finding would appear to support the premise that MDA may be a separate construct to DA and they are worthy of investigating as two discrete variables. Daily activity pertains to the frequency of performing activities and the meaningfulness that is personally attributed to a specific activity.

The following thesis chapter reports on the results obtained from the 234 participants who completed the MDAQ and the DAQ. The psychometric properties, including the factor composition, reliability, and validity for the MDAQ and DAQ, and Australian, adult, male and female norms were calculated. The revised measures: MDAQ-R and DAQ-R generated in this study were then used in a further study to test the proposed research model.

Having identified the criteria for a measure of Meaningful Daily Activity (MDAQ) that was separate to a measure of Daily Activity (DAQ) two parallel measures were developed. In developing the measures, consideration was given to the following criteria identified in the Pilot Study. The activities that were found to be most meaningful by CPP were related to self care and health maintenance, interacting with others and passive leisure. Pilot Study participants did not identify physical activity not directly related to rehabilitation as being either important or meaningful. The psychopathology, health psychology, and health outcome research literature, supports the Pilot Study findings and emphasises the need for individuals

to participate in a range of activities, to maintain their physical, vocational, social and emotional functioning (American Psychiatric Association, 1994; Baum & Posluszny, 1999; Garrat, Ruta, Abdalla, Buckingham, & Russell, 1993; Guyatt & Cook, 1994; H. Leventhal & Colman, 1997). Spirituality was also identified by participants as a meaningful activity, and confirmed by research as related to health status (Kim, Heinemann, Bode, Sliwa, & King, 2000; M. King, Speck, & Thomas, 1999), as well as the implications of the demonstrated physical and emotional health benefits of structured or purposeful activity (E. Harris, et al., 1998; Trombly, 1995; Winefield, et al., 1992). This structured activity is most often described as being paid employment, volunteer work, caring for others, hobbies, participation in sports or clubs and both passive and active leisure (Dubin, 1992; Feather & Bond, 1983; Jackson, et al., 1996; Patterson, 1997; Stebbins, 1996; Tinsley & Eldredge, 1995). Copies of the MDAQ and DAQ are provided in Appendices B 4 and B 5.

4.2 Aims of Study

1. To develop two reliable and valid self report global measures:
 - (a) One measure to assess the meaningfulness of various daily activities (MDAQ).and
 - (b) The other measure to assess the frequency of performing a variety of daily activities (DAQ).
2. To investigate factors (subscales) and items for inclusion in revised versions of the measures.
3. Generate norms for the MDAQ and the DAQ.

4.3 Method

4.3.1. Design

This psychometric study of the MDAQ and the DAQ was a cross-sectional study of a convenience sample of Australian adults. The number and type of participants recruited was in accordance with the requirements of conducting an exploratory factor analysis in psychological research. The ratio of participants required per variable has been suggested to vary from 1:5 to 1:10 (Fabrigar, Wegener, MacCallum, & Strahan, 1999). In the current study there are 32 items and 234 participants were recruited, a ratio of 1:7. As a general guideline, it is considered that when conducting a factor analysis a sample size of 100 is poor, 200 fair and 300 good. It is also important that the sample be representative of the population so as not to be overly homogenous (MacCallum, Widaman, Zhang, & Hong, 1999). The sample selected for this study was representative of a non clinical community sample of Australian adults.

4.3.2 Study One Participants

This sample was a purposeful convenience sample recruited from Suburban Melbourne residents. A range of occupational groups that were identified as being relatively representative of the Australian urban population were identified by the researcher from Australian Bureau of Statistics Industry Sector Employment Data. The targeted industries included education, health, emergency services, construction, manufacturing, transport, building, banking and finance, communications, fitness, retail, service and hospitality. Industries such as agricultural or farming, and mining or forestry were not included as Melbourne does not have these industries in the suburban Melbourne.

The researcher identified employers in the various sectors in the Western, Northern and South Eastern Suburbs of Melbourne and both individual employers and employees from the

various industries were approached by the researcher. In some instances snowball sampling occurred where an employer or employee in a specific industry sector recruited other workers in their industry.

This method of recruitment was used rather than obtaining all of the participants from one occupational group such as tertiary education: university students, administrative staff and academics, because it was anticipated that it was only representative of one employment sector and could not be seen as being representative of the broader Australian community.

Two hundred and sixty four participants, 119 males (45.1%) and 145 females (54.9%) aged between 19 and 78 years completed questionnaires. Each participant returned the completed measures by prepaid post to the researcher, at the Victoria University, School of Psychology. Thirty cases (11.36%) were excluded for either not meeting the age research criteria or not completing the research measures. Participants ($N=234$) retained included 107 (45.7%) males and 127 (54.3%) females. The mean age of female participants was 44.1 years ($SD=10.6$) and for male participants was 44.6 years ($SD = 10.6$).

Table 9. Participant Demographic Characteristics

Demographic Variable		Frequency (N= 234)	Percent
Gender	male	107	45.7
	female	127	54.3
Level of Education	primary	4	1.7
	up to & including year 11	101	43.2
	trade/TAFE	52	22.2
	degree	29	12.4
	post graduate	48	20.5
Employment Status	full time	148	64.1
	part time	46	19.9
	casual	21	9.1
	other income replacement	10	4.3
	retired	6	2.6
Marital Status	married	140	59.8
	de facto	19	8.1
	separated	32	13.7
	widowed	1	.4
	single	42	17.9
Children	yes	161	68.8
	no	73	31.2
Malignancy	yes	3	1.3
	no	225	98.7

Table 9. (Continued) Participant Demographic Characteristics

Demographic Variable	yes/no	Frequency	Percent
Multiple Physical Disabilities	yes	7	3.1
	no	220	96.9
Diabetes	yes	6	2.7
	no	220	97.3
Psychiatric Illness	yes	11	4.9
	no	215	95.1
Additional Health Problems	yes	73	31.7
	no	157	68.3
Take medication	yes	63	27.2
	no	169	72.8
Work Injury	yes	52	22.7
	no	177	77.3
Motor Accident	yes	29	12.6
	no	202	87.4
Litigating	yes	3	1.3
	no	231	98.70
Observed Religion	yes	103	46.2
	no	120	53.8

4.3.3 Measures

The MDAQ and DAQ included a range of daily activities that the general population would be likely to perform on a regular basis. The same 32 items were included in both the MDAQ and the DAQ however the instructions were not the same. A copy of the MDAQ and the DAQ may be found in Appendices B 5 and B 6.

With the authors' permission via email (refer to Appendix B 3), the four activity scales (18 items) of the West Haven Yale Multidimensional Pain Inventory (WHYMPI) were included in the MDAQ and the DAQ. The authors of the activity scales of the WHYMPI reported that the measure consisted of (i) Household chores (5 items, α .86), (ii) Outdoor Work (5 items, α .77), (iii) Activities Away from Home (4 items, α .70), and (iv) Social Activities (4 items, α .74). In the MDAQ and the DAQ these items (1-18) were presented in the original sequence of the 1985 version of the WHYMPI (Kerns, et al., 1985). Refer to Table 7 for a full list of the WHYMPI Activity Subscale items.

Fourteen additional items were added to the 18 WHYMPI items. These additional items, were included as a result of the literature reviewed (Bond, et al., 1995; Bond, Harris, Smith, & Clark, 1992; Debats, et al., 1993; Dubin, 1992), and the findings of the Pilot Study. The additional items that were incorporated into the MDAQ were rated as being meaningful by the Pilot Study participants and encompassed activities that were related to:

Work (Jackson, et al., 1996; Scheid & Anderson, 1995; Trombly, 1995);

Health (Fife, 1995; Lukas, 1998);

Passive and active leisure (Argyle & Lu, 1992; Patterson, 1997; Stebbins, 1992, 1996; Tinsley & Eldredge, 1995);

Interpersonal contact and caring for others (Farran & Kuhn, 1998);

Intimacy (Monga, Tan, Ostermann, Monga, & Grabois, 1998) and

The observance of a religion (Chamberlain & Zika, 1988b; Frankl, 1959/1963/1984, 1986, 1992, 2000; Slife, et al., 1999).

Meaningful Daily Activity Questionnaire (MDAQ)

Content and face validity was established by obtaining feedback from 10 peers who were either academics teaching psychology (n=3), PhD students in psychology (n=3), or

allied health professionals (psychologists and physical therapists, n=4) who were currently in clinical practice treating CPP. Peer review confirmed face validity in that the measure included activities that were often important in the lives of CPP and would be appropriate to administer to a CP cohort. The reviewers also reported that the MDAQ was clear, concise and did measure MDA. Additional items were recommended relating to medication; treatment and work were also included. Also from the advice of these reviewers the reading age of the MDAQ was considered. The Microsoft Word reading age was calculated and the Flesch-Kincaid Grade level reading age of the e MDAQ was grade 6.8 and the reading ease was 56.2%.

The MDAQ had the following instructions: “Listed below are 32 common daily activities. Please indicate how meaningful you currently find each of these activities by placing a number from **0** to **6** in the corresponding question box for each activity”.

The method of scoring for the MDAQ questionnaire was based on the seven point (0-6) Likert scale scoring method used in the WHYMPI. However on the MDAQ respondents were asked to indicate how meaningful each activity (item) was rather than how often they performed the activity. A rating of **0** indicated that the respondent found the activity to be *not at all meaningful* and a rating of **6** indicated that they perceived the activity to be *extremely meaningful*. For each item there was a possible score ranging from 0 to 6. The sum of the 32 item scores obtained on the MDAQ provides an overall global measure of the meaningfulness of 32 daily activities, with possible total scores ranging from 0 to 192.

Daily Activity Questionnaire (DAQ)

The DAQ instructions to participants were: “Listed below are some common daily activities. Please indicate *how often* you do each of these activities by placing a number from **0** to **6** in the corresponding question box for each activity”. The method of scoring for the DAQ was also based on the seven point (0-6) Likert scale scoring method used in the

WHYMPI. Each of the DAQ items was rated from **0** to **6**. A rating of **0** indicated that the respondent *never* participated in the activity and a rating of **6** identified that the respondent performed this activity *very often*. The sum of the scores obtained on the DAQ provides an overall global measure of the frequency of performing 32 daily activities. For each of the DAQ items there was a possible score ranging from 0 to 6. The sum of the DAQ item scores obtained an overall global measure of the respondents' participation in 32 daily activities, with possible total scores ranging from 0 to 192.

Likert Scale Satisfaction with Life (SWL) and Meaningfulness of Daily Activities (MDA)

Two additional Likert scales were included in the Participant Information Survey, one measuring the participants Satisfaction with Life (SWL) and the other measuring Meaningfulness of Daily Activities (MDA) (see Appendix B6).

The Satisfaction with Life item was "Overall how satisfied are you with your life?" Responses to this item were scored on a seven point visual analogue scale, from **0** to **6**, where **0** indicated that the participant was "not at all satisfied with life" and a score of **6** indicated that the participant was "extremely satisfied with their life".

The Meaningfulness of Daily Activities (MDA) item was "Overall how meaningful are your daily activities?" Responses to this item were scored on a seven point visual analogue scale, from **0** to **6**, where **0** indicated that the participant found that their daily activities were "not at all meaningful" and a score of **6** indicated that the participant found their daily activities to be "extremely meaningful".

4.3.4 Procedures

Ethics approval was obtained from the Victoria University, Faculty of Arts, Human Research Ethics Committee (See Appendix A 1). The criteria for participants' inclusion in

this study were that men and women should be aged between 25 and 65 years of age and not suffer from a severe psychiatric disorder or a terminal illness.

Participants were recruited from February to August 2000 in metropolitan suburbs of Melbourne, Victoria. Research envelopes containing two questionnaires, a participant information sheet, consent form and a reply paid envelope were distributed to participants, by the receptionists/administrators of selected departments at two Melbourne hospitals, Victoria University TAFE, a manufacturing company, two large building sites and two physiotherapy practices. Members of the community also recruited participants from administrative and clerical staff at Victoria University, four metropolitan schools (primary and secondary teachers), hospitality workers, health and fitness workers and Victoria Police. Each participant completed a demographic survey, the MDAQ and the DAQ measures and returned them to the researcher at Victoria University in a reply paid envelope. In total, 446 questionnaires were distributed to potential participants. Two hundred and sixty four participants returned the measures. This is equivalent to a response rate of 59.2%.

4.4 Results

4.4.1 MDAQ Reliability and Validity

After checking the data for any outliers, the internal consistency of the MDAQ was examined, using Cronbach's α . The α coefficient for the 32 item MDAQ was $\alpha = 0.86$. Test-retest reliability was not calculated at this time. These results confirmed that the 32 item MDAQ was a reliable measure (Clark-Carter, 1997; Streiner & Norman, 1995). The global MDA score for the MDAQ was $M=101.92$, $SD\ 25.9$. Summary descriptive statistics for the 32 item MDAQ are presented in Appendix B 7.

4.4.2 MDAQ Exploratory Factor Analysis

Prior to performing the exploratory factor analysis (FA) on the MDAQ data, the underlying assumptions to be met for the appropriateness of using a factorial analysis were considered (Coakes, Steed, & Dzidic, 2006). There was a minimum of five subjects per variable ($32 \times 5 = 160$), of the 234 participants recruited, there were 169 valid cases listwise on the MDAQ, satisfying the sample size criteria. While there is some controversy regarding adequate sample size for a factor analysis, the ratios of participants to items varies from 1:5 to 1:10, and some authors suggest that 200-300 participants would be the ideal. On the visual inspection of individual histograms for each of the 32 MDAQ items, scores appeared to be normally distributed, with the possible exception of Item 1 Wash the dishes (M 2.10, SD 2.02).

In addition some of the MDAQ items were slightly skewed in either a positive or a negative direction. MDAQ items that were skewed in a positive direction were item 3 Go out to eat (M 3.97, SD 1.53), 8 Visit friends (M 4.55, SD 1.47), 12 Visit relatives (M 4.36, SD 1.54), 15 Take a trip (M 4.60, SD 1.43), 16 Go to the park or beach (M 4.20, SD 1.74), 21 Go to the doctor (M 4.94, SD 1.54), 22 Take medication (M 2.58, SD 2.01), 24 Hobbies, crafts or making things (M 4.30, SD 1.91), 26 Hugging and cuddling (M 4.31, SD 1.53), 27 Sexual activity (M 4.5, SD 1.74), 29 Attending a religious or spiritual service (M 4.34, SD 1.71) and 32 Offering support to a friend or family member (M 4.82, SD 1.55). The negatively skewed items were 2 Mow the lawn (M 1.66, SD 1.93), 10 Work on the car (M 1.24, SD 1.65), 14 Wash the car (M 1.70, SD 1.86), and item 25 Watching TV, listening to music or the radio, reading or relaxing (M 1.87, SD 1.93).

There were items correlated with each other .3 and above on the correlation matrix and the presence of linearity between the variables was satisfied (refer to Appendix B8 and B14). Outliers were not present that may have caused any problems with the analysis.

Multicollinearity and singularity were not considered at this juncture as these criteria were not essential to a Principal Component Analysis (PCA) method of factor analysis.

A principal component factor analysis with varimax rotation was performed on all of the 32 items of the MDAQ (Refer to Appendices B 9 to B 11). Cases were excluded list wise if there was missing data. The number of factors that were selected for extraction in SPSS version 10 was four. Four factors were selected because there were four factors in the WHYMPI. Olkin measure of sampling adequacy was .81 and the Bartlett's Test of Sphericity significance was $p > .000$. The four factors had eigenvalues greater than 1, and items had factor loadings of greater than .40. The SPSS scree plot generated from this PCA calculation also identified four principal components with eigenvalues greater than 1 (Refer to Appendix B 11). The four factors accounted for 48.4% of the variance (Refer to Table 11).

Table 10. Rotated Component Matrix MDAQ Factors

Rotated Component Matrix(a)				
MDAQ Item	Component			
	1	2	3	4
29. Care for a friend	0.86			
23. Care for a family member	0.80			
32. Offer support to a friend or family member	0.79			
12. Visit relatives	0.70			
30. Work outside of the home in non paid employment	0.56			
21. Hugging and cuddling	0.53			
28. Attend a religious or spiritual service.	0.49			
9. Help with the house cleaning		0.81		
17. Do a load of laundry		0.81		
1. Wash dishes		0.75		
5. Go grocery shopping		0.68		
13. Prepare a meal		0.68		
24. Work in paid employment		0.43		
3. Go out to eat			0.73	
16. Go to a park or beach.			0.61	
8. Visit friends	0.52		0.56	
7. Go to a movie			0.56	
15. Take a trip			0.53	
4. Play cards or other games			0.50	
11. Take a ride in a car			0.49	
20. Hobbies, crafts or making things			0.48	
26. Watching TV, listening to music or the radio, reading or relaxing			0.46	
27. Sexual activity			0.44	
6. Work in the garden			0.43	
19. Go to the doctors				0.69
31. Take medication				0.68
25. Attend medical appointments other than doctors				0.65
10. Work on the car				0.63
2. Mow the lawn				0.56
14. Wash the car		0.46		0.55
18. Work on a needed house repair				0.55
22. Attend meetings not related to paid work.				0.37

These four factors were: Factor 1 Support, Caring and Interpersonal Relationships 13.35% of the variance, Factor 2 Structured Tasks 12.76% of the variance, Factor 3 Sensory and Leisure Activities 11.33% of the variance and Factor 4 Home Maintenance and Health Care accounted for 10.94% of the variance.

Table 11. Total Variance Explained by Four MDAQ Factors

Factor	Rotation Sums of Squared Loadings		
	Eigenvalue	% of Variance	Cumulative %
1. Support, Caring & Interpersonal Relationships	4.27	13.35	13.35
2. Structured Tasks	4.08	12.76	26.11
3. Sensory & Leisure Activities	3.63	11.33	37.44
4. Home Maintenance and Health Care	3.50	10.94	48.38

4.4.3 Revised MDAQ-R Item Composition

MDAQ item 22, Attend meetings not related to paid work, did not load $> .40$ on the factor solution of the MDAQ and was omitted from the revised measure. MDAQ items 8 Visit friends and item 14 Wash the car had loadings of $> .40$ on two separate factors, and were deleted from the MDAQ-R (Streiner, 2003). Twenty-nine items were retained and included in the revised version of the MDAQ-R to be used in a further study to test the research model. Details of the item composition of the MDAQ-R factors are presented in Table 12.

Table 12. Item Composition of the Revised 29 Item MDAQ -R

MDAQ-R Factor	Item	Factor Loading
Factor 1		
<i>Support, Caring & Interpersonal Relationships</i>	12. Visit relatives	.70
	21. Hugging and cuddling	..53
	23. Care for a family member	.80
	28. Attend a religious or spiritual service	.50
	29. Care for a friend	.86
	30. Work outside of the home in non paid employment	.56
	32. Offer support to a friend or family member	.79
Factor 2		
<i>Structured Tasks</i>	1. Wash dishes	.75
	5. Go grocery shopping	.68
	9. Help with the household cleaning	.81
	13. Prepare a meal	.68
	17. Do a load of laundry	..81
	24. Work in paid employment	.43
Factor 3		
<i>Sensory & Leisure Activities</i>	3. Go out to eat	.73
	4. Play cards or other games	.50
	6. Work in the garden	.43
	7. Go to a movie	.56
	11. Take a ride in the car	.49
	15. Take a trip	..53
	16. Go to a park or the beach	.61
	20. Hobbies crafts or making things	.48
	26 Watch TV, listening to music or the radio, reading or relaxing	.46
	27. Sexual activity	.44
Factor 4		
<i>Home Maintenance & Health Care</i>	2. Mow the lawn	.56
	10. Work on the car	.63
	18 Work on a needed house repair	.55
	19. Go to the doctors	.69
	25. Attend medical appointments other than doctors	.65
	31. Take medication	.68

4.4.4 MDAQ-R Reliability and Validity

The results of the reliability analysis for the 29 item MDAQ-R Alpha= .85 and Standardized Alpha =.85. These results confirm that the revised MDAQ-R is reliable. The internal consistency of each subscale, based on the four factors was estimated with Alpha, the results are provided in Table 13 Validity of MDAQ-R.

To establish the validity of the MDAQ-R as a measure of MDA a Pearson Product-Moment Correlation was calculated. The measures entered into the calculation were each of the four MDAQ-R subscales and the total MDAQ-R scores, and the Likert Scale Satisfaction with Life (SWL) and Meaningfulness of Daily Activity (MDA). The Likert Scales on the Participants' Information Sheet: were "Overall, how satisfied with life are you?" and "Overall how meaningful are your daily activities?"

Results of the Pearson Product-Moment Correlation indicated that the MDAQ-R both correlated with the Likert Scale Meaningfulness of Daily Activity (MDA). All four MDAQ-R subscales and the total MDAQ-R score were significantly related to the Likert Scale MDA. However, only one MDAQ-R subscale was associated with Likert Scale Satisfaction with Life (SWL), MDAQ-R 3 Sensory & Leisure Activities. The results of this analysis may be found in Table 22.

These results identified a difference between the constructs of meaningfulness and satisfaction with life, and that separate measures are required for the two constructs. There was also some overlap between the constructs of SWL and MDA, the MDAQ-R and the DAQ-R, although each appears to measure different constructs.

Table 13. Internal Consistency (Cronbach's Alpha) of the MDAQ-R Subscales

Subscale	No. of items	Cronbach's Alpha
MDAQ-R 1. Support, Caring & Interpersonal Relationships	7	.82
MDAQ-R 2. Structured Tasks	6	.84
MDAQ-R 3. Sensory & Leisure Activities	10	.73
MDAQ-R 4. Home Maintenance & Health Maintenance	6	.78
MDAQ-R	29	.85

The internal consistency of the MDAQ-R factors range from .82 to .78 with five items or more in each scale. Each item on the MDAQ-R is rated on a continuum ranging from the lowest score of **0** to the highest possible item score of **6**. To calculate the scale scores for the MDAQ-R individual items comprising each subscale were summed, thereby obtaining a subscale score for each of the four scales on the measure. The subscales can be summed to produce a total score for the MDAQ-R. As each subscale has a different number of items, the maximum scores for each subscale are different, the details are provided in Table 14.

4.4.5 MDAQ-R Scoring

Table 14. Scoring of MDAQ-R

MDAQ-R Subscales	Items	Maximum Possible Score
1. Support, Caring, & Interpersonal Relationships	11, 19, 20, 25, 26, 27, 29	42
2. Structured Tasks	1, 5, 8, 12, 15, 21	36
3. Sensory & Leisure Activities	3, 4, 6, 7, 10, 13, 14, 18, 23, 24	60
4. Home Maintenance & Health Maintenance	2, 9, 16, 17, 22, 28	36

Each item on the MDAQ-R was rated on a continuum ranging from the lowest score of **0** to the highest possible item score of **6**. To calculate the scale scores for the MDAQ-R, individual items comprising each subscale were summed, thereby obtaining a score for each of the four subscales on the measure. The subscales can then be summed to produce a total score for the MDAQ-R. As each subscale has a different number of items, the maximum scores for each subscale are different. The Total MDAQ-R Score consisted of 29 items with a total possible score for the measure of 174.

4.4.6 Demographics and MDAQ-R

To determine if there were any significant associations between the demographic variables of the cohort and the MDAQ-R subscales, all of the demographic variables were

correlated with each of the MDAQ-R subscales and the total MDAQ-R score. Refer to Appendix B 8 for a full copy of the correlation matrix analysis of these calculations.

For the subscale Support Caring and Interpersonal Relationships, there was a positive correlation with gender ($r = .22$, $n=231$, $p < 0.01$), the observance of a religion ($r = .22$, $n=221$, $p < 0.01$) and having diabetes ($r = .15$, $n=231$, $p < 0.05$). Also there was a small negative correlation with being involved in a motor vehicle accident a ($r = -.14$, $n=230$, $p < 0.05$) and a small negative correlation between Structured Tasks and having children ($r = -.15$, $n=231$, $p < 0.05$). There was a medium positive correlation between Sensory and Leisure Activities and gender ($r = .32$, $n=190$, $p < 0.01$) and a small negative correlation with having children ($r = -.16$, $n=190$, $p < 0.05$). For Home Maintenance and Health Maintenance there was a small positive correlation with age ($r = .28$, $n=190$, $p < 0.01$) and small negative correlations with gender ($r = -.17$, $n= 193$, $p < 0.05$), having children ($r = -.16$, $n= 193$, $p < 0.05$), experiencing health problems ($r = -.15$, $n= 190$, $p < 0.05$), and taking medication ($r = -.16$, $n= 171$, $p < 0.05$).

Mann-Whitney U and Kruskal Wallis Significance Tests were calculated for the measures and demographics. The ten grouping variables for the calculations were 1 age, 2 gender, 3 level of education, 4 employment status, 5 marital status, 6 having children, 7 having a psychiatric illness, 8 taking medication, 9 sustained a work injury, and 10 observing a religion.

For each of these demographic factors (1-10) a calculation was performed with the test variables. The test variables were each of the four MDAQ-R subscales: MDAQ-R Subscale 1 Support, Caring and Interpersonal Relationships, MDAQ-R Subscale 2 Structured Tasks, MDAQ-R Subscale 3 Sensory and Leisure Activities, MDAQ-R Subscale 4, Home Maintenance and Health Maintenance, the total MDAQ-R score and the Likert Scale SWL and MDA.

Significant demographic variables are summarised in Table 15. Age was not significant in any of the MDAQ-R subscales. Gender was significant in subscales of (1) Support, Caring & Interpersonal Relationships; (3) Sensory & Leisure Activities; and (4) Home Maintenance and Health Maintenance, and total MDAQ-R. The level of education attained, marital status, having a psychiatric illness, or having sustaining a work injury was not significant on any of the MDAQ-R subscales. However, having children was significant on all subscales except for MDAQ-R Support, Caring, and Interpersonal Relationships.

4.4.7 Daily Activity Questionnaire (DAQ) Reliability and Validity

After checking the data for outliers, the internal consistency of the DAQ was examined, using Cronbach's α . The α coefficient for the 32 item DAQ was 0.86. Test –retest reliability was not calculated at this time. These results confirmed that the 32 item DAQ was a reliable measure. The global daily activity score for the DAQ was $M=98.23$, SD 21.07. Summary descriptive statistics for the 32 item DAQ are presented in Appendix B 7.

Content and face validity was established by obtaining feedback from 10 peers who were either academics teaching psychology ($n=3$), PhD students in psychology ($n=3$), or allied health professionals (psychologists and physical therapists, $n=4$) who were currently in clinical practice treating CPP. Peer review established that the measure had face validity. It also had content validity since it was directly based on the Activity Scale of the WHYMPI. On the reviewers' suggestion the reading age of the measure was checked and some items were adjusted to improve the clarity of the 14 additional items. The Microsoft Word reading age was calculated, the Flesch-Kincaid Grade level reading age of the DAQ was grade 7 and the reading ease was 55.3%.

Table 15. Significant Demographic Variables on MDAQ-R, DAQ-R, and Likert Scale *Satisfaction with Life* and *Meaningfulness of Daily Activity*

Measures	Demographic Variables 1 - 10									
MDAQ-R	1	2	3	4	5	6	7	8	9	10
Support, Caring & Interpersonal Relationships		$P < .05$								$P < .01$
Structured Tasks				$P < .05$		$P < .01$				
Sensory & Leisure Activities		$P < .001$		$P < .05$		$P < .05$				
Home Maintenance & Health Maintenance		$P < .05$				$P < .05$		$P < .01$		
Total MDAQ-R Score		$P < .01$				$P < .01$		$P < .05$		
DAQ-R										
Domestic Chores		$P < .001$	$P < .05$	$P < .001$		$P < .01$			$P < .05$	
Work, Health, Spirituality & Caring		$P < .05$				$P < .01$		$P < .001$		
Interpersonal Contact, Leisure & Sensuality		$P < .05$	$P < .05$				$P < .05$			
Home Maintenance	$P < .01$	$P < .001$				$P < .001$				
Total DAQ-R Scores		$P < .001$			$P < .05$			$P < .001$		$P < .01$
Likert Scale MDA					$P < .05$	$P < .01$				
Likert Scale SWL					$P < .01$		$P < .05$			

Legend: (1) age, (2) gender, (3) level of education, (4) employment status, (5) marital status, (6) having children, (7) having a psychiatric illness, (8) taking medication, (9) sustained a work injury, and (10) observing a religion.

4.4.8 DAQ Exploratory and Factor Analysis

Prior to performing the exploratory factor analysis (FA) on the DAQ data, the underlying assumptions to be met for the appropriateness of using a factorial analysis were considered (Coakes, et al., 2006). There was a minimum of five subjects per variable ($32 \times 5 = 160$), and there were 179 valid cases listwise on the DAQ, satisfying the sample size criteria. While there is some controversy regarding adequate sample size for a factor analysis, the ratios of participants to items can vary from 1:5 to 1:10, and some authors suggest that 200-300 participants would be the ideal (MacCallum, et al., 1999; Pett, Lackey, & Sullivan, 2003; Tabachnick & Fidell, 1996).

On the visual inspection of individual histograms for each of the 32 DAQ items, item scores appeared to be normally distributed. With the possible exception of four items: 2 Mow the lawn ($M\ 1.95, SD\ 2.16$); item 4 Play cards or other games ($M\ 1.95, SD\ 2.16$); item 22 Attend medical appointments other than doctors ($M\ 2.21, SD\ 2.04$); and item 31 Care for a friend ($M\ 1.94, SD\ 2.18$). However, these observations were not significant.

DAQ items that were skewed in a positive direction included item 1 Wash the dishes ($M\ 4.33, SD\ 1.74$), 5 Go grocery shopping ($M\ 4.32, SD\ 1.66$), 9 Help with the house cleaning ($M\ 4.43, SD\ 1.78$), 11. Take a ride in a car ($M\ 4.5, SD\ 1.82$), 13 Prepare a meal ($M\ 4.48, SD\ 1.72$), 17 Do a load of laundry ($M\ 4.34, SD\ 1.99$), 21 Go to the doctor's ($M\ 3.80, SD\ 1.90$), 24 Hobbies, crafts or making things ($M\ 5.02, SD\ 1.87$), 26 Hugging and cuddling ($M\ 4.81, SD\ 1.43$) and item 32 Offer support to a friend or family member ($M\ 3.84, SD\ 1.70$). The negatively skewed items were items, 10 Work on the car ($M\ 1.40, SD\ 1.72$), 19 Work in paid employment ($M\ 1.95, SD\ 1.29$), 25 Watching TV, listening to music or the radio, reading or relaxing ($M\ 1.30, SD\ 1.59$) and, item 28 Attending meetings outside of work ($M\ 1.67, SD\ 1.95$).

The criterion of items correlating .3 or above with each other was satisfied, and the presence of linearity between the variables were satisfied. Outliers that may have caused any problems with the analysis were not present. Multicollinearity and singularity were not considered at this juncture, as these criteria were not essential to a Principal Components Analysis (PCA) method of factor analysis (MacCallum, et al., 1999).

A principal component factor analysis with varimax rotation with Kaiser Normalization was performed on all of the 32 items of the DAQ. Cases were excluded list wise if there was missing data. The number of factors that were selected for extraction in SPSS version 10 was four. Kaiser-Meyer' - Olkin measure of sampling adequacy was .74 and the Bartlett's Test of Sphericity significance was $p=.000$ (Refer Appendix B 13). The four factors identified had eigenvalues greater than 1, and items had factor loadings of greater than .40. The four factors accounted for 42.79% of the variance (Refer to Table 17).

Items 4 (Play cards or other games), 26 (Watching TV, listening to music or the radio, reading or relaxing) and 20 (Hobbies, craft or making things) were excluded from the revised measure because they did no load .40 or greater on the factor analysis.

Table 16. Rotated Component Matrix DAQ Factors

Rotated Component Matrix(a)				
DAQ Items (1-32)	Component			
	1	2	3	4
7. Do a load of laundry.	0.82			
9. Help with the house cleaning	0.82			
13. Prepare a meal.	0.78			
5. Go grocery shopping	0.70			
1. Wash dishes	0.60			
30. Work outside of the home in non paid employment.		0.67		
29. Care for a friend.		0.64		
31. Take medication.		0.59		
19. Go to the doctors.		0.57		
28. Attend a religious or spiritual service.		0.53		
23. Care for a family member.		0.52		
22. Attend meetings not related to paid work.		0.52		
25. Attend medical appointments other than doctors.		0.47		
32. Offer support to a friend or family member.		0.47		
24. Work in paid employment.		-0.40		
8. Visit friends			0.65	
21. Hugging and cuddling			0.64	
3. Go out to eat			0.60	
27. Sexual activity			0.59	
7. Go to a movie			0.57	
15. Take a trip.			0.52	
12. Visit relatives			0.51	
16. Go to a park or beach			0.50	
2. Mow the lawn				0.73
14. Wash the car.				0.72
10. Work on the car				0.71
18. Work on a needed house repair.				0.69
6. Work in the garden				0.50
11. Take a ride in a car.				0.42

The SPSS scree plot generated from this PCA calculation identified four principal components with eigenvalues greater than 1 (Refer to Appendix B 16).

Table 17. Total DAQ Variance Explained by Four Factors

DAQ Factor	Rotation Sums of Squared Loadings		
	Eigenvalue	% of Variance	Cumulative %
1. Domestic Chores	4.00	12.50	12.50
2. Work, Health, Spirituality & Caring	3.41	10.64	23.15
3. Interpersonal Contact, Leisure & Sensuality	3.33	10.40	33.55
4. Home Maintenance	2.96	9.25	42.79

4.4.9 Revised Daily Activity Questionnaire DAQ-R Item Composition

DAQ items 4 Play cards or other games, item 20 Hobbies, crafts or making things and item 26 Watching TV, listening to music or the radio, reading or relaxing, did not significantly load .4 or higher on any of the four factors and were not retained in the DAQ-R. Item 11 Take a ride in the car, loaded at a value $> .40$ on two factors, Factor 1 Domestic Chores, and Factor 4 Home Maintenance, and was subsequently excluded (Streiner & Norman, 1995). In total 28 items were retained to be included in the revised version of the DAQ-R. The 28 items that were included in the revised measure are listed in Table 18.

Table 18. Item Composition of the Revised 28 Item DAQ-R

Subscales and Items	Factor Loading
Subscale 1 Domestic Chores	
1. Wash the dishes	.60
5. Go grocery shopping	.70
9. Help with the household cleaning	.82
13. Prepare a meal	.78
17. Do a load of laundry	.82
Subscale 2 Work, Health, Spirituality and Caring	
19. Go to the doctors	.57
22. Attend meetings not related to work	.52
23. Care for a family member	.52
24. Work in paid employment	.40
25. Attend medical appointments other than doctors	.47
28. Attend a religious or spiritual meeting	.53
29. Care for a friend	.64
30. Work outside the home in non paid employment	.67
31. Take medication	.59
32. Offer support to a friend or a family member	.47
Subscale 3 Interpersonal Contact, Leisure & Sensuality	
3. Go out to eat	.60
7. Go to a movie	.57
8. Visit friends	.65
12. Visit relatives	.51
15. Take a trip	.52
16. Go to a park or the beach	.50
21. Hugging and cuddling	.64
27. Sexual activity	.59
Subscale 4 Home Maintenance	
2. Mow the lawn	.73
6. Work in the garden	.50
10. Work on the car	.71
14. Wash the car	.72
18. Work on a needed house repair	.69

4.4.10 DAQ-R Reliability

The results of the reliability analysis for the 28 item DAQ-R was Alpha=.80 and Standardized Alpha = .80. The internal reliability of the DAQ-R subscales for the four factors are summarised in Table 19.

Table 19. Internal Consistency (Cronbach Alpha) of the DAQ-R Subscales

Subscale	No. of items	Cronbach's Alpha
DAQ-R 1. <i>Domestic Chores</i>	5	.84
DAQ-R 2. <i>Work, Health, Spirituality & Caring</i>	10	.68
DAQ-R 3. <i>Interpersonal Contact, Leisure & Sensuality</i>	8	.73
DAQ-R 4. <i>Home Maintenance</i>	5	.72
DAQ-R	28	.80

The internal consistency of the DAQ-R subscales range from .84 to .68 (Refer Table 19) with five items or more in each scale (Pett, et al., 2003). It was noted that the DAQ-R Subscale 2 Work, Health, Spirituality & Caring was less than $\alpha = 70$, the score that is most often considered to be the lowest score that indicates a measure's internal consistency is reliable (Allen & Bennett, 2008). To determine why this subscale was lower than the others, the Cronbach's Alpha score if each of the 10 items in that subscale were deleted was calculated (Kline, 1986; Nunnally & Bernstein, 1994). On a further inspection of this analysis, if DAQ-R Item 24 Work in paid employment was deleted, the overall scale would increase from .68 to .74, and the overall Cronbach's reliability score for the DAQ-R would increase from .79 to .80 (refer Table 20). While the overall reliability of the DAQ-R would have been increased by the removal of item 24, this would have presented a problem in future analysis, particularly in Study Two. As in the Pilot Study, paid work was identified as a frequently performed DA, and also was retained in the MDAQ-R Subscale 2 Structured Tasks. Therefore, to maintain consistency between the MDAQ-R R and DAQ-R,-and to

compare the meaningfulness of daily activity as reported on the MDAQ-R with the frequency of performing that central life activity, this item was retained in the DAQ-R.

Table 20. DAQ-R Subscale 2 Work, Health, Spirituality and Caring: Cronbach's Alpha if Item Deleted-Total Statistics

DAQ-R Item	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
19	22.86	76.92	.35	.30	.66
22	22.62	70.29	.35	.31	.66
23	21.75	68.32	.40	.25	.64
24	19.69	88.89	-.17	.09	.74
25	23.47	73.85	.36	.20	.65
28	23.10	70.23	.37	.20	.65
29	22.56	67.24	.60	.42	.61
30	23.17	71.54	.38	.36	.65
31	22.91	68.68	.37	.32	.65
32	20.95	68.72	.51	.37	.63

4.4.11 DAQ-R Scoring

Table 21. Scoring of DAQ-R Subscales

DAQ-R Subscale	Items	Max. Possible Score
1. <i>Domestic Chores</i>	1, 4, 8, 11, 15	30
2. <i>Work, Health, Spirituality & Caring</i>	17, 19, 20, 21, 22, 24, 25, 26, 27, 28	60
3. <i>Interpersonal Contact, Leisure & Sensuality</i>	3, 6, 7, 10, 13, 14, 18, 23	48
4. <i>Home Maintenance</i>	2, 5, 9, 12, 16	30

Each item on the DAQ-R was rated on a continuum ranging from the lowest score of 0 to the highest possible item score of 6. To calculate the scale scores for the DAQ-R,

individual items comprising each subscale were summed, thereby obtaining a score for each of the four subscales on the measure. The subscales can then be summed to produce a total score for the DAQ-R. As each subscale has a different number of items, the maximum scores for each subscale are different. The Total DAQ-R Score consisted of 28 items with a total possible score for the measure of 0-168.

4.4.12 Demographic Effects on DAQ-R Subscales

To determine the significance of these observed relationships between the measures and demographic variables, non parametric tests of significance Mann-Whitney U and Kruskal Wallis Tests were calculated. The ten grouping variables for the calculations were 1 age, 2 gender, 3 level of education, 4 employment status, 5 marital status, 6 having children, 7 having a psychiatric illness, 8 taking medication, 9 sustained a work injury, and 10 observing a religion.

For each of these demographic factors (1-10) a calculation was performed with the test variables. The test variables were each of the four DAQ-R subscales: DAQ-R Subscale 1 Domestic Chores, DAQ-R Subscale 2 Work, Health, Spirituality and Caring, DAQ-R Subscale 3 Interpersonal Contact, Leisure and Sensuality, DAQ-R Subscale 4, Home Maintenance, the total MDAQ-R score and the Likert Scale SWL and MDA.

The demographic variables that were significant in the analysis are summarised in Table 15. Male or female gender was significant on all four of the DAQ-R subscales and the total DAQ-R score, while age was significant on (4) Home Maintenance, (2) Work, Health, Spirituality and Caring and (3) Interpersonal Contact, Leisure and Sensuality. Being married or single was a significant predictor of only the total DAQ-R score, while having children was a significant predictor of all the DAQ-R subscales except for Interpersonal Contact, Leisure and Social Support.

4.4.13 DAQ-R Reliability and Validity

To explore the strength of the DAQ-R as a measure of meaningfulness of life each of the four subscales were correlated with the measures of Satisfaction with Life and Meaningfulness of Daily Activity. The results of this analysis may be found in Table 22 and Appendix B19.

The DAQ-R Subscale 3 Interpersonal Contact Leisure and Sensuality ($r = .16$, $n = 209$, $p < .05$) and Subscale 4 Home Maintenance ($r = .24$, $n = 226$, $p < .05$), were both significantly related to the Likert Scale Meaningfulness of Daily Activity. Daily activity Subscale 3 Interpersonal Contact Leisure and Sensuality, was the only DAQ-R subscale that was significantly related to the measure of Satisfaction with Life ($r = .29$, $n = 209$, $p < .05$). The DAQ-R ($\alpha = .80$, 28 items) is a less reliable measure than the MDAQ-R ($\alpha = .85$, 29 items). However unlike the MDAQ-R, the DAQ-R does relate to Satisfaction with Life.

Table 22. Study One: Correlation Matrix of MDAQ-R, DAQ-R and Likert Scale- *MDA* and *SWL*

	1	2	3	4	5	6	7	8	9	10	11	12
1. DAQ-R 1		.22**	.18*	-0.03	.54**	.22**	.20**	.21**	-0.05	.25**	-0.06	0.05
2. DAQ-R 2			.32**	.20**	.77**	.45**	.15*	.25**	.29**	.44**	0.06	0.04
3. DAQ-R 3				0.07	.65**	.37**	-0.09	.47**	-0.04	.27**	.29*	.16*
4. DAQ-R 4					.47**	0.08	.18*	0.08	.47**	.25**	0.1	.24**
5. Sum DAQ-R						.51**	.18*	.42**	.27**	.52**	.18*	.18*
6. MDAQ-R 1							.15*	.50**	.16*	.66**	0.03	.18*
7. MDAQ-R 2								0.1	.58**	.67**	0.01	.23**
8. MDAQ-R 3									0.14	.67**	.15*	.20**
9. MDAQ-R 4										.66**	-0.03	.16*
10. Sum MDAQ-R											0.06	.29**
11. Likert Scale <i>SWL</i>												.51**
12. Likert Scale <i>MDA</i>												

(1) DAQ-R 1 *Domestic Chores*, (2) DAQ-R 2 *Work, Health, Spirituality and Caring*, (3) DAQ-R 3 *Interpersonal Contact, Leisure and Sensuality*, (4) DAQ-R 4 *Home Maintenance*, (5) Sum DAQ-R. (6) MDAQ-R 1 *Support, Caring and Interpersonal Relationships*, (7) MDAQ-R 2 *Structured Tasks*, (8) MDAQ-R 3 *Sensory and Leisure Activities*, (9) MDAQ-R 4 *Home and Health Maintenance*, (10) Sum MDAQ-R, (11) Likert Scale *Meaningful Daily Activity (MDA)*, (12) Likert Scale *Satisfaction with Life (SWL)*

Concurrent Validity - Consistency of WHYMPI with DAQ - Items 1-18

A principal component factor analysis with varimax rotation was performed on the original items from the WHYMPI, items 1 to 18 of the DAQ (Appendix B 26). Cases were excluded list wise if there was missing data. Kaiser-Meyer'- Olkin measure of sampling adequacy was .75 and the Bartlett's Test of Sphericity significance was $p=.000$. Of the four DAQ factors identified with eigenvalues greater than 1, and a factor loading of greater than .40, 55.2% of the variance was explained by the four factors identified in the DAQ. All of the items in the WHYMPI activities sub scale loaded .4 or greater on at least one of the four factors identified in this study. The SPSS scree plot generated from this PCA calculation (Appendix B 27) identified four principal components with eigenvalues greater than 1. All of the items in the WHYMPI activities sub scale loaded .4 or greater on at least one of the four factors identified in this study.

Table 23. Total Variance Explained by Four WHYMPI Factors on the DAQ

Factor	Rotation Sums of Squared Loadings		
	Eigenvalue	% of Variance	Cumulative %
1. <i>Household Chores</i>	3.39	18.84	18.84
2. <i>Outdoor Work</i>	2.57	14.26	33.10
3. <i>Activities Away from Home</i>	2.48	13.78	46.89
4. <i>Social Activities</i>	1.49	8.27	55.16

The results of this analysis confirmed the first two factors, identified by (Kerns, et al., 1985) in the WHYMPI, Household Chores and Outdoor Work. In the current study Household Chores accounted for 18.84% of the variance and Outdoor Work accounted for 14.26% of the variance.

Three of the four items in the third WHYMPI factor Activities Away from Home were also confirmed in the PCA. The item, Take a ride in a car did not significantly load on this factor. However, the additional items Play cards and other games, Visit friends and Visit relatives were also found to load in Factor 3, Activities Away from Home. The factor analysis performed on the current study data did not affirm the cluster of items in Factor 4, Social Activities, of the WHYMPI. Instead, this study identifies Take a ride in a car with Visit relatives which could be considered to be now a scale of activities away from home that requires travelling to visit family (see Table 24).

4.4.14 Norms of MDAQ-R and DAQ-R

Subscale scores, comprising of means, sums and standard deviations were calculated for each of the DAQ-R and MDAQ-R subscales. Norms for males and females on the DAQ-R and the MDAQ-R have also been calculated and are combined in Table 25.

Gender and DAQ-R and MDAQ-R

Gender was found to be a significant factor in both the DAQ-R and the MDAQ-R. Due to this observation, a further exploration of the influence of gender on DA and MDA was undertaken. The norms for males and females scores on subscales of the DAQ-R and the MDAQ-R are presented in Table 25.

The statistical analysis of the DAQ-R included the descriptive statistics, reliability and validity of the measure, the number of factors extracted, factor scores, data matrix, communalities, eigenvalues, variance attributed to each of the factors, factor loadings, factor scores and the significance of demographic variables are also presented.

Table 24. Comparison of the Item Loadings of DAQ on Four WHYMPI Factors

WHY MPI	WHYMPI	DAQ
Inventory item	Factor Loading	Factor Loading
	Kerns, Turk & Rudy, 1985	Mulcahy & Charman, 2000
Factor 1 Household Chores		
Prepare a meal	.79	.84
Help with house cleaning	.78	.80
Wash the dishes	.70	.66
Do a load of laundry	.69	.83
Go grocery shopping	.66	.73
Factor 2 Outdoor Work		
Work on a needed house repair	.68	.69
Wash the car	.65	.69
Mow the lawn	.64	.77
Work on the car	.59	.74
Work in the garden	.50	.50
Factor 3 Activities Away from Home		
Take a trip	.59	.51
Go out to eat	.52	.62
Go to a movie	.51	.74
Take a ride in a car	.48	(< .4)
Play cards or other games	NA	.50
Visit friends	NA	.73
Visit relatives	NA	.48
Go to a park or beach	NA	.46
Factor 4 Social Activities		
Visit relatives	.70	.48
Visit friends	.51	(< .4)
Go to the park or beach	.46	(< .4)
Play cards or other games	.44	(< .4)
Take a ride in a car	NA	.75

Table 25. Study One Mean Scores DAQ-R and MDAQ-R

Subscale	No of Items	N	Combined		Males ^a		Females ^b		ρ
DAQ-R			M	SD	M	SD	M	SD	
1. <i>Domestic Chores</i>	5	216	21.99	6.90	17.84	6.47	25.74	4.55	.001
2. <i>Work, Health, Spirituality & Caring</i>	10	215	24.7	9.29	23.67	9.20	26.62	9.41	.05
3. <i>Interpersonal Contact, Leisure & Sensuality</i>	8	209	22.67	6.76	21.70	6.76	24.51	6.75	.001
4. <i>Home Maintenance</i>	5	193	11.11	6.55	13.34	7.24	8.61	5.17	.001
Total DAQ-R	28	186	84.46	18.96	78.78	19.66	89.51	17.18	.001
MDAQ-R									
1. <i>Support, Caring & Interpersonal Relationships</i>	7	193	28.35	8.71	25.70	10.48	29.41	7.14	.05
2. <i>Structured Tasks</i>	6	192	19.66	9.77	19.30	8.89	19.18	10.37	NS
3. <i>Sensory & Leisure Activities</i>	10	190	34.22	8.95	30.12	7.38	35.78	10.05	.001
4. <i>Home Maintenance & Health Maintenance</i>	6	193	12.79	9.03	12.97	9.49	10.39	8.34	.05
Total MDAQ-R	29	172	93.59	23.36	88.97	23.88	95.78	23.04	NS(.052)
Likert Scale <i>SWL</i>	1	224	4.56	1.18	4.62	1.25	4.60	1.05	NS
Likert Scale <i>MDA</i>	1	224	4.30	1.14	4.35	1.17	4.31	1.07	NS

Note: Males^a n= 105, Females^b n= 121

4.5 Discussion

4.5.1 Major Findings

The aim of this study was to investigate the concept and measurement of MDA. This aim has been achieved with the development of the DAQ-R and the MDAQ-R. Both questionnaires have been found to be reliable and valid. Norms have been generated from a broadly representative sample of males and females, aged between 25 and 65 years, who reside in suburbs of Melbourne, Australia. In this Chapter the processes that were undertaken to develop the MDAQ-R and the DAQ-R were described. There were four subscales for each of the MDAQ-R and DAQ-R and norms were calculated for both measures.

4.5.2 Meaningful Daily Activity and Participation in Meaningful Daily Activity

There were problems experienced while developing the MDAQ-R, such as the relatively small sample size ($N = 234$), the number items that were retained (29), not undertaking test retest reliability or a confirmatory factor analysis to substantiate the subscales identified. However, the MDAQ-R would appear to identify certain activities people find to be meaningful in their daily life, in four categories of activity; (1) Support Caring and Interpersonal Relationships, (2) Structured Tasks, (3) Sensory and Leisure Activities and (4) Home Maintenance and Health Care. These findings would appear to be relatively consistent with the research literature, identifying relationships (Cassidy, 2005), structured tasks and purposeful activity (Ball & Orford, 2002; Christiansen, 2000; D. R. May, et al., 2004), and leisure activity (Tinsley & Eldredge, 1995) as being important aspects of emotional wellbeing. Maintaining a domestic environment and one's own health are also important functions that individuals need to perform to live in a healthy manner.

There was also a difference observed between the actual frequency of performing a daily activity and the meaningfulness that was attributed to that activity. This was identified firstly by performing two principal component factor analyses (PCA). Both of the factor analyses included the 18 WHYMPI items (1-18) as numbered in the original Activity Subscale of the WHYMPI. In the PCA of the 18 DAQ, two of the four WHYMPI factors were identified; Household Chores (5 items) and Outdoor Work (5 items).

However there was not the same agreement between the other two Factors; Activities Away from Home (7/8 items) and Social Activities (2/5 items). The second PCA included the MDAQ items 1-18; the factor solution did not identify the same factors as either the WHYMPI or the DAQ. All of the items from Household Chores and Outdoor Work loaded on one single Factor, consisting of 10 items. The second factor consisted of 6 items from the WHYMPI; the third factor included two items and the fourth factor three items. There were

also items that loaded on two or more factors. It would appear from this analysis that DA and MDA are not the same constructs and require separate measures.

While there are two dimensions to the measurement and analysis of DA, participation and meaningfulness; it was also observed that there was some considerable overlap in the total DAQ and total MDAQ. The two global measures of activity were highly correlated ($r = .52, p < 0.01, n = 172$). However not all of the subscales on the two measures were correlated. The strongest associations were between the DAQ 3 Activities Away from Home and MDAQ 3 Sensory and Leisure Activities ($r = .48, p < 0.01, n = 193$); DAQ 2 Outdoor Work and MDAQ 1 Support, Caring and Interpersonal Relationships ($r = .45, p < 0.01, n = 193$) and MDAQ 4 Home Maintenance and Health Care and DAQ 4. Home Maintenance ($r = .43, p < 0.01, n = 193$).

There were no significant relationships observed between DAQ 2 Outdoor Work and MDAQ 2 Structured Tasks; DAQ 3 Activities Away from Home and both MDAQ 2 Structured Tasks and MDAQ 4 Home Maintenance and Health Care. Also the DAQ 4 Home Maintenance was not significantly correlated with three of the four MDAQ Factors; 1 Support, Caring and Interpersonal Relationships; 2 Structured Tasks, and 3 Sensory and Leisure Activities.

4.5.3 Meaning and Meaningfulness as a Theoretical Construct

While there are obvious overlapping dimensions of meaning in, or of life, and the meaningfulness of life activities, there are also distinct differences. The current study did not attempt to ascertain “the meaning of life”, as this was beyond the scope of the study. The purpose was to identify the activities in life that participants rated as being “meaningful”.

A meaningful life can be considered as a combination of subjective experiences, consisting of elements relating to life circumstances (De Vogler & Ebersole, 1981; Frankl, 2000; Kunnen & Bosma, 2000; Raskin & Bridges, 2002; Schnell & Becker, 2006). In

particular it would appear that there are obstacles experienced that prevent a person from living a meaningful life, such as poor health, isolation (Gabassi, 1981), and unemployment and financial insecurity (Crooks & Chouinard, 2006; Diener & Diener, 1995; Lukas, 1998; Trombly, 1995). This is certainly the case for persons who experience suffering, chronic illnesses, and losses that require significant adjustments to how meaningfulness is created (Emmons, Colby, & Kaiser, 1998; B. N. Ong, Hooper, Jinks, Dunn, & Croft, 2006; Shantall, 1999).

In addition to meaningfulness in life being affected by health and external circumstantial factors, the experience of a meaningful life is also influenced by a person's age (Bar-Tur & Prager, 1996; Park, 2006; Prager, 1997b). There were demographic characteristics of the current study that would support this view. For example, age was related to meaningfulness of Home and Health Maintenance (older persons found these activities more meaningful). The current study did not however recruit participants from a clinical sample and age related meaningfulness of health would be more appropriately compared with a clinical sample or a sample of persons who were older than 65 years.

Gender was an influential factor in participants' reported meaningfulness of Support, Caring and Interpersonal Relationships and Sensory and Leisure Activities (females had higher scores).

Practising a religion has also been identified as an issue that is related to the meaningfulness of life (Chamberlain & Zika, 1988b; Gold & Mansager, 2000; Wong, 1998c). In the current study observing a religion was related to Support, Caring and Interpersonal Relationships. In the broader sense of how religion or spirituality relates to the meaningfulness of life, there is no further analysis that can be performed, as details were not collected.

Meaningfulness has also been found to be related to a person's contact with others (Debats & Drost, 1995). In the current study this was confirmed, as the most meaningful activities were related to contact with others. Having children was a factor in determining the meaningfulness of Structured Tasks and Sensory and Leisure Activities. Structured tasks were more meaningful for persons who had children and so were Sensory and leisure activities.

There is however limited clinical research that explores meaningful life activities of persons who are aged from 18 to 65 years (the age of the current cohort). Predominantly the "purpose in life", "meaningfulness of life", and "constructing meaning in life" has been researched on older populations (Braam, Bramsen, van Tilburg, van Der Ploeg, & Deeg, 2006) or persons who have experienced severe life threatening illnesses, trauma or incarceration (Janoff-Bulman & Frantz, 1997). The current study adds to the body on knowledge relating to what activities adult Australians find meaningful. This is particularly significant for activities that have been associated previously with age and gender. Including activities such as: domestic chores, paid work (Ball & Orford, 2002; Westenholz, 2006), caring (Farran & Kuhn, 1998; Hellen, 2000), leisure (Freeman, Palmer, & Baker, 2006; Herridge, Shaw, & Mannell, 2003) and interpersonal contact and social support (Horowitz et al., 2006).

4.5.4 Methodological Limitations of Study One

There were some methodological problems experienced in this Study. Firstly, the response rate was poor, of the total 446 questionnaires distributed, 264 participants, 119 men (45.1%) and 145 women (54.9%) completed and returned questionnaires. This is equivalent to a response rate of 59.2%. Secondly missing data considerably reduced the size of the sample. Of the completed MDA Questionnaires 26.5% of the sample was excluded due to missing data (see Appendices B 22 and B 23).

MDAQ-R Item Composition

There were some items on the MDAQ that were rather broad, for example the passive leisure domains were all grouped together into one item, Watch TV, listen to music or the radio, reading or relaxing. From the previous chronic illness research, passive activity is a large component of the DA of this population, and more details regarding this area of activity may prove helpful when identifying rehabilitation goals to increase MDA. Due to the length of the measure and the time it takes to complete an exhaustive list of all meaningful daily activities this was not possible, however the MDAQ did identify a broad range of activities that the Australian adult population found meaningful.

The MDAQ did not measure physical activity or exercise related to leisure. Physical leisure activities were excluded because in the Pilot Study, physical activity was not regularly performed. There was an opportunity for any person completing the MDAQ, to list additional activities at the bottom of the MDAQ. Participants were encouraged to add such activities in response to the following prompt: “You may feel that there are other activities that you do which are not included in the questionnaire, please feel free to list them in the spaces below”. However, given the current focus of Australian health practitioners of the time, was to prescribe engaging in physical activity on a regular basis, it was interesting to note that less than two percent of participants reported physical activity was a MDA.

Characteristics of Study One Sample

The Australian Bureau of Statistics reported that the educational trend, for all Australians aged 15-64 in 2002 was 17.8% of the population had completed a bachelor degree or above while in the current Australian sample only 12.4% had an equivalent qualification. (Australian Bureau of Statistics, 2002d). In the current study 4.7% of the sample had an education below upper secondary and 52.3% had completed secondary education, 12.4% had completed a university degree and 20.5% had completed postgraduate

studies and 10.1% had completed apprenticeships or TAFE courses. Of the postgraduate participants 9% were employed in education, all sectors and 8.5% were employed in public health, including nurses, doctors and allied health assistants.

In this sample, the number of unemployed participants who were receiving some form of income replacement or unemployment benefits was 6.9%, 7.1% for women and 4.7% for men. This was lower than the unemployment rate for 1998-1999 in Victoria of 7.8% for males and 7.7% for females, and the National unemployment rate for 1999 –2000 for Australia was 6.9%, 7.5% for females and 6.6% for males (Australian Bureau of Statistics, 2001d, 2001e). The marital status of participants was 67.9% were in a relationship, and 25.6% of participants were single. Of those who were in a relationship, 88.05% were married and 11.94% were in a de facto relationship. The number of married persons was higher, and persons in a de facto relationship lower than Australian national statistics for social trends in 1991, where 8.2% of all couples were in de facto relationships, and in this same period, 75% of all couples were married.

Fifty four percent of the participants stated they observed a religion. The 1991 Australian Census data stated that 76.6% of the population had a religious affiliation, 12.9% had no religion and 10.51% did not state their religious affiliation (Australian Bureau of Statistics, 2001a).

There was a small sample and a disproportionate number of women as compared to men.

Some data was not collected that may have increased the understanding of MDA, such as socioeconomic status which may include the type of dwelling the participant lived in and the physical, financial and personal characteristics that impact on the activities a participant performs, and whether they may find an activity meaningful or not. For example, activities such as gardening in a flat, home maintenance in a rented property, or car maintenance when

the participant does not have a car, would not be identified by CPP who do not perform these tasks.

4.6 Study One: Summary and Conclusions

There were four factors identified in each of the measures and the factor structure of the measures was similar. For example where the original items from the WHYMPI factors Household Chores and Outdoor Work were included DAQ-R (1) Domestic Chores and (4) Home Maintenance and MDAQ-R (2) Structured Tasks and (4) Home Maintenance and Health Maintenance were very similar. However the addition of working in paid employment in MDAQ-R 2 Structured Task and the items: Go to the doctors, Attend medical appointments other than doctors and Take medication in the fourth factor in MDAQ-R 4 Home and Health Maintenance emphasised the difference in loadings on meaningfulness and frequency daily activity. Also when the additional items (19-32) were included in both the DAQ-R and MDAQ-R the composition of factors was somewhat different.

Two internally consistent measures were developed. One measured the frequency of performing a range of daily activities (DAQ-R) and the other measure rated the meaningfulness of these daily activities (MDAQ-R). The internal consistency of the DAQ-R and the MDAQ-R ranged from .80 to .68 and .73 to .84 respectively. Although the Cronbach's alpha internal reliability of the DAQ-R subscale (2) Work, Health, Spirituality and Caring was increased from .68 to .74 if the item Work in paid employment was removed. This item was retained because the amount of time spent each day in paid work is a relatively large proportion of the activity that is performed by persons who are aged between 18 and 65 years of age on a daily basis.

The activities most frequently performed (DAQ-R Subscales) varied for males and females. Women performed more (1) Domestic Chores, (2) Work, Health Spirituality and

Caring, (3) Interpersonal Contact, Leisure, Sensuality, and males performed more (4) Home Maintenance Activities.

The meaningfulness of daily activities (MDAQ-R Subscales) also varied for males and females. Females had higher meaningfulness scores for (1) Support, Caring and Interpersonal Relationships and (3) Sensory and Leisure Activities, whereas males had higher scores on (4) Home and Health Maintenance. However there was no difference between males and females scores on (3) Structures Tasks. MDAQ-R Structured Tasks items included the Domestic Chore items from the DAQ-R with one additional item Work in paid employment. This finding was of some interest in that while females more often performed domestic chores (DAQ-R 1) males and females with the addition of paid work to this subscale found these tasks to be equally meaningful (MDAQ 2). When the effect of gender on the item Work in paid employment was considered for the meaningfulness of work for males and females there was no significant difference, although males had a higher score on paid work. Also of note was that the item Work in paid employment loaded on the Work, Health, Spirituality and Caring Subscale on the DAQ-R, not Domestic Chores.

The DAQ-R and the MDAQ-R will be used in a further study (Study Two) to determine whether or not CPP who perceive they engage in MDA as measured on the MDAQ-R, experience less severe pain, illness behaviours, functional disability, and psychological distress.

CHAPTER FIVE: STUDY TWO - CHRONIC PAIN AND MEANINGFUL DAILY ACTIVITY

5.1 Introduction

There were two major aims of this research study as stated in Chapter Two. The first aim was: To develop two separate reliable measures of DA; one measuring the frequency of performing a variety of daily activities (DAQ-R) and the other assessing how meaningful a participant rates these daily activities (MDAQ-R). This aim has been achieved and is reported in Chapters Three and Four.

The second aim of this study was to test the research mode of the Proposed Associations between Dispositional Optimism, Meaningful Daily Activity, Daily Activity, Causes of Chronic Pain, with Psychological Distress, Pain and Disability (Figure 8). This model depicts the proposed effect of MDA and DA, on a CPP pain severity, illness beliefs, psychological distress (depression, anxiety, and hopelessness), functional disability, and dispositional optimism. The current chapter describes the methodological processes that were undertaken in Study Two, to test whether a CPP who perceives they engage in MDA experienced less severe pain, functional disability, psychological distress, and higher dispositional optimism.

5.2 Method

5.2.1 Participants

There were 172 research packages distributed to prospective participants, consisting of a consent form, information about the study and the research measures. The participants were recruited in Melbourne, Victoria, Australia, from two sources: a community centre, and five physical therapy practices. One hundred and six packages were distributed to the Community Sample (CS) and 66 to the Physical Therapy Sample (PTS).

To be included in the study participations were required to be between the ages of 25 and 65 years, with CP duration of at least six months. Participants were excluded if they reported having a previous history of psychiatric illness, or if they were unable to read and write English. Of the surveys distributed, there were 115 (n= 60/106 community sample (CS) and 55/66 PTS) returned via prepaid envelopes to the researcher, 60 surveys were from the CS and 55 from the PTS. The overall response rate for the combined sample of participants was 66.86% (CS 56.66% and PTS 83.33%).

Of the completed surveys, 108 participants satisfied the research criteria and were included in this study. The combined CP sample consisted of 46.30% (n=50) physical therapy practice patients and 53.70% (n=58) volunteers from the community. Table 26 provides a summary of the demographic characteristics of the PTS and CS participants.

There were three significantly different demographic characteristics between the PTS and the CS, having a work injury or accident, being currently involved in litigation, and having multiple physical disabilities, apart from a CP condition.

Table 26. Demographic Characteristics of Physical Therapy and Community Samples

Demographic Variable	CS (N 58)	%	PTS (N 50)	%	Total % (N 108)	Sig. Test τ/χ^2	Result P
Gender							
Male	15	25.9	16	32.0	28.7		
Female	43	74.1	34	68.0	71.3	χ^2	NS
Age (years)							
M	49.9	N/A	50.4	N/A	N/A		
SD	10.9	N/A	10.4	N/A	N/A	τ	NS
Marital Status							
Married/de facto	45	77.6	30	60.0	69.4		
Single/ separated/widowed/divorced	13	22.4	20	40.0	30.56	χ^2	NS
Children							
YES	46	79.3	36	72.0	75.9		
No	12	20.7	14	28.0	24.1	χ^2	NS
Education							
Did not complete secondary school	17	34.0	19	32.8	33.3		
Completed secondary school	11	22.0	9	15.5	18.5		
Apprenticeship/Trade /TAFE	7	14.0	12	20.7	17.6		
Post Secondary Degree/Diploma	7	14.0	11	19.0	16.7		
Completed Postgraduate Study	7	14.0	7	12.1	13.0	τ	NS
Employment Status							
Full Time	9	18.0	19	32.8	25.9		
Part time/casual	12	24.0	15	25.9	25.0		
Work cover/Disability Pension	16	32.0	10	17.2	24.1		
Unemployed	7	14.0	7	12.1	13.0		
Self funded retirees	6	12.1	7	12.0	12.0	τ	NS
Practice a Religion							
Yes	27	46.6	32	64.0	54.6		
No	31	53.4	18	36.0	45.4	χ^2	NS
Medication							
Yes	49	84.5	43	86.0	85.2		
No	9	15.5	7	14.0	14.8	χ^2	NS
Motor Vehicle Accident							
Yes	5	8.6	13	26.0	16.7		
No	53	91.4	37	74.0	83.3	χ^2	NS
Work accident/ Injury							
Yes	17	29.3	27	54.0	40.7		
No	41	70.7	23	46.0	59.3	χ^2	<0.02
Currently Involved in Litigation							
Yes	5	8.6	13	26.0	16.7		
No	55	91.4	37	74.0	83.3	χ^2	<0.03
Malignancy							
Yes	3	5.2	4	8.0	6.5		
No	55	94.8	46	92.0	93.5	χ^2	NS
Multiple Physical Disabilities							
Yes	3	5.2	12	24.0	13.9		
No	55	94.8	38	76.0	86.1	χ^2	<0.01
Diabetes							
Yes	5	8.6	4	8.0	8.3		
No	53	91.4	46	92.0	91.7	χ^2	NS
Psychiatric Illness							
Yes	5	8.6	4	8.0	8.3		
No	53	91.4	46	92.0	91.7	χ^2	NS
Pain Duration							
3-18 months	17	29.3	13	26.0	27.8		
24-36 months	41	70.7	37	74.0	72.2	χ^2	NS

5.2.2 Measures

Pain

The McGill Pain Questionnaire (MPQ) was developed as a self report measure to provide a quantitative measure of a patient's experience of pain (Melzack, 1975). There are five separate scores that can be obtained from this measure: location of pain, present pain intensity (PPI), number of words chosen (NWC), the pain rating index (PRI), and temporal pain experiences. The questionnaire is divided into four sections and takes approximately 10 minutes to complete.

Part 1 Pain Location asks the patient "Where is your pain?" In response to this question the patient indicates on an anatomical drawing of the front and back of the body, exactly where there pain is, by marking the location of their pain on the diagram.

Part 2 Pain Rating Index and Number of Words Chosen require the patient to respond to the question "What does your pain feel like?" In this section the patient is instructed to circle any of the descriptive pain words that describe their pain experience, from a group of 20 words. This qualitative pain section may be scored in two ways: firstly by counting the number of words chosen (NWC), with a possible range of scores from 0-20, and secondly by ranking the values of each of the 20 groups of pain categories (PRI). The PRI method provides four separate scores; Sensory (subclasses 1-10), Affective (subclasses 11-15), Evaluative (subclass 16) and Miscellaneous (subclasses 17-20). The range of scores for the PRI is from 0-78.

Part 3 Temporal Pain examines the temporal aspect of pain by asking the patient "How Does Your Pain Change with Time?" On this section, the patient indicates the temporal pattern of their pain, by circling a word that describes their pattern of pain, ranging from 1 Continuous, 2 Rhythmic to 3 Brief. Additional information about pain management strategies

is also obtained in this section, with the inclusion of the questions “What kind of things relieve your pain?” and “What kind of things increase your pain?”

Part 4 Present Pain Intensity assesses the patient’s present pain intensity (PPI) by asking “How Strong Is Your Pain?” The possible responses to this question are on a five point Likert Scale ranging from 1 to 5, where the scores are: 1 *mild*; 2 *discomforting*; 3 *distressing*; 4 *horrible*; and 5 *excruciating*.

Cronbach’s alpha was not reported by the test author for this measure; however the correlation of the sections and subscales was reported, and high correlations were found between different PRI categories (M. Johnston, Wright, & Weinman, 1995; Melzack, 1975). The MPQ is not disease specific, and has been widely used in research and practice as a measure of qualitative aspects of pain, for both acute and CP populations who have suffered from a variety of medical conditions. While there is some variation in the methods of scoring used by researchers and clinicians on the PRI, the measure is reliable and valid and provides a quantitative and qualitative assessment of a patient’s pain experience (Melzack, 1983; Melzack & Katz, 1992). The MPQ is the most widely used measure of pain in clinical research (Strong, Sturgess, Unruh, & Vicenzino, 2002). Scores obtained on the four sections of the MPQ, have been used to identify current pain severity (PPI and NWC), to plan treatment strategies and assess the effectiveness of pain management techniques (Hildebrandt, et al., 1988; Mikail, et al., 1993). The Flesch-Kincaid Grade reading level and reading ease (Microsoft Word) was not able to be calculated and the reading ease of the MPQ was not reported by the author.

Disability

The Pain Disability Index (PDI) is a self report measure of disability that was developed to assess the degree of interference that CP has on daily activities (C. A. Pollard, 1984; Tait, Chibnall, & Krause, 1990). The measure consists of seven categories of life

activity 1 Family/home Responsibilities, 2 Recreation, 3 Social Activity, 4 Occupation, 5 Sexual Behaviour, 6 Self Care and 7 Life Support Activity, and takes approximately five minutes to complete. These seven categories of DA were scored on an 11 point Likert Scale that ranged from 0 no disability to 10, total disability. The PDI range of possible scores is from 0 to 10 on each of the activities, with a total possible score ranging from 0 to 70, and the Cronbach's alpha for the measure was reported by the authors to be $\alpha .86$ (Tait, Chibnall, & Krause, 1990). However, the authors reported that the test-retest reliability was lower than expected $r = 0.44$ ($p < 0.001$). The validity of the PDI was established by the test authors, with more disabled patients having higher rates of pain behaviour, as measured on the University of Alabama-Birmingham scale (Richards, et al., 1982).

The PDI has been used with pain populations in research and practice (Main & Burton, 2000). The Victorian WorkCover Authority, also recommended the PDI as a suitable assessment measure, to health professionals who were treating back pain patients, that were receiving compensation for a work related injury (Victorian WorkCover Authority, 1996). The Flesch-Kincaid Grade reading level is 9.9 and the Flesch reading ease is 47.4 (Microsoft Word).

Illness Perception

The Revised Illness Perception Questionnaire (IPQ-R) (Moss-Morris et al., 2002) , was a revised version of the IPQ (Weinman, Petrie, & Moss-Morris, 1996), that was developed as a self report questionnaire to quantitatively measure five of the illness representations in Levanthal's (1988; 1984), self-regulatory model. The IPQ-R provides a quantitative measure of five separate areas of illness representation: identity, consequences, timeline, control/cure, and cause. This measure has been widely used to establish illness perceptions about various illnesses and has been found to be a reliable and valid measure. However, given the length of this measure when added to the other measures being used it was considered the extra burden

placed on participants to complete all of the five subscales was not justifiable. As noted previously, the focus of the current research was on pain and disability, psychological distress and the mediating effects of engaging in daily activities that were meaningful and dispositional optimism. Each of the five subscales was considered, and the causes subscale was selected for inclusion in this study because it appeared from the literature reviewed that CPP who experienced work related injuries appeared to report different degrees of symptom severity from persons with systemic illnesses such as arthritis.

Therefore for the current research study, only the Causes Subscale was used, consisting of 18 possible causes of CP. The patient is required to indicate their level of agreement with each of the 18 possible causes of pain. The five responses available for each of the 18 IPQ-R items were (i) *Strongly Agree*, (ii) *Disagree*, (iii) *Neither Agree or Disagree*, (iv) *Agree* and (v) *Strongly Agree* (scored 1-5). Patients were also requested to perform the following task: “In the table below please list in rank- order the three most important factors that you believe caused your CP.”

To score the IPQ-R, the Likert ranks given to each of the 18 items are tabulated, and secondly, in order of importance, the three principal causes of CP are identified. While the authors recommended that a PCA be performed to identify casual factors of illness, the current study elected to use the factors identified by the authors in the article published on the psychometric properties of the revised measure, so as to have some comparative data to use as a benchmark. The IPQ-R as reported by the authors (Moss-Morris, et al., 2002), consisted of four Causal subscales: IPQ-R 1 Psychological Attributions consisting of 6 items, $\alpha = .86$; IPQ-R 2 Risk Factors 7 items, $\alpha = .77$; IPQ-R 3 Immunity 3 items, $\alpha = .67$, IPQ-R 4 Accident or Chance 2 items, $\alpha = .23$. Test retest reliability for rheumatoid arthritis patients was .72 for Risk Factors, Psychological Attributions .82, .53 Chance and .58 Immunity attributions. Reliability of the IPQ-R was established on a group of CP and acute pain populations, where

all of the subscales were significantly different, at $p \leq .01$ level of significance (Moss-Morris, et al., 2002). The IPQ-R Causal Subscale Flesch-Kincaid Grade reading level is 8.4 and the Flesch reading ease is 66.5 (Microsoft Word).

Anxiety and Depression

The Hospital Anxiety and Depression Scale (HADS), is a brief self report screening measure, to identify possible cases of clinical anxiety and/or depression in a medical out-patient clinic (Zigmond & Snaith, 1983), and takes the patient approximately 10 minutes to complete. The form consists of 7 depression items, and 7 anxiety items, these items are presented as alternative anxiety and depression questions. Test authors report that the test is internally consistent, the Cronbach's alpha for HADS Depression was $\alpha = .90$ and $\alpha = .93$ for Anxiety. The measure requires the patient to select from four possible alternatives in response to each of the 14 questions.

Each of the 14 HADS items is scored from 0 to 3, and the total scores for the anxiety and depression subscales range from 0-21. The scores obtained from the HADS, have also been used to determine the presence and or severity of clinical disorders (Anxiety or Depression); where scores ranging from 0-7 indicate *No Disorder* (Normal), 8 to 10 a *Mild Disorder*, 11 to 14 a *Moderate Disorder* and scores above 15 indicate there is a *Severe Disorder* (Zigmond & Snaith, 1983).

The HADS Flesch-Kincaid Grade reading level is 5.9, and the Flesch reading ease is 74.1 (Microsoft Word). The HADS has been widely used by researchers, and clinicians, because it is easy to score, brief, and takes approximately ten five minutes to complete. It is a reliable and valid measure, of anxiety and depression. With 1% of false positives, and 1% false negatives, for the anxiety subscale, and 5% false positives, and 1% false negatives for the depression scale, compared with a diagnostic interview to determine the clinical diagnosis of disorders. Also physically ill patients, who were not identified on a clinical interview, as

having mood disorders, had similar scores, to the normal population on the HADS scales (Zigmond & Snaith, 1983). Norms have also been established for a variety of medical and psychiatric populations, including CP (Abiodun, 1994; Harter, Reuter, Gross-Hardt, & Bengel, 2001).

Hopelessness

The Beck Hopelessness Scale (BHS) (Beck & Weissman, 1974), is a 20 item self report measure of hopelessness and takes 5 to 10 minutes to complete. For each of the 20 items there is a True or False response required. Scoring of items is either 0 or 1 (1 indicates Hopelessness, 0 denotes no Hopelessness on the item). Eleven of the items are True (2, 4, 7, 9, 11, 12, 14, 15, 16, 17 & 20) and nine items are False (1, 3, 5, 6, 8, 10, 13, 15 & 19). For example Item 1 “I look forward to the future with hope and enthusiasm” the response is False (=1). There is a possible BHS score range from 0-20, with higher scores indicating greater hopelessness. The internal consistency of the BHS was .93 (KR 20), concurrent and construct validity were established, and the BHS was found to be a measure that assessed negative expectations about the future (Beck & Weissman, 1974).

Beck and Steer (1988), proposed that scores on the BHS should generally be interpreted as 0-3 *Minimal Hopelessness*, 4-8 *Mild Hopelessness*, 9-14 *Moderate Hopelessness*, while a score of more than 14 indicates *Severe Hopelessness*. A BHS of greater than 9 was reported by the authors to be predictive of suicide in depressed suicide ideators.

Interpretation of the BHS score is dependent on the sample and the purpose of administering the test. The BHS was included in this study to determine pessimism, or lack of hopefulness in CPP, as pessimism, or lack of optimism about the future, was most likely to affect whether or not CPP found their daily activities to be meaningful.

The reading age of the measure was not reported by the authors, however the language used in the measure was relatively complex. For example, words such as “enthusiasm”, and

“accomplish” were included in the BHS. The authors report that the test is internally consistent reporting the Cronbach’s alpha as $\alpha = .93$ (Beck & Steer, 1988)

Dispositional Optimism

The Life Orientation Test (*LOT*) is a 12 item self report measure of Dispositional Optimism (Scheier & Carver, 1985), and takes approximately five minutes to complete. The LOT consists of eight items and four filler items. There are four positive items (1, 4, 5, & 11), four negative items (3, 8, 9 & 12), and four filler Items (2, 6, 7 & 10). The measure requires the patient to respond to the 12 items, on a five point Likert type scale, ranging from (A) “I agree a lot” to (E) “I disagree a lot”. Each of the positively phrased items is scored from 0-4, with A “I agree a lot” = 4, and E “I disagree a lot” = 0, and the negatively phrased items are scored from A=0 to E=4, the filler items are not included in the total LOT score. A total score range for the LOT is from 0-32. The LOT was found to be internally consistent, with the authors reporting the Cronbach’s alpha as $\alpha = .76$. Test-retest reliability ranged from 0.79 to 0.72 over four and thirteen weeks respectively. Validity of the LOT was established in the positive correlations with measures such as internal control and self-efficacy, and negative correlations with depression and hopelessness (Fontaine, Manstead, & Wagner, 1993). The total optimism score indicates how optimistic the patient is, with high scores identifying patients with high dispositional optimism. The reading age of the LOT was not reported by the authors.

This measure of dispositional optimism was included in the study because, the severity of symptoms of patients with chronic illness, and psychological distress, has been found to be affected by optimistic personality or disposition (Achat, et al., 2000; Costello et al., 2002; Jackson, Weiss, Lundquist, & Soderlind, 2002). With those patients who are more optimistic in their attitude toward life, and their medical condition/s, experiencing less severe pain and illness symptoms (Chang & Sanna, 2001; Fournier, et al., 2002a)

Meaningful Daily Activity

The Revised Meaningful Daily Activity (MDAQ-R) is reported in Chapter Four, Study One. The MDAQ-R, was designed to measure the extent to which various daily activities were rated by patients to be meaningful, and consists of 29 items, rated on a seven point Likert type scale, ranging from 0= Not at All Meaningful to 6=Extremely Meaningful. The measure takes 5 to 10 minutes to complete, and the MDAQ-R Flesch-Kincaid Grade reading level is 6.5 and the Flesch reading ease is 59.3 (Microsoft Word).

The measure as reported in Study One of this research, was internally consistent, the Cronbach's alpha for each of the MDAQ-R subscales were MDAQ-R 1 Support, Caring & Interpersonal Relationships $\alpha = .82$; MDAQ-R 2 Structured Tasks $\alpha = .84$; MDAQ-R 3 Sensory & Leisure Activities $\alpha = .73$; MDAQ-R 4 Home Maintenance $\alpha = .78$ and $\alpha = .85$ for the total MDAQ-R score. There was no test-retest reliability calculated. The validity of the measure was established in Study One. MDAQ-R subscales were all positively correlated with the *MDA* Visual Analogue Scale: 1 Support, Caring and Interpersonal Relationships ($r = .18$, $p < .05$), 2 Structured Tasks ($r = .24$, $p < .05$), 3 Sensory and Leisure Activities ($r = .22$, $p < .01$), and 4 Home Maintenance and Health Maintenance ($r = .16$, $p < .05$), and the total MDAQ-R score ($r = .29$, $p < .01$). In Study One norms for the MDAQ-R, and each of the subscales, have also been calculated for a non clinical sample of 234 Australian adults (males= 107, females=127), aged between 25 and 65 years of age (Refer Table 25). There was no test-retest reliability calculated.

Daily Activity

The Revised Daily Activity Questionnaire (DAQ-R) was reported in Study One, Chapter Four. The DAQ-R was designed to measure the frequency of performing various daily activities, and consists of 28 items, rated on a seven point Likert type scale, ranging

from 0= *Never*, to 6= *Very Often*. The measure takes 5 to 10 minutes to complete, and the DAQ-R Flesch-Kincaid Grade reading level is 6.3 and the Flesch reading ease is 60.5 (Microsoft Word).

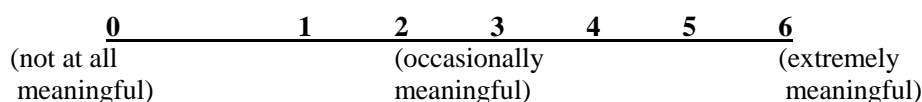
The measure was internally consistent, with the Cronbach's alpha for each of the DAQ-R subscales as DAQ-R 1 Domestic Chores $\alpha = .84$; DAQ-R 2 Work, Health Spirituality & Caring $\alpha = .68$; DAQ-R 3 Interpersonal Contact, Leisure & Sensuality $\alpha = .73$; DAQ-R 4 Home Maintenance $\alpha = .72$ and $\alpha = .80$ for the total DAQ-R score. Test retest reliability was not evaluated. The validity of the DAQ-R items 1- 18 has previously been established. In Study One, the DAQ-R subscales 3 Interpersonal Contact, Leisure and Sensuality ($r = .16$, $p < .05$), and 4 Home Maintenance and Health Maintenance ($r = .24$, $p < .01$), and the total DAQ-R score ($r = .18$, $p < .05$), were all positively correlated with the Likert Scale of *MDA*. DAQ-R 1 Domestic Chores and 2 Work, Health Spirituality and Caring scores were not significantly correlated with *MDA* Likert Scale. Norms for the DAQ-R, and each of the subscales have also been calculated for a non-clinical sample of 234 Australian adults (males= 107, females=127), aged between 25 and 65 years of age (Refer Table 25).

Likert Measures of Meaningful Daily Activity (MDA) and Satisfaction with Life (SWL)

Two single item Likert scale measures were included to assess the patient's overall global Meaningfulness of Daily Activity (*MDA*) and their current Satisfaction with Life (SWL). The *MDA* Flesch-Kincaid Grade reading level was 10.8 and the Flesch reading ease 40.7 and the SWL Flesch-Kincaid Grade reading level was 7.6 and the Flesch reading ease 62.1 (Microsoft Word). Both of the measures were seven point Likert type scales ranging from 0 to 6 (extremely meaningful and extremely satisfied), as depicted in the rating scales.

Overall how meaningful are your daily activities?

Please circle the number on the scale below that best describes how meaningful your current daily activities are.



Overall how satisfied are you with your life?

Please circle the number on the scale below that best describes your current satisfaction with life.

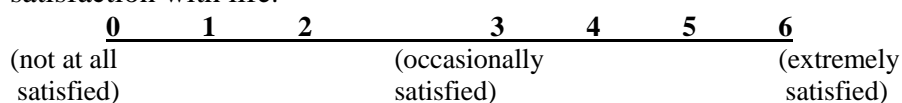


Figure 9. Likert type Measures of MDA and SWL

A Participant Information Sheet was also included, along with the measures, to obtain relevant demographic variables that have been found to influence the outcome of pain treatment. These included gender, age, observation of a religion, education level attained, employment status, marital status, having children, caring for someone, a history of previous illness, and medications used. Also, information relating to whether or not the participants had sustained a work injury, had been involved in a motor vehicle accident, or were involved in legal proceedings as a result of a personal injury or accident was collected. Specific details regarding the diagnosis, duration and treatments the participants found most helpful in managing their pain were also collected on this form. A copy of each of the measures and forms provided to participants may be found in Appendices C 1 to C 14.

5.2.3 Procedures

Ethics approval was obtained from Victoria University Human Research Ethics Committee. There were two groups of participants recruited for this study, a clinical cohort, who attended physical therapy practitioners, and a community group, who attended a community centre (CS).

The clinical cohort (PTS) was recruited from five clinical practices, consisting of three physiotherapists including conventional physiotherapy, hydrotherapy and manipulative therapy (PTS), a myotherapist and an osteopath all located in Melbourne. All CPP (both new and returning), who attended the clinical practice were invited by the receptionist, practice manager, or the treating practitioner to complete the research package, if they fitted the research criteria. In the physiotherapy practices, the practice receptionist or manager noted when, and to whom, the research packages were distributed, and also recorded whether or not participants returned the forms. This information was collected to establish the return rate of research packages distributed, and identifying details were not retained by the researchers or the practices involved in recruitment. Those persons who volunteered for this study were provided with a research package consisting of the study measures, a Participant Information Form, an Information Sheet, Consent Form, and a reply paid envelope, and were asked to return their completed material via pre paid post to the researcher. Some participants chose to return the material to the practice manager, or receptionist, when they attended their next appointment, in the sealed envelope provided in the research package, and these envelopes were forwarded to the researcher.

The community cohort (CS) was recruited at a community centre. All persons who attended the community centre activities program were informed of the research study by the group facilitator, and were invited to take part in the study, a poster was also placed on the notice board of the community centre, and inviting persons to volunteer for the study (refer Appendix C4). Those persons who were willing to volunteer for the study were provided with the research material by staff and volunteers at the centre. The material was identical to the clinical cohort, although the entire community sample returned their completed material via pre paid post.

5.3 Results

5.3.1 Demographic Variables

To explore the relationships between demographic characteristics of CP participants the PTS and CS were combined ($N=108$) and a Pearson Product Moment correlation was performed using SPSS 12 for all of the 19 demographic variables (refer to Table 27).

The source of the sample (PTS or CS) was negatively correlated with marital status ($r = -.19, n=108, p < .05$), and positively correlated with disability ($r = .27, n= 108, p < .01$), work injury ($r = .25, n= 108, p < .01$), and litigation ($r = .23, n= 108, p < .01$). While male gender was negatively correlated with caring for someone ($r = -.25, n= 108, p < .01$), and positively correlated with having a work injury ($r = .27, n= 108, p < .01$) and being involved in litigation ($r = .43, n= 108, p < .01$). Age of participants was positively correlated with employment status ($r = .40, n= 108, p < .01$), and pain duration ($r = .23, n= 108, p < .05$) and negatively correlated with having children ($r = -.43, n= 108, p < .01$), being diabetic ($r = -.23, n= 108, p < .05$) and having additional health problems apart from CP ($r = -.25, n= 108, p < .05$). Being married and having children, and practicing a religion and having children, were also positively correlated ($r = .47, n= 108, p < .01$; and $r = .23, n= 108, p < .05$), and being employed and having children ($r = .40, n= 108, p < .01$) were significantly correlated in a positive direction.

Marital status was negatively correlated with having a malignancy ($r = -.23, n= 108, p < .05$), and having additional disabilities apart from CP ($r = -.20, n= 108, p < .05$). Level of education was positively correlated with having children ($r = .25, n= 108, p < .01$), and additional disability apart from CP ($r = .19, n= 108, p < .05$). For those participants who were currently involved in litigation, as a result of a personal injury or accident, there was also a positive correlation with gender ($r = .43, n= 108, p < .01$), having sustained a work injury

($r = .27$, $n = 108$, $p < .01$), and being a participant recruited from the PTS ($r = .23$, $n = 108$, $p < .05$).

In the PTS there were fewer married persons, these participants also had more disabilities, work injuries and more of them were involved in litigation. Employment status was influenced by participants' ages, with older participants being less engaged in the workforce. Older persons also had additional health complaints, including diabetes and a longer pain duration. While the correlation analysis identified differences between the two samples, these differences were not significant on the χ^2 and τ tests, apart from work injury, currently litigating and experiencing multiple physical disabilities.

Table 27. Pearson Product Moment Correlation of Demographic Variables (n=108)

N=108	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)
(1) Source of Sample																			
(2) Gender	.11																		
(3) Age	-.04	.16																	
(4) Religion	.18	-.12	-.16																
(5) Education	.03	.12	-.01	.14															
(6) Employment Status	-.16	.04	.40**	-.05	-.15														
(7) Marital Status	-.19*	.15	.11	.04	.08	.26**													
(8) Children	-.09	.12	-.43**	.23*	.25**	-.12	.47**												
(9) Caring	.03	-.25*	.08	.02	-.14	.12	.08	.02											
(10) Malignancy	.06	-.08	-.14	.16	.04	-.09	-.23*	-.03	.01										
(11) Disability	.27**	-.08	-.05	-.01	.19*	-.13	-.20*	.04	-.16	.11									
(12) Diabetes	-.01	-.12	-.23*	.01	-.11	-.31**	-.16	.01	-.12	.19*	-.02								
(13) Psychiatric Illness	-.01	-.04	.07	-.13	-.05	.12	-.16	-.07	.18	-.08	.07	.03							
(14) Health Problems	-.01	-.09	-.25*	-.04	-.07	-.19*	-.16	.00	.06	.23*	.03	.22*	.15						
(15) Medication	.02	.09	-.15	-.07	.11	-.18	-.05	.07	.01	.00	.02	.03	.13	.20*					
(16) Work Injury	.25**	.27**	.02	-.15	.01	.01	.10	.11	.07	.01	.05	.09	-.05	-.10	.08				
(17) Motor Accident	.13	-.02	-.08	.09	-.10	.09	.10	.11	.07	.01	-.05	.09	-.05	-.10	.08	.05			
(18) Litigation	.23*	.43**	.15	.06	.16	-.14	.08	.14	-.10	-.12	.04	-.14	.05	-.23*	.19	.34**	-.04		
(19) Pain Duration	-.04	.08	.23*	.07	.17	.31**	.17	.13	.04	-.09	-.09	-.19	.07	-.20*	-.19	-.01	-.13	.04	

*Correlation is significant at ≤ 0.05 level (2 tailed)**Correlation is significant at ≤ 0.01 level (2 tailed)

5.3.2 Participants' Pain and Disability Characteristics

No significant differences were found between the pain duration of the two CP samples. The majority of participants in both the PTS and CS experienced pain for >24 months (n= 37, 74% and n= 41, 70.7%).

Causes of Chronic Pain

There were 103 participants (95.3%) who responded to the MPQ item “What is your pain condition called?” Musculoskeletal disease accounted for 68.5% (n=74) of the reported primary diagnosis. Other conditions identified were injuries 17.6% (n=19), nervous system disorders 5.6% (n=6), and malignant and non-malignant neoplasms 1.8% (n=2). Seventy one percent of those persons who reported two diagnosed pain conditions, indicated their additional diagnosis was a musculoskeletal disease (n=15). The reported diagnosis of CPP conditions is illustrated in Figure 10. For a comprehensive list of all the participants self reported diagnosis of pain conditions refer to Appendix C 16.

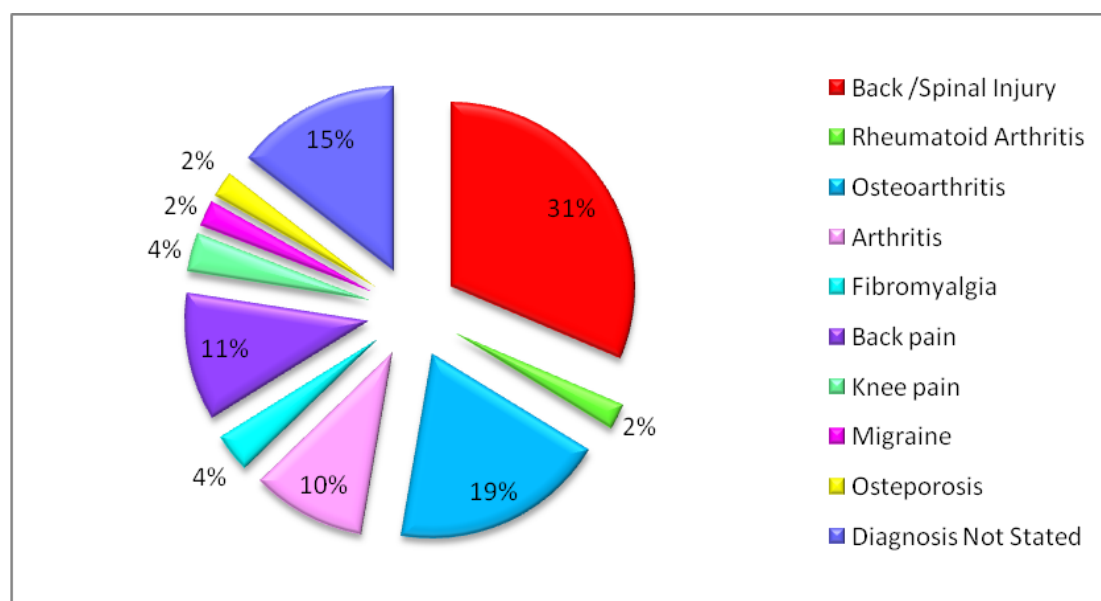


Figure 10. Combined Samples Reported Diagnosis of Chronic Pain Condition

Apart from the anatomical or medical cause of pain identified by CPP a separate measure CPP perception of the Causes of their CP was collected on the IPQ-R. IPQ-R, Accident or Injury, was the most common cause of CP, for both samples. A summary of the mean scores for all of the possible IPQ-R Scale causes of CP, for each sample are represented in Figure 11. To determine whether the observed differences between the CS and PTS reported causes of pain on the IPQ-R were significant Mann-Whitney U Tests were calculated for each of the 18 IPQ-R items. There were significant differences between the between the CS and PTS for the IPQ-R individual item scores: My own behaviour $z = -2.83$, $p = .01$ and Accident or injury $z = -3.06$, $p = .01$.

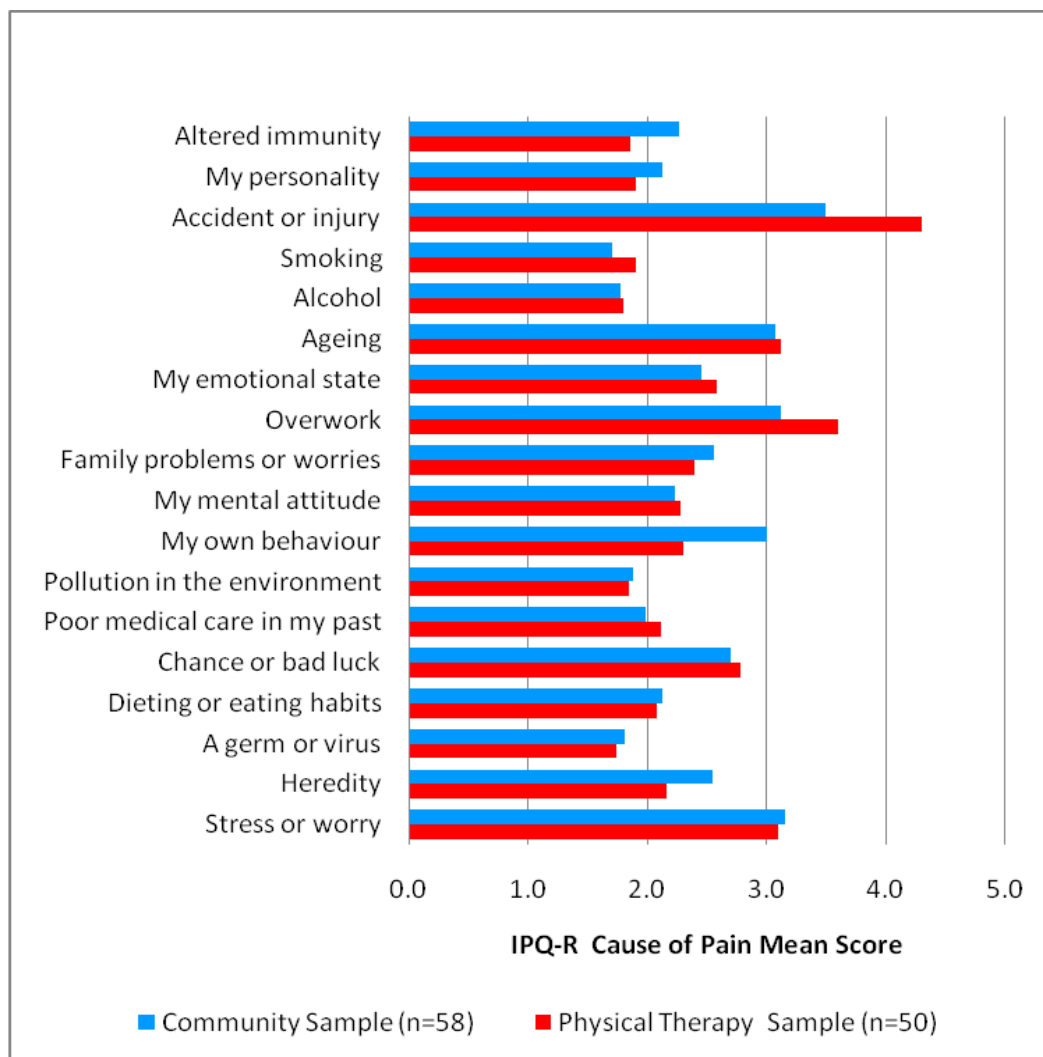


Figure 11. IPQ-Cause of Chronic Pain Items 1 to 18 Mean Score: Community Sample (CS n=58) and Physical Therapy Sample (PTS n=50)

Anatomical Location/s of Pain

Table 28, depicts the number of participants who identified pain in various pain sites, on the anatomical drawing of the McGill Pain Questionnaire item “Where is your pain?” At least one pain site was identified by 100% (n=108) of CPP, two pain sites by 80.6% (n=87), three 62.9% (n=68), four 47.2% (n=51), five 28.7 % (n=31), six 16.7% (n=18), seven 7.4% (n=8), eight 2.8 % (n=3) and nine pain sites were reported by 1.9% (n=2).

There were no significant differences between the number of PTS and CS who identified back, neck, and shoulder locations of pain. There were however more participants in the CS who identified ankles, fingers/hand, head, knees, toes/feet as the location of their pain. This difference may be related to the prevalence of arthritis in the CS, where 27.5% of the sample reported their primary diagnosis being a form of arthritis, compared to 18% in the PTS.

Table 28. MPQ Pain Locations: Combined Sample Number of Persons who Identified Pain Locations (N= 108)

Pain Location	No of cases	%
Ankle/s	13	12.0%
Arm/s	21	19.4%
Back	70	64.8%
Elbow/s	6	5.6%
Finger/hand/s	22	20.4%
Head	17	15.7%
Hip/s	42	38.9%
Knee/s	37	34.3%
Leg/s	22	20.45
Neck	47	43.5%
Shoulder/s	50	46.3%
Toes/feet	11	10.2%
Wrist/s	13	12.0%

Pain Management Strategies

The combined sample pain management strategy reported to be most helpful was physical therapies 41.1% (n=44), consisting of hydrotherapy 21.5% (n=23), physiotherapy 6.5% (n=7), myotherapy 3.7% (n=4), massage % 3.7% (n=4), chiropractic treatment 3.7% (n=4), acupuncture .9% (n=1) and osteopathy .9% (n=1). Of the 44 chronic musculoskeletal pain patients who reported physical therapy was the most helpful pain management strategy 34 (68%) were in the PTS and 10 (17%) in the CS.

The second most helpful pain management strategy was medication 18.7% (n=20), including: pain medication 8.4% (n=9) and anti-arthritic medication 7.5% (n=8). Seventeen of the 20 persons (29.3%) who reported medication was their most helpful pain management strategy were in the CS, compared with three in the PTS (6%). While behavioral strategies were found to be helpful by 15.9% (n=17), including behaviours such as rest 4.7% (n=5), modifying activities 3.7% (n=4), and keeping busy 4.7% (n=5). In total there were 35 different pain management strategies reported by the CPP, a comprehensive list of these strategies may be found in Appendix C 16.

There were 92 (85.19%) of the 108 of the participants who indicated they used at least one pain medication. Of these participants 43 % were from the PTS, and 49 % were in the CS. Seventy seven percent (n= 84) of persons who used pain medication used one pain medication, 20.37% (n=22) used two pain medications, and 5.55% (n=6) used three pain medications. The most often used medications were anti-arthritics such as Celebrex 8.7% (n=9), Vioxx 6.8% (n=7) and other NSAID's 6.8% (n=7), and pain medication such as Panadene Forte 10.7% (n=11), Tramal 6.8% (n=7), and Panadol 8.7% (n=9). A summary of the broad categories of medications used by CPP is provided in Figure 12, and a comprehensive list of the trade names of specific medications used by CPP may be found in Appendix C 16.

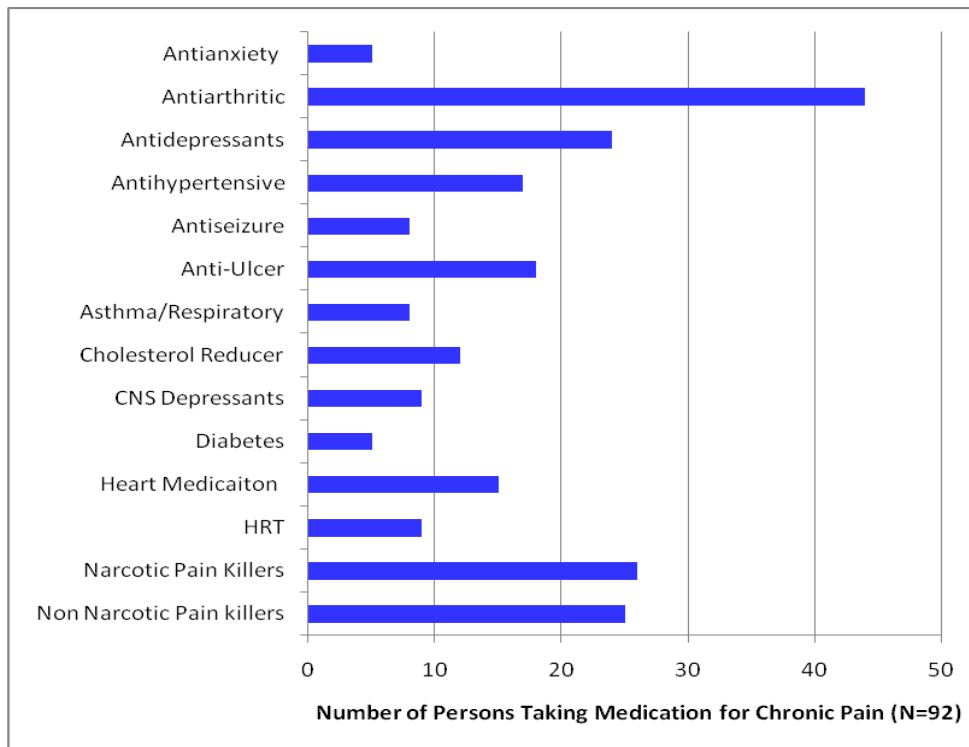


Figure 12. Combined Sample Numbers of Persons Taking Medications to Manage Chronic Pain

The Cs and the PTS sample differed on demographic variables, including the number of participants who had sustained a work injury $z = 6.72$ (df 1) $p < .01$ and who were currently litigating $z = 5.79$ (df 1) $p < .05$, more PTS patients reported sustaining a work injury and currently being involved in litigation.

5.3.3 Scoring and Analysis of Measures

Each of the measures was scored according to the test authors prescribed method of scoring as described in section 5.2.3. The data were then checked for missing data, errors, minimum and maximum values, and extreme values. It was noted that there were very few extreme values. Twenty-one, of the twenty-six scales, did not have any extreme values. There were some low scores on the BHS $n = 4$, MDAQ-R 4 $n = 4$, HADS Depression $n = 1$, Satisfaction with Life $n = 3$ and Meaningfulness of Daily Activity $n = 1$.

For the combined CP sample each of the measures was then assessed for normality. This analysis was performed using SPSS 12. Measures of frequency and distribution were calculated, box plots, stem and leaf plots, and histograms were generated, for each of the

twenty six scales. The Skewness and Kurtosis scores were also calculated for each of the measures (refer Appendix C 17). On the visual inspection of histograms and stem and leaf plots, it was noted that the BHS, the DAQ-R 4 Home Maintenance. While the DAQ-R 1 (Domestic Chores), and the Likert Scale of SWL, and MDA. were negatively skewed, the distribution of these measures was consistent with social research scores, such as those obtained for measures of hopelessness, SWL and MDA (Pallant, 2001).

Normality was observed, and confirmed by the Skewness and Kurtosis measures, being within +1 to -1, for the MPQ PRI Sum, MPQ NWC, PDI, HADS Anxiety and Depression, LOT, BHS, all of the MDAQ-R subscales and total score, and the DAQ-R subscales and total score. The MPQ Number of Pain Sites (-1.15), MPQ PPI (1.17) and the Likert Scale SWL (1.41) were not within Kurtosis range of +1 to -1. On examining the Normal Q Plot, and Detrended Normal Q Plot there were equally distributed points above and below the horizontal line.

The reliability of each of the eight measures used in this study was tested using Cronbach's Alpha coefficient. The results of the Cronbach's Alpha confirmed that the test items for each of the measures were generally within acceptable limits ($\infty.7$) and ranged from .13 to .91. These results were also relatively consistent with the test authors' reliability statistics of the measure (refer Table 29). The internal consistency of the MPQ Parts One, Three, and Four, could not be calculated using this reliability method, and the MPQ Part Two, Pain Ranking Index (PRI) Miscellaneous $\alpha = .53$ (standardized $\alpha = .55$) was poor.

To determine whether or not there were any statistically significant differences between the participant's demographic variables and scores on the measures, ANOVA tests were performed. The results of these tests may be found in Appendix C 24. There were statistically significant differences between the mean scores of CS and PTS, males and females, working and not working, work injury and non work injury, and also between litigants and non

litigants, on more than one of the measures. The subscale means and standard deviations are presented in Tables 30, 31 and 32, along with *p* values and degrees of freedom.

Table 29. Combined Sample Mean Scores (N=108)

Measure	n	<u>M</u>	S D	Range	α	Test Authors α
MPQ NWC	108	9.12	4.97	0-20	NA	NA
Sum MPQ PRI	108	22.71	14.09	0-78	.85	NA
MPQ PPI	108	2.18	.94	1-5	NA	NA
PDI	108	5.68	2.54	0-70	.89	.86
IPQ-R 1	107	15.75	5.94	6-30	.86	.86
IPQ-R 2	107	15.86	5.19	7-35	.76	.77
IPQ-R 3	107	5.71	2.64	3-15	.76	.67
IPQ-R 4	107	6.61	2.05	2-10	.13	.23
HADS Anxiety	106	9.42	4.37	0-21	.86	.93
HADS Depression	106	7.13	4.67	0-21	.86	.90
BHS	103	5.70	5.05	0-20	.90	.93
LOT	103	20.02	6.69	0-32	.81	.76
Likert Scale <i>SWL</i>	108	3.93	1.32	0-6	NA	NA
Likert Scale <i>MDA</i>	108	4.09	1.32	0-6	NA	NA
MDAQ-R 1	94	24.90	9.80	0-42	.82	.82
MDAQ-R 2	94	18.19	9.02	0-36	.82	.84
MDAQ-R 3	94	34.10	12.86	0-36	.85	.73
MDAQ-R 4	94	14.54	7.68	0-36	.68	.78
Sum MDAQ-R	94	91.73	30.67	0-174	.91	.85
DAQ-R 1	101	21.20	7.62	0-30	.86	.84
DAQ-R 2	101	27.35	9.17	0-60	.58	.68
DAQ-R 3	101	22.43	9.06	0-48	.80	.73
DAQ-R 4	101	7.89	5.67	0-30	.68	.72
Sum DAQ-R	101	78.86	22.57	0-168	.84	.80

Legend:

MPQ NWC: Number of Words Chosen	MPQ PRI S: Sensory Pain Rating Index	MPQ PRI A: Affective Pain Rating Index
MPQ PRI E: Evaluative Pain Rating Index	MPQ PRI M: Miscellaneous	Sum MPQ PRI: Total Pain Rating Index
MPQ PPI: Present Pain Intensity	PDI: Pain Disability Index	IPQ-R 1: Psychological Attributions
IPQ-R 2 Risk Factors	IPQ-R 3 Immunity	IPQ-R 4 Accident or Chance
HADS A HADS Anxiety	HADS D: HADS Depression	BHS: Beck Hopelessness Scale
LOT Dispositional Optimism	Likert Scale (SWL) Satisfaction with Life	Likert Scale (MDA)
MDAQ-R 1 Support, Caring & Interpersonal Relationships	MDAQ-R 2 Structured Tasks	Meaningfulness of Daily Activities
MDAQ-R 4 Home & Health Maintenance	MDAQ-R Total MDAQ-R Score	MDAQ-R 3 Sensory & Leisure Activities
DAQ-R 2 Work, Health, Spirituality & Caring	DAQ-R 3 Interpersonal Contact, Leisure & Sensuality	DAQ-R 1 Domestic Chores
DAQ-R Total DAQ-R Score		DAQ-R 4 Home Maintenance

Pain and Disability

Table 30, provides a breakdown of the means, and standard deviations, of the Pain and Disability measure scores for: the community sample/physical therapy samples; males/females; working/not working; work injury/no work injury; and litigants/non litigants. The significance of the difference between the measure scores, according to these demographic characteristics, is also reported in this table. To examine the type of CPP in the sample the character of the participants pain will be considered. As observed in Table 30, there were differences between the scores obtained on the PDI items according to demographics. As a result of this observation, each of the seven areas of PDI daily functioning, were reviewed. Figure 13 summarises these differences.

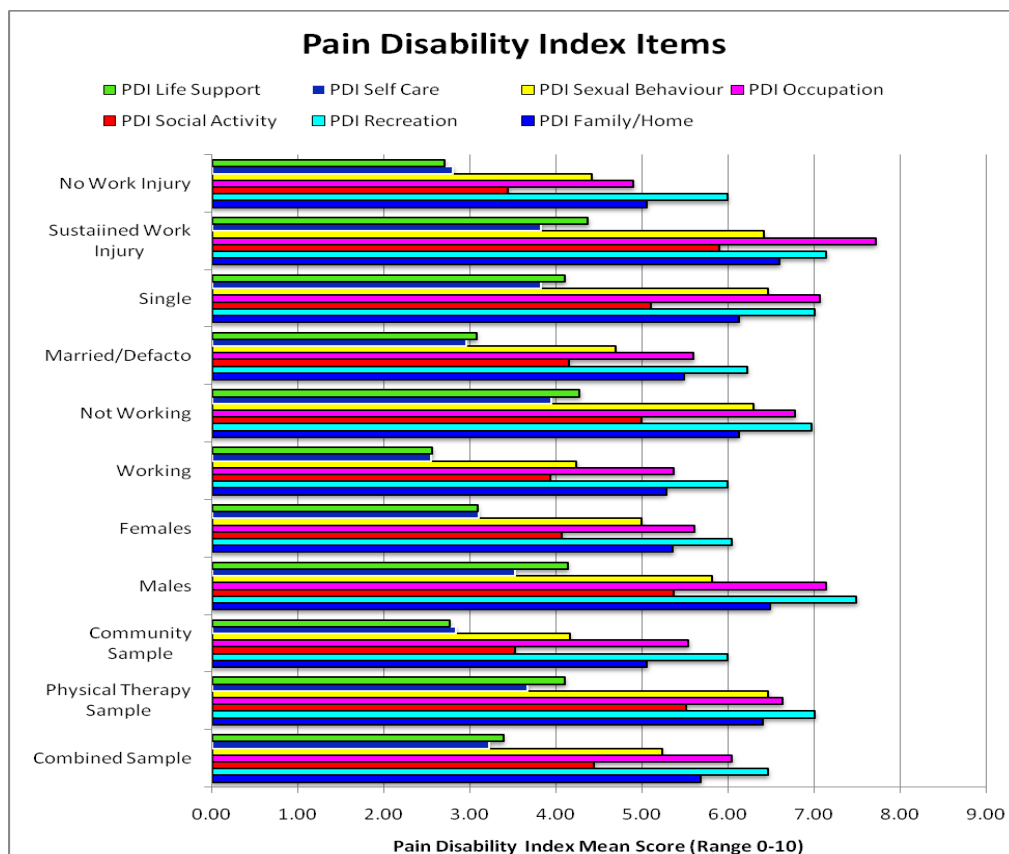


Figure 13. Mean Pain Disability Index Scores for Participant Sub Samples (N=108)

Table 30. Pain and Disability Scores: Physical Therapy Sample (PTS) and Community Sample (CS); Male (M) and Female (F); Working (W) and Not Working (NW); Work Injury (WI) and No Work Injury (NWI); and Litigating (L) and Not Litigating (NL).

	PTS n=50		CS n=58		Sig.	M n=31		F n=77		Sig.	W ^e		NW ^f		Sig.	WI ^g		NWI ^h		Sig.	L ⁱ		NL ^j		Sig.
Measures	M	SD	M	SD	ρ	M	SD	M	SD	ρ	M	SD	M	SD	ρ	M	SD	M	SD	ρ	M	SD	M	SD	ρ
MPQ NWC	9.96	5.15	8.40	4.74		9.39	5.00	9.0	4.99		7.77	4.41	10.58	5.17	.01	9.32	5.31	8.98	4.77		11.72	5.63	8.60	4.69	.05
MPQ PRI	24.18	13.88	21.45	14.27		23.19	14.51	22.52	14.01		18.70	11.75	27.04	15.20	.001	23.18	15.39	22.39	13.25		29.00	15.99	21.46	13.43	.05
MPQ PPI	2.36	.90	2.02	.95	.05	2.35	.95	2.10	.93		2.11	.87	2.25	1.01		2.34	.89	2.06	.96		2.83	.86	2.04	.90	.001
PDI	39.74	15.61	29.83	15.41	.001	39.90	16.47	32.21	15.68	.05	29.86	15.24	39.33	15.92	.001	41.91	13.27	29.27	16.13	.001	47.50	12.52	31.80	15.64	.001
PDF	.26	.98	-.21	.97	.01	.22	1.02	-.09	.99		-.34	.84	.36	1.04	.001	.29	.93	-.20	1.01	.01	.74	.93	-.15	.95	.001
Legend																									
MPQ NWC: Number of Words Chosen					MPQ PPI: Present Pain Intensity					MPQ PRI: Total Pain Rating Index					PDI: Pain Disability Index					PDF: Pain and Disability Factor					

Note the numbers of participants in each of the groups were:

PTS ^an=50, CS ^bn=58, M ^cn=31, F ^dn=77, W ^en=56, NW ^fn=51, WI ^gn=44, NWI ^hn=64, L ⁱn=18, NL ^jn=90.

Due to the unequal numbers of CP in each of the groups significance tests for non parametric samples were calculated with Mann-Whitney U.

Dispositional Optimism and Psychological Distress

Dispositional optimism was affected by demographic variables. To determine the significance of these observed differences three Mann-Whitney U tests were calculated, gender ($p < .01$), work status ($p < .01$), and currently litigating ($p < .01$). All significantly affected Dispositional Optimism scores obtained on the LOT. The effect of these demographic variables on the LOT are presented in Figure 14. Males and females who were working had higher Dispositional Optimism scores regardless of their litigation status, or having sustained a work injury or not. This was particularly evident for males who had sustained a work injury and were also litigants. Where the mean score for Dispositional Optimism was 23 for males who were working and 12 for men who were not working.

Table 31, provides a breakdown of the mean, and standard deviation, of the Psychological Distress (hopelessness, depression and anxiety, Dispositional Optimism and Illness Perception scores for: the community sample/physical therapy samples; males/females; working/not working; work injury/no work injury; and litigants/non litigants. The significance of the difference between the measure scores, according to these demographic characteristics, is also reported in this table.

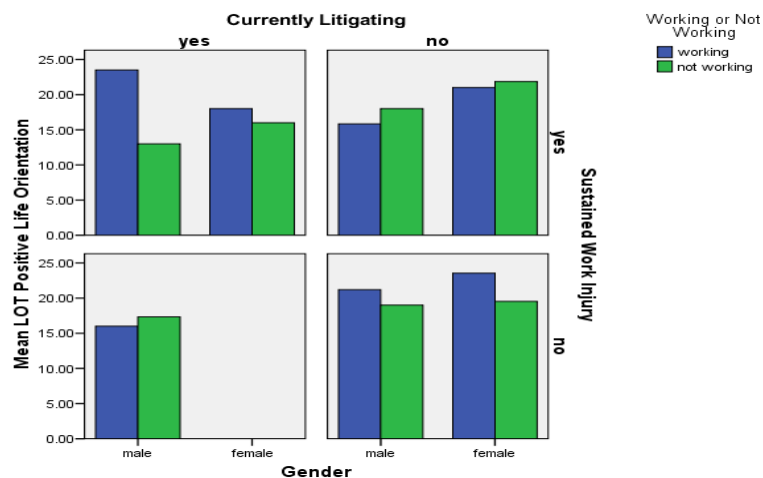


Figure 14. Mean Dispositional Optimism Scores for Gender, Work Status, Work Injury and Litigation.

Table 31. Illness Perception, Psychological Distress and Dispositional Optimism Scores: Physical Therapy Sample (PTS); Community Sample (CS); Male (M);Female (F); Working (W); Not Working (NW); Work Injury (WI);No Work Injury (NW); Litigating (L); Not Litigating (NL)

	PTS		CS ^b		Sig.	M ^c		F ^d		Sig.	W ^e		NW ^f		Sig.	WI ^g		NWI ^h		Sig.	L ⁱ		NL ^j		Sig.
	n=50 ^a		n=58			n=31		n=77																	
Measures	M	SD	M	SD	ρ	M	SD	M	SD	ρ	M	SD	M	SD	ρ	M	SD	M	SD	ρ	M	SD	M	SD	ρ
IPQ-R 1	15.80	6.02	15.65	5.95		15.17	5.83	15.39	6.03		14.64	6.40	16.88	5.24	.05	14.45	5.58	16.55	6.09		14.29	4.44	15.99	6.19	
IPQ-R 2	15.48	4.93	16.19	5.43		15.32	5.39	16.08	5.13		15.24	5.09	16.52	5.26		14.07	5.11	17.06	4.93	.01	11.61	3.81	16.72	5.02	.00
IPQ-R 3	5.54	2.40	5.95	2.82		5.10	2.43	5.96	2.69		5.09	2.46	6.37	2.68	.01	4.91	2.23	6.25	2.76	.01	4.39	1.72	5.98	2.71	.05
IPQ-R 4	7.08	1.82	6.19	2.17	.05	7.39	1.67	6.29	2.12	.05	6.47	2.05	6.75	2.06		7.37	1.76	6.09	2.08	.01	7.94	1.70	6.34	2.02	.01
HADS A	10.70	4.50	8.27	3.95	.01	11.77	4.55	8.49	3.95	.00	8.24	3.78	10.63	4.64	.01	10.93	4.63	8.34	3.87	.00	12.61	4.75	8.76	4.01	.00
HADS D	8.28	5.15	6.11	3.96	.05	9.87	5.22	6.05	3.97	.00	6.07	4.26	8.23	4.85	.05	9.14	4.86	5.71	3.99	.00	12.44	4.85	6.05	3.83	.00
BHS	6.90	5.62	4.61	4.25	.05	7.93	5.79	4.82	4.48	.01	4.56	4.68	6.86	5.20	.01	7.40	5.56	4.48	4.43	.00	8.72	5.43	5.06	4.76	.01
PDF	.29	1.07	-.28	.88	.00	.61	1.08	-.25	.88	.00	-.29	.90	.27	1.04	.001	.41	1.06	-.32	.85	.00	.93	1.01	-.21	.89	.00
LOT	18.94	7.47	20.96	5.83		17.17	7.05	21.14	6.24	.01	21.42	6.99	18.54	6.07	.05	18.51	6.99	21.10	6.30		16.22	6.91	20.82	6.93	.01

Legend

IPQ-R 1: Psychological Attributions

IPQ-R 2 Risk Factors

IPQ-R 3 Immunity

IPQ-R 4 Accident or Chance

HADS A HADS Anxiety

HADS D: HADS Depression

BHS: Beck Hopelessness Scale

PDF: Psychological Distress Factor

LOT Dispositional Optimism

Note the numbers of participants in each of the groups were:

PTS ^a n=50, CS ^b n=58, M ^c n=31, F ^d n=77, W ^e n=56, NW ^f n=51, WI ^g n=44, NWI ^h n=64, L ⁱ n=18, NL ^j n=90.

Due to the unequal numbers of CPP in each of the groups significance tests for non parametric samples were calculated with Mann-Whitney U

Hopelessness scores obtained on the BHS were significantly affected by the demographic variables including gender, work status, work injury and currently litigating. To determine the significance of these observed differences four Mann-Whitney U tests were calculated. Gender ($p < .01$), work status ($p < .01$), work injury ($p < .01$), and currently litigating ($p < .01$). All significantly affected hopelessness scores obtained the BHS. The effect of these demographic variables on the BHS measure of hopelessness are presented in Figure 15.

Male CPP who were not working had significantly higher scores on the BHS than those males who were working. This positive association between males not working and the severity of hopelessness was quite evident, in that males who were not working, having sustained a work injury and were litigating was 11, while those who were working in this group of males had a mean score of 2.5. However for female CPP working, having sustained a work injury and currently litigating increased the severity of hopelessness.

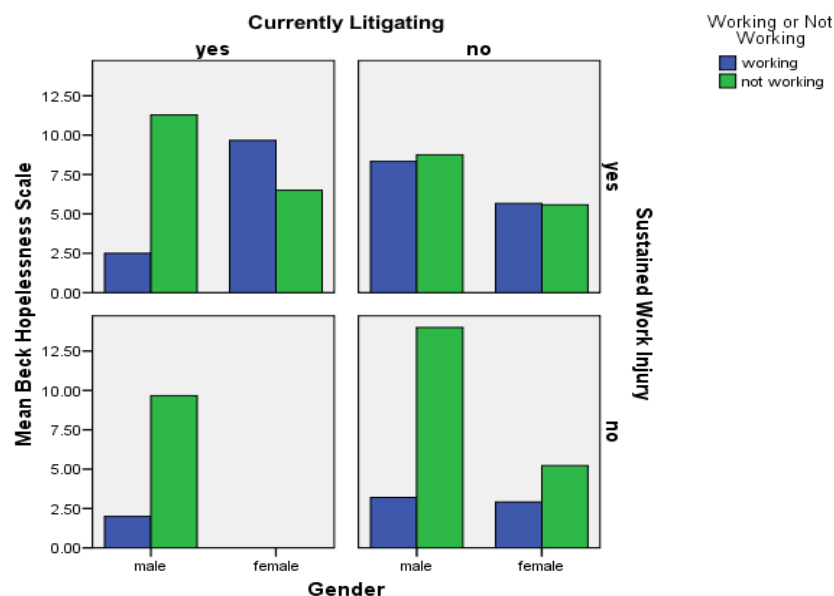


Figure 15. Mean Hopelessness Scores for Gender, Work Injury, Work Status and Litigation.
Daily Activity and Meaningful Daily Activity

Table 32 presents results of Z tests that were calculated for each of the DAQ-R and MDAQ-R subscales for both samples, Study One (community sample) and Study Two (chronic pain sample). There were only four areas of DA where the two populations did not significantly differ from one another: Domestic Chores, Structured Tasks, Support, Caring and Interpersonal Relationships and Home and Health Maintenance.

This analysis supports the changed meaningfulness of CPP compared to community samples. Persons who experience CP do not find the same activities to be equally meaningful nor do they participate in meaningful activities as often as persons in the broader community do.

While Table 33 provides a breakdown of the means, and standard deviations, of SWL, MDA, DAQ-R and MDAQ-R mean scores for: the community sample/physical therapy samples; males/females; working/not working; work injury/no work injury; and litigants/non litigants. The significance of the difference between the scores, according to these demographic characteristics, is also reported in this table, depicting the significant differences between male and female participants' scores on all of the DAQ-R subscales except for Home Maintenance.

MDAQ-R scores were significantly different for Support, Caring & Interpersonal Relationships, and Structured tasks. Also there were significant differences between litigants and non litigants' scores on all of the DAQ-R subscales, and the MDAQ-R Sensory & Leisure Activities subscale. The largest difference between the two groups was for the attributed meaningfulness ratings for Sensory and Leisure Activities.

Table 32. DAQ-R and MDAQ-R Means for Scores Study One Community Sample (Study One) and Study Two Chronic Pain Sample

Subscale	Study 1 n=216	<i>M</i>	<i>SD</i>	Study 2 n= 101	<i>M</i>	<i>SD</i>	<i>Z</i>	<i>p</i>
DAQ-R 1	216	21.99	6.90	101	21.19	7.62	-1.17	NS
DAQ-R 2	215	24.78	9.29	101	27.35	9.17	2.78	.01
DAQ-R 3	209	26.30	7.62	101	22.43	9.06	-5.10	.001
DAQ-R 4	193	11.15	7.95	101	7.89	5.67	-4.12	.001
Total DAQ-R	186	84.46	18.87	94	78.86	22.57	-2.48	.01
MDAQ-R 1	193	28.35	8.71	94	24.90	9.80	-3.84	.001
MDAQ-R 2	192	19.66	9.77	94	18.19	9.02	-1.46	NS
MDAQ-R 3	190	37.46	9.61	94	34.09	12.86	-3.40	.001
MDAQ-R 4	193	12.79	9.03	94	14.54	7.62	1.88	NS
Total MDAQ-R	172	93.59	23.36	94	91.37	30.67	-.59	NS

Legend

DAQ-R 1 Domestic Chores
 DAQ-R 2 Work, Health, Spirituality & Caring
 DAQ-R 3 Interpersonal Contact, Leisure & Sensuality
 DAQ-R 4 Home Maintenance
 Total DAQ-R Score

MDAQ-R 1 Support, Caring & Interpersonal Relationships
 MDAQ-R 2 Structured Tasks
 MDAQ-R 3 Sensory & Leisure Activities
 MDAQ-R 4 Home Maintenance & Health Maintenance
 Total MDAQ-R Score

Table 33. SWL, MDAQ-R and DAQ-R Scores: Physical Therapy Sample (PTS); Community Sample (CS), Male (M); Female (F), Working (W); Not Working (NW), Work Injury (WI); No Work Injury (NL); Litigating (L); Not Litigating (NL)

	PTS ^a		CS ^b		Sig.	M ^c		F ^d		Sig.	W ^e		NW ^f		Sig.	WI ^g		NW ^h		Sig.	L ⁱ		NL ^j		Sig.
Measures	M	SD	M	SD	ρ	M	SD	M	SD	ρ	M	SD	M	SD	ρ	M	SD	M	SD	ρ	M	SD	M	SD	ρ
Likert Scale (SWL)	3.62	1.37	4.91	1.23	.01	3.52	1.55	4.09	1.19		4.39	1.04	3.42	1.42	.001	3.36	1.37	4.31	1.15	.001	2.56	1.54	4.20	1.09	.001
Likert Scale (MDA)	3.86	1.62	4.29	.96		3.58	1.46	4.30	1.20	.05	4.55	.95	3.60	1.47	.001	3.73	1.44	4.34	1.17	.05	3.11	1.75	4.29	1.12	.001
MDAQ-R 1	23.80	10.09	25.88	9.54		20.19	9.11	26.81	9.48	.00	26.31	8.70	23.43	10.73		23.68	10.05	25.85	9.60		19.61	11.25	26.16	9.06	.05
MDAQ-R 2	19.45	9.31	17.08	8.71		17.74	8.98	18.37	9.10		19.56	8.24	16.76	9.65		19.44	9.53	17.23	8.57		16.83	10.22	18.51	8.76	
MDAQ-R 3	32.05	14.17	35.90	11.43		31.74	13.69	35.04	12.49		36.71	12.09	31.37	13.20		32.80	14.76	35.09	11.22		26.94	15.17	35.79	11.73	.05
MDAQ-R 4	14.68	6.33	14.42	8.76		17.63	6.71	13.30	7.73	.01	14.06	7.64	15.04	7.76		16.54	7.98	13.00	7.13	.05	15.33	7.35	14.36	7.79	
MDAQ-R	89.98	31.44	93.28	30.21		87.30	31.65	93.52	30.32		96.65	26.61	86.61	33.94		92.46	34.56	91.17	27.60		78.72	35.83	94.82	28.73	
DAQ-R 1	20.32	7.90	21.96	7.36		14.82	7.02	23.64	6.35	.00	21.78	7.55	20.60	7.72		19.03	7.92	22.62	7.13	.05	14.24	8.50	22.61	6.64	.00
DAQ-R 2	28.15	9.87	26.65	8.56		21.25	5.67	29.68	9.21	.00	29.55	9.19	25.10	8.68	.05	27.40	8.39	27.31	9.72		22.41	8.55	28.35	9.02	.01
DAQ-R 3	20.77	9.49	23.87	8.49		18.32	8.37	24.00	8.87	.00	25.12	8.82	19.68	8.53	.00	20.50	8.91	23.69	9.00		14.06	7.25	24.12	8.45	.00
DAQ-R 4	6.64	4.90	8.98	6.11	.05	9.46	6.57	7.29	5.21		8.31	5.30	7.46	6.06		7.08	5.73	8.43	5.62		3.71	4.06	8.74	5.60	.00
DAQ-R	75.87	24.91	81.46	20.19		63.86	19.89	84.62	20.92	.00	84.76	20.57	72.84	23.12	.05	74.00	23.43	82.05	21.58		54.41	19.17	83.81	19.89	.00

Legend

Likert Scale *Satisfaction with Life* (SWL)
MDAQ-R 1 *Support, Caring & Interpersonal Relationships*
MDAQ-R 3 *Sensory & Leisure Activities*
MDAQ-R Total MDAQ-R Score
DAQ-R 2 *Work, Health, Spirituality & Caring*
DAQ-R 4 *Home Maintenance*

Likert Scale *Meaningfulness of Daily Activities* (MDA)
MDAQ-R 2 *Structured Tasks*
MDAQ-R 4 *Home Maintenance & Health Maintenance*
DAQ-R 1 *Domestic Chores*
DAQ-R 3 *Interpersonal Contact, Leisure & Sensuality*
DAQ-R Total DAQ-R Score

Note Due to the unequal numbers of CP in each of the group's significance tests for non parametric samples was calculated with Mann-Whitney U.

Relationship between Measures

Having examined the effect of demographic variables on the measures the association between all of the measures of pain, disability, psychological distress, optimism and the cause of illness (IPQR) was considered, and a Pearson Product-Moment correlation was calculated in SPSS 12 for the combined sample (n=108). The result of this calculation is presented in Table 34.

Table 34. Association between Pain, Disability, and Psychological Measures

Measure	n	1	2	3	4	5	6	7	8	9	10	11	12
1. MPQ NWC	108	1											
2. . MPQ PPI	108	.32**	1										
3. . MPQ PRI	108	.94**	.32**	1									
4. . PDI	108	.41**	.48**	.42**	1								
5. . BHS	103	.17	.33**	.17	.55**	1							
6. . HADS D	106	.32**	.39**	.32**	.64**	.70**	1`						
7. . HADS A	106	.40**	.29**	.38**	.60**	.63**	.71**	1					
8. . LOT	103	-.12	-.13	-.13	-.33**	-.58**	-.55**	-.54**	1				
9. . IPQR 1	107	.30**	-.09	.29**	.29**	.04	.09	.40**	-.31**	1			
10. . IPQR 2	107	-.04	-.18	-.03	-.03	-.01	-.14	.15	-.11	.54**	1		
11. . IPQR 3	107	.08	-.07	.09	.09	.02	.01	.014	-.04	.47**	.49**	1	
12. . IPQR 4	107	.09	.20*	.04	.04	.31**	.31**	.033**	-.25*	.14	.01	.01	1

McGill Pain Questionnaire (**MPQ**), Number of Words Chosen (**NWC**), Present Pain Intensity (**PPI**), **Total** Pain Rating Index (**PRI**), Pain Disability Index (**PDI**), Illness Perception Questionnaire Revised (**IPQR**), Hospital Anxiety and Depression Scale (**HADS**), HADS Anxiety, HADS Depression, Beck Hopelessness Scale (**BHS**) Life Orientation Test (**LOT**)

The Psychological Distress measures of Hopelessness (BHS), Anxiety and Depression (HADS) were all highly significantly correlated with each other in a positive direction ($p < .01$). While the LOT measure of Dispositional Optimism was strongly correlated in a negative direction with disability (PDI, $p < .01$), and all of the measures of Psychological Distress ($p < .01$).

Disability was significantly correlated in a positive direction with pain measures ($p < .01$), Hopelessness (BHS), Depression (HADS D), and Anxiety (HADS A) were all positively correlated with Disability and negatively correlated with Dispositional Optimism ($p < .01$).

On the basis of the positively associated relationships that were identified between the pain and disability measures (MPQ and PDI), and the Psychological Distress measures (HADS and BHS), two Principal Component Factor Analyses were performed to reduce the number of measures for further analysis to test the research models.

Reducing the pain and disability measures to one pain and disability factor

A principal component factor analysis with varimax rotation was performed including the PDI and the MPQ scores. There was one factor selected for extraction in SPSS version 18. Olkin measure of sampling adequacy was .50 and the Bartlett's Test of Sphericity significance was $p = .000$. The factor identified had an eigenvalue greater than 1, and a factor loading of .80 accounted for 71.06 % of the variance. The factor scores were saved as the Pain and Disability factor Scores to be used in further analyses. The LOT was retained as a separate measure because it was associated in a negative direction with both psychological distress and pain and disability measures. The IPQ R was also retained as a separated measure because the association between the IPQ R Causes of CP subscales and both pain and disability and Psychological Distress was not uniform and did not fit into either of the categories of Pain and Disability or Psychological Distress.

The Pain and Disability factor was significantly influenced by demographic variables such as gender, work status, work injury and litigation and these variables were explored further. To determine the significance of these observed differences four Mann-Whittney U tests was calculated. There were significant differences between the Pain and Disaiblity Factor and gender ($\rho < .05$), work status ($\rho < .01$), sustaining a work injury ($\rho < .01$), and currently litigating ($\rho < .01$). The effect of these demographic variables on the mean Pain Disability Factor scores are presented in Figure 16.

Pain and Disability factor scores were higher for males and females who had sustained a work injury, were currently litigating and not currently in paid employment. Those CPP who were working (both males and females) had lower scores on the Pain and Disability factor if they had not sustained a work injury and were not litigating. Pain and disability as measured on the Pain and Disability factor was negatively associated with being employed.

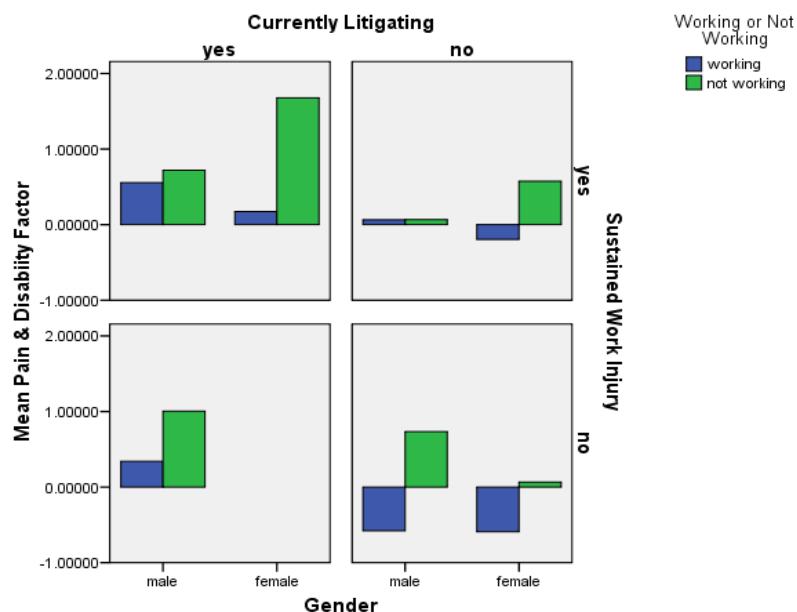


Figure 16. Pain and Disability factor Scores: Gender, Work Status, Work Injury, and Litigation

Reducing the psychological distress measures to one psychological distress factor

In a second Principal Component Analysis the measures entered into the analysis were the HADS anxiety and depression subscales and the BHS. The results of this analysis identified one component. There was one factor that was selected for extraction in SPSS version 12. Olkin measure of sampling adequacy was .73 and the Bartlett's Test of Sphericity significance was $p=.000$. The factor identified had an eigenvalue greater than 1, and a factor loading of $> .90$ for each of the measures in the equation, that accounted for 78.80% of the variance. The factor scores were saved as the Psychological Distress Factor Scores to be used in further analyses.

Psychological Distress Factor (consisting of HADS, anxiety and depression scales and BHS) scores were significantly affected by the demographic variables including gender, work status, work injury and currently litigating. To determine the significance of these observed differences four Mann-Whitney U tests were calculated. Gender ($p < .001$), work status ($p < .01$), work injury ($p < .001$) and currently litigating ($p < .001$) all significantly effected Psychological Distress scores obtained the Psychological Distress Factor.

The effect of these demographic variables on the Psychological Distress Factor are presented in Figure 17. For male and to a lesser extent female CPP, Psychological Distress was positively related to not working, having sustained a work injury and to be currently litigating. There was however a negative association between currently working, not having a work injury or currently litigating and Psychological Distress.

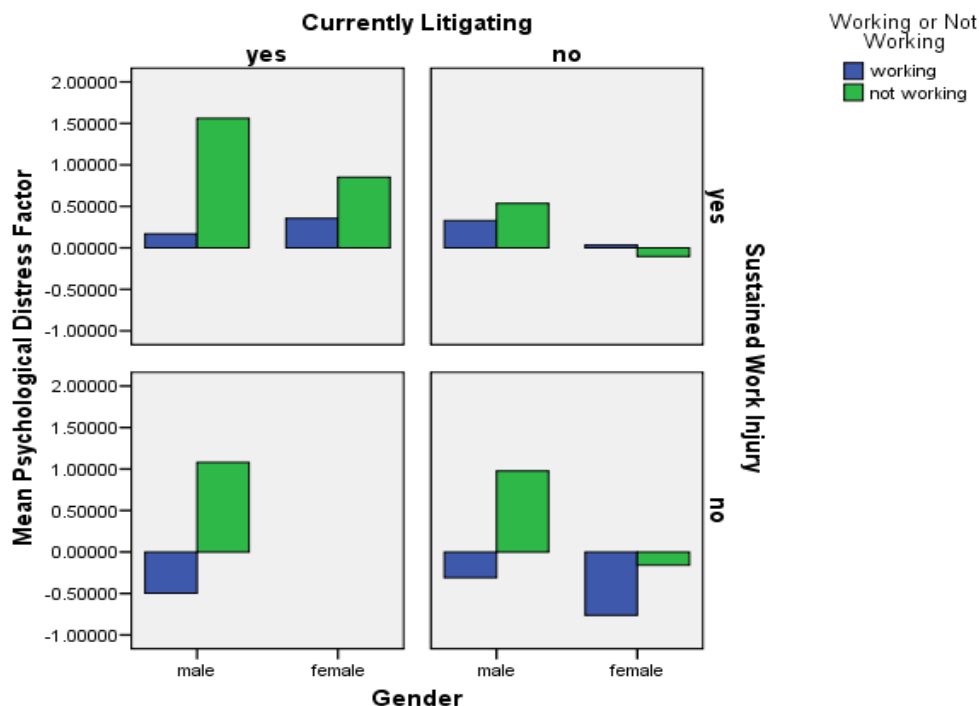


Figure 17. Mean Psychological Distress Factor Scores for Males, Females, Work Injury Status and Litigation.

Possibly Change to what do you think and add in CFA comment OR where should this be otherwise????

Psychometric Properties of the, MDAQ-R and DAQ-R

To estimate the construct validity of the MDAQ-R a Pearson Product Moment Correlation was calculated in SPSS 12. The MDAQ-R subscales and total score, DAQ-R subscales and total score, the Likert Scales SWL and MDA were included in the calculation. The result of this correlation coefficient are presented in Table 35 Satisfaction with life (SWL) was positively correlated with all of the DAQ-R subscales ($r = .25$ to $r = .65$), the MDAQ-R subscales Support, 1 Caring & Interpersonal Relationships ($r = .35$, $p < .01$) and 3 Sensory & Leisure Activities ($r = .26$, $p < .05$). The MDA was correlated with all of the DAQ-R subscales ($r = .32$ to $r = .50$), and the MDAQ-R subscales 1 Support, Caring & Interpersonal

Relationships $r=.30$, $p < .01$), 3 Sensory & Leisure Activities ($r=.26$, $p < .05$) and SWL ($r=.61$, $p < .01$).

A second analysis was performed to investigate whether the MDAQ-R was a valid measure of MDA, and if the MDAQ-R measured a separate construct to pain, disability, dispositional optimism, illness perception, satisfaction with life, global rating of the meaningfulness of daily activities, or participation in daily activities, a Principal Component Factor Analysis, with varimax rotation was performed.

Prior to performing this analysis all of the measures used in Study Two were assessed for normality on the Shapiro Wilk test. Not all of the measures were normally distributed, however, there were linear relationships observed on the Normal Q-Q plots. The ratio of participants to variables was less than ideal ($N=107$) but in the circumstances was sufficient to perform an exploratory analysis of these variables.

There were 28 variables entered into the PCA, the rotation method was Varimax and there were seven factors with Eigenvalues greater than 1. These seven factors accounted for 77.21% of the variance components identified. The seven component factor solution is summarised in Table 36. Of particular interest was Factor 1 that consisted of a Positive/Negative Affect factor, Positive items were Satisfaction with Life, DAQ-R 3 Interpersonal Contact and Social Support, Dispositional Optimism (four items) and the negative items were Psychological Distress Factor, Beck Hopelessness Scale, HADS Depression, HADS Anxiety, and the Pain Disability Index (five items). Also of note was that the MDAQ-R four subscales and total of all the MDAQ-R subscales loaded on one factor, with no additional items. However the DAQ-R subscales were less consistent in the factor loadings of the subscales. The fact that the MDAQ-R subscales loaded on a single factor tends to support the construct validity of a measure of Meaningful Daily Activity, by measuring a construct that was not being measured in any of the other measures used in this

study. That being the case, the MDAQ-R was measuring a construct that was not measured in any of the standard measures used to assess the CP population in the current study. Also MDAQ-R 3 Interpersonal Contact and Social Support was a possible measure of Positive Affect that is yet to be tested.

When this completed thesis was examined, one of the examiners recommended that a confirmatory factor analysis (CFA) should be performed to confirm the factor structure of the MDAQ-R and DAQ-R measures. To comply with this request a confirmatory factor analysis was performed by Dr Ken Sharp, from the Statistical Consultancy Centre, Department of Mathematics and Statistics, University of Melbourne. Dr Sharp confirmed that the MDAQ-R and DAQ-R were both four factor solutions and that the elimination of four items on the DAQ (DAQ-R 28 items) and three items from the MDAQ (MDAQ-R 29 items) from the original 32 item scales was justified (Study One). The details of these analyses are provided in Appendix E 1-7.

It was confirmed that, on the general population participants in Study One that a four factor solution was acceptable although not optimal, the Root Mean Error of Approximation (RMSEA) range being within the acceptable range of .05 to 0.08. The RMSEA of the MDAQ-R (29 items) and DAQ-R (28 items) four factor solutions was 0.082 and 0.079 respectively (Browne & Cudeck, 1993).

For the CPP in Study Two the results were not quite as acceptable. For the four factor solutions of the MDAQ-R (29 items) and DAQ-R (28 items) measures in Study Two the RMSEA were 0.11 and 0.098. By eliminating four items (Play cards and other games – in subscale MDAQ-R 3 Sensory and Leisure Activities, Mow the lawn, Work on the Car and Work on a needed house repair, all in subscale 4 Home and Health Maintenance) from the MDAQ-R the RMSEA was improved to 0.10. All of these items were taken from the original 18 item WHYMPI Activity Scale. By excluding all of the Home Maintenance items from

MDAQ-R subscale 4 Home and Health Maintenance the remaining three items would be Health items. Given the current study, Study Two, was conducted on a clinical population it is not surprising that health items loaded as a separate factor that was not evident in the general population sampled in Study One. Future revisions of a MDAQ-R measure would need to consider this observation.

Also four items were eliminated from DAQ-R 2 Work, Health, Spirituality and Caring (Go to the doctors, Work in paid employment, Attend health appointments other than doctors, and Take medication) improved the RMSEA to 0.094. Interestingly the Subscale included perhaps three areas that did not necessarily load on the same factor and from the results of the CFA it would appear that this factor should be renamed as Spirituality and Caring. The items identified in the CFA to remove from the DAQ-R were paid work and health items. In future revisions of the DAQ-R measure the factor structure needs to be considered and as was also the case with the MDAQ-R health items appear to load on a separate factor and this requires more robust testing. Once again in Study Two as was observed in Study One paid work did not appear to add to the factor solution and this was somewhat curious. In Study Two this may be explained to some extent by the clinical population sampled and given the possible impact of work injury this may not be so unusual. However in Study One the exclusion of paid work in the Work, Health and Spirituality subscale would have increased the internal reliability from .68 to .74. In any further revisions of the DAQ-R unless there was additional work related items added to the measure, Work in paid employment should be excluded.

These results while helpful in understanding the factor structure in a more rigorous manner require cautious interpretation, because the number of participants in the CP sample of Study Two is not sufficient to interpret the current CFA with any confidence. A larger sample (200+) would be required for clinicians to interpret the CFA with any confidence.

Another study is required to perform this CFA before the measure or measures can be clinically tested (Browne & Cudeck, 1992).

Table 35. Association between Daily Activity, Meaningful Daily Activity, DAQ-R, MDAQ-R and Likert Scales *SWL* and *MDA*

Measure	N	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
(1).DAQ-R 1 <i>Domestic Chores</i>	101												
(2).DAQ-R 2 <i>Work, Health, Spirituality & Caring</i>	101	.42**											
(3). DAQ-R 3 <i>Interpersonal Contact, Leisure & Sensuality</i>	101	.42**	.44**										
(4). DAQ-R 4 <i>Home Maintenance</i>	101	.17	.09	.37**									
(5). Sum DAQ –R	101	.72**	.75**	.82**	.49**								
(6). MDAQ-R 1 <i>Support, Caring & Interpersonal Relationships</i>	87	.45**	.50**	.53**	.22*	.63**							
(7). MDAQ-R 2 <i>Structured Tasks</i>	87	.35**	.22*	.21	.23*	.35**	.46**						
(8). MDAQ-R 3 <i>Sensory & Leisure Activities</i>	87	.33**	.35**	.60**	.42**	.23**	.69**	.45**					
(9). MDAQ-R 4 <i>Home Maintenance & Health Maintenance</i>	87	-.06	.13	-.01	.25*	.09	.30**	.51**	.33**				
(10). Sum MDAQ-R	87	.37**	.40**	.47**	.37**	.57**	.82**	.76**	.85**	.63**			
11). <i>SWL</i>	108	.25*	.21*	.63**	.35**	.51**	.30**	-.01	.26*	-.12	.17		
(12). <i>MDA</i>	108	.32**	.34**	.49**	.22*	.50**	.35**	.14	.33**	.06	.31**	.61**	








** Correlation is significant at the ≤ 0.01 level (2-tailed).

*Correlation is significant at the ≤ 0.05 level (2-tailed).

Table 36. Principal Component Analysis Rotated Factors of all Measures

Measure	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6	Factor 7
Psychological Distress Factor	.87						
VAS Satisfaction with Life	-.84						
Beck Hopelessness Scale	.83						
HADS Depression	.84						
DAQ-R 3 Interpersonal Contact & Social Support	-.75						
HADS Anxiety	.74						
Dispositional Optimism (LOT)	-.71						
VAS Meaningfulness of Daily Activities	-.67						
Pain Disability Index	.65						
MPQ Sum		.98					
MPQ NWC		.93					
MPQ PRI Sensory		.91					
MPQ PRI Misc.		.83					
Pain & Disability Factor		.79					
MPQ PRI Affective		.78					
MPQ PRI Evaluative		.71					
MDAQ-R Sum			.94				
MDAQ-R 2 Structured Tasks			.80				
MDAQ-R 4 Home Maintenance & Health Maintenance			.78				
MDAQ-R 3 Sensory & Leisure Activities			.71				
MDAQ-R 1 Support, Caring & Interpersonal Relationships			.69				
IPQR 2 Risk Factors				.87			
IPQR 3 Immunity				.80			
IPQR 1 Psychological Attributions				.79			
DAQ-R 1 Domestic Chores					.73		
DAQ-R 2 Work, Health, Spirituality & Caring					.71		
MPQ PPI						.79	
DAQ-R 4 Home Maintenance							.69
IPQR 4 Accident or Chance							.59
Percentage of Variance	22.87	18.59	11.87	7.71	6.79	5.10	4.28

DAQ-R Sum loaded on Factors 1 (-.60) and 5 (.64) and was not included.

Factor 1		Positive and Negative Affect	Factor 2		Pain and Disability
Factor 3		Meaningful Daily Activity	Factor 4		Illness Perceptions
Factor 5		Domestic Chores, Work, Health, Spirituality & Caring			
Factor 6		Pain Intensity	Factor 7		Accident and Home Maintenance

5.3.4 Testing the Revised Meaningful Daily Activity Research Model

There were two major aims of this research study as stated in Chapter Two. The first aim was: To develop two separate reliable measures of daily activity; one measuring the frequency of performing a variety of daily activities (DAQ-R) and the other assessing how meaningful a normal (non pain) participant rates these daily activities to be (MDAQ-R). This aim has been achieved and is reported in Chapters, Three and Four.

The second aim was to test the research model: relating meaningfulness of activity and frequency of daily activity to pain severity, psychological distress (depression, anxiety, and hopelessness), and functional disability in a sample of chronic pain patients (CPP). This aim has been undertaken with a sample of CPP. The characteristics of the CP sample are described in *5.3.2 Participants' Pain and Disability Characteristics*. The current analyses will now address the testing of the DA and MDA research model and report the results obtained from these analyses.

A Model was constructed from the theory and research reviewed, and depicted in Figure 8. The research model was revised to incorporate the subscales identified in Chapter Four, the measure of daily activity (DAQ-R), and meaningful daily activity (MDAQ-R). Consistent with Figure 8 the revised research model incorporated the possible influence of demographic variables, the cause of CP (IPQ-R), Dispositional Optimism (LOT), MDA (MDAQ-R) and DA (DAQ-R) on CP symptoms (anxiety, depression, disability, hopelessness, disability and pain).

Hierarchical multiple regression analyses were performed using SPSS 18 to test the proposed research model (Figure 8). The dependent variables in the analyses included (1) Pain and Disability factor (incorporating pain and functional Disability) and (2) Psychological Distress factor (incorporating anxiety, depression and hopelessness), (3) Dispositional Optimism, (4) Meaningful Daily Activity and (5) Daily Activity. The method

of regression analysis used for calculations was linear and method of entry was enter, cases were excluded pairwise in the calculation, the stepping method criteria was a probability of F entry .05 and .10 removal.

Predicting Pain and Disability

To test the contribution of the independent variables (IV's), DA and MDA on the dependent variables (DV's) Pain and Disability (Pain and Disability factor) a number of hierarchical linear regression analyses were performed. In the 1st Step of the analyses the demographic variables that were significantly correlated with the dependent variable Pain and Disability were entered. In Step 2 the causes of pain were entered (IPQ-R Causes Subscales). Step 3 was the addition of Dispositional Optimism (LOT), in the 4th Step the DAQ-R subscales were added to the equation and in Step 5 the MDAQ-R subscales were included. In subsequent analyses the Psychological Distress variables, Hopelessness, Depression and Anxiety were also added as separate steps in the equations to establish the contribution of Psychological Distress to Pain and Disability of CPP. The results of these analyses are presented in Tables 37, 38, 39 and 40.

In the first multiple hierarchical regression analyses the Pain and Disability factor was the DV and the independent variables were entered in five consecutive steps. The 1st Step included the demographic variables marital status, litigation status, pain duration and work status. In Step 2 the four IPQ-R subscales were included (1 Psychological Attributions, 2 Risk Factors, 3 Immunity, 4 Accident or Chance). Step 3 consisted of the inclusion of Dispositional Optimism (LOT). In the 4th Step the DAQ-R subscales were added to the equation (1 Domestic Chores, 2 Work, Health, Spirituality & Caring, 3 Interpersonal Contact & Social Support, 4 Home Maintenance), and in Step 5 the MDAQ-R subscales (1 Support, Caring & Interpersonal Relationships, 2 Structured Tasks, 3 Sensory & Leisure Activities and 4 Home Maintenance & Health Maintenance) were included.

The ANOVA was significant; at each step of the regression and Multiple R was significantly different from zero; Step 1 $F(4, 79) = 8.38$ $p < .001$, Step 2 $F(8, 75) = 5.16$ $p < .001$, Step 3 $F(9, 74) = 5.12$ $p < .001$, Step 4 $F(13, 70) = 5.22$ $p < .001$, and Step 5 $F(17, 66) = 3.98$ $p < .001$.

Table 37 presents the unstandardized regression coefficients (B), the standardized regression coefficients (β) and because the current study has a small sample rather than R^2 being reported as the estimate of the population variance in the Pain and Disability Factor at each step of the equation, the adjusted R^2 has also been reported. Refer to Appendix D 1 for the Model Summary, ANOVA and Coefficients.

In Step 1 where work status, marital status, pain duration and litigation status were the four IV's entered into the equation 30.0% (26.0% adjusted) of the variation in Pain and Disability (Pain and Disability Factor) was explained by these demographic variables. The addition of Causes of Pain (IPQ-R) in 2 explained an additional 6.0% ($R^2 = 0.35$, 0.29 adjusted), Dispositional Optimism in Step 3 explained an additional 3.0% ($R^2 = 0.38$, 0.31 adjusted). When Daily Activity was included in Step 4, an additional 11.0% ($R^2 = 0.49$, 0.40 adjusted) of the variation in Pain and Disability was explained and when Meaningful Daily Activity was added to the regression in Step 5 the change was minimal, adding only 1.0% ($R^2 = 0.51$, 0.38 adjusted) to the prediction of Pain and Disability.

This minimal effect of MDA is very likely due to two other variables being added to the equation before Meaningful Daily Activity was added. Dispositional Optimism was added in Step 3 and Daily Activity in Step 4. The MDAQ-R and DAQ-R are highly correlated as demonstrated in Table 22. Therefore the items that were included in the DAQ-R while not rating meaningfulness per se, the DAQ-R rated the same activities as MDAQ-R, however they were rating the frequency of performing the activity, rather than the meaningfulness of the activity. Also Dispositional Optimism is a measure of Positive Affect and it is very

possible that some of the items would overlap and minimise the effect of MDA. The R^2 change was significantly different from zero at the end of Step 1 (Demographic IV's) and Step 4 (Daily Activity), there was however no significant differences in Step 2 (Causes of Pain), 3 (Dispositional Optimism) and Step 5 (Meaningful Daily Activity).

The significant positive predictors of higher Pain and Disability at Step 4 of the equation were not working in paid employment, being single or not in a relationship and higher scores on IPQ-R Psychological Attributions and DAQ-R 2 Work Health, Spirituality and Caring. Higher scores on Dispositional Optimism and DAQ-R 4 Home Maintenance negatively predicted scores on Pain and Disability.

Table 37. Hierarchical Multiple Regression Analysis Predicting Pain and Disability Factor

Independent Variables	<i>B</i>	β	ΔR^2
Step 1			0.30***
Working or Not Working	0.44	0.23*	
Relationship/Married or Single	0.53	0.24**	
Litigating or Not Litigating	-0.85	-0.34***	
Pain Duration \leq or \geq 18 months	0.30	0.14	
Step 2			0.06
Working or Not Working	0.39	0.20	
Relationship/Married or Single	0.49	0.22*	
Litigating or Not Litigating	-0.73	-0.30**	
Pain Duration \leq or \geq 18 months	0.21	0.10	
IPQ-R 1 Psychological Attributions	0.05	0.29*	
IPQ-R 2 Risk Factors	-0.04	-0.24	
IPQ- R 3 Immunity	0.02	0.06)	
IPQ- R 4 Accident or Chance,	0.01	0.03)	
Step 3			0.03
Working or Not Working	0.04	0.23	
Relationship/Married or Single	0.46	0.22*	
Litigating or Not Litigating	-0.56	-0.23)	
Pain Duration \leq or \geq 18 months	0.27	0.13	
IPQ-R 1 Psychological Attributions	0.04	0.23	
IPQ-R 2 Risk Factors	-0.05	-0.27*	
IPQ- R 3 Immunity	0.03	0.09	
IPQ- R 4 Accident or Chance	0.00	0.01	
LOT Positive Life Orientation	-0.03	-0.20	
Step 4			0.11**
Working or Not Working	0.50	0.26*	
Relationship/Married or Single	0.47	0.21*	
Litigating or Not Litigating	-0.27	-0.11	
Pain Duration \leq or \geq 18 months	0.13	0.06	

Table 37. Hierarchical Multiple Regression Analysis Predicting Pain and Disability Factor continued

Independent Variables	<i>B</i>	β	ΔR^2
IPQ-R 1 Psychological Attributions	0.04	0.24*	
IPQ-R 2 Risk Factors	-0.04	-0.22	
IPQ- R 3 Immunity	0.02	0.05	
IPQ- R 4 Accident or Chance	0.02	0.04	
LOT Positive Life Orientation	-0.03	-0.23*	
DAQ-R 1 Domestic Chores	-0.01	-0.10	
DAQ-R 2 Work, Health, Spirituality & Caring	0.03	0.24*	
DAQ-R 3 Interpersonal Contact & Social Support	0.00	-0.01	
DAQ-R 4 Home Maintenance	-0.05	-0.29**	
Step 5			0.01
Working or Not Working	0.47	0.24*	
Relationship/Married or Single	0.45	0.21*	
Litigating or Not Litigating	-0.34	-0.14	
Pain Duration \leq or \geq 18 months	0.12	0.06	
IPQ-R 1 Psychological Attributions	0.04	0.24*	
IPQ-R 2 Risk Factors	-0.04	0.20	
IPQ- R 3 Immunity	0.01	-0.20	
IPQ- R 4 Accident or Chance	0.00	0.01	
LOT Positive Life Orientation	-0.03	-0.20	
DAQ-R 1 Domestic Chores	-0.01	-0.04	
DAQ-R 2 Work, Health, Spirituality & Caring	0.03	0.28**	
DAQ-R 3 Interpersonal Contact & Social Support	0.00	-0.01	
DAQ-R 4 Home Maintenance	-0.06	-0.31**	
MDAQ-R 1 Support, Caring & Interpersonal Relationships	-0.02	-0.18	
MDAQ-R 2 Structured Tasks	-0.01	-0.06	
MDAQ-R 3 Sensory & Leisure Activities	0.01	0.09	
MDAQ-R 4 Home Maintenance & Health Maintenance	0.01	0.06	

*** $p < .001$, ** $p < .01$, * $p < .05$.

In the second multiple hierarchical regression analysis the Pain and Disability Factor was the DV and the independent variables were entered in six consecutive steps. The 1st Step included the demographic variables marital status, litigation status, pain duration and work status. In Step 2 the four IPQ-R subscales were included (1 Psychological Attributions, 2 Risk Factors, 3 Immunity, 4 Accident or Chance). Step 3 consisted of the inclusion of Dispositional Optimism (LOT). In the 4th Step the DAQ-R subscales were added to the equation (1 Domestic Chores, 2 Work, Health, Spirituality & Caring, 3 Interpersonal Contact & Social Support, 4 Home Maintenance). In Step 5 the MDAQ-R subscales (1 Support, Caring & Interpersonal Relationships, 2 Structured Tasks, 3 Sensory & Leisure Activities and 4 Home Maintenance & Health Maintenance) were included and in Step 6 the Psychological Distress factor was included.

The ANOVA was significant; at each Steps of the regression and Multiple R was significantly different from zero. Step 1 $F(4, 77) = 8.07$ $p < .001$, Step 2 $F(8, 73) = 4.67$ $p < .001$, Step 3 $F(9, 72) = 4.80$ $p < .001$, Step 4 $F(13, 68) = 4.99$ $p < .001$, Step 5 $F(17, 64) = 3.86$ $p < .001$ Step 6 $F(18, 63) = 4.83$ $p < .001$.

Table 38 presents the unstandardized regression coefficients (B), the standardized regression coefficients (β), because the current study has a small sample rather than R^2 being reported as the estimate of the population variance in *Pain and Disability* at each step of the equation, the adjusted R^2 has also been reported. Refer to Appendix D 2 for the Model Summary, ANOVA and Coefficients.

In Step 1 where work status, marital status, pain duration and litigation status were the four IV's entered into the equation 30.0% (26.0% adjusted) of the variation in Pain and Disability (Pain and Disability Factor) was explained by these demographic variables. The addition of Causes of Pain (IPQ-R) in Step 2 explained an additional 4.0% ($R^2 = 0.34$, 0.27 adjusted), Dispositional Optimism in Step 3 explained an additional 4.0% ($R^2 = 0.37$, 0.30 adjusted),

adjusted). When Daily Activity was included in Step 4, an additional 11.0% ($R^2 = 0.49$, 0.39 adjusted) of the variation in Pain and Disability was explained and when Meaningful Daily Activity was added to the regression in Step 5 the change was minimal, adding only 2.0% ($R^2 = 0.51$, 0.38 adjusted) to the prediction of Pain and Disability. The Psychological Distress factor was added in Step 6 of the equation and contributed an additional 7% ($R^2 = 0.58$, 0.46 adjusted) to the prediction of Pain and Disability.

The R^2 change was significantly different from zero at the end of Step 1 (Demographic IV's), Step 3 (Dispositional Optimism), Step 4 (Daily Activity) and Step 6 (Psychological Distress factor), there was however no significant differences in Step 2 (Causes of Pain), and Step 5 (Meaningful Daily Activity).

The significant predictors of higher scores on the Pain and Disability Factor in the 6th step of the analysis were being single or not in a relationship, not working and higher DAQ-R 2 Work, Health, Spirituality and Caring. Higher scores on the Psychological Distress factor and. DAQ-R 4 Home Maintenance and Health Maintenance predicted lower scores on the Pain and Disability Factor.

Table 38. Hierarchical Multiple Regression Analysis Predicting Pain and Disability Factor (Including Psychological Distress factor)

Independent Variables	<i>B</i>	β	ΔR^2
Step 1			0.30***
Working or Not Working	0.41	0.21*	
Relationship/Married or Single	0.51	0.24*	
Litigating or Not Litigating	-0.84	-0.35***	
Pain Duration \leq or \geq 18 months	0.33	0.16	
Step 2			0.04
Working or Not Working	0.38	0.20	
Relationship/Married or Single	0.48	0.22*	
Litigating or Not Litigating	-0.75	0.31**	
Pain Duration \leq or \geq 18 months	0.25	0.12	
IPQ-R 1 Psychological Attributions	0.04	0.27*	
IPQ-R 2 Risk Factors	0.04	-0.21	
IPQ- R 3 Immunity	0.02	0.05	
IPQ- R 4 Accident or Chance,	0.01	0.01	
Step 3			0.04*
Working or Not Working	0.32	0.17*	
Relationship/Married or Single	0.46	0.22	
Litigating or Not Litigating	-0.57	-0.23	
Pain Duration \leq or \geq 18 months	0.31	0.15	
IPQ-R 1 Psychological Attributions	0.03	0.19	
IPQ-R 2 Risk Factors	-0.04	-0.23	
IPQ- R 3 Immunity	0.03	0.08	
IPQ- R 4 Accident or Chance	-0.01	-0.01	
LOT Positive Life Orientation	-0.03	-0.22	
Step 4			0.11**
Working or Not Working	0.47	0.24*	
Relationship/Married or Single	0.44	0.21*	
Litigating or Not Litigating	-0.28	-0.12	
Pain Duration \leq or \geq 18 months	0.18	0.09	

Table 38. Hierarchical Multiple Regression Analysis Predicting Pain and Disability factor (including Psychological Distress factor) continued

Independent Variables	<i>B</i>	β	ΔR^2
IPQ-R 1 Psychological Attributions	0.03	-0.18	
IPQ-R 2 Risk Factors	-0.03	-0.18	
IPQ- R 3 Immunity	0.01	0.04	
IPQ- R 4 Accident or Chance	0.01	0.02	
LOT Positive Life Orientation	-0.04	0.25*	
DAQ-R 1 Domestic Chores	-0.01	-0.10	
DAQ-R 2 Work, Health, Spirituality & Caring	0.03	0.25*	
DAQ-R 3 Interpersonal Contact & Social Support	0.00	-0.02	
DAQ-R 4 Home Maintenance	-0.05.-	-0.29**	
Step 5			0.02
Working or Not Working	0.45	0.23*	
Relationship/Married or Single	0.42	0.20	
Litigating or Not Litigating	-0.33	-0.14	
Pain Duration \leq or \geq 18 months	0.16	0.08	
IPQ-R 1 Psychological Attributions	0.03	0.21	
IPQ-R 2 Risk Factors	-0.03	-0.16	
IPQ- R 3 Immunity	0.01	0.02	
IPQ- R 4 Accident or Chance	-0.01	-0.02	
LOT Positive Life Orientation	-0.03	-0.21	
DAQ-R 1 Domestic Chores	0.00	-0.04	
DAQ-R 2 Work, Health, Spirituality & Caring	0.03	0.28**	
DAQ-R 3 Interpersonal Contact & Social Support	0.00	-0.03	
DAQ-R 4 Home Maintenance	-0.06	-0.33**	
MDAQ-R 1 Support, Caring & Interpersonal Relationships	-0.02	-0.19	
MDAQ-R 2 Structured Tasks	-0.01	-0.06	
MDAQ-R 3 Sensory & Leisure Activities	0.01	0.12	
MDAQ-R 4 Home Maintenance & Health Maintenance	0.01	0.10	

Table 38. Hierarchical Multiple Regression Analysis Predicting Pain and Disability factor (including Psychological Distress factor) continued

Independent Variables	<i>B</i>	β	ΔR^2
Step 6			0.07***
Working or Not Working	0.46	0.24*	
Relationship/Married or Single	0.47	0.22*	
Litigating or Not Litigating	-0.25	0.10	
Pain Duration \leq or \geq 18 months	0.02	0.01	
IPQ-R 1 Psychological Attributions	0.03	0.19	
IPQ-R 2 Risk Factors	-0.03	-0.16	
IPQ- R 3 Immunity	0.00	0.00	
IPQ- R 4 Accident or Chance	-0.04	-0.08	
LOT Positive Life Orientation	0.00	-0.01	
DAQ-R 1 Domestic Chores	0.00	0.02	
DAQ-R 2 Work, Health, Spirituality & Caring	0.03	0.30**	
DAQ-R 3 Interpersonal Contact & Social Support	0.01	0.10	
DAQ-R 4 Home Maintenance	-0.05	-0.27**	
MDAQ-R 1 Support, Caring & Interpersonal Relationships	-0.02	-0.18	
MDAQ-R 2 Structured Tasks	-0.01	-0.06	
MDAQ-R 3 Sensory & Leisure Activities	0.01	0.18	
MDAQ-R 4 Home Maintenance & Health Maintenance	0.01	0.05	
Psychological Distress Factor	0.48	0.51***	

*** $p < .001$, ** $p < .01$, * $p < .05$.

In the third multiple hierarchical regression analysis the IV's that were significant in the previous analyses (Table 38) were included. The Pain and Disability factor was the DV and the independent variables were entered in four consecutive steps. The 1st Step included the demographic variables marital status and work status. In Step 2 the DAQ-R subscale 2 Work, Health, Spirituality & Caring was added and in Step 3 the DAQ-R subscale 4 Home Maintenance was included to the equation. In Step 4 the Psychological Distress factor was included.

The ANOVA was significant; at each step of the regression and Multiple R was significantly different from zero. Step 1 $F(2, 94) = 10.85$ $p < .001$, Step 2 $F(3, 93) = 7.19$ $p < .001$, Step 3 $F(4, 92) = 13.54$ $p < .001$, Step 4 $F(5, 91) = 23.40$ $p < .001$.

Table 39 presents the unstandardized regression coefficients (B), the standardized regression coefficients (β), because the current study has a small sample rather than R^2 being reported as the estimate of the population variance in Pain and Disability at each step of the equation, the adjusted R^2 has also been reported. Refer to Appendix D 3 for the Model Summary, ANOVA and Coefficients.

In Step 1 where work status and marital status were the two IV's entered into the equation 19.0% (17.0% adjusted) of the variation in Pain and Disability (Pain and Disability factor) was explained by these demographic variables. The addition of DAQ-R subscale 2 Work, Health, Spirituality & Caring in Step 2 did not contribute to the Pain and Disability factor ($R^2 = 0.19$, 0.16 adjusted). DAQ-R subscale 4 Home Maintenance in Step 3 explained an additional 18.0% ($R^2 = 0.37$, 0.34 adjusted). When the Psychological Distress factor was included in Step 4, an additional 19.0% ($R^2 = 0.56$, 0.54 adjusted) of the variation in Pain and Disability was explained.

The R^2 change was significantly different from zero at the end of Step 1 (Demographic IV's), Step 3 (DAQ-R subscale 4 Home Maintenance) and Step 4 (Psychological Distress

factor), there was however no significant differences in Step 2 (DAQ-R subscale 2 Work, Health, Spirituality & Caring). The significant predictors of higher Pain and Disability in the 4th Step of the analysis were not being married or in a relationship, not working in paid employment, higher scores on DAQ-R Work, Health, Spirituality and Caring and the Psychological Distress factor. Higher scores on DAQ-R 4 Home Maintenance negatively predicted scores in the Pain and Disability factor.

Table 39. Hierarchical Multiple Regression Analysis of Significant Independent Variables Predicting Pain and Disability factor (including Psychological Distress factor as a separate step)

Independent Variables	<i>B</i>	β	ΔR^2
Step 1			0.19***
Working or Not Working	0.70	0.36***	
Marital Status	0.42	0.20*	
Step 2			0.00
Working or Not Working	0.72	0.37***	
Marital Status	0.42	0.20	
DAQ-R 2 Work, Health, Spirituality & Caring	0.00	0.03	
Step 3			0.18***
Working or Not Working	0.70	0.36***	
Marital Status	0.39	0.18	
DAQ-R 2 Work, Health, Spirituality & Caring	0.01	0.07	
DAQ-R 4 Home Maintenance	-0.07	-0.43	
Step 4			0.19***
Working or Not Working	0.47	0.24***	
Marital Status	0.35	0.17*	
DAQ-R 2 Work, Health, Spirituality & Caring	0.02	0.21**	
DAQ-R 4 Home Maintenance	-0.05	-0.27***	
Psychological Distress Factor	0.50	0.52***	

*** $p < .001$, ** $p < .01$, * $p < .05$.

In a fourth multiple hierarchical regression analysis the IV's that were significant in the previous analyses were included. The Pain and Disability factor was the DV and the independent variables were entered in six consecutive steps. The 1st Step included the demographic variables marital status and work status. In Step 2 the DAQ-R subscale 2 Work, Health, Spirituality & Caring was added and in Step 3 the DAQ-R subscale 4 Home Maintenance was included to the equation. In Step 4 Hopelessness was added, Step 5 Depression and the 6th Step was Anxiety.

The ANOVA was significant; at each step of the regression and Multiple R was significantly different from zero. Step 1 $F(2, 94) = 10.85$ $p < .001$, Step 2 $F(3, 93) = 7.19$ $P < .001$, Step 3 $F(4, 92) = 13.54$ $P < .001$, Step 4 $F(5, 91) = 14.23$ $p < .001$, Step 5 $F(6, 90) = 18.13$ $P < .001$ Step 6 $F(7, 89) = 19.77$ $P < .001$.

Table 40 presents the unstandardized regression coefficients (B), the standardized regression coefficients (β), because the current study has a small sample rather than R^2 being reported as the estimate of the population variance in Pain and Disability at each step of the equation, the adjusted R^2 has also been reported. Refer to Appendix D5 for the Model Summary, ANOVA and Coefficients.

In Step 1 where work status and marital status were the two IV's entered into the equation 19.0% (17.0% adjusted) of the variation in Pain and Disability (Pain and Disability factor) was explained by these demographic variables. The addition of DAQ-R 2 Work, Health, Spirituality & Caring in Step 2 did not contribute to the Pain and Disability factor ($R^2 = 0.19$, 0.16 adjusted). DAQ-R 4 Home Maintenance explained an additional 18.0% ($R^2 = 0.37$, 0.34 adjusted) in Step 3. When the Hopelessness was included in Step 4, an additional 7.0% ($R^2 = 0.44$, 0.41 adjusted) of the variation in Pain and Disability was explained. Step 5 Depression added 11% ($R^2 = 0.55$, 0.52 adjusted) and Step 6 Anxiety 6% ($R^2 = 0.61$, 0.58 adjusted) to the Pain and Disability factor.

The R^2 change was significantly different from zero at the end of Step 1 (Demographic IV's), Step 3 (DAQ-R subscale 4 Home Maintenance), Step 4 (Hopelessness), Step 5 (Depression), and Step 6 (Anxiety). There was however no significant difference contributed by Step 2 (DAQ-R subscale 2 Work, Health, Spirituality & Caring).

The positive predictors of the Pain and Disability factor after Step 6 were not being married or in a relationship and not working in paid employment, and higher DAQ-R 2 Work, Health, Spirituality and Caring and higher Depression Scores. Higher scores on DAQ-R 4 Home Maintenance was a negative predictor of Pain and Disability.

Table 40. Hierarchical Multiple Regression Analysis of Significant Independent Variables Predicting Pain and Disability factor (including Hopelessness, Depression and Anxiety as separate steps)

Independent Variables	<i>B</i>	β	ΔR^2
Step 1			0.19***
Working or Not Working	0.70	0.36***	
Relationship/Married or Single	0.42	0.20*	
Step 2			0.00
Working or Not Working	0.72	0.37	
Relationship/Married or Single	0.42	0.20*	
DAQ-R 2 Work, Health, Spirituality & Caring	0.00	0.03	
Step 3			0.18***
Working or Not Working	0.70	0.36	
Relationship/Married or Single	0.39	0.16	
DAQ-R 2 Work, Health, Spirituality & Caring	0.01	0.14	
DAQ-R 4 Home Maintenance	-0.07	-0.37***	
Step 4			0.07***
Working or Not Working	0.59	0.30	
Relationship/Married or Single	0.35	0.16*	
DAQ-R 2 Work, Health, Spirituality & Caring	0.01	0.14	
DAQ-R 4 Home Maintenance	-0.06	-0.37***	
Hopelessness	0.06	0.29***	
Step 5			0.11***
Working or Not Working	0.50	0.26***	
Relationship/Married or Single	0.41	0.19**	
DAQ-R 2 Work, Health, Spirituality & Caring	0.02	0.20**	
DAQ-R 4 Home Maintenance	-0.04	-0.23**	
Hopelessness	-0.01	-0.04	
Depression	0.11	0.54***	

Table 40. Hierarchical Multiple Regression Analysis of Significant Independent Variables Predicting Pain and Disability factor (including Hopelessness, Depression and Anxiety as separate steps) continued

Step 6		0.06***
Working or Not Working	0.46	0.24***
Relationship/Married or Single	0.38	0.18**
DAQ-R 2 Work, Health, Spirituality & Caring	0.02	0.22***
DAQ-R 4 Home Maintenance	-0.04	-0.23***
Hopelessness	-0.02	-0.11
Depression	0.07	0.33**
Anxiety	0.08	0.37

*** $p < .001$, ** $p < .01$, * $p < .05$.

Predicting Psychological Distress

To test the contribution of the independent variables, DA and MDA on the dependent variable Psychological Distress, hierarchical linear regression analyses were performed. In the 1st Step of the analysis the demographic variables that were significantly correlated with the DV of Psychological Distress (Psychological Distress factor) were entered. In Step 2 the causes of pain were entered (IPQ-R Causes Subscales). Step 3 was the addition of Dispositional Optimism (LOT), in the 4th Step the DAQ-R subscales were added to the equation and in Step 5 the MDAQ-R subscales were included. The results of these analyses are presented in Table 41.

The dependent variable entered into the first hierarchical multiple regression analysis was the Psychological Distress factor. The IV's entered in Step 1 were the demographic variables including: education above and below year 12, work status, work injury, gender and litigation status. In Step 2 the four IPQ-R subscales were included (1 Psychological Attributions, 2 Risk Factors, 3 Immunity, 4 Accident or Chance). Step 3 consisted of the inclusion of Dispositional Optimism (LOT). In the 4th Step the DAQ-R subscales were added to the equation (1 Domestic Chores, 2 Work, Health, Spirituality & Caring, 3 Interpersonal

Contact & Social Support, 4 Home Maintenance), and in Step 5 the MDAQ-R subscales (1 Support, Caring & Interpersonal Relationships, 2 Structured Tasks, 3 Sensory & Leisure Activities and 4 Home Maintenance & Health Maintenance) were included.

The ANOVA was significant; at each step of the regression and Multiple R was significantly different from zero. Step 1 $F(5, 76) = 10.42$ $p < .001$, Step 2 $F(9, 72) = 7.74$ $p < .001$, Step 3 $F(10, 71) = 11.37$ $p < .001$, Step 4 $F(14, 67) = 12.10$ $p < .001$, Step 5 $F(18, 63) = 9.08$ $p < .001$.

Table 41 presents the unstandardized regression coefficients (B), the standardized regression coefficients (β), Because the current study has a small sample rather than R^2 being reported as the estimate of the population variance in Psychological Distress at each step of the equation, the adjusted R^2 has also been reported. Refer to Appendix D9 for the Model Summary, ANOVA and Coefficients.

In Step 1 where education above or below year 12, working or not working, sustaining a work injury, gender and litigants or non litigants were the five IV's entered into the equation 41.0% (37.0% adjusted) of the variation in Psychological Distress (Psychological Distress factor) was explained by these demographic variables. The addition of Causes of Pain (IPQ-R) in Step 2 explained an additional 8.0% ($R^2 = 0.49$, 0.43 adjusted), Dispositional Optimism in Step 3 explained an additional 12.0% ($R^2 = 0.62$, 0.56 adjusted). When Daily Activity was included in Step 4 an additional 10.0% ($R^2 = 0.72$, 0.66 adjusted) of the variation in Psychological Distress was explained and when Meaningful Daily Activity was added to the regression in Step 5 the change was minimal adding only 1.0% ($R^2 = 0.72$, 0.64 adjusted) to the prediction of Psychological Distress.

The R^2 change was significantly different from zero at the end of Step 1 (Demographic IV's), Step 2 IPQ-R subscales (1 Psychological Attributions, 2 Risk Factors, 3 Immunity, 4 Accident or Chance), Step 3 Dispositional Optimism (LOT) and Step 4 Daily Activity (DAQ-

R subscales 1 Domestic Chores, 2 Work, Health, Spirituality & Caring, 3 Interpersonal Contact & Social Support, 4 Home Maintenance). There was however no significant difference in Stage 5 Meaningful Daily Activity (MDAQ-R subscales 1 Support, Caring & Interpersonal Relationships, 2 Structured Tasks, 3 Sensory & Leisure Activities and 4 Home Maintenance & Health Maintenance). After Step 4 of the equation there were two negative predictors of Psychological Distress Dispositional Optimism and DAQ-R 3 Interpersonal Contact and Social Support.

Table 41. Hierarchical Multiple Regression Analysis Predicting Psychological Distress

factor

Independent Variables	<i>B</i>	β	ΔR^2
Step 1			0.41***
Education	-0.56	.27***	
Working or Not Working	0.29	0.14	
Work Injury,	-0.28	-0.03	
Gender	-0.65	-0.28**	
Litigating or Not Litigating	-0.62	0.24*	
Step 2			0.08*
Education	-0.54	-0.26**	
Working or Not Working	0.21	0.10	
Work Injury	-0.34	--0.17	
Gender	-0.54	-0.24*	
Litigating or Not Litigating	0.54	-0.21	
IPQ-R 1 Psychological Attributions	0.05	0.28*	
IPQ-R 2 Risk Factors	-0.04	-0.18	
IPQ- R 3 Immunity	0.04	0.11	
IPQ- R 4 Accident or Chance,	0.07	0.14	
Step 3			0.12***
Education	-0.29	-0.14	
Working or Not Working	0.16	0.06	
Work Injury,	-0.15	-0.07	
Gender	-0.32	-0.14	
Litigating or Not Litigating	-0.36	-0.14	
IPQ-R 1 Psychological Attributions	0.02	0.12	
IPQ-R 2 Risk Factors	-0.03	-0.17	
IPQ- R 3 Immunity	0.05	0.15	
IPQ- R 4 Accident or Chance	0.07	0.14	
LOT Positive Life Orientation	-0.07	-0.45***	

Table 41. Hierarchical Multiple Regression Analysis Predicting Psychological Distress factor continued

Independent Variables	<i>B</i>	β	ΔR^2
Step 4			0.10***
Education	-0.20	-0.10	
Working or Not Working	0.10	0.05	
Work Injury	-0.18	-0.09	
Gender	-0.30	-0.13	
Litigating or Not Litigating	0.02	0.01	
IPQ-R 1 Psychological Attributions	0.02	0.09	
IPQ-R 2 Risk Factors	-0.01	-0.03	
IPQ- R 3 Immunity	0.02	0.06	
IPQ- R 4 Accident or Chance	0.07	0.13	
LOT Positive Life Orientation	-0.05	-0.35***	
DAQ-R 1 Domestic Chores	-0.02	-0.11	
DAQ-R 2 Work, Health, Spirituality & Caring	0.00	-0.01	
DAQ-R 3 Interpersonal Contact & Social Support	-0.03	-0.25**	
DAQ-R 4 Home Maintenance	-0.03	-0.17	
Independent Variables	<i>B</i>	β	ΔR^2
Step 5			0.01
Education	-0.19	-0.09	
Working or Not Working	0.07	0.04	
Work Injury	-0.15	-0.07	
Gender	-0.30	-0.13	
Litigating or Not Litigating	0.02	0.01	
IPQ-R 1 Psychological Attributions	0.02	0.11	
IPQ-R 2 Risk Factors	-0.01	-0.06	
IPQ- R 3 Immunity	0.02	0.06	
IPQ- R 4 Accident or Chance	0.07	0.14	
LOT Positive Life Orientation	-0.05	-0.33***	

Independent Variables	<i>B</i>	β	ΔR^2
DAQ-R 1 Domestic Chores	-0.01	-0.0	
DAQ-R 2 Work, Health, Spirituality & Caring	0.00	-0.02	
DAQ-R 3 Interpersonal Contact & Social Support	-0.02	-0.21	
DAQ-R 4 Home Maintenance	-0.03	-0.16	
MDAQ-R 1 Support, Caring & Interpersonal Relationships	0.000	0.00	
MDAQ-R 2 Structured Tasks	0.00	0.01	
MDAQ-R 3 Sensory & Leisure Activities	-0.01	-0.11	
MDAQ-R 4 Home Maintenance & Health Maintenance	0.01	0.06	

*** $p < .001$, ** $p < .01$, * $p < .05$.

The dependent variable entered into the second hierarchical multiple regression analysis was the Psychological Distress factor. The IV's entered in Step 1 were the demographic variables including: education above and below year 12, work status, sustaining a work injury, gender and litigation status. In Step 2 the four IPQ-R subscales were included (1 Psychological Attributions, 2 Risk Factors, 3 Immunity, 4 Accident or Chance). Step three consisted of the inclusion of Dispositional Optimism (LOT). In the 4th Step the DAQ-R subscales were added to the equation (1 Domestic Chores, 2 Work, Health, Spirituality & Caring, 3 Interpersonal Contact & Social Support and 4 Home Maintenance). In Step 5 the MDAQ-R subscales (1 Support, Caring & Interpersonal Relationships, 2 Structured Tasks, 3 Sensory & Leisure Activities and 4 Home Maintenance & Health Maintenance) were included and the Pain and Disability factor was included in the 6th Step of the equation.

The ANOVA was significant; at each step of the regression and Multiple R was significantly different from zero. Step 1 $F(5, 76) = 10.42$ $p < .001$, Step 2 $F(9, 72) = 7.74$ $p < .001$, Step 3 $F(10, 71) = 11.37$ $p < .001$, Step 4 $F(14, 67) = 12.10$ $p < .001$, Step 5 $F(18, 63) = 9.08$ $p < .001$ and Step 6 $F(19, 62) = 10.23$ $p < .001$.

Table 42 presents the unstandardized regression coefficients (*B*), the standardized regression coefficients (β), Because the current study has a small sample rather than R^2 being

reported as the estimate of the population variance in Psychological Distress at each step of the equation, the adjusted R^2 has also been reported. Refer to Appendix D10 for the Model Summary, ANOVA and Coefficients.

In Step 1 where education above or below year 12, working or not working, sustaining a work injury, gender and litigants or non litigants were the five IV's entered into the equation 41.0% (37.0% adjusted) of the variation in Psychological Distress (Psychological Distress factor) was explained by these demographic variables. The addition of Causes of Pain (IPQ-R) in Step 2 explained an additional 8.0% ($R^2 = 0.49$, 0.43 adjusted), Dispositional Optimism in Step 3 explained an additional 12.0% ($R^2 = 0.62$, 0.56 adjusted). When Daily Activity was included in Step 4 an additional 10.0% ($R^2 = 0.72$, 0.66 adjusted) of the variation in Psychological Distress was explained and when Meaningful Daily Activity was added to the regression in Step 5 the change was minimal adding only 1.0% ($R^2 = 0.72$, 0.64 adjusted) to the prediction of Psychological Distress. In Step 6 the Pain and Disability factor contributed a further 4% ($R^2 = 0.76$, 0.66 adjusted).

The R^2 change was significantly different from zero at the end of five of the six steps of the equation. Including Step 1 (Demographic IV's), Step 2 IPQ-R subscales (1 Psychological Attributions, 2 Risk Factors, 3 Immunity, 4 Accident or Chance), Step 3 Dispositional Optimism (LOT) and Step 4 Daily Activity (DAQ-R subscales 1 Domestic Chores, 2 Work, Health, Spirituality & Caring, 3 Interpersonal Contact & Social Support, 4 Home Maintenance), and Step 6 the Pain and Disability factor. There was however no significant difference in Psychological Distress at Steps 5 Meaningful Daily Activity (MDAQ-R subscales 1 Support, Caring & Interpersonal Relationships, 2 Structured Tasks, 3 Sensory & Leisure Activities and 4 Home Maintenance & Health Maintenance).

After Step 6 of the equation there were two positive predictor of Psychological Distress IPQ-R 4 Accident or Chance, and the Pain and Disability Factor. There was one negative predictor of Psychological Distress the Dispositional Optimism score.

Table 42. Hierarchical Multiple Regression Analysis Predicting Psychological Distress factor (including Pain and Disability factor as a Separate Step)

Independent Variables	<i>B</i>	β	ΔR^2
Step 1			0.41***
Education	-0.56	-0.27***	
Working or Not Working	0.29	0.14	
Work Injury,	-0.28	-0.13	
Gender	-0.65	-0.28**	
Litigating or Not Litigating	-0.62	-0.24*	
Step 2			0.08*
Education	0.54	-0.26**	
Working or Not Working	0.21	0.10	
Work Injury	-0.34	-0.17	
Gender	-0.54	-0.24*	
Litigating or Not Litigating	-0.54	-0.21-	
IPQ-R 1 Psychological Attributions	0.05	0.28*	
IPQ-R 2 Risk Factors	-0.04	-0.18	
IPQ- R 3 Immunity	0.04	0.11	
IPQ- R 4 Accident or Chance,	0.07	0.14	

Table 42. Hierarchical Multiple Regression Analysis Predicting Psychological Distress factor (including Pain and Disability factor as a Separate Step) continued

Independent Variables	<i>B</i>	β	ΔR^2
Step 3			0.12***
Education	-.29	-0.14	
Working or Not Working	0.16	0.08	
Work Injury,	0.15	-0.07	
Gender	-0.32	-0.14	
Litigating or Not Litigating	-0.36	-0.14	
IPQ-R 1 Psychological Attributions	0.02	0.12	
IPQ-R 2 Risk Factors	-0.03	-0.17	
IPQ- R 3 Immunity	0.05	0.15	
IPQ- R 4 Accident or Chance	0.07	0.14	
LOT Positive Life Orientation	-0.07	-0.45***	
Step 4			0.10***
Education	-0.20	-0.10	
Working or Not Working	0.10	0.05	
Work Injury	-0.18	-0.09	
Gender	-0.30	-0.13	
Litigating or Not Litigating	0.02	0.01	
IPQ-R 1 Psychological Attributions	0.02	0.09	
IPQ-R 2 Risk Factors	-0.01	-0.03	
IPQ- R 3 Immunity	0.02	0.06	
IPQ- R 4 Accident or Chance	0.07	0.13	
LOT Positive Life Orientation	-0.05	-0.35***	
DAQ-R 1 Domestic Chores	-0.02	-0.11	
DAQ-R 2 Work, Health, Spirituality & Caring	-0.00	-0.11	
DAQ-R 3 Interpersonal Contact & Social Support	-0.03	-0.25**	
DAQ-R 4 Home Maintenance	-0.03	-0.17*	
Step 5			0.01
Education	-0.19	-0.09	
Working or Not Working	0.07	0.04	
Work Injury	-0.15	-0.07	

Table 42. Hierarchical Multiple Regression Analysis Predicting Psychological Distress factor (including Pain and Disability factor as a Separate Step) continued

Independent Variables	<i>B</i>	β	ΔR^2
Gender	-0.30	-0.13	
Litigating or Not Litigating	0.02	0.01	
IPQ-R 1 Psychological Attributions	0.02	0.11	
IPQ-R 2 Risk Factors	-0.01	-0.06	
IPQ- R 3 Immunity	0.02	0.06	
IPQ- R 4 Accident or Chance	0.07	0.14	
LOT Positive Life Orientation	-0.05	-0.33***	
DAQ-R 1 Domestic Chores	-0.01	-0.10	
DAQ-R 2 Work, Health, Spirituality & Caring	0.00	-0.02	
DAQ-R 3 Interpersonal Contact & Social Support	-0.02	-0.21	
DAQ-R 4 Home Maintenance	-0.30	-0.16	
MDAQ-R 1 Support, Caring & Interpersonal Relationships	0.00	0.00	
MDAQ-R 2 Structured Tasks	0.00	0.01	
MDAQ-R 3 Sensory & Leisure Activities	-0.01	-0.11	
MDAQ-R 4 Home Maintenance & Health Maintenance	0.01	0.06	
Step 6			0.04***
Education	-0.15	-0.07	
Working or Not Working	-0.06	-0.03	
Work Injury	-0.15-	-0.07	
Gender	-0.24	-0.11	
Litigating or Not Litigating	-0.08	0.03	
IPQ-R 1 Psychological Attributions	0.01	0.04	
IPQ-R 2 Risk Factors	0.00	-0.01	
IPQ- R 3 Immunity	0.02	0.05	
IPQ- R 4 Accident or Chance	0.08	0.16*	
LOT Positive Life Orientation	-0.04	-0.30***	
DAQ-R 1 Domestic Chores	-0.01	-0.09	
DAQ-R 2 Work, Health, Spirituality & Caring	-0.01	-0.10	
DAQ-R 3 Interpersonal Contact & Social Support	-0.02	-0.18	
DAQ-R 4 Home Maintenance	-0.01	-0.07	

Table 42. Hierarchical Multiple Regression Analysis Predicting Psychological Distress factor (including Pain and Disability factor as a Separate Step) continued

Independent Variables	<i>B</i>	β	ΔR^2
MDAQ-R 1 Support, Caring & Interpersonal Relationships	0.01	0.05	
MDAQ-R 2 Structured Tasks	0.00	0.02	
MDAQ-R 3 Sensory & Leisure Activities	-0.01	-0.14	
MDAQ-R 4 Home Maintenance & Health Maintenance	0.00	0.03	
Pain and Disability Factor	0.28	0.26***	

*** $p < .001$, ** $p < .01$, * $p < .05$.

The dependent variable entered into the third hierarchical multiple regression analysis was the Psychological Distress factor. The IV's entered in Step 1 were the demographic variables including: education above and below year 12, gender and litigation status. In Step 2 IPQ-R subscales 1 Psychological Attributions and 4 Accident or Chance was included Step 3 consisted of the inclusion of Dispositional Optimism (LOT). In the 4th Step the DAQ-R subscales 3 Interpersonal Contact and Social Support and 4 Home Maintenance were added to the equation. In Step 5 the Present Pain Intensity (MPQ- PPI), in the 6th Step Pain Rating Index of the MPQ was added and the Pain Disability Index (PDI) was included in the 7th Step of the equation.

The ANOVA was significant; at each step of the regression and Multiple R was significantly different from zero. Step 1 $F(3, 91) = 17.64$ $p < .001$, Step 2 $F(5, 89) = 13.97$ $p < .001$, Step 3 $F(6, 88) = 20.07$ $p < .001$, Step 4 $F(8, 86) = 24.95$ $p < .001$, Step 5 $F(9, 85) = 24.17$ $p < .001$, Step 6 $F(10, 94) = 22.45$ $p < .001$ and Step 7 $F(11, 82) = 22.53$ $p < .001$.

Table 43 presents the unstandardized regression coefficients (*B*), the standardized regression coefficients (β), because the current study has a small sample rather than R^2 being reported as the estimate of the population variance in Pain and Disability at each step of the equation, the adjusted R^2 has also been reported. Refer to Appendix D 12 for the Model Summary, ANOVA and Coefficients.

In Step 1 where education above or below year 12, gender and litigants or non litigants were the three IV's entered into the equation 37.0% (35.0% adjusted) of the variation in Psychological Distress (Psychological Distress factor) was explained by these demographic variables. The addition of Causes of Pain (IPQ-R) in Step 2 explained an additional 7.0% ($R^2 = 0.44$, 0.41 adjusted), Dispositional Optimism in Step 3 explained an additional 14.0% ($R^2 = 0.58$, 0.55 adjusted). When Daily Activity was included in Step 4 an additional 12.0% ($R^2 = 0.70$, 0.67 adjusted) of the variation in Psychological Distress was explained and when Present Pain Intensity was added to the regression in Step 5 the change was minimal adding only 2.0% ($R^2 = 0.72$, 0.69 adjusted) to the prediction of Psychological Distress. In Step 6 the Pain Rating Index was a minimal change of 1% ($R^2 = 0.73$, 0.70 adjusted) and when the Pain Disability Index was added this measure contributed a further 2% ($R^2 = 0.75$, 0.72 adjusted) to Psychological Distress.

The R^2 change was significantly different from zero at the end of six of the seven steps of the equation. Including Step 1 (Demographic IV's), Step 2 IPQ-R subscales (1 Psychological Attributions & 4 Accident or Chance), Step 3 Dispositional Optimism (LOT) and Step 4 Daily Activity (DAQ-R subscales 3 Interpersonal Contact & Social Support & 4 Home Maintenance), Step 5 Present Pain Intensity (MPQ- PPI) and Step 7 the Pain Disability Index (PDI). There was however no significant difference in Psychological Distress at Step 6 Pain Rating Index of the MPQ.

In the 7th Step of the equation there were two negative predictors of Psychological Distress, Dispositional Optimism and DAQ-R 3 Interpersonal Contact and Social Support.

Table 43. Hierarchical Multiple Regression Analysis Predicting Psychological Distress factor
(Including MPQ PPI & PRI & PDI as separate steps)

Independent Variables	<i>B</i>	β	ΔR^2
Step 1			0.25***
Education	-3.18	-0.32***	
Gender	-2.56	-0.23*	
Litigating or Not Litigating	-2.63	-0.20	
Step 2			0.05*
Education	-3.10	-0.31***	
Gender	-2.08	-0.18	
Litigating or Not Litigating	-2.05	-0.15	
IPQ-R 1 Psychological Attributions	0.02	0.02	
IPQ- R 4 Accident or Chance,	0.55	0.23*	
Step 3			0.21***
Education	-1.84	-0.18	
Gender	-0.65	-0.06	
Litigating or Not Litigating	-0.54	-0.04	
IPQ-R 1 Psychological Attributions	-0.11	-0.13	
IPQ- R 4 Accident or Chance	0.45	0.19*	
LOT Positive Life Orientation	-0.41	-0.55***	
Step 4			0.09***
Education	-1.35	-0.14	
Gender	-0.90	-0.08	
Litigating or Not Litigating	1.20	0.09	
IPQ-R 1 Psychological Attributions	-0.12	-0.14	
IPQ- R 4 Accident or Chance	0.37	0.15*	
LOT Positive Life Orientation	-0.34	-0.45***	
DAQ-R 3 Interpersonal Contact & Social Support	-0.18	-0.33***	
DAQ-R 4 Home Maintenance	-0.07	-0.08	
Step 5			0.01
Education	-1.15	-0.12	
Gender	-0.93	-0.08	
Litigating or Not Litigating	1.59	0.12	

Table 43. Hierarchical Multiple Regression Analysis Predicting Psychological Distress factor (Including MPQ PPI & PRI & PDI as separate steps) continued

Independent Variables	<i>B</i>	β	ΔR^2
IPQ-R 1 Psychological Attributions	-0.11	-0.13	
IPQ- R 4 Accident or Chance	0.33	0.14	
LOT Positive Life Orientation	-0.33	-0.44***	
DAQ-R 3 Interpersonal Contact & Social Support	-0.19	-0.34***	
DAQ-R 4 Home Maintenance	-0.06	-0.06	
MPQ PPI	0.70	0.13	
Step 6			0.00
Education	-1.16	-0.12	
Gender	-0.92	-0.08	
Litigating or Not Litigating	1.57	0.12	
IPQ-R 1 Psychological Attributions	-0.11	-0.12	
IPQ- R 4 Accident or Chance	0.33	0.14	
LOT Positive Life Orientation	0.33	-0.44***	
DAQ-R 3 Interpersonal Contact & Social Support	-0.19	-0.34***	
DAQ-R 4 Home Maintenance	-0.06	-0.06	
MPQ PPI	0.72	0.06	
MPQ PRI	0.00	0.13	
Step 7			0.01
Education	-1.04	-0.10	
Gender	-0.67	--0.06	
Litigating or Not Litigating	1.47	0.11	
IPQ-R 1 Psychological Attributions	-0.11	-0.13	
IPQ- R 4 Accident or Chance	0.30	0.13	
LOT Positive Life Orientation	-0.32	-0.43***	
DAQ-R 3 Interpersonal Contact & Social Support	-0.17	-0.31***	
DAQ-R 4 Home Maintenance	-0.02	-0.03	
MPQ PPI	0.52	0.10	
MPQ PRI	-0.01	-0.03	
Pain Disability Index	0.04	0.19	

*** $p < .001$, ** $p < .01$, * $p < .05$.

Predicting Dispositional Optimism

The dependent variable in a third series of hierarchical multiple regression analysis was Dispositional Optimism (Life Orientation Test). The IV's were entered in 6 steps. Step 1 was the demographic variables including gender, education above and below year 12, and litigation status. In Step 2 IPQ-R subscales (1 Psychological Attributions, 2 Risk Factors, 3 Immunity and 4 Accident or Chance) was included. Step 3 consisted of the inclusion of the DAQ-R subscales 1 Domestic Chores, 2 Work, Health, Spirituality and Caring, 3 Interpersonal Contact & Social Support and 4 Home Maintenance. In the 4th Step MDAQ-R subscales 1 Support, Caring and Interpersonal Relationships, 2 Structured Tasks, 3 Sensory and Leisure Activities and 4 Home Maintenance and Health Maintenance were added to the equation. In Step 5 the Pain and Disability factor, in the 6th Step the Psychological Distress factor was added.

The ANOVA was significant; at each step of the regression and Multiple R was significantly different from zero. Step 1 $F(4, 77) = 7.26$ $p < .001$, Step 2 $F(8, 73) = 5.22$ $p < .001$, Step 3 $F(12, 69) = 4.73$ $p < .001$, Step 4 $F(16, 65) = 4.03$ $p < .001$, Step 5 $F(17, 64) = 3.87$ $p < .001$, Step 6 $F(18, 63) = 4.97$ $p < .001$.

Table 44 presents the unstandardized regression coefficients (B), the standardized regression coefficients (β), Because the current study has a small sample rather than R^2 being reported as the estimate of the population variance in Dispositional Optimism at each step of the equation, the adjusted R^2 has also been reported. Refer to Appendix D15-20 for the Model Summary, ANOVA and Coefficients.

In Step 1 where gender, education above or below year 12, working or not working and litigating or not litigating were the four IV's entered into the equation 27.0% (24.0% adjusted) of the variation in Dispositional Optimism was explained by these demographic variables. The addition of Causes of Pain (IPQ-R) in Step 2 explained an additional 9.0% (R^2

= 0.36, 0.29 adjusted). Daily Activity explained an additional 9% ($R^2 = 0.45$, 0.36 adjusted) in Step 3, and Meaningful Daily Activity attributed 9% ($R^2 = 0.45$, 0.36 adjusted). in Step 4 an additional 5.0% ($R^2 = 0.50$, 0.37 adjusted) of the variation in Dispositional Optimism was explained and when the Pain and Disability factor was added to the regression in Step 5 the change was minimal adding only 1.0% ($R^2 = 0.51$, 0.38 adjusted) to the prediction of Dispositional Optimism. In Step 6 the Psychological Distress factor resulted in a change of 8% ($R^2 = 0.59$, 0.47 adjusted).

The R^2 change was significantly different from zero at the end of four of the six steps of the equation. Including Step 1 (Demographic IV's), Step 2 IPQ-R subscales (1 Psychological Attributions & 4 Accident or Chance), Step 3 Daily Activity (DAQ-R subscales 3 Interpersonal Contact & Social Support and 4 Home Maintenance) and Step 6 Psychological Distress factor. There was however no significant difference in Dispositional Optimism at Step 4 MDAQ Subscales 1 Support, Caring and Interpersonal Relationships, 2 Structured Tasks, 3 Sensory and Leisure Activities and 4 Home Maintenance and Health Maintenance or Step 5 Pain and Disability factor.

In Step 5 persons with higher scores on IPQ-R 1 Psychological Attributions and MDAQ-R Home and Health Maintenance had lower scores on Dispositional Optimism. In the 6th Step of the equation the only predictor of Dispositional Optimism was the Psychological Distress factor. Persons with higher scores on the Psychological Distress factor had lower scores on Dispositional Optimism.

Table 44 Hierarchical Multiple Regression Analysis Predicting Dispositional Optimism (with Pain and Disability, and Psychological Distress factors as separate steps)

Independent Variables	<i>B</i>	β	ΔR^2
Step 1			0.27***
Gender	4.84	0.31**	
Education Above or Below Year 12	3.99	0.29**	
Working or Not Working	-0.74	-0.05	
Litigating or Not Litigating	2.61	0.15	
Step 2			0.09*
Gender	3.94	0.26*	
Education Above or Below Year 12	3.93	0.29**	
Working or Not Working	-0.46	-0.03	
Litigating or Not Litigating	2.83	0.16	
IPQ-R 1 Psychological Attributions	-0.39	-0.33**	
IPQ-R 2 Risk Factors	0.02	0.02	
IPQ- R 3 Immunity	0.33	0.13	
IPQ- R 4 Accident or Chance,	-0.20	-0.06	
Step 3			0.09*
Gender	3.56	0.23	
Education Above or Below Year 12	2.94	0.22*	
Working or Not Working	0.85	0.06	
Litigating or Not Litigating	2.58	0.15	
IPQ-R 1 Psychological Attributions	-0.31	-0.27*	
IPQ-R 2 Risk Factors	-0.09	0.07	
IPQ- R 3 Immunity	0.32	0.13	
IPQ- R 4 Accident or Chance	-0.06	-0.02	
DAQ-R 1 Domestic Chores	-0.12	-0.13	
DAQ-R 2 Work, Health, Spirituality & Caring	0.08	0.10	
DAQ-R 3 Interpersonal Contact & Social Support	0.24	0.34**	
DAQ-R 4 Home Maintenance	-0.04	-0.04	

Table 44. Hierarchical Multiple Regression Analysis Predicting Dispositional Optimism
(with Pain and Disability, and Psychological Distress factors as separate steps) continued

Independent Variables	<i>B</i>	β	ΔR^2
Step 4			0.05
Gender	2.24	0.15	
Education Above or Below Year 12	2.65	0.19	
Working or Not Working	1.47	0.11	
Litigating or Not Litigating	2.80	0.16	
IPQ-R 1 Psychological Attributions	-0.36	-0.31**	
IPQ-R 2 Risk Factors	-0.06	-0.04	
IPQ- R 3 Immunity	0.40	0.16	
IPQ- R 4 Accident or Chance	-0.01	0.00	
DAQ-R 1 Domestic Chores	-0.19	-0.21	
DAQ-R 2 Work, Health, Spirituality & Caring	0.10	0.13	
DAQ-R 3 Interpersonal Contact & Social Support	0.16	0.23	
DAQ-R 4 Home Maintenance	-0.01	-0.01	
MDAQ-R 1 Support, Caring & Interpersonal Relationships	0.08	0.11	
MDAQ-R 2 Structured Tasks	0.08	0.00	
MDAQ-R 3 Sensory & Leisure Activities	0.05	0.09	
MDAQ-R 4 Home Maintenance & Health Maintenance	-0.27	-0.30*	
Step 5			0.01
Gender	2.01	0.13	
Education Above or Below Year 12	2.50	0.18	
Working or Not Working	1.86	0.14	
Litigating or Not Litigating	2.57	0.15	
IPQ-R 1 Psychological Attributions	-0.32	-0.27*	
IPQ-R 2 Risk Factors	-0.08	-0.07	
IPQ- R 3 Immunity	0.41	0.17	
IPQ- R 4 Accident or Chance	-0.04	-0.01	
DAQ-R 1 Domestic Chores	-0.19	-0.21	
DAQ-R 2 Work, Health, Spirituality & Caring	0.13	0.17	
DAQ-R 3 Interpersonal Contact & Social Support	0.15	0.21	
DAQ-R 4 Home Maintenance	-0.07	-0.05	

Table 44. Hierarchical Multiple Regression Analysis Predicting Dispositional Optimism
(with Pain and Disability, and Psychological Distress factors as separate steps) continued

Independent Variables	<i>B</i>	β	ΔR^2
MDAQ-R 1 Support, Caring & Interpersonal Relationships	0.06	0.09	
MDAQ-R 2 Structured Tasks	0.08	0.10	
MDAQ-R 3 Sensory & Leisure Activities	0.06	0.10	
MDAQ-R 4 Home Maintenance & Health Maintenance	-0.25	-0.28*	
Pain and Disability Factor	-0.90	-0.13	
Step 6			0.08***
Gender	0.74	0.05	
Education Above or Below Year 12	1.55	0.11	
Working or Not Working	1.33	0.10	
Litigating or Not Litigating	2.44	0.14	
IPQ-R 1 Psychological Attributions	-0.25	-0.21	
IPQ-R 2 Risk Factors	-0.08	-0.06	
IPQ- R 3 Immunity	0.39	0.16	
IPQ- R 4 Accident or Chance	0.27	0.08	
DAQ-R 1 Domestic Chores	-0.20	-0.23	
DAQ-R 2 Work, Health, Spirituality & Caring	0.07	0.09	
DAQ-R 3 Interpersonal Contact & Social Support	0.06	0.08	
DAQ-R 4 Home Maintenance	-0.10	-0.08	
MDAQ-R 1 Support, Caring & Interpersonal Relationships	0.07	0.10	
MDAQ-R 2 Structured Tasks	0.07	0.10	
MDAQ-R 3 Sensory & Leisure Activities	0.01	0.01	
MDAQ-R 4 Home Maintenance & Health Maintenance	-0.19	-0.21	
Pain and Disability Factor	0.23	0.03	
Psychological Distress Factor	-3.51	-0.52***	

*** $p < .001$, ** $p < .01$, * $p < .05$.

To explore the significance of the IV's that were identified in Table 44 on Dispositional Optimism another hierarchical regression analysis was performed. The dependent variable was Dispositional Optimism (Life Orientation Test). The IV's were entered in eight steps. Step 1 was the demographic variables gender and education above and below year 12, Step 2

IPQ-R 1 Psychological Attributions, Step 3 DAQ-R 3 Interpersonal Contact & Social Support, Step 4 MDAQ-R 4 Home Maintenance and Health Maintenance and Step 5 the Pain and Disability factor. The psychological IV's were added in Steps 6 Depression, 7 Anxiety and 8 Hopelessness.

The ANOVA was significant at each of the eight steps of the multiple regression analysis and Multiple R was significantly different from zero at Step 1 $F(2,79) = 13.35$ $p < .001$, Step 2 $F(3,78) = 11.71$ $p < .001$, Step 3 $F(4,77) = 13.23$ $p < .001$, Step 4 $F(5, 76) = 11.07$ $p < .001$, Step 5 $F(6, 75) = 9.27$ $p < .001$, Step 6 $F(7, 74) = 10.25$ $p < .001$, Step 7 $F(8, 73) = 9.25$ $p < .001$ and Step 8 $F(9, 72) = 9.08$ $p < .001$.

Table 45 presents the unstandardized regression coefficients (B), the standardized regression coefficients (β), Because the current study has a small sample rather than R^2 being reported as the estimate of the population variance in Dispositional Optimism at each step of the equation, the adjusted R^2 has also been reported. Refer to Appendix D 16 for the Model Summary, ANOVA and Coefficients.

In Step 1 where gender and education above or below year 12 were the demographic IV's entered into the equation 25.0 % (23.0% adjusted) of the variation in Dispositional Optimism was explained by these demographic variables. The addition of Causes of Pain (IPQ-R) 1 Psychological Attributions in Step 2 explained an additional 6.0% ($R^2 = 0.31$, 0.28 adjusted). Step 3 DAQ-R 3 Interpersonal Contact & Social Support explained an additional 10.0% ($R^2 = 0.41$, 0.38 adjusted). Step 4 MDAQ-R 4 Home Maintenance and Health Maintenance explained a minimal additional 1.0% ($R^2 = 0.42$, 0.38 adjusted). Step 5 the Pain and Disability factor did not explain any additional variance 0.0% ($R^2 = 0.43$, 0.38 adjusted).

In Step 6 the psychological IV's Depression, explained an additional 7.0% ($R^2 = 0.49$, 0.44 adjusted). Step 7 Anxiety explained 1.0% ($R^2 = 0.50$, 0.45 adjusted) and Step 8 Hopelessness explained an additional 3.0% ($R^2 = 0.53$, 0.47 adjusted).

The R^2 change was significantly different from zero at the end of Step 1 gender and education (Demographic IV's), Step 2 IPQ-R 1 Psychological Attributions, Step 3 Daily Activity (DAQ-R 3 Interpersonal Contact & Social Support), Step 6 Depression and Step 8 Hopelessness. There was however no significant difference in Dispositional Optimism at Step 4 Meaningful Daily Activity (MDAQ-R 4 Home Maintenance and Health Maintenance), Step 5 Pain and Disability factor or Step 7 Anxiety.

When the psychological IV's were added as separate steps (6, 7 & 8) Step 6 Depression and Step 8 Hopelessness were significant negative predictors of Dispositional Optimism. However Step 7 Anxiety was not a significant predictor of Dispositional Optimism although Depression was almost significant ($p = .06$). In Step 8 when all of the IV's were included the only IV to predict Dispositional Optimism was Hopelessness. Higher scores on Hopelessness predicted lower scores on Dispositional Optimism.

Table 45. Hierarchical Multiple Regression Analysis of Significant IV's Predicting Dispositional Optimism (with Pain and Disability factor, Depression, Anxiety and Hopelessness as separate steps)

Independent Variables	<i>B</i>	β	ΔR^2
Step 1			0.52***
Gender	6.03	0.39***	
Education Above or Below Year 12	4.55	0.33***	
Step 2			0.06**
Gender	5.76	0.37***	
Education Above or Below Year 12	4.24	0.31***	
IPQ-R 1 Psychological Attributions	-0.28	-0.24**	
Step 3			0.10***
Gender	4.40	0.29***	
Education Above or Below Year 12	2.94	0.21*	
IPQ-R 1 Psychological Attributions	-0.27	0.10	
DAQ-R 3 Interpersonal Contact & Social Support	0.24	0.07***	
Step 4			0.01
Gender	3.77	0.25**	
Education Above or Below Year 12	2.89	0.22*	
IPQ-R 1 Psychological Attributions	-0.26	-0.22**	
DAQ-R 3 Interpersonal Contact & Social Support	0.25	0.34***	
MDAQ-R 4 Home Maintenance & Health Maintenance	-0.12	-0.13	
Step 5			0.00
Gender	3.69	0.24**	
Education Above or Below Year 12	2.81	0.21*	
IPQ-R 1 Psychological Attributions	-0.25	-0.21*	
DAQ-R 3 Interpersonal Contact & Social Support	0.23	0.32***	
MDAQ-R 4 Home Maintenance & Health Maintenance	-0.11	-0.12	
Pain and Disability Factor	-0.55	-0.08	

Table 45. Hierarchical Multiple Regression Analysis of Significant IV's Predicting Dispositional Optimism (with Pain and Disability factor, Depression, Anxiety and Hopelessness as separate steps) continued

Independent Variables	<i>B</i>	β	ΔR^2
Step 6			0.07***
Gender	2.08	0.14	
Education Above or Below Year 12	2.34	0.17	
IPQ-R 1 Psychological Attributions	-0.29	-0.25***	
DAQ-R 3 Interpersonal Contact & Social Support	0.12	0.16	
MDAQ-R 4 Home Maintenance & Health Maintenance	-0.09	-0.10	
Pain and Disability Factor	0.09	0.01	
Depression	-2.49	-0.37***	
Step 7			0.01
Gender	1.82	0.12	
Education Above or Below Year 12	2.26	0.17	
IPQ-R 1 Psychological Attributions	-0.20	-0.17	
DAQ-R 3 Interpersonal Contact & Social Support	0.12	0.16	
MDAQ-R 4 Home Maintenance & Health Maintenance	-0.09	-0.09	
Pain and Disability Factor	0.41	0.06	
Depression	-1.82	-0.27	
Anxiety	-0.30	-0.19	
Step 8			0.03*
Gender	1.94	0.13	
Education Above or Below Year 12	1.77	0.13	
IPQ-R 1 Psychological Attributions	-0.21	-0.18	
DAQ-R 3 Interpersonal Contact & Social Support	0.06	0.08	
MDAQ-R 4 Home Maintenance & Health Maintenance	-0.08	-0.09	
Pain and Disability Factor	0.23	0.03	
Depression	-0.85	-0.13	
Anxiety	-0.20	-0.13	
Hopelessness	-0.41	-0.30*	

*** $p < .001$, ** $p < .01$, * $p < .05$.

Predictors of Meaningful Daily Activity.

The dependent variable in the hierarchical multiple regression analysis regression analysis was Meaningful Daily Activity (MDAQ-R). The IV's were entered in 8 steps. Step 1 was the demographic variables including gender, education above and below year 12, and marital status, practising a religion and litigation status. In Step 2 IPQ-R subscales (1 Psychological Attributions, 2 Risk Factors, 3 Immunity and 4 Accident or Chance) was included. Step 3 consisted of the inclusion of the Pain and Disability factor. In Step 4 the Psychological Distress factor, Step 5 Daily Activities (DAQ-R), Step 6 Dispositional Optimism (LOT), Step 7 Satisfaction with Life (SWL Likert Scale) and Step 8 the Meaningful Daily Activity (MDA Likert Scale).

The ANOVA was significant; at steps 1 $F(5, 76) = 2.73$ $p < .05$, Step 4, $F(11, 70) = 2.05$ $p < .05$, Step 5 $F(12, 69) = 4.07$ $p < .001$, Step 6 $F(13, 68) = 3.71$ $p < .001$, Step 7 $F(14, 67) = 3.66$ $p < .001$, and Step 8 $F(15, 66) = 3.68$ $p < .001$. The regression and Multiple R was significantly different from zero at Step 2 $F(9, 72) = 1.77$ $p > .05$ and 3 Step 3 $F(10, 71) = 1.61$ $p > .05$ were not significant.

Table 46 presents the unstandardized regression coefficients (B), the standardized regression coefficients (β), Because the current study has a small sample rather than R^2 being reported as the estimate of the population variance in Meaningful Daily Activity (MDAQ-R) at each step of the equation, the adjusted R^2 has also been reported. Refer to Appendix D20 for the Model Summary, ANOVA and Coefficients.

In Step 1 where gender, education above and below year 12, and marital status, practicing a religion and litigation status were the five IV's entered into the equation 15.0% (10.0% adjusted) of the variation in Meaningful Daily Activity was explained by these demographic variables.

In Step 2 the addition of Causes of Pain IPQ-R subscales (1 Psychological Attributions, 2 Risk Factors, 3 Immunity and 4 Accident or Chance) (IPQ-R) explained an additional 3.0% ($R^2 = 0.18$, 0.08 adjusted). Step 3 the Pain and Disability factor explained an additional 0.00% ($R^2 = 0.18$, 0.07 adjusted). In Step 4 the Psychological Distress factor explained an additional 6.0% ($R^2 = 0.24$, 0.12 adjusted). Step 5 Meaningful Daily Activity (MDAQ-R) explained an additional 17% ($R^2 = 0.41$, 0.31 adjusted). Step 6 Dispositional Optimism (LOT) explained an additional 0.0% ($R^2 = 0.41$, 0.30 adjusted). Step 7 Satisfaction with Life Likert Scale explained an additional 2.0% ($R^2 = 0.43$, 0.31 adjusted). Step 8 the Meaningful Daily Activity Likert Scale explained an additional 2.0% ($R^2 = 0.46$, 0.33 adjusted).

The R^2 change was significantly different from zero at the end of three of the eight steps of the equation including Step 1 (Demographic IV's), Step 4 the Psychological Distress factor, and Step 5 Daily Activity (DAQ-R)/ Meaningful Daily Activity (MDAQ-R). Steps 2 IPQ-R subscales (1 Psychological Attributions, 2 Risk Factors, 3 Immunity and 4 Accident or Chance), Step 3 the Pain and Disability factor Step 6 Dispositional Optimism (LOT), Step 7 Satisfaction with Life Likert Scale and Step 8 the Meaningful Daily Activity Likert Scale were not significantly different from zero.

Not practicing a religion was negatively significant for scores on MDAQ-R in Steps 1, 2, 3 and 4. When DAQ-R was added in step 5 practicing a religion was not a significant predictor of MDAQ-R. Psychological Distress was a negative predictor of MDAQ-R scores in Step 4 but when DAQ-R was added in Step 5 Psychological Distress was not a significant predictor of MDAQ-R. Also of note was that Pain and Disability, Dispositional Optimism and the Meaningful Daily Activity (MDA) Likert Scale did not predict MDAQ-R, but the Satisfaction with Life (SWL) Likert Scale did (higher SWL predicted lower scores on MDAQ-R).

Table 46. Predictors of Meaningful Daily Activity

Variables	<i>B</i>	β	ΔR^2
Step 1			0.15*
Gender	-2.78	-0.04	
Education	15.52	0.25*-	
Marital Status	-5.05	-0.07	
Practise a Religion	-14.13	-0.23*	
Litigation	16.10	0.21	
Step 2			0.03
Gender	-1.17	-0.02	
Education	15.88	0.26*	
Marital Status	-5.50	-0.08	
Practise a Religion	-14.44	-0.23*	
Litigation	11.85	0.15	
IPQR 1	0.33	0.06	
IPQR 2	0.86	0.15	
IPQR 3	-1.84	-0.17	
IPQR 4	-1.16	-0.08	
Step 3			0.00
Gender	1.59	-0.02	
Education	14.93	0.24*	
Marital Status	-4.26	-0.06	
Practise a Religion	-14.22	-0.23*	
Litigation	10.35	0.13	
IPQR 1	0.45	0.08	
IPQR 2	0.74	0.13	
IPQR 3	-1.76	-0.16	
IPQR 4	-1.13	-0.08	
Pain and Disability Factor	-2.27	-0.07	

Table 46. Predictors of Meaningful Daily Activity continued

Variables	<i>B</i>	β	ΔR^2
Step 4			0.06*
Gender	-8.53	-0.12	
Education	9.91	0.16	
Marital Status	-2.84	-0.04	
Practise a Religion	-14.67	-0.23*	
Litigation	6.62	0.09	
IPQR 1	0.70	0.13	
IPQR 2	0.55	0.09	
IPQR 3	-1.66	-0.14	
IPQR 4	-0.03	0.00	
Pain and Disability Factor	2.01	0.06	
Psychological Distress Factor	-11.22	-0.37*	
Step 5			0.17***
Gender	-12.82	-0.18	
Education	10.03	0.16	
Marital Status	4.41	0.06	
Practise a Religion	-4.31	-0.07	
Litigation	-10.35	-0.13	
IPQR 1	0.70	0.13	
IPQR 2	-0.29	-0.05	
IPQR 3	-0.14	-0.01	
IPQR 4	-0.97	-0.06	
Pain and Disability Factor	-1.22	-0.04	
Psychological Distress Factor	0.20	0.01	
DAQ-R	0.93	0.68***	

Table 46. Predictors of Meaningful Daily Activity continued

Variables	<i>B</i>	β	ΔR^2
Step 6			0.00
Gender	-12.60	-0.18	
Education	10.31	0.17	
Marital Status	4.41	0.06	
Practise a Religion	-4.38	-0.07	
Litigation	-10.17	-0.13	
IPQR 1	0.66	0.13	
IPQR 2	-0.30	-0.05	
IPQR 3	-0.07	-0.01	
IPQR 4	-0.94	-0.06	
Pain and Disability Factor	-1.13	-0.04	
Psychological Distress Factor	-0.45	-0.01	
DAQ-R	0.93	0.68***	
LOT	-0.16	-0.03	
Step 7			0.02
Gender	-15.10	-0.22	
Education	10.64	0.17	
Marital Status	4.34	0.06	
Practise a Religion	-5.24	-0.08	
Litigation	-6.41	-0.08	
IPQR 1	0.67	0.13	
IPQR 2	-0.20	-0.03	
IPQR 3	-0.15	-0.01	
IPQR 4	-1.49	-0.10	
Pain and Disability Factor	-1.34	-0.04	
Psychological Distress Factor	-3.53	-0.12	

Table 46. Predictors of Meaningful Daily Activity continued

Variables	<i>B</i>	β	ΔR^2
DAQ-R	0.94	0.68***	
LOT	-0.12	-0.03	
SWL Likert	-4.84	-0.21	
Step 8			0.02
Gender	-17.31	-0.25*	
Education	9.81	0.16	
Marital Status	4.41	0.06	
Practise a Religion	-5.57	-0.09	
Litigation	-3.36	-0.04	
IPQR 1	0.65	0.12	
IPQR 2	-0.19	-0.03	
IPQR 3	-0.22	-0.02	
IPQR 4	-1.64	-0.11	
Pain and Disability Factor	-1.14	-0.04	
Psychological Distress Factor	-3.75	-0.12	
DAQ-R	0.87	0.63***	
LOT	-0.09	-0.02	
SWL Likert	-7.66	-0.33*	
MDA Likert	4.55	0.20	

** $p < .01$, * $p < .05$.

Predictors of Daily Activity

The dependent variable in the hierarchical multiple regression analysis regression analysis was Daily Activity (DAQ-R). The IV's were entered in 8 steps. Step 1 was the demographic variables including gender, education above and below year 12, and marital status, practising a religion and litigation status. In Step 2 IPQ-R subscales (1 Psychological Attributions, 2 Risk Factors, 3 Immunity and 4 Accident or Chance) was included. Step 3 consisted of the inclusion of the Pain and Disability factor. In Step 4 the Psychological Distress factor, Step 5 Meaningful Daily Activity (MDAQ-R), Step 6 Dispositional Optimism (LOT), Step 7 Satisfaction with Life Likert Scale and Step 8 the Meaningful Daily Activity Likert Scale.

The ANOVA was significant at each of the steps of the regression. Multiple R was significantly different from zero at Step 1 $F(5, 76) = 12.21$ $p < .001$, Step 2 $F(9, 72) = 7.79$ $p < .001$, Step 3 $F(10, 71) = 6.97$ $p < .001$, Step 4 $F(11, 70) = 10.75$ $p < .001$, Step 5 $F(12, 69) = 14.23$ $p < .001$, Step 6 $F(13, 68) = 12.95$ $p < .001$, Step 7 $F(14, 67) = 12.08$ $p < .001$, and Step 8 $F(15, 66) = 11.23$ $p < .001$.

Table 47 presents the unstandardized regression coefficients (B), the standardized regression coefficients (β). Because the current study has a small sample rather than R^2 being reported as the estimate of the population variance in Daily Activity (DAQ-R) at each step of the equation, the adjusted R^2 has also been reported. Refer to Appendix D21 for the Model Summary, ANOVA and Coefficients.

In Step 1 where gender, education above and below year 12, and marital status, practising a religion and litigation status were the five IV's entered into the equation 45.0% (41.0% adjusted) of the variation in Daily Activity was explained by these demographic variables. In Step 2 the addition of Causes of Pain IPQ-R subscales (1 Psychological

Attributions, 2 Risk Factors, 3 Immunity and 4 Accident or Chance) (IPQ-R) explained an additional 5.0% ($R^2 = 0.49$, 0.43 adjusted). Step 3 the Pain and Disability factor explained an additional 0.0% ($R^2 = 0.50$, 0.42 adjusted). In Step 4 the Psychological Distress factor explained an additional 13.0% ($R^2 = 0.63$, 0.57 adjusted). Step 5 Meaningful Daily Activity (MDAQ-R) explained an additional 8.0% ($R^2 = 0.71$, 0.66 adjusted). Step 6 Dispositional Optimism (LOT) explained no additional variance 0.0% ($R^2 = 0.71$, 0.66 adjusted). Similarly Step 7 Satisfaction with Life Likert Scale 0.0% ($R^2 = 0.72$, 0.66 adjusted) and Step 8 the Meaningful Daily Activity Likert Scale explained no additional variance 0.0% ($R^2 = 0.72$, 0.65 adjusted) in Daily Activities.

The R^2 change was significantly different from zero at the end of three of the eight steps of the equation including Step 1 (Demographic IV's), Step 4 the Psychological Distress factor, and Step 5 Meaningful Daily Activity (MDAQ-R). Steps 2 IPQ-R subscales (1 Psychological Attributions, 2 Risk Factors, 3 Immunity and 4 Accident or Chance), Step 3 the Pain and Disability factor Step 6 Dispositional Optimism (LOT), Step 7 Satisfaction with Life Likert Scale and Step 8 the Meaningful Daily Activity Likert Scale were not significantly different from zero.

Table 47. Predictors of Daily Activity

Variables	<i>B</i>	β	ΔR^2
Step 1			0.45***
Gender	11.02	0.22*	
Education	5.57	0.12	
Marital Status	-10.98	-0.22**	
Practise a Religion	-11.27	-0.25**	
Litigation	26.29	0.46***	
Step 2			0.05
Gender	12.42	0.25*	
Education	5.87	0.13	
Marital Status	-9.99	-0.20*	
Practise a Religion	-10.76	-0.24**	
Litigation	23.10	0.41***	
IPQR 1	-0.33	-0.09	
IPQR 2	1.17	0.27*	
IPQR 3	-1.79	-0.22*	
IPQR 4	-0.21	-0.02	
Step 3			0.00
Gender	12.19	0.24*	
Education	5.36	0.12	
Marital Status	-9.33	-0.19*	
Practise a Religion	-10.64	-0.23**	
Litigation	22.30	0.39***	
IPQR 1	-0.27	-0.07	
IPQR 2	1.11	0.26	
IPQR 3	-1.75	-0.22*	
IPQR 4	-0.20	-0.02	
Pain and Disability Factor	-1.21	-0.05	

Table 47. Predictors of Daily Activity continued

Variables	<i>B</i>	β	ΔR^2
Step 4			0.13***
Gender	4.61	0.09	
Education	-0.13	0.00	
Marital Status	-7.79	-0.16	
Practise a Religion	-10.48	-0.23***	
Litigation	18.22	0.32***	
IPQR 1	0.01	0.00	
IPQR 2	0.90	0.21	
IPQR 3	-1.58	-0.19*	
IPQR 4	1.01	0.09	
Pain and Disability Factor	3.47	0.45	
Psychological Distress Factor	-12.27	-0.56***	
Step 5			0.08***
Gender	6.67	0.13	
Education	-2.53	-0.06	
Marital Status	-7.10	-0.14*	
Practise a Religion	-7.07	-0.16*	
Litigation	16.62	0.29***	
IPQR 1	-0.16	-0.04	
IPQR 2	0.77	0.18	
IPQR 3	-1.19	-0.15	
IPQR 4	1.02	0.09	
Pain and Disability Factor	2.98	0.13	
Psychological Distress Factor	-9.55	-0.43***	
MDAQ-R	0.24	0.33***	

Table 47. Predictors of Daily Activity continued

Variables	<i>B</i>	β	ΔR^2
Step 6			0.00
Gender	6.74	0.13	
Education	-2.45	-0.05	
Marital Status	-7.09	-0.14	
Practise a Religion	-7.09	-0.16*	
Litigation	16.67	0.29***	
IPQR 1	-0.17	-0.05	
IPQR 2	0.77	0.18	
IPQR 3	-1.17	-0.14	
IPQR 4	1.03	0.09	
Pain and Disability Factor	3.01	0.13	
Psychological Distress Factor	-9.74	-0.44***	
MDAQ-R	0.24	0.33***	
LOT	-0.05	-0.01	
Step 7			0.00
Gender	7.63	0.15	
Education	-2.64	-0.06	
Marital Status	-7.02	-0.14	
Practise a Religion	-6.65	-0.15*	
Litigation	15.28	0.27**	
IPQR 1	-0.18	-0.05	
IPQR 2	0.72	0.17	
IPQR 3	-1.13	-0.14	
IPQR 4	1.21	0.11	
Pain and Disability Factor	3.05	0.13	
Psychological Distress Factor	-8.55	-0.39***	
MDAQ-R	0.25	0.34***	

Table 47. Predictors of Daily Activity continued

Variables	<i>B</i>	β	ΔR^2
LOT	-0.06	-0.02	
SWL Likert	1.64	0.10	
Step 8			0.00
Gender	6.90	0.14	
Education	-2.72	-0.06	
Marital Status	-6.97	-0.14	
Practise a Religion	-6.72	-0.15*	
Litigation	15.82	0.28**	
IPQR 1	-0.18	-0.05	
IPQR 2	0.72	0.17	
IPQR 3	-1.14	-0.14	
IPQR 4	1.15	0.11	
Pain and Disability Factor	3.06	0.13	
Psychological Distress Factor	-8.57	-0.39***	
MDAQ-R	0.24	0.33***	
LOT	-0.05	-0.02	
SWL Likert	0.91	0.05	
MDA Likert	1.08	0.07	

** $p < .01$, * $p < .05$.

To summarise the multiple hierarchical regression analyses performed Figure 18 depicts the relationships that were tested in the Meaningful Daily Activity/Daily Activity research model. The dependent variables were Psychological Distress, Dispositional Optimism, Pain, and Disability. The IV's were the MDAQ-R and DAQ-R subscales, patient characteristics and the IPQ-R Causes of Pain subscales.

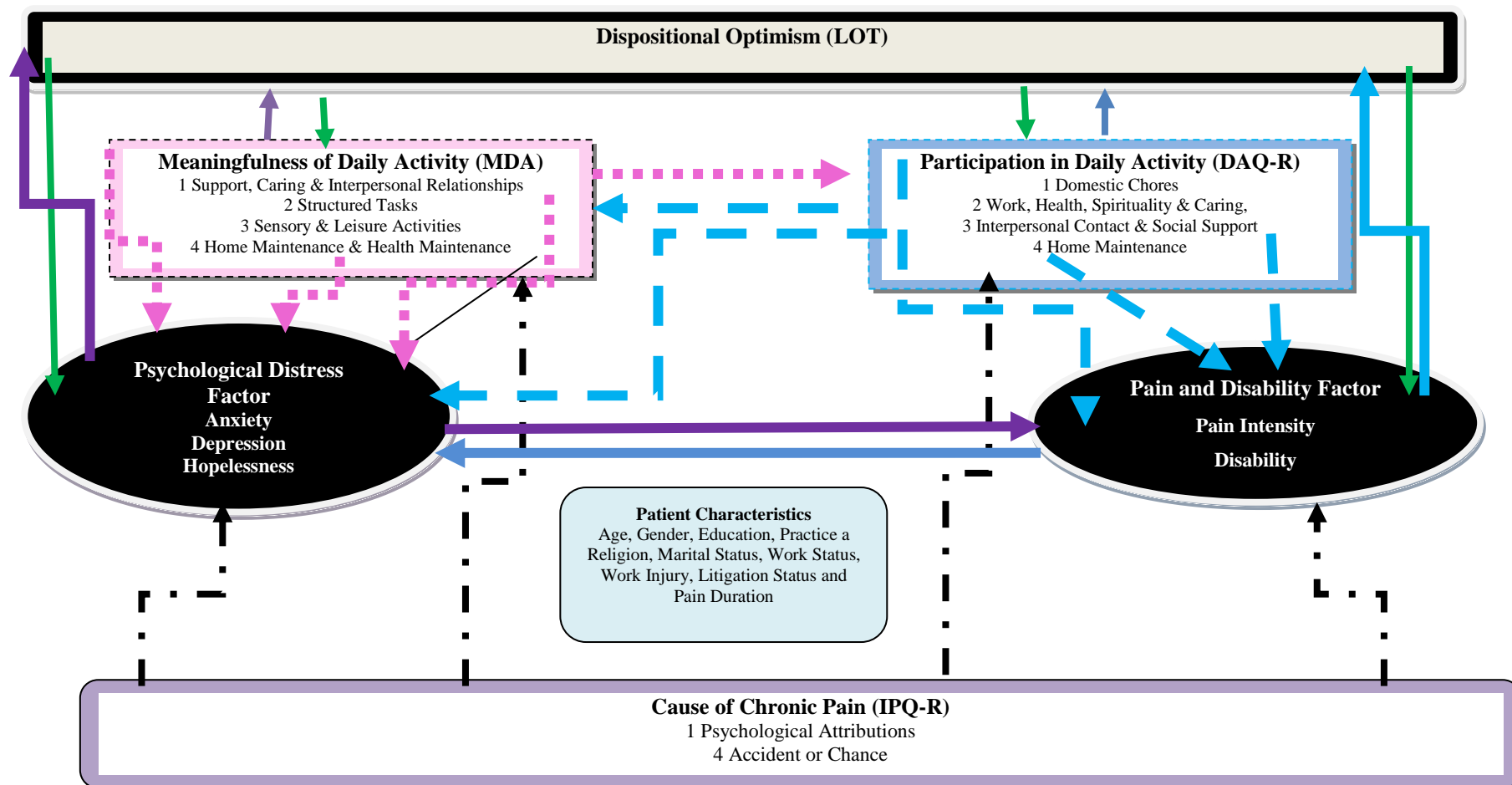


Figure 18. Model Tested: Associations between Patient Characteristics, Meaningful Daily Activity (MDAQ-R), Daily Activity (DAQ-R), Dispositional Optimism (LOT), Cause of Chronic Pain, Psychological Distress, Pain and Disability

Figure 19 summarises the significant predictors of Psychological Distress, Pain and Disability in the hierarchical regression analysis where DAQ-R and MDAQ-R Subscales were included in the analyses as well as Dispositional Optimism and patient characteristics. Psychological Distress and Pain and Disability factors were not included as IV's in the analyses.

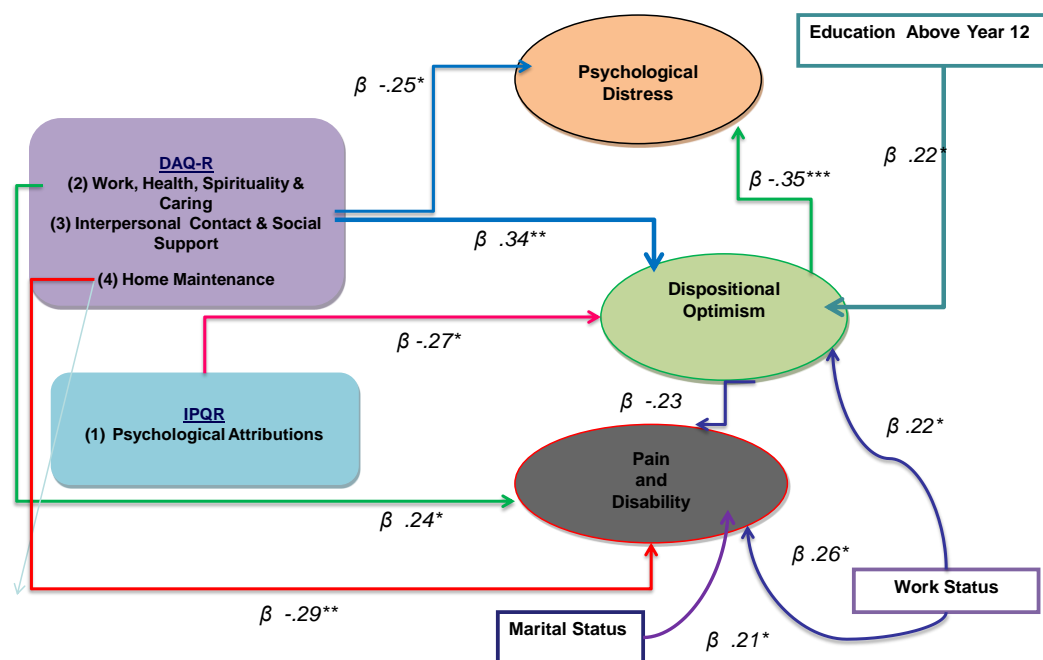


Figure 19. Significant Predictors of Psychological Distress, Dispositional Optimism, Pain and Disability (Pain and Disability and Psychological Distress factors not included as IV's)

Figure 20 summarises the significant predictors of Psychological Distress, Pain and Disability and Dispositional Optimism in the hierarchical regression analyses where DAQ-R and MDAQ-R Subscales, Dispositional Optimism, patient characteristics, Psychological Distress and Pain and Disability factors were included in the analyses.

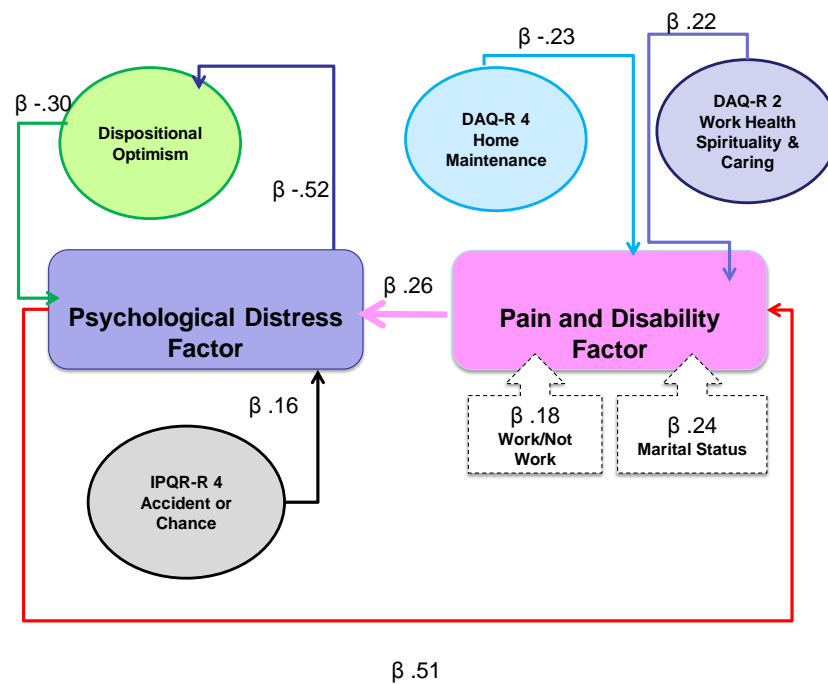


Figure 20. Significant Predictors of Pain and Disability and Psychological Distress factors and Dispositional Optimism Combined Model

Figure 21 summarises the relationships that were significant in the hierarchical regression analysis where Meaningful Daily Activity (MDAQ-R) was the dependent variable in the analysis and patient characteristics, IPQ-R subscales, Pain and Disability factor, Psychological Distress Factor, Dispositional Optimism, SWL and MDA were included in the equation. Daily Activity (DAQ-R) was excluded from this analyses but was included in a subsequent analyses and the results of this analysis are not depicted in a figure because the only significant predictor of Meaningful Daily Activity (MDAQ-R) after Daily Activity was added to the equation was Daily Activity (DAQ-R).

Figure 22 summarises the relationships that were significant in the hierarchical regression analysis where Daily Activity (DAQ-R) was the dependent variable in the analysis and patient characteristics, IPQ-R subscales, Pain and Disability factor, Psychological Distress factor, Meaningful Daily Activity (MDAQ-R), Dispositional Optimism, SWL and MDA Likert Scales were included in the equation.

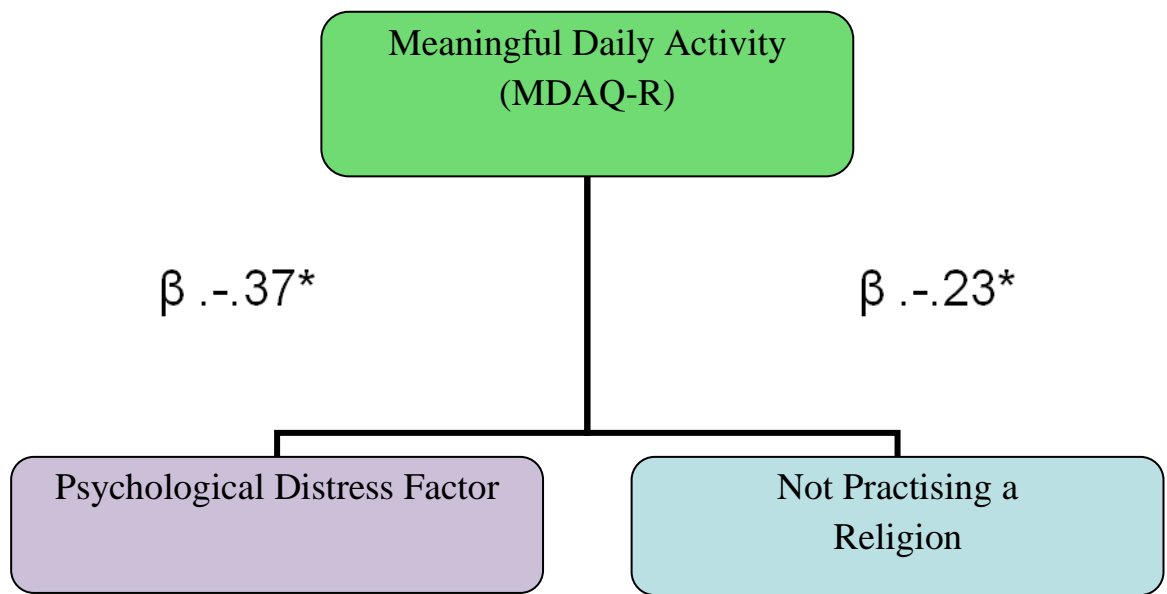


Figure 21. Significant Predictors of Meaningful Daily Activity

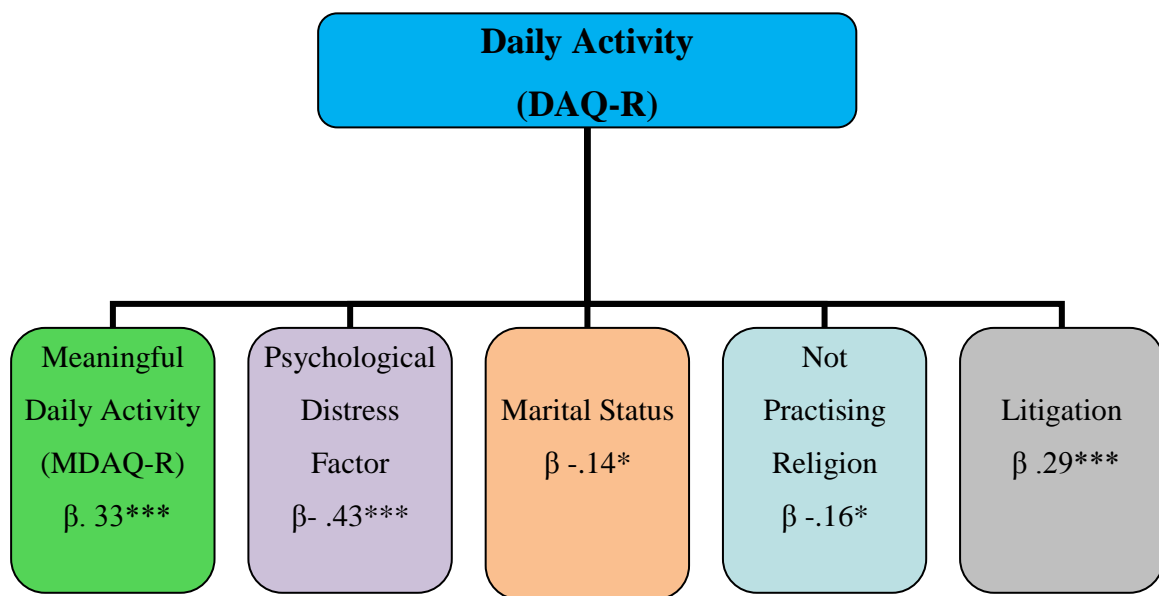


Figure 22. Significant Predictors of Daily Activity (DAQ-R)

5.3.5 Testing the Research Hypotheses

A series of hierarchical (sequential) regression analyses were calculated to test each of the four MDA and DA research and null hypothesis presented in section 2.9. The results of these four analyses are presented in Hypothesis 1: MDAQ-R Scores and Psychological Distress factor, Hypothesis 2 DAQ-R Scores and Psychological Distress factor, Hypothesis 3: MDAQ-R Scores, Pain and Disability factor and Hypothesis 4: DAQ-R Scores, Pain and Disability factor (Tables 48, 49, 50 and 51). The method of hierarchical regression analysis used for the calculation was linear and the method of entry was enter, cases were excluded pairwise in the calculation, the stepping method criteria was a probability of F entry .05 and .10 removal.

Hypothesis 1: MDA Scores and Psychological Distress

A CPP who obtains higher scores on the MDAQ will have lower scores on measures for depression, anxiety and hopelessness.

Conversely, a CPP who obtains higher scores on the MDAQ will not have lower scores on measures for depression, anxiety and hopelessness.

To determine whether after controlling for specific CPP demographic variables that affected Psychological Distress (anxiety, depression and hopelessness) and Dispositional Optimism (LOT), higher scores on Meaningful Daily Activity (MDAQ-R) reduced or increased scores obtained on measures of (1) Depression (HADS-D), (2) Anxiety (HADS A), (3) Hopelessness (BHS) and (4) the Psychological Distress factor. Using SPSS 18 four hierarchical regression analyses were performed.

(1) Depression (HADS Depression) and MDA Scores

In the first regression analysis the dependent variable was Depression (HADS-D) the IV's entered in Step 1 were age (above or below 45 years), work injury, education (above or

below year 12), work status (working or not working), gender, and litigation status, Step 2 Dispositional Optimism (LOT) and Step 3 Meaningful Daily Activity (MDAQ-R).

The ANOVA was significant at each step of the regression and multiple R was not significantly different from zero; Step 1 $F(6, 79) = 8.39$ $p < .001$, Step 2 $F(7, 78) = 11.77$ $p < .001$ and Step 3 $F(8, 77) = 12.91$ $p < .001$. Table 48 presents the unstandardized regression coefficients (B), the standardized regression coefficients (β). Because the current study has a small sample rather than R^2 being reported the estimate of the population variance in Depression at each step of the equation, the adjusted R^2 has also been reported. Refer to Appendix D 22 for the model summary, ANOVA and coefficients.

In Step 1 where the demographic variables were the five IV's entered into the equation 39% (34% adjusted) of the variation in Depression was explained by these demographic variables. The addition of Dispositional Optimism in Step 2 explained an additional 12% ($R^2 = 0.51$, 0.47 adjusted). Meaningful Daily Activity (MDAQ-R) in Step 3 explained an additional 6.0% ($R^2 = 0.57$, 0.53 adjusted). The R^2 change was significantly different from zero at Steps 1 Demographic Variables, Step 2 Dispositional Optimism and Step 3 Meaningful Daily Activity. Not litigating, higher scores on Dispositional Optimism and higher scores on MDAQ predicted lower scores on Depression. Therefore the research hypothesis was accepted. A CPP who obtained higher scores on MDA did have lower scores on Depression. The null hypothesis a CPP who obtained higher scores on the MDA did not have lower scores on Depression was rejected.

Table 48. Hierarchical Regression of Individual Patient Characteristics, Dispositional Optimism and Meaningful Daily Activity as Predictors of Depression

Independent Variables	<i>B</i>	β	ΔR^2
Step 1			0.39***
Age (above or below 45 years)	0.61	-0.06	
Work Injury	-1.49	-0.16	
Education Above or Below Year 12	-1.99	-0.21*	
Working or Not Working	1.08	0.11	
Gender	-2.16	-0.20	
Litigating or Not Litigating	-3.72	-0.30**	
Step 2			0.12***
Age (above or below 45 years)	-0.21	-0.02	
Work Injury	-1.08	-0.11	
Education Above or Below Year 12	-0.94	-0.10	
Working or Not Working	0.76	0.08	
Gender	-1.17	-0.11	
Litigating or Not Litigating	-3.27	-0.27**	
Dispositional Optimism (LOT)	-0.28	-0.40***	
Step 3			0.06***
Age (above or below 45 years)	-0.27	-0.03	
Work Injury	-1.34	-0.14	
Education Above or Below Year 12	-0.49	-0.05	
Working or Not Working	0.61	0.06	
Gender	-1.26	-0.12	
Litigating or Not Litigating	-2.76	-0.23*	
Dispositional Optimism (LOT)	-0.26	-0.37***	
Meaningful Daily Activity (MDAQ-R)	-0.04	-0.26***	

*** $p < .001$, ** $p < .01$, * $p < .05$.

(2) Anxiety (HADS Anxiety) and MDA Scores

In the second regression analysis the dependent variable was Anxiety (HADS-A) the IV's entered in Step 1 were age (above or below 45 years), work injury, education (above or below year 12), work status, gender and litigation status, Step 2 Dispositional Optimism (LOT) and Step 3 Meaningful Daily Activity (MDAQ-R).

The ANOVA was significant at each step of the regression and multiple R was significantly different from zero; Step 1 $F(6, 79) = 5.53$ $p < .001$ and Step 2 $F(6, 78) = 8.13$ $p < .001$ but not Step 3 $F(7, 77) = 7.02$ $p > .05$. Table 49 presents the unstandardized regression coefficients (B), the standardized regression coefficients (β). Because the current study has a small sample rather than R^2 being reported the estimate of the population variance in Anxiety at each step of the equation, the adjusted R^2 has also been reported. Refer to Appendix D 23 for the model summary, ANOVA and coefficients.

In Step 1 where the demographic variables were the six IV's entered into the equation 30% (24% adjusted) of the variation in Anxiety was explained by these demographic variables. The addition of Dispositional Optimism in Step 2 explained an additional 13 % ($R^2 = 0.42$, 0.37 adjusted) and Meaningful Daily Activity in Step 3 did not explain any additional variance 0% ($R^2 = 0.42$, 0.36 adjusted). The R^2 change was significantly different from zero at Step 1 Demographic variables and Step 2 Dispositional Optimism but not at Step 3 Meaningful Daily Activity. Females and those persons with education beyond Year 12 level had lower scores on Anxiety. Higher scores on Dispositional Optimism also predicted lower scores on Anxiety. Therefore the research hypothesis was rejected. A CPP who obtains higher scores on the MDAQ will have lower scores on Anxiety was not supported. The null hypothesis was supported. A CPP who obtains higher scores on the MDAQ does not have lower scores on Anxiety.

Table 49. Hierarchical Regression of Individual Patient Characteristics, Dispositional Optimism and Meaningful Daily Activity as Predictors of Anxiety

Independent Variables	<i>B</i>	β	ΔR^2
Step 1			0.30***
Age (above or below 45 years)	-0.97	-0.10	
Work Injury	-0.89	-0.10	
Education Above or Below Year 12	-1.78	-0.20*	
Working or Not Working	1.62	0.18	
Gender	-2.72	-0.27*	
Litigating or Not Litigating	-1.47	-0.13	
Step 2			0.13***
Age (above or below 45 years)	-0.60	-0.06	
Work Injury	-0.52	-0.06	
Education Above or Below Year 12	-0.80	-0.09	
Working or Not Working	1.32	0.15	
Gender	-1.80	-0.18	
Litigating or Not Litigating	-1.06	-0.10	
Dispositional Optimism (LOT)	-0.26	-0.40***	
Step 3			0.00
Age (above or below 45 years)	-0.60	-0.06	
Work Injury	-0.51	-0.06	
Education Above or Below Year 12	-0.82	-0.09	
Working or Not Working	1.33	0.15	
Gender	-1.80	-0.18	
Litigating or Not Litigating	-1.09	-0.10	
Dispositional Optimism (LOT)	-0.26	-0.41***	
Meaningful Daily Activity (MDAQ-R)	0.00	0.01	

*** $p < .001$, ** $p < .01$, * $p < .05$.

(3) Hopelessness (BHS) and MDA Scores

In the third regression analysis the dependent variable was Hopelessness (BHS) the IV's entered in Step 1 were sustained work injury, education, work status, gender, litigation status, marital status and pain duration, Step 2 Dispositional Optimism (LOT) and Step 3 Meaningful Daily Activity (MDAQ-R).

The ANOVA was significant at each step of the regression and multiple R was significantly different from zero; Step 1 $F(7, 80) = 3.35$ $p < .001$, Step 2 $F(8, 79) = 6.81$ $p < .001$ and Step 3 $F(9, 78) = 7.98$ $p < .001$. Table 50 presents the unstandardized regression coefficients (B), the standardized regression coefficients (β). Because the current study has a small sample rather than R^2 being reported the estimate of the population variance in Hopelessness at each step of the equation, the adjusted R^2 has also been reported. Refer to Appendix D 24 for the model summary, ANOVA and coefficients.

In Step 1 where the demographic variables were the seven IV's entered into the equation 24% (17% adjusted) of the variance in Hopelessness was explained by these demographic variables. The addition of Dispositional Optimism in Step 2 explained an additional 17% ($R^2 = 0.41$, 0.35 adjusted). Meaningful Daily Activity in Step 3 explained an additional 7.0% ($R^2 = 0.48$, 0.42 adjusted). The R^2 change was significantly different from zero at Steps 1, 2 and 3. Persons who were educated beyond year 12 who had higher scores on Dispositional Optimism and the MDAQ-had lower Hopelessness scores. Therefore the research hypothesis was accepted. A CPP who obtains high scores on the MDAQ will have lower scores on Hopelessness was supported. The null hypothesis a CPP who obtains higher scores on the MDAQ does not have lower scores on Hopelessness was not supported.

Table 50. Hierarchical Regression of Individual Patient Characteristics, Dispositional Optimism and Meaningful Daily Activity as Predictors of Hopelessness

Independent Variables	<i>B</i>	β	ΔR^2
Step 1			0.24***
Marital Status	1.58	0.15	
Work Injury	-1.52	-0.15	
Education Above or Below Year 12	-2.53	-0.25*	
Working or Not Working	0.12	0.01	
Gender	-2.49	-0.22	
Litigating or Not Litigating	-1.46	-0.12	
Pain Duration	0.90	0.08	
Step 2			0.17***
Marital Status	1.67	0.15	
Work Injury	-0.96	-0.10	
Education Above or Below Year 12	-1.37	-0.14	
Working or Not Working	-0.25	-0.03	
Gender	-1.29	-0.11	
Litigating or Not Litigating	-0.75	-0.06	
Pain Duration	1.26	0.11	
Dispositional Optimism (LOT)	-0.35	-0.47	
Step 3			0.07***
Marital Status	1.40	0.13	
Work Injury	-1.12	-0.11	
Education Above or Below Year 12	-0.79	-0.08	
Working or Not Working	-0.53	-0.05	
Gender	-1.53	-0.11	
Litigating or Not Litigating	-0.26	-0.02	
Pain Duration	1.42	0.13	
Dispositional Optimism (LOT)	-0.34	-0.45***	
Meaningful Daily Activity (MDAQ-R)	-0.05	-0.29***	

*** $p < .001$, ** $p < .01$, * $p < .05$.

(4) Psychological Distress factor and MDA Scores

In the fourth regression analysis the dependent variable was the Psychological Distress factor the IV's entered in Step 1 were sustained work injury, education, work status, gender, litigation status, marital status and pain duration, Step 2 Dispositional Optimism (LOT) and Step 3 Meaningful Daily Activity (MDAQ-R).

The ANOVA was significant at each step of the regression and multiple R was significantly different from zero; Step 1 $F(7, 79) = 6.90$ $p < .001$, Step 2 $F(8, 78) = 12.16$ $p < .001$ and Step 3 $F(9, 77) = 12.50$ $p < .001$. Table 51 presents the unstandardized regression coefficients (B), the standardized regression coefficients (β). Because the current study has a small sample rather than R^2 being reported the estimate of the population variance in Psychological Distress factor at each step of the equation, the adjusted R^2 has also been reported. Refer to Appendix D 25 for the model summary, ANOVA and coefficients.

In Step 1 where the demographic variables were the seven IV's entered into the equation 38% (32% adjusted) of the variation in the Psychological Distress factor was explained by these demographic variables. The addition of Dispositional Optimism in Step 2 explained any additional 18% ($R^2 = 0.55$, 0.51 adjusted). Meaningful Daily Activity in Step 3 explained an additional 4% ($R^2 = 0.59$, 0.55 adjusted). The R^2 change was significantly different from zero at Steps 1, 2 and 3. Persons with higher Dispositional Optimism and Meaningful Daily Activity had lower scores on the Psychological Distress factor. Therefore the research hypothesis was accepted. A CPP who obtains higher scores on the MDAQ will have lower scores on the Psychological Distress factor was supported. The null hypothesis a CPP who obtains higher scores on the MDAQ does not have lower scores on the Psychological Distress factor was not supported.

Table 51. Hierarchical Regression of Individual Patient Characteristics, Dispositional Optimism and Meaningful Daily Activity as a Predictor of the Psychological Distress factor

Independent Variables	<i>B</i>	β	ΔR^2
Step 1			0.38***
Marital Status	0.22	0.10	
Pain Duration	0.18	0.08	
Work Injury	-0.36	-0.18	
Education Above or Below Year 12	-0.50	-0.25**	
Working or Not Working	0.15	0.07	
Gender	-0.60	-0.26**	
Litigating or Not Litigating	-0.58	-0.23*	
Step 2			0.18***
Marital Status	0.23	0.10	
Pain Duration	0.27	0.12	
Work Injury	-0.23	-0.11	
Education Above or Below Year 12	-0.25	-0.12	
Working or Not Working	0.06	0.03	
Gender	-0.35	-0.15	
Litigating or Not Litigating	-0.44	-0.17	
Dispositional Optimism (LOT)	-0.07	-0.48***	
Step 3			0.04***
Marital Status	0.20	0.09	
Pain Duration	0.28	0.13	
Work Injury	-0.27	-0.13	
Education Above or Below Year 12	-0.18	-0.09	
Working or Not Working	0.03	0.02	
Gender	-0.35	-0.16	
Litigating or Not Litigating	-0.36	-0.14	
Dispositional Optimism (LOT)	-0.07	-0.46***	
Meaningful Daily Activity (MDAQ-R)	-0.01	-0.21**	

*** $p < .001$, ** $p < .01$, * $p < .05$.

Hypothesis 2 DAQ-R Scores and Psychological Distress

A CPP who obtains higher scores on the DAQ will have lower scores on measures for depression, anxiety and hopelessness.

Conversely, a CPP who obtains higher scores on the DAQ will not have lower scores on measures for depression, anxiety and hopelessness.

To determine whether after controlling for specific CPP demographic variables that affected Psychological Distress (anxiety, depression, and hopelessness) and Dispositional Optimism (LOT), higher scores on Daily Activity (DAQ-R) reduced or increased scores obtained on measures of (1) Depression (HADS-D), (2) Anxiety (HADS A), (3) Hopelessness (BHS) and (4) the Psychological Distress factor. Using SPSS 18 four hierarchical regression analyses were performed.

(1) Depression (HADS D) and DA Scores

In the first regression analysis the dependent variable was Depression (HADS-D) the IV's entered in Step 1 were age, sustaining a work injury, education, work status, gender and litigation status, Step 2 Dispositional Optimism (LOT) and Step 3 Daily Activity (DAQ-R).

The ANOVA was significant at each step of the regression and multiple R was significantly different from zero; Step 1 $F(6, 89) = 10.26$ $p < .001$, Step 2 $F(7, 88) = 13.34$ $p < .001$ and Step 3 $F(8, 87) = 18.12$ $p < .001$. Table 52 presents the unstandardized regression coefficients (B), the standardized regression coefficients (β). Because the current study has a small sample rather than R^2 being reported the estimate of the population variance in Depression at each step of the equation, the adjusted R^2 has also been reported. Refer to Appendix D 26 for the model summary, ANOVA and coefficients.

In Step 1 where the demographic variables were the six IV's entered into the equation 41% (37% adjusted) of the variance in Depression was explained by these demographic

variables. The addition of Dispositional Optimism in Step 2 explained an additional 11% ($R^2 = 0.51, 0.48$ adjusted). Daily Activity in Step 3 explained an additional 11% ($R^2 = 0.62, 0.59$ adjusted). The R^2 change was significantly different from zero at Steps 1, 2 and 3. Not sustaining a work injury, having attained education beyond year 12 and not litigating negatively predicted scores on Depression. Higher scores on Dispositional Optimism and Daily Activity also predicted lower scores on Depression. Therefore the research hypothesis was accepted. A CPP who obtained higher scores on DAQ will have lower scores on Depression was supported. The null hypothesis a CPP who obtains higher scores on the DAQ does not have lower scores on Depression was not supported.

Table 52. Hierarchical Regression of Individual Patient Characteristics, Dispositional Optimism and Daily Activity as Predictors of Depression

Independent Variables	<i>B</i>	β	ΔR^2
Step 1			0.41***
Age (above or below 45 years)	-0.62	-0.06	
Work Injury	-1.96	-0.20*	
Education Above or Below Year 12	-1.97	-0.21*	
Working or Not Working	1.41	0.15	
Gender	-1.78	-0.17	
Litigating or Not Litigating	-3.79	-0.30***	
Step 2			0.11***
Age (above or below 45 years)	-0.50	-0.05	
Work Injury	-1.47	-0.15	
Education Above or Below Year 12	-1.21	-0.13	
Working or Not Working	0.94	0.10	
Gender	-0.82	-0.08	
Litigating or Not Litigating	-3.45	-0.28***	
Dispositional Optimism (LOT)	-0.26	-0.37***	

Table 52. Hierarchical Regression of Individual Patient Characteristics, Dispositional Optimism and Daily Activity as Predictors of Depression continued

Independent Variables	<i>B</i>	β	ΔR^2
Step 3			0.11***
Age (above or below 45 years)	-0.61	-0.06	
Work Injury	-1.54	-0.16*	
Education Above or Below Year 12	-1.26	-0.13	
Working or Not Working	0.39	0.04	
Gender	0.00	0.00	
Litigating or Not Litigating	-1.66	-0.13	
Dispositional Optimism (LOT)	-0.20	-0.29***	
Daily Activity (DAQ-R)	-0.09	-0.41***	

*** $p < .001$, ** $p < .01$, * $p < .05$.

(2) Anxiety (HADS Anxiety) and DA Scores

In the second regression analysis the dependent variable was Anxiety (HADS-A) the IV's entered in Step 1 were age (above or below 45 years), work injury, education (above or below year 12), work status, gender and litigation status, Step 2 Dispositional Optimism (LOT) and Step 3 Daily Activity (DAQ-R).

The ANOVA was significant at each step of the regression and multiple R was significantly different from zero; Step 1 $F(6, 89) = 7.07$ $p < .001$, Step 2 $F(7, 88) = 9.53$ $p < .001$ and Step 3 $F(8, 87) = 9.59$ $p < .001$. Table 53 presents the unstandardized regression coefficients (*B*), the standardized regression coefficients (β). Because the current study has a small sample rather than R^2 being reported the estimate of the population variance in Anxiety at each step of the equation, the adjusted R^2 has also been reported. Refer to Appendix D27 for the model summary, ANOVA and coefficients.

In Step 1 where the demographic variables were the six IV's entered into the equation 32% (28% adjusted) of the variance in Anxiety was explained by these demographic

variables. The addition of Dispositional Optimism in Step 2 explained an additional 11% ($R^2 = 0.43, 0.39$ adjusted). Daily Activity in Step 3 explained an additional 4% ($R^2 = 0.47, 0.42$ adjusted). The R^2 change was significantly different from zero at Steps 1, 2 and 3. Dispositional Optimism and Daily Activity scores negatively predicted Anxiety, when all demographic variables were controlled for. Therefore the research hypothesis was accepted. A CPP who obtained higher scores on DAQ will have lower scores on Anxiety was supported. The null hypothesis a CPP who obtains higher scores on the DAQ does not have lower scores on Anxiety was not supported.

Table 53. Hierarchical Regression of Individual Patient Characteristics, Dispositional Optimism and Daily Activity as Predictors of Anxiety

Independent Variables	<i>B</i>	β	ΔR^2
Step 1			0.32***
Age (above or below 45 years)	-1.10	-0.11	
Work Injury	-1.50	-0.17	
Education Above or Below Year 12	-1.59	-0.18	
Working or Not Working	-1.91	0.22*	
Gender	-2.64	-0.26**	
Litigating or Not Litigating	-1.30	-0.11	
Step 2			0.11***
Age (above or below 45 years)	-0.99	-0.10	
Work Injury	-1.03	-0.11	
Education Above or Below Year 12	-0.87	-0.10	
Working or Not Working	1.47	0.17	
Gender	-1.74	-0.17	
Litigating or Not Litigating	-0.98	-0.08	
Dispositional Optimism (LOT)	-0.25	-0.37***	

Table 53. Hierarchical Regression of Individual Patient Characteristics, Dispositional Optimism and Daily Activity as Predictors of Anxiety continued

Independent Variables	<i>B</i>	β	ΔR^2
Step 3			0.04*
Age (above or below 45 years)	-1.05	-0.11	
Work Injury	-1.07	-0.12	
Education Above or Below Year 12	-0.90	-0.10	
Working or Not Working	1.17	0.13	
Gender	-1.29	-0.13	
Litigating or Not Litigating	0.00	0.00	
Dispositional Optimism (LOT)	-0.22	-0.33***	
Daily Activity (DAQ-R)	-0.05	-0.24*	

*** $p < .001$, ** $p < .01$, * $p < .05$.

(3) *Hopelessness (BHS) and DA Scores*

In the third regression analysis the dependent variable was Hopelessness (BHS) the IV's entered in Step 1 were education, work status, marital status, pain duration, litigation status, work injury, and gender, Step 2 Dispositional Optimism (LOT) and Step 3 Daily Activity (DAQ-R).

The ANOVA was significant at each step of the regression and multiple R was significantly different from zero; Step 1 $F(7, 89) = 5.32$ $p < .001$, Step 2 $F(8, 88) = 11.15$ $p < .001$ and Step 3 $F(9, 87) = 13.72$ $p < .001$. Table 54 presents the unstandardized regression coefficients (*B*), the standardized regression coefficients (β). Because the current study has a small sample rather than R^2 being reported the estimate of the population variance in Hopelessness at each step of the equation, the adjusted R^2 has also been reported. Refer to Appendix D28 for the model summary, ANOVA and coefficients.

In Step 1 where the demographic variables were the seven IV's entered into the equation 30% (24% adjusted) of the variance in Hopelessness was explained by these demographic variables. The addition of Dispositional Optimism in Step 2 explained an additional 21% ($R^2 = 0.50$, 0.46 adjusted). Daily Activity in Step 3 explained an additional

8.0% ($R^2 = 0.59, 0.54$ adjusted). The R^2 change was significantly different from zero at Steps 1, 2 and 3. Persons who were educated beyond year 12 had lower scores on Hopelessness and persons with pain duration longer than 18 months had higher Hopelessness scores. Also persons with higher Dispositional Optimism and Daily Activity Scores had lower Hopelessness scores. Therefore the research hypothesis was accepted. A CPP who obtained higher scores on DAQ will have lower scores on Hopelessness was supported. The null hypothesis a CPP who obtains higher scores on the DAQ does not have lower scores on Hopelessness was not supported.

Table 54. Hierarchical Regression of Individual Patient Characteristics, Dispositional Optimism and Daily Activity as Predictors of Hopelessness

Independent Variables	<i>B</i>	β	ΔR^2
Step 1			0.38***
Marital Status	1.03	0.09	
Pain Duration	1.60	0.15	
Work Injury	-1.45	-0.14	
Education Above or Below Year 12	-2.88	-0.29***	
Working or Not Working	0.91	0.09	
Gender	-2.31	-0.21*	
Litigating or Not Litigating	-1.62	-0.12	
Step 2			0.18**
Marital Status	1.16	0.11	
Pain Duration	1.62	0.15	
Work Injury	-0.73	-0.07	
Education Above or Below Year 12	-1.81	-0.18**	
Working or Not Working	0.26	0.03	
Gender	-0.96	-0.09	
Litigating or Not Litigating	-1.01	-0.08	
Dispositional Optimism (LOT)	-0.38	-0.52***	

Table 54. Hierarchical Regression of Individual Patient Characteristics, Dispositional Optimism and Daily Activity as Predictors of Hopelessness continued

Independent Variables	<i>B</i>	β	ΔR^2
Step 3			0.04**
Marital Status	0.51	0.05	
Pain Duration	2.02	0.18*	
Work Injury	-0.66	-0.07	
Education Above or Below Year 12	-1.92	-0.19**	
Working or Not Working	-0.38	-0.04	
Gender	-0.11	-0.01	
Litigating or Not Litigating	0.55	0.04	
Dispositional Optimism (LOT)	-0.33	-0.45***	
Daily Activity (DAQ-R)	-0.08	-0.37***	

*** $p < .001$, ** $p < .01$, * $p < .05$.

(4) Psychological Distress factor and DA Scores

In the fourth regression analysis the dependent variable was the Psychological Distress factor the IV's entered in Step 1 were education work injury, work status, gender, litigation status marital status and pain duration, Step 2 Dispositional Optimism (LOT) and Step 3 Daily Activity (DAQ-R).

The ANOVA was significant at each step of the regression and multiple R was significantly different from zero; Step 1 $F(7, 88) = 9.98$ $p < .001$, Step 2 $F(8, 87) = 16.58$ $p < .001$ and Step 3 $F(9, 86) = 22.01$ $p < .001$. Table 55 presents the unstandardized regression coefficients (*B*), the standardized regression coefficients (β). Because the current study has a small sample rather than R^2 being reported the estimate of the population variance in Psychological Distress factor at each step of the equation, the adjusted R^2 has also been reported. Refer to Appendix D 29 for the model summary, ANOVA and coefficients.

In Step 1 where the demographic variables were the seven IV's entered into the equation 44% (40% adjusted) of the variance in Psychological Distress factor was explained by these demographic variables. The addition of Dispositional Optimism in Step 2 explained

an additional 16% ($R^2 = 0.60$, 0.57 adjusted). Daily Activity in Step 3 explained an additional 9% ($R^2 = 0.70$, 0.67 adjusted). The R^2 change was significantly different from zero at Steps 1, 2 and 3. Having attained an education beyond Year 12, higher scores on Dispositional Optimism and Daily Activities predicted lower scores on the Psychological Distress factor. Pain duration of more than 18 months predicted higher Psychological Distress scores. Therefore the research hypothesis was accepted. A CPP who obtains higher scores on DAQ will have lower scores on Psychological Distress factor was supported. The null hypothesis a CPP who obtains higher scores on the DAQ does not have lower scores on the Psychological Distress factor was not supported.

Table 55. Hierarchical Regression of Individual Patient Characteristics, Dispositional Optimism and Daily Activity as Predictors of Psychological Distress factor

Independent Variables	<i>B</i>	β	ΔR^2
Step 1			0.44***
Marital Status	0.20	0.09	
Pain Duration	0.24	0.11	
Work Injury	-0.40	-0.19*	
Education Above or Below Year 12	-0.54	-0.27***	
Working or Not Working	0.28	0.14	
Gender	-0.61	-0.27***	
Litigating or Not Litigating	-0.58	-0.22*	
Step 2			0.16***
Marital Status	0.21	0.09	
Pain Duration	0.26	0.12	
Work Injury	-0.26	-0.13	
Education Above or Below Year 12	-0.34	-0.17*	
Working or Not Working	0.15	0.07	
Gender	-0.36	-0.16*	
Litigating or Not Litigating	-0.48	-0.18*	
Dispositional Optimism (LOT)	-0.07	-0.46***	

Table 55. Hierarchical Regression of Individual Patient Characteristics, Dispositional Optimism and Daily Activity as Predictors of Psychological Distress factor continued

Step 3	0.09***	
Marital Status	0.07	0.03
Pain Duration	0.34	0.15*
Work Injury	-0.25	-0.12
Education Above or Below Year 12	-0.37	-0.18**
Working or Not Working	0.01	0.01
Gender	-0.18	-0.08
Litigating or Not Litigating	-0.14	-0.05
Dispositional Optimism (LOT)	-0.06	-0.38***
Daily Activity (DAQ-R)	-0.02	-0.39***

*** $p < .001$, ** $p < .01$, * $p < .05$.

Hypothesis 3: MDAQ-R Scores, Pain and Disability

A CPP who obtains higher scores on the MDAQ will have lower scores on measures for pain severity and functional disability.

Conversely, a CPP who obtains higher scores on the MDAQ will not have lower scores on measures for pain severity and functional disability.

To test this hypothesis four hierarchical multiple regression analysis were performed using SPSS 18. The dependent variables entered in the four analyses were (1) Pain (MPQ PRI), (2) Pain Intensity (MPQ-PPI) (3) Disability (PDI) and (4) Pain and Disability factor. Independent variables entered into each of the regression analysis were the sample source, gender, age, education, marital status, pain duration, employment status, work injury status, and litigation status, Dispositional Optimism (LOT) and Meaningful Daily Activity (MDAQ-R).

(1) Pain (MPQ PRI) and MDA scores

In the first regression analysis the dependent variable was Pain (MPQ PRI) the IV's entered in Step 1 were gender, education, work injury, age, marital status, litigation status, and work status, and Step 2 Dispositional Optimism and Step 3 Meaningful Daily Activity (MDAQ-R).

The ANOVA was significant at Step 1 of the regression and multiple R was significantly different from zero; Step 1 $F(7, 79) = 2.11$ $p > .05$, but not at Step 2 $F(8, 78) = 1.84$ $p < .05$ or Step 3 $F(9, 77) = 1.62$ $p < .05$. Table 56 presents the unstandardized regression coefficients (B), the standardized regression coefficients (β). Because the current study has a small sample rather than R^2 being reported the estimate of the population variance in Pain (MPQ-PRI) at each step of the equation, the adjusted R^2 has also been reported. Refer to Appendix D30 for the model summary, ANOVA and coefficients.

In Step 1 where the demographic variables were the seven IV's entered into the equation 16% (8% adjusted) of the variance in Pain (MPQ-PRI) was explained by these demographic variables. The addition of Dispositional Optimism in Step 2 did not explain any additional variance 0% ($R^2 = 0.16$, 0.07 adjusted), nor did Meaningful Daily Activity in Step 3 0% ($R^2 = 0.16$, 0.06 adjusted). The R^2 change was significantly different from zero at Step 1 but not Steps 2 or 3. There was only one demographic variable, not being married or in a relationship, that predicted higher Pain scores. None of the other variables were significant predictors of Pain (MPQ-PRI). Therefore the research hypothesis was not accepted. A CPP who obtained higher scores on MDAQ-R will have lower scores on Pain was not supported. The null hypothesis a CPP who obtains higher scores on the MDAQ-R does not have lower scores on Pain (MPQ-PRI). was supported. The null hypothesis was accepted.

Table 56. Hierarchical Regression of Individual Patient Characteristics, Dispositional Optimism and Meaningful Daily Activity as Predictors of Mc Gill Pain Questionnaire PRI Scores

Independent Variables	<i>B</i>	β	ΔR^2
Step 1			0.16*
Marital Statue	7.01	0.23*	
Age (above or below 45 years)	-0.92	-0.03	
Work Injury	0.26	0.01	
Education Above or Below Year 12	-2.78	-0.10	
Working or Not Working	5.22	0.18	
Gender	0.05	0.00	
Litigating or Not Litigating	-5.54	-0.15	
Step 2			0.00
Marital Status	7.07	-0.23*	
Age (above or below 45 years)	--0.82	-0.03	
Work Injury	.036	0.01	
Education Above or Below Year 12	-2.47	-0.09	
Working or Not Working	5.14	0.18	
Gender	0.33	0.00	
Litigating or Not Litigating	-5.40	-0.15	
Dispositional Optimism (LOT)	-0.08	-0.04	
Step 3			0.00
Marital Status	6.98	0.23*	
Age (above or below 45 years)	-0.82	-0.03	
Work Injury	0.31	0.01	
Education Above or Below Year 12	-2.30	-0.08	
Working or Not Working	5.08	0.18	
Gender	0.32	0.01	
Litigating or Not Litigating	-0.08	-0.04	
Dispositional Optimism (LOT)	-0.01	0.03	
Meaningful Daily Activity (MDAQ-R)			

*** $p < .001$, ** $p < .01$, * $p < .05$.

(2) Pain (MPQ-PPI) and MDA scores

In the second regression analysis the dependent variable was Present Intensity Pain (MPQ-PPI) the IV's entered in Step 1 were age, gender, education, marital status, litigation status, work injury, and work status, and Step 2 Dispositional Optimism, Step 3 Meaningful Daily Activity (MDAQ-R).

The ANOVA was not significant at each Step of the regression and multiple R was not significantly different from zero; Step 1 $F(7, 79) = 1.76$ $p > .05$ Step 2 $F(8, 78) = 1.53$ $p > .05$ and Step 3 $F(9, 77) = 1.41$ $p > .05$. Table 57 presents the unstandardized regression coefficients (B), the standardized regression coefficients (β). Because the current study has a small sample rather than R^2 being reported the estimate of the population variance in Present Pain Intensity at each step of the equation, the adjusted R^2 has also been reported. Refer to Appendix D 30 for the model summary, ANOVA and coefficients.

In Step 1 where the demographic variables were the seven IV's entered into the equation 14% (6% adjusted) of the variance in Present Pain Intensity was explained by these demographic variables. The addition of Dispositional Optimism in Step 2 did not explain any additional variance in Present Pain Intensity 0% ($R^2 = 0.14$, 0.05 adjusted). Meaningful Daily Activity in Step 3 did not explain any additional 0% ($R^2 = 0.14$, 0.04 adjusted). The R^2 change was not significantly different from zero at any of the 3 Steps. Not litigating was the only significant predictor of Present Pain Intensity, ($B = -.71$, $\beta = -0.30$) $p < .05$. Therefore the research hypothesis was not accepted. A CPP who obtained higher scores on MDAQ-R will have lower scores on Present Pain Intensity was not supported. The null hypothesis a CPP who obtains higher scores on the MDAQ-R does not have lower scores on Present Pain Intensity was supported. The null hypothesis was accepted.

Table 57. Hierarchical Regression of Individual Patient Characteristics, Dispositional Optimism and Meaningful Daily Activity as Predictors of Mc Gill Pain Questionnaire Present Pain Intensity (PPI) Scores

Independent Variables	<i>B</i>	β	ΔR^2
Step 1			0.14
Marital Status	0.26	0.13	
Age (above or below 45 years)	0.01	0.00	
Work Injury	-0.09	-0.05	
Education Above or Below Year 12	-0.16	-0.09	
Working or Not Working	-0.05	-0.03	
Gender	-0.01	0.00	
Litigating or Not Litigating	-0.74	-0.31*	
Step 2			0.00
Marital Status	0.26	0.13	
Age (above or below 45 years)	0.00	0.00	
Work Injury	-0.09	-0.05	
Education Above or Below Year 12	-0.17	-0.09	
Working or Not Working	-0.05	-0.02	
Gender	-0.01	-0.01	
Litigating or Not Litigating	-0.74	-0.32*	
Dispositional Optimism (LOT)	0.00	0.01	
Step 3			0.01
Marital Status	0.24	0.12	
Age (above or below 45 years)	0.00	0.00	
Work Injury	-0.10	-0.05	
Education Above or Below Year 12	-0.14	-0.07	
Working or Not Working	-0.06	-0.03	
Gender	-0.02	-0.01	
Litigating or Not Litigating	-0.71	-0.30*	
Dispositional Optimism (LOT)	0.00	0.02	
Meaningful Daily Activity (MDAQ-R)	0.00	-0.08	

*** $p < .001$, ** $p < .01$, * $p < .05$.

(3) Disability (PDI) and MDA scores

In the third regression analysis the dependent variable was Disability (PDI) the IV's entered in Step 1 were education, work status, work injury, age (above or below 45 years), marital status, and litigation status, Step 2 Dispositional Optimism, and Step 3 Meaningful Daily Activity (MDAQ-R).

The ANOVA was significant at each Step of the regression and multiple R was significantly different from zero; Step 1 $F(6, 80) = 6.07$ $p < .001$, Step 2 $F(7, 79) = 6.2$ $p < .001$ and Step 3 $F(8, 78) = 6.02$ $p < .001$. Table 58 presents the unstandardized regression coefficients (B), the standardized regression coefficients (β). Because the current study has a small sample rather than R^2 being reported the estimate of the population variance in Depression at each step of the equation, the adjusted R^2 has also been reported. Refer to Appendix D 31 for the model summary, ANOVA and coefficients.

In Step 1 where the demographic variables were the six IV's entered into the equation 31% (26% adjusted) of the variance in Disability was explained by these demographic variables. The addition of Dispositional Optimism in Step 2 explained an additional 4% ($R^2 = 0.35, 0.30$ adjusted). Meaningful Daily Activity in Step 3 explained an additional 3% ($R^2 = 0.38, 0.32$ adjusted). The R^2 change was significantly different from zero at Steps 1 and 2 but not at Step 3. Single person and litigants had higher scores on Disability and persons with higher Dispositional Optimism scores had lower scores on Disability. Meaningful Daily Activity did not predict Disability. ($p > .05$) although Meaningful Daily Activity was almost significant ($p = .07$). Therefore the research hypothesis was not accepted. A CPP who obtained higher scores on MDAQ-R will have lower scores on Disability was not supported. The null hypothesis a CPP who obtains higher scores on the MDAQ-R does not have lower scores on Disability was supported.

Table 58. Hierarchical Regression of Individual Patient Characteristics, Dispositional Optimism and Meaningful Daily Activity as Predictors of Disability (PDI) Scores

Independent Variables	<i>B</i>	β	ΔR^2
Step 1			0.31***
Age (above or below 45 years)	-0.85	-0.05	
Work Injury	-9.57	-0.30***	
Education Above or Below Year 12	-2.62	-0.08	
Working or Not Working	5.76	0.18	
Marital Status	8.19	0.24*	
Litigating or Not Litigating	-9.70	-0.24	
Step 2			0.04
Age (above or below 45 years)	-0.98	-0.03	
Work Injury	-8.55	-0.27	
Education Above or Below Year 12	-0.94	-0.03**	
Working or Not Working	5.04	0.16	
Marital Status	8.68	0.25**	
Litigating or Not Litigating	-8.06	-0.20	
Dispositional Optimism (LOT)	-0.53	-0.23	
Step 3			0.03
Age (above or below 45 years)	-0.92	-0.03	
Work Injury	-8.91	-0.28	
Education Above or Below Year 12	0.22	0.01	
Working or Not Working	4.63	0.15	
Marital Status	8.13	0.24**	
Litigating or Not Litigating	-6.97	-0.17	
Dispositional Optimism (LOT)	-0.51	-0.22*	
Meaningful Daily Activity (MDAQ-R)	-0.09	-0.18	

*** $p < .001$, ** $p < .01$, * $p < .05$.

(4) Pain and Disability Factor and MDA scores

In the fourth regression analysis the dependent variable was Pain and Disability factor and the IV's entered in Step 1, gender, were age (above or below 45 years), work injury, work status, litigation, education, marital status, Step 2 Dispositional Optimism (LOT), Step 3 Meaningful Daily Activity (MDAQ-R).

The ANOVA was significant at each Step of the regression and multiple R was significantly different from zero; Step 1 $F(7, 79) = 4.51$ $p < .001$, but not Step 2 $F(8, 78) = 4.22$ $p > .05$ and Step 3 $F(9.77) = 3.93$ $p > .05$. Table 59 presents the unstandardized regression coefficients (B), the standardized regression coefficients (β). Because the current study has a small sample rather than R^2 being reported the estimate of the population variance in Pain and Disability factor at each step of the equation, the adjusted R^2 has also been reported. Refer to Appendix D 32 for the model summary, ANOVA and coefficients. In Step 1 where the demographic variables were the seven IV's entered into the equation 29% (22% adjusted) of the variance in Pain and Disability factor was explained by these demographic variables. The addition of Dispositional Optimism in Step 2 explained an additional 2% ($R^2 = 0.30$, 0.23 adjusted). Meaningful Daily Activity in Step 3 explained an additional 1% ($R^2 = 0.31$, 0.23 adjusted). The R^2 change was significantly different from zero at Step 1, but not significant at Steps 2 and 3. Being married or in a relationship was the only significant predictor of the Pain and Disability factor. Therefore the research hypothesis was not accepted. A CPP who obtained higher scores on MDAQ-R will have lower scores on the Pain and Disability factor was not supported. The null hypothesis a CPP who obtains higher scores on the MDAQ-R does not have lower scores on the Pain and Disability factor was supported.

Table 59. Hierarchical Regression of Individual Patient Characteristics, Dispositional Optimism and Meaningful Daily Activity as Predictors of Pain and Disability Factor Scores

Independent Variables	<i>B</i>	β	ΔR^2
Step 1			0.29***
Marital Status	0.61	.28**	
Age (above or below 45 years)	-0.08	-0.04	
Work Injury	-0.30	-0.15	
Education Above or Below Year 12	-0.23	-0.12	
Working or Not Working	0.42	0.21	
Gender	-0.16	-0.07	
Litigating or Not Litigating	-0.52	0.20	
Step 2			0.02
Marital Status	0.62	0.29***	
Age (above or below 45 years)	-0.06	-0.03	
Work Injury	0.29	-0.14	
Education Above or Below Year 12	-0.11	-0.08	
Working or Not Working	0.38	0.20	
Gender	-0.09	-0.04	
Litigating or Not Litigating	-0.44	-0.19	
Dispositional Optimism (LOT)	-0.02	-0.15	
Step 3			0.01
Marital Status	0.60	0.27**	
Age (above or below 45 years)	-0.06	-0.03	
Work Injury	0.29	-0.14	
Education Above or Below Year 12	-0.11	-0.05	
Working or Not Working	0.38	0.19	
Gender	-0.09	-0.04	
Litigating or Not Litigating	-0.44	-0.17	
Dispositional Optimism (LOT)	-0.02	-0.14	
Meaningful Daily Activity (MDAQ-R)	0.00	-0.12	

*** $p < .001$, ** $p < .01$, * $p < .05$.

Hypothesis 4 DAQ-R Scores, Pain and Disability

A CPP who obtains higher scores on the DAQ-R will have lower scores on measures for pain severity and functional disability.

Conversely, a CPP who obtains higher scores on the DAQ-R will not have lower scores on measures for pain severity and functional disability.

To test this hypothesis four hierarchical multiple regression analysis were performed using SPSS 18. The dependent variables entered in the four analyses were (1) Pain (MPQ PRI), (2) Pain Intensity (MPQ-PPI) (3) Disability (PDI) and (4) Pain and Disability factor. Independent variables entered into each of the regression analysis were gender, education, work status, marital status, work injury, litigation status and age, Dispositional Optimism (LOT) and Daily Activity (DAQ-R).

(1) Pain (MPQ PRI) and DA scores

In the first regression analysis the dependent variable was Pain (MPQ PRI) the IV's entered in Step 1 were gender, education, work status, marital status, work injury, litigation status and age Step 2 Dispositional Optimism and Step 3 Daily Activity (DAQ-R).

The ANOVA was significant at each Step of the regression and multiple R was significantly different from zero; Step 1 $F(7, 89) = 2.76$ $p < .01$, but not Step 2 $F(8, 88) = 2.45$ $p > .05$ and Step 3 $F(9, 87) = 2.16$ $p > .05$. Table 60 presents the unstandardized regression coefficients (B), the standardized regression coefficients (β). Because the current study has a small sample rather than R^2 being reported the estimate of the population variance in Pain (MPQ-PRI) at each step of the equation, the adjusted R^2 has also been reported. Refer to Appendix D 33 for the model summary, ANOVA and coefficients.

In Step 1 where the demographic variables were the seven IV's entered into the equation 18% (11% adjusted) of the variance in Pain was explained by these demographic

variables. The addition of Dispositional Optimism in Step 2 did not explain any additional variance 0% ($R^2 = 0.18$, 0.18 adjusted). Also Daily Activity in Step 3 did not explain any additional variance 0% ($R^2 = 0.18$, 0.10 adjusted). The R^2 change not significantly different from zero at Step 1 only. Persons who were not working had higher scores on Pain (MPQ-PRI). Therefore the research hypothesis was not accepted. A CPP who obtained higher scores on DAQ-R will have lower scores on Pain (MPQ-PRI) was not supported. The null hypothesis a CPP who obtains higher scores on the DAQ-R does not have lower scores on Pain (MPQ-PRI) was supported.

Table 60. Hierarchical Regression of Individual Patient Characteristics, Dispositional Optimism and Daily Activity as Predictors of Mc Gill Pain Questionnaire PRI Scores

Independent Variables	<i>B</i>	β	ΔR^2
Step 1			0.18**
Marital Status	4.05	0.13	
Age (above or below 45 years)	-3.05	-0.10	
Work Injury	0.92	0.03	
Education Above or Below Year 12	-2.77	-0.10	
Working or Not Working	6.94	0.25*	
Gender	2.59	0.08	
Litigating or Not Litigating	-7.40	-0.20	
Step 2			0.00
Marital Status	4.14	0.14	
Age (above or below 45 years)	-3.00	-0.10	
Work Injury	1.17	0.04	
Education Above or Below Year 12	2.35	-0.09	
Working or Not Working	6.69	0.24*	
Gender	3.12	0.10	
Litigating or Not Litigating	-7.19	-0.20	
Dispositional Optimism (LOT)	-0.15	0.07	
Step 3			0.00
Marital Status	4.02	0.13	
Age (above or below 45 years)	-3.04	-0.10	
Work Injury	1.18	0.04	
Education Above or Below Year 12	-2.36	-0.09	
Working or Not Working	6.61	0.24*	
Gender	3.28	0.11	
Litigating or Not Litigating	-6.89	-0.19	
Dispositional Optimism (LOT)	-0.14	-0.07	
Daily Activity (DAQ-R)	0.010	-0.02	

*** $p < .001$, ** $p < .01$, * $p < .05$.

(2) Pain (MPQ PPI) and DA scores

In the second regression analysis the dependent variable was Present Pain Intensity (MPQ-PPI) the IV's entered in Step 1 were gender, education, work status, marital status, work injury, litigation status and age, in Step 2 Dispositional Optimism and Step 3 Daily Activity (DAQ-R).

The ANOVA was not significant at each Step of the regression and multiple R was not significantly different from zero; Step 1 $F(7, 89) = 1.96$ $p > .05$, Step 2 $F(8, 88) = 1.71$ $p > .05$ and Step 3 $F(9, 87) = 1.52$ $p > .05$. Table 61 presents the unstandardized regression coefficients (B), the standardized regression coefficients (β). Because the current study has a small sample rather than R^2 being reported the estimate of the population variance in Present Pain Intensity (MPQ-PPI) at each step of the equation, the adjusted R^2 has also been reported. Refer to Appendix D 33 for the model summary, ANOVA and coefficients.

In Step 1 where the demographic variables were the seven IV's entered into the equation 13% (7% adjusted) of the variance in Present Pain Intensity was explained by these demographic variables. The addition of Dispositional Optimism in Step 2 explained no additional variance 0% ($R^2 = 0.13$, 0.06 adjusted). Also Daily Activity in Step 3 did not explain any additional variance 0% ($R^2 = 0.14$, 0.05 adjusted). The R^2 change was not significantly different from zero at steps 1, 2 and 3. Not litigating was the only predictor of Present Pain Intensity. Persons who were not litigating had lower scores on Present Pain Intensity. Therefore the research hypothesis was not accepted. A CPP who obtained higher scores on DAQ-R will have lower scores on Present Pain Intensity was not supported. The null hypothesis a CPP who obtains higher scores on the DAQ-R does not have lower scores on Present Pain Intensity was supported.

Table 61. Hierarchical Regression of Individual Patient Characteristics, Dispositional Optimism and Daily Activity as Predictors of Mc Gill Pain Questionnaire Present Pain Intensity (PPI) Scores

Independent Variables	<i>B</i>	β	ΔR^2
Step 1			0.13
Marital Status	6.08	0.04	
Age (above or below 45 years)	0.01	0.00	
Work Injury	-0.03	-0.02	
Education Above or Below Year 12	-0.25	-0.13	
Working or Not Working	0.08	0.04	
Gender	0.10	0.04	
Litigating or Not Litigating	-0.77	-0.13**	
Step 2			0.00
Marital Status	0.08	0.04	
Age (above or below 45 years)	0.01	0.01	
Work Injury	-0.02	-0.01	
Education Above or Below Year 12	0.23	-0.12	
Working or Not Working	0.07	0.04	
Gender	0.12	0.05	
Litigating or Not Litigating	-0.77	-0.31**	
Dispositional Optimism (LOT)	-0.01	-0.04	

Table 61. Hierarchical Regression of Individual Patient Characteristics, Dispositional Optimism and Daily Activity as Predictors of Mc Gill Pain Questionnaire Present Pain Intensity (PPI) Scores continued

Independent Variables	<i>B</i>	β	ΔR^2
Step 3			0.00
Marital Status	0.10	0.05	
Age (above or below 45 years)	0.02	0.01	
Work Injury	-0.02	-0.01	
Education Above or Below Year 12	-0.23	-0.12	
Working or Not Working	0.08	0.04	
Gender	0.10	0.05	
Litigating or Not Litigating	-0.80	-0.32*	
Dispositional Optimism (LOT)	-0.01	-0.05	
Daily Activity (DAQ-R)	0.00	0.04	

*** $p < .001$, ** $p < .01$, * $p < .05$.

(3) Disability (PDI) and DA Scores

In the third regression analysis the dependent variable was Disability (PDI) the IV's entered in Step 1 were education, work status, marital status, work injury, litigation, and age, Step 2 Dispositional Optimism and Step 3 Daily Activity (DAQ-R).

The ANOVA was significant at each step of the regression and multiple R was significantly different from zero; Step 1 $F(6, 90) = 8.18$ $p < .001$, Step 2 $F(7, 89) = 8.27$ $p < .05$ and Step 3 $F(8, 88) = 8.15$ $p < .05$. Table 62 presents the unstandardized regression coefficients (*B*), the standardized regression coefficients (β). Because the current study has a small sample rather than R^2 being reported the estimate of the population variance in Disability (PDI) at each step of the equation, the adjusted R^2 has also been reported. Refer to Appendix D34 for the model summary, ANOVA and coefficients.

In Step 1 where the demographic variables were the six IV's entered into the equation 35% (31% adjusted) of the variance in Disability (PDI) was explained by these demographic variables. The addition of Dispositional Optimism in Step 2 explained an additional 4% ($R^2 =$

0.39, 0.35 adjusted). Daily Activity in Step 3 explained an additional 3% ($R^2 = 0.43, 0.37$ adjusted). The R^2 change was significantly different from zero at steps 1, 2 and 3. Persons who were not married had higher Disability scores. Lower Disability scores were predicted by not having sustained a work injury and higher scores on DAQ-R. Therefore the research hypothesis was accepted. A CPP who obtained higher scores on DAQ-R will have lower scores on Disability was supported. The null hypothesis a CPP who obtains higher scores on the DAQ-R does not have lower scores on Disability was not supported.

Table 62. Hierarchical Regression of Individual Patient Characteristics, Dispositional Optimism and Daily Activity as Predictors of Disability (PDI) Scores

Independent Variables	<i>B</i>	β	ΔR^2
Step 1			0.35
Age (above or below 45 years)	-2.12	-0.06	
Work Injury	-9.69	-0.03***	
Education Above or Below Year 12	-4.40	0.14	
Working or Not Working	7.30	0.23*	
Marital Status	7.75	0.22**	
Litigating or Not Litigating	-9.12	-0.22*	
Step 2			0.04
Age (above or below 45 years)	-1.51	-0.04	
Work Injury	-8.50	-0.26***	
Education Above or Below Year 12	-3.04	-0.10	
Working or Not Working	6.26	0.20*	
Marital Status	8.24	0.23**	
Litigating or Not Litigating	-7.66	-0.18	
Dispositional Optimism (LOT)	0.53	-0.22*	
Step 3			0.03
Age (above or below 45 years)	-1.59	-0.05	
Work Injury	-8.26	-0.25**	
Education Above or Below Year 12	-3.34	-0.10	
Working or Not Working	5.33	0.17	
Marital Status	7.13	0.20*	
Litigating or Not Litigating	-3.81	-0.09	
Dispositional Optimism (LOT)	-0.41	-0.17	
Daily Activity (DAQ-R)	-0.160	-0.22*	

*** $p < .001$, ** $p < .01$, * $p < .05$.

(4) Pain and Disability Factor and DA scores

In the fourth regression analysis the dependent variable was the Pain and Disability factor and the IV's entered in Step 1 were gender, education, work status, marital status, work injury, litigation and age, Step 2 Dispositional Optimism (LOT) and Step 3 Daily Activity (DAQ-R).

The ANOVA was significant at each Step of the regression and multiple R was significantly different from zero at Step 1 $F(7, 89) = 6.28$ $p < .001$, but not Step 2 $F(8, 88) = 6.07$ $p > .05$ and Step 3 $F(9, 87) = 5.69$ $p > .05$. Table 63 presents the unstandardized regression coefficients (B), the standardized regression coefficients (β). Because the current study has a small sample rather than R^2 being reported the estimate of the population variance in Pain and Disability factor at each step of the equation, the adjusted R^2 has also been reported. Refer to Appendix D 35 for the model summary, ANOVA and coefficients.

In Step 1 where the demographic variables were the seven IV's entered into the equation 33% (28% adjusted) of the variance in Pain and Disability factor was explained by these demographic variables. The addition of Dispositional Optimism in Step 2 explained an additional 3% ($R^2 = 0.36$, 0.30 adjusted). Daily Activity in Step 3 explained an additional 1% ($R^2 = 0.37$, 0.31 adjusted). The R^2 change was significantly different from zero at Step 1 but not 2 and 3. Being unmarried or not in a relationship and not working in paid employment, predicted higher scores on the Pain and Disability factor. Higher scores on Dispositional Optimism and Daily activity did not predict lower scores on the Pain and Disability factor. Therefore the research hypothesis was not accepted. A CPP who obtained higher scores on DAQ-R will have lower scores on the Pain and Disability factor was not supported. The null hypothesis a CPP who obtains higher scores on the DAQ-R does not have lower scores on Pain and Disability factor was not supported.

Table 63. Hierarchical Regression of Individual Patient Characteristics, Dispositional Optimism and Daily Activity as Predictors of Pain and Disability factor Scores

Independent Variables	<i>B</i>	β	ΔR^2
Step 1			0.33***
Marital Status	0.46	0.21*	
Age (above or below 45 years)	-0.19	-0.09	
Work Injury	-0.13	-0.15	
Education Above or Below Year 12	-0.28	-0.14	
Working or Not Working	0.55	0.29***	
Gender	0.05	0.02	
Litigating or Not Litigating	-0.62	-0.24*	
Step 2			0.03
Marital Status	0.47	0.22**	
Age (above or below 45 years)	-0.18	-0.09	
Work Injury	-0.26	-0.13	
Education Above or Below Year 12	-0.21	-0.11	
Working or Not Working	0.51	0.26**	
Gender	0.14	0.07	
Litigating or Not Litigating	-0.59	-0.23*	
Dispositional Optimism (LOT)	-0.03	-0.18	
Step 3			0.01
Marital Status	0.40	0.20*	
Age (above or below 45 years)	-0.20	-0.09	
Work Injury	-0.26	-0.13	
Education Above or Below Year 12	-0.22	-0.11	
Working or Not Working	0.48	0.24**	
Gender	-0.21	0.10	
Litigating or Not Litigating	-0.45	-0.18	
Dispositional Optimism (LOT)	-0.02	-0.15-	
Daily Activity (DAQ-R)	-0.01	-0.15	

*** $p < .001$, ** $p < .01$, * $p < .05$.

5.4 Summary of Findings

5.4.1 Daily Activity and Meaningful Daily Activity Research Model

Figure 20 illustrates associations that were observed between scores obtained on DAQ-R Subscales, Dispositional Optimism and CP symptoms. No MDAQ-R Subscales were significant predictors of CP symptoms or Dispositional Optimism when both DAQ and MDAQ measures were combined in the same hierarchical regression analyses.

There was an association between Daily Activity scores obtained on DAQ-R 2 Work, Health, Spirituality and Caring and DAQ-R 4 Home Maintenance as predictors of severity of Pain and Disability represented in the Pain and Disability factor.

Illness Perceptions of the participants' self reported Cause of Pain as measured on the IPQR, Subscale 1 Psychological Attributions, was significant in predicting Dispositional Optimism. When the Psychological Distress factor and the Pain and Disability factor were included in the analyses, IPQ-R 4 Accident or Chance was a predictor of Psychological Distress.

The Pain and Disability factor predicted Psychological Distress and the Psychological Distress factor predicted both Dispositional Optimism and the Pain and Disability factor.

Negative predictors of Meaningful Daily Activity (MDAQ-R) were the Psychological Distress factor and not practicing a religion. Not practising a religion and the Psychological Distress factor were also negative predictors of Daily Activity (DAQ-R) along with marital status. However the DAQ-R also had positive predictors, including the MDAQ-R and not litigating, CPP who did not practise a religion attained lower scores on both the MDAQ-R and DAQ-R.

Also demographic variables such as education predicted Dispositional Optimism, and marital status was a predictor of both Pain and Disability and Dispositional Optimism and

marital status predicted Pain and Disability. In the combined MDA and DA research model there were no demographic predictors of Psychological Distress or Dispositional Optimism.

5.4.2 Psychological Distress, Pain and Disability Research Hypothesis

Research Hypothesis 1 was partly supported. Depression, Hopelessness and the Psychological Distress factor were less severe in CPP who had higher scores on the MDAQ-R. Depression, Hopelessness and the Psychological Distress factor scores were higher in CPP who obtained low MDAQ-R scores. Anxiety was not lower in participants who had higher MDAQ-R scores. Depression and Hopelessness was affected by self reported MDA scores but Anxiety was not affected.

Research Hypothesis 2 was supported. High DA as measured on the self report DAQ-R was a significant predictor of all the psychological distress variables. Depression, Anxiety, Hopelessness and the Psychological Distress factor were all influenced by scores participants obtained on the DAQ-R, with lower scores being associated with higher scores on the measures of psychological distress and higher DAQ-R scores being consistent with lowered psychological distress. Depression, Anxiety and Hopelessness were all affected by self reported MDA scores.

Research hypothesis 3 was not supported, in that disability and severity of pain as reported on the PDI, MPQ and the Pain and Disability factor scores was not reduced by a participant's score on the MDAQ-R. Higher scores on the MDAQ-R did not predict lower scores on any of the measures of Pain and Disability.

Research hypothesis 4 was partly supported; disability was significantly less severe in participants who had higher scores on the DAQ-R. However, pain, and the scores obtained on the Pain and Disability factor were not reduced by CPP who attained higher scores on the DAQ-R. Frequency of participations in various daily activities as assessed on the DAQ-R was influential in mediating the severity of CP symptomatology. Higher scores on the DAQ-

R did not predict lower scores on any of the measures of Pain or the Pain and Disability factor but did predict lower scores on the PDI disability measure.

The findings of the current study will now be considered in relation to the current chronic pain research in Chapter Six.

CHAPTER SIX DISCUSSION: STUDY TWO: CHRONIC PAIN DAILY ACTIVITY AND MEANINGFULNESS

6.1 Overview of Chapter Rewrite when completed

The current chapter focuses on the significant results of Study Two and presents the findings of the analyses. The clinical implications of this research for CP practice and future research are also considered. Overall there are six significant areas that have been reviewed:

- (1) Reviewing the findings testing the hypotheses and DA/MDA research model
- (2) Sample characteristics that affected chronic pain symptoms
- (3) Methodological limitations of the study
- (4) Relating theory and research to the chronic pain study (Study Two)
- (5) Clinical issues identified and further studies
- (6) What has been learned and a revised model, representing the theoretical and research implications for how a chronic pain patient perceives their pain experience and how it affects their life in regards to pain experiences, disability and psychological distress.

6.2 Daily Activity and Meaningful Daily Activity in the Research Model

In the hierarchical regression analysis no MDAQ-R Subscales were significant predictors of CP symptoms or Dispositional Optimism when both DAQ-R and MDAQ-R measures were combined in the same hierarchical regression analyses (Refer Tables 46 and 47, Figures 21 and 22). This finding was not anticipated and may in part be attributed to the fact that there was a relatively high correlation between the MDAQ-R and DAQ-R scales and there may be some criterion contamination (Streiner & Norman, 2007).

These analyses may have confounded the results because activities that were rated as being meaningful or important in the Pilot Study were included in both the DAQ-R and MDAQ-R. Because initially these measures were developed to assess whether or not activities that were rated as being meaningful that were also performed frequently affected the severity of CP symptoms.

6.2.1 Psychological Distress in the Research Model

In the hierarchical regression analyses (Table 39) where Psychological Distress factor was the dependent variable in Step 1 of the analysis education (beyond year 12 level), gender (female) and litigation (not litigating) were all negative predictors of Psychological Distress. Education and gender are often cited as psychosocial factors that increase Psychological Distress. However, female gender and Psychological Distress are less often associated with reduced levels of Psychological Distress than males (Addis, 2008; Australian Bureau of Statistics, 2008f; Australian Institute of Health and Welfare (AIHW), 2008a; Wilhelm, Parker, Geerligs, & Wedgwood, 2008).

In step 2 when the Illness Perception (IPQR) subscales were added to the equation education, gender and litigation remained significant and Psychological Attributions was also a

positive predictor of higher Psychological Distress. This finding is to be expected because items in this subscale included items such as: Stress or worry, My mental attitude (thinking about life negatively), Family problems or worries caused by my illness, Overwork, My emotional state (feeling down, lonely, anxious, empty), My personality). Also the authors of the IPQ-R reported that patients with more Psychological Attributions of the Causes of Illness Subscale were more distressed by their illness (Moss-Morris, et al., 2002).

When Dispositional Optimism was added as a variable in Step 3 no other variables were significant predictors of Psychological Distress. Given that the Psychological Distress factor (negative affect) consisted of depression, anxiety and helplessness it is not surprising that scores on a positive affect measure such as the LOT predicted negative scores on the Psychological Distress factor (Lyrakos, Tsakogia, Damigos, & Dimoliatis, 2011).

In Step 4 the DAQ-R Subscales were added to the equation and of note was the significant contribution of DAQ-R Interpersonal Contact and Social Support and Home Maintenance, both subscales being negative predictors of Psychological Distress. Dispositional Optimism was also a significant predictor of Psychological Distress in this step of the analysis. However when MDAQ-R was added in Step 5 this eliminated the DAQ-R scales as significant predictors of Psychological Distress, leaving only Dispositional Optimism as a significant predictor. In the final step of the analysis where the Pain and Disability factor was also included there were three significant predictor variables: Dispositional Optimism, IPQ-R Accident or Chance and the Pain and Disability factor.

6.2.2 Pain and Disability in the Research Model

In the hierarchical regression (Table 38) analyses where Pain and Disability factor was the dependent variable in Step 1 of the analysis work status (not working) and marital status (not being in a relationship) were positive predictors and litigation (not litigating) was a negative predictor of Pain and Disability. When the Illness Perception (IPQR) subscales were

added to the equation, marital status and litigation remained significant and Psychological Attributions was also a positive predictor of higher Pain and Disability. Psychological Attributions includes items such as: Stress or worry, My mental attitude (*thinking about life negatively*), Family problems or worries caused by my illness, Overwork, My emotional state (*feeling down, lonely, anxious, empty*) and My personality. This finding is logically consistent with Illness Perception previously being identified as a cognitive component of how a patient's perception of an illness affects the severity of their illness symptoms (Frostholm et al., 2007). This subscale has also previously been reported to be a significantly positive predictor of Psychological Distress in the current study and previously and that Psychological Distress positively predicts Pain and Disability (Alschuler, et al., 2008). Therefore this finding is to be expected.

When Dispositional Optimism was added as a variable in Step 3 work status (not working) was a positive predictor and Dispositional Optimism (LOT) a negative predictor of Pain and Disability. Given that not working is very often associated with CP and disability and optimism is associated with improved health status this is consistent with previous research (de Ridder, et al., 2004; Eriksson, Agerbo, Mortensen, & Westergaard-Nielsen, 2010).

In Step 4, the DAQ-R subscales were added to the equation and of note was the positive significant contribution of not working in paid employment, not being married or in a permanent relationship and DAQ-R 2 Work, Health, Spirituality and Caring. The negative predictors of Pain and Disability were Dispositional Optimism and DAQ-R Home Maintenance. When MDAQ-R subscales were added in Step 5 there was no significant change in the variance of Pain and Disability. In Step 6 the final step, the Psychological Distress factor was added to the analysis and the significant predictors of Pain and Disability were: not working, not being married or in a relationship, DAQ-R 2 Work, Health,

Spirituality and Caring, DAQ-R 4 Home Maintenance and the Psychological Distress factor. Interestingly the only negative predictor of Pain and Disability was DAQ-R 4 Home Maintenance. Also Dispositional Optimism was not a significant predictor when included in the analysis with all of the variables. From this observation it would appear that being able to perform Home Maintenance was an important area of daily activity and highly predictive of the Pain and Disability factor. The items included in Home Maintenance were: Mow the lawn, Work in the garden, Work on the car, Wash the car and Work on a needed house repair. These items were all include in the WHYMPI and constitute the most physically demanding category of daily activity contained in the DAQ-R. This subscale contained activities that were mostly performed outdoor and more often by males than females in the current study. The other subscale that was task orientated was Domestic Chores and was more an area of daily activity that was performed by female CPP rather than male CPP in this study.

6.2.3 Dispositional Optimism in the Research Model

Dispositional Optimism was investigated in a hierarchical regression analysis (Table 45) where demographic variables, illness perceptions, DAQ-R, MDAQ-R, Pain and Disability and Psychological Distress were included in the final step of the analyses was predicted by knowing the scores on the Psychological Distress factor. Lower levels of Dispositional were observed where CPP had higher levels of Psychological Distress (Dewberry & Richardson, 1990; Fournier, et al., 2002a; Hirsch, et al., 2007).

There were six steps in the multiple hierarchical regression analysis. The dependent variable in a hierarchical multiple regression analysis was Dispositional Optimism (Life Orientation Test). In Step 1 the demographic variables gender (female) and education (above and 12) were positive predictors of Dispositional Optimism (Ek, Remes, & Sovio, 2004; L. A. King & Broyles, 1997). In Step 2 IPQ-R subscales were added, IPQ-R Psychological

Attributions was a negative predictor of Dispositional Optimism and gender (female) and education (above and below year 12) were positive predictors.

When DAQ-R subscales were included in Step 3, DAQ-R 3 Interpersonal Contact and Social Support was a positive predictor of Dispositional Optimism and previous Step 2 predictors were also significant. In the 4th Step MDAQ-R subscales were added to the equation and there was no significant change to the variance in Dispositional Optimism. In Step 5 the Pain and Disability factor, in the 6th Step the Psychological Distress factor was added to the regression and there was no significant variance predicted from the addition of this variable. In 6th Step the addition of the Psychological Distress factor to the equation was significant and added 8% to the variance in Dispositional Optimism was explained. The Psychological Distress factor was highly significant ($\beta = -.052$, $p > .001$) and no other variables predicted Dispositional Optimism when all of the other variables were entered in the final step of the analysis.

6.2.4 Daily Activity in the Research Model

Daily Activity was also included in the model and was assessed in a separate hierarchical regression analysis (Table 47). The dependent variable in the analysis was Daily Activity (DAQ-R). The variables were entered in 8 steps. In Step 1 the demographic variables gender (female), marital status (not being married or in a permanent relationship), religion (not practising a religion) and litigation status (not litigating) all predicted Daily Activity. In Step 2 when the IPQ-R subscales were added IPQ-R Risk Factors and Immunity also predicted Daily Activity, negatively and positively respectively. Step 3 included the addition of the Pain and Disability factor and this step of the equation did not contribute any significance variance to Daily Activity. In Step 4 the Psychological Distress factor, was added and significantly contributed to the equation, 13% of additional variance in Daily

Activity was predicted by the Psychological Distress factor. Also not practicing a religion was a negative predictor and litigation was a positive predictor.

In Step 5 Meaningful Daily Activity (MDAQ-R) was added to the equation and was a highly significant positive predictor of Daily Activity. Psychological Distress remained a highly significant negative predictor of Daily Activity along with not practising a religion and not litigating was a positive predictor of Daily Activity. Step 6 Dispositional Optimism (LOT), Step 7 Satisfaction with Life Likert Scale and Step 8 the Meaningful Daily Activity Likert Scale did not significantly contribute to the prediction of Daily Activity. This analysis confirms the often cited examples of Psychological Distress interfering with or restricting role performance, psychical activity and social relationships (Augestad, Slettemoen, & Flanders, 2008; Breslin, Gnam, Franche, Mustard, & Lin, 2006; Huijnen et al., 2010; Wijndaele et al., 2007).

6.2.5 Meaningful Daily Activity in the Research Model

Meaningful Daily Activity was also included in the model and was assessed in a separate hierarchical regression analysis (Table 46). The dependent variable in the analysis was Meaningful Daily Activity (MDAQ-R).

In Step 1 the demographic variables education (education attained beyond year 12 level) and religion (not practicing a religion) significantly predicted Meaningful Daily Activity in a positive and negative direction respectively. In Step 2 when the IPQ-R subscales were added there was no significant change in the variance of Meaningful Daily Activity. Step 3 included the addition of the Pain and Disability factor and did not significantly contribute prediction of Meaningful Daily Activity.

In Step 4 the Psychological Distress factor, was added and significantly contributed to the equation, 6% of additional variance in Meaningful Daily Activity was negatively predicted by the Psychological Distress factor. Also not practising a religion was a negative

predictor of Meaningful Daily Activity. In Step 5 Daily Activity (DAQ-R) was added to the equation and was a highly significant positive predictor of Meaningful Daily Activity, contributing a further 17% of variance in Meaningful Daily Activity

This finding would appear to confirm the premise that the DAQ-R did actually access the frequency of performing Meaningful Daily Activity as measured on the MDAQ-R. This finding is important because the rationale for not defining meaningfulness of activities on the MDAQ-R so as not to contaminate the CPP with what was, or was not deemed to be meaningful, does not appear to have affected the outcomes of this study. This observed association between the MDAQ-R and DAQ-R would infer that the ratings of frequently performed activities (rated as meaningful by the CPP in the Pilot Study) does measure the frequency of performing Meaningful Daily Activity (DAQ-R). However, this observation cannot be proven and is yet to be tested.

Other indications that the MDAQ did measure meaningfulness, was the association between not practising a religion and negative MDAQ-R scores and Psychological Distress and negative MDAQ-R scores. Meaningfulness has most often been associated with spirituality, religion or purpose in life. In the current instance it may be related to the MDAQ-R and that meaningfulness is affected by religious or spiritual practices and mental health status (Ironson et al., 2002; James & Wells, 2003; Koenig, 2001; Steger & Frazier, 2005; Wong, 1998c). The current study confirms previous findings by Thompson (1991) as cited by Simpson (2008) that “it is gender orientation that affects religiousness” (Simpson, Cloud, Newman, & Fuqua, 2008, p. 43) and that women participate more frequently in religious activities. This theoretical premise has been found to be the case in the current study. Female CPP practised a religion more often than male CPP and it was observed that CPP who did not practise a religion had lower MDA. This was depicted diagrammatically in Figure 21.

Another important observation is that a common goal of psychotherapy is to find a meaning or purpose in one's life and make sense of human existence to reduce Psychological Distress (Auhagen & Holub, 2006; Bering, 2003; Brewin & Power, 1999; Wong, 1997).

Meaningful Daily Activity in the current study is confirmed by Fegg et al (2007) who conducted a study in Germany in 2005. In this study the researchers administered a Schedule for Meaning in Life (MiL) on 856 adults from the general population. The MiL measure contained 13 categories of activities: (1) Altruism, (2) Animals/Nature, (3) Family, (4) Financial Security, (5) Friends, (6) Health, (7) Hedonism, (8) Home, (9) Leisure Time, (10) Occupation, (11) Partnership, (12) Psychological Well-Being and (13) Spirituality/Religion. The results of this study confirmed that males scored lower on all outcome scores (Fegg, Kramer, Bausewein, & Borasio, 2007).

Also persons with higher levels of education were more satisfied with life and a "mid life crisis" was observed in the results. Individuals aged 40-49 years were less satisfied with "meaning-in-life" (MiL). The findings of this German study may also be reflected in the current study and we may make a similar analysis between Erikson's last few stages (Erikson, 1959a).

Of particular relevance to the current chronic pain study is that women were not only more satisfied with their lives but they also listed more important areas, they focussed on "animals/nature, family, and health." And that "women emphasized expressive communal values (e.g. Creativity, nature experience), while men emphasized instrumental values (e.g. job, achievement, power." (Page 59) this observation bears further support for Frankl's premise that meaning is *creative*, *experiential* and *attitudinal* as previously cited (Frankl, 1959/1963/1984).

6.2.6 Illness Perception in the Research Model

Illness Perceptions of the participants' self reported Cause of Pain as measured on the IPQ-R, Subscales, generally were not predictors of Pain and Disability, Psychological Distress and Dispositional Optimism when all of the variables were entered into the hierarchical regression analysis. There were however some instances where this was not the case.

In the analysis where Psychological Distress was the Dependent variable in the equation (Table 39) in step 2 when the Illness Perception (IPQR) subscales were added to the equation Education, Gender and Ligation remained significant and Psychological Attributions was also a positive predictor of higher Psychological Distress. As previously reported this finding is to be expected because items in this subscale included negative affect items such as: Stress or worry, My mental attitude (*thinking about life negatively*), Family problems or worries caused by my illness, Overwork, My emotional state (*feeling down, lonely, anxious, empty*) and My personality.

No IPQ-R subscales that were significant in Step 3 because when Dispositional Optimism was added as a variable, there were no other significant predictors of Similarly when the DAQ-R Subscales and MDAQ-R were added to the equation in Steps 4 and 5 no IPQ-R subscales were significant predictors of Psychological Distress. In the final step of the analysis where the Pain and Disability factor was also included there were three significant predictor variables: Dispositional Optimism, IPQ-R Accident or Chance and the Pain and Disability factor.

This was an interesting observation in that Dispositional Optimism was a negative predictor of Psychological Distress, whereas Pain and Disability and Accident or Chance was both positive predictors of Psychological Distress. There were two items included in the IPQ-R subscales Accident or Chance: Chance or bad luck and Accident or injury. In this

hierarchical regression analysis, not surprisingly, where Pain and Disability were significant predictors' of Psychological Distress, persons who had severe Pain and Disability symptoms would very often have experienced an injury. In such circumstances the injury may be viewed by the person who had sustained that injury as being negative, consequently resulting in negative affect such as Psychological Distress.

In another hierarchical regression analysis (Table 38) where the Pain and Disability factor was the dependent variable in Step 1 of the analysis not working and not being married or in a permanent relationship, were positive predictors and not litigating was a negative predictor of Pain and Disability. When the Illness Perception (IPQR) subscales were added to the equation in Step 2 marital status, litigation remained significant, and IPQ-R Psychological Attributions was also a positive predictor of higher Pain and Disability. Psychological Attributions consisted of the negative affect items: Stress or worry, My mental attitude (thinking about life negatively), Family problems or worries caused by my illness, Overwork, My emotional state (*feeling down, lonely, anxious, empty*) and My personality. This finding would appear to confirm the proposition that persons who have higher Psychological Attributions for their illness experience more severe symptoms. When Dispositional Optimism was added as a variable in Step 3 Work Status (not working) was a positive predictor and Dispositional Optimism (LOT) a negative predictor of Pain and Disability. Given that not working is very often associated with CP and disability and optimism is associated with improved health status this is consistent with previous research.

In Step 4 the DAQ-R subscales were added to the equation and of note was the positive significant contribution of not working in paid employment, not being married or in a permanent relationship and DAQ-R 2 Work, Health, Spirituality and Caring. The negative predictors of Pain and Disability were Dispositional Optimism and DAQ-R Home Maintenance. When MDAQ-R subscales were added in Step 5 there was no significant

change in the variance of Pain and Disability. In Step 6 the final step, the Psychological Distress factor was added to the analysis and the significant predictors of Pain and Disability were: not working, not being married or in a relationship, DAQ-R 2 Work, Health, Spirituality and Caring, DAQ-R 4 Home Maintenance and the Psychological Distress factor. Interestingly the only negative predictor of Pain and Disability was DAQ-R 4 Home Maintenance. Also Dispositional Optimism was not a significant predictor when included in the analysis with all of the variables. From this observation it would appear that being able to perform Home Maintenance was an important area of daily activity and highly predictive of the Pain and Disability factor. The items included in Home Maintenance were: Mow the lawn, Work in the garden, Work on the car, Wash the car and Work on a needed house repair. These items were all include in the WHYMPI and constitute the most physically demanding category of daily activity contained in the DAQ-R. This subscale contained activities that were mostly performed outdoor and more often by males than females in the current study. The other subscale that was task orientated was Domestic Chores and was more an area of daily activity that was performed by female CPP rather than male CPP in this study..

6.3 Psychosocial Factors that Affected Pain and Disability, Psychological Distress and Optimism

There were several psychosocial factors that affected the severity of CP symptoms including depression, anxiety, hopelessness, pain and disability). These psychosocial variables included gender, work status, work injury, litigation, marital status, level of education.

6.3.1 Impact of Gender on Chronic Pain

Gender significantly influenced many of the measures used in the CP study. These included: the McGill Pain Questionnaire (NWC, PRI and PPI); Pain Disability Index; Life Orientation Test; Beck Hopelessness Scale; HADS Depression and Anxiety Scales; DAQ-R subscales 1 Domestic Chores; 2 Work Health Spirituality and Caring; 3 Interpersonal Contact

and Social Support; and total DAQ-R score. As well as the MDAQ-R 1 Support, Caring and Interpersonal relationships; 4 Home and Health Maintenance; global measures of Satisfaction with Life and Meaningfulness of Daily Activities; and the Illness Perception causal subscale, Accident or Chance. These differences are presented in the tables and figures in Chapter Five.

Males had significantly higher mean negative affect scores than females: Depression (9.87 males, 6.05 females, $p < .001$.), Anxiety (11.77 males, 8.49 females, $p < .001$), Hopelessness (7.93 males, 4.82 females, $p < .01$), Psychological Distress factor (0.61 males, -0.25 females, $p < .001$). Females had higher positive affect as indicated in scores obtained on Dispositional Optimism (17.17 males, 21.14 females, $p < .01$).

These findings are somewhat contrary to the current prevalence of anxiety, depression and hopelessness in the general population. Females have a higher prevalence of anxiety and depression than males (Tsang, et al., 2009). However, males have a higher prevalence of substance abuse and unfortunately this was not measured in the current study. There are, however, studies that have found males who have chronic health disorders such as pain and are unemployed or not in a stable relationship, have a higher prevalence of depression than women who experience the same psychosocial variables (Wasan, Anderson, & Giddon, 2010).

To interpret the current findings it is necessary to consider the variables that have confounded these statistics. Firstly, unemployment has been generally identified as a factor that contributes to higher Psychological Distress, including anxiety and depression. Another factor to consider is that 23% of the male CPP in this study had sustained a work injury, 32.3% of males were married, unemployed or on WorkCover and had children. There were 41.9% of the male CPP were litigating and 54% of these litigants were also on WorkCover. All of these life circumstances must be taken into consideration when we are interpreting these findings. This viewpoint was also presented by Klose and Jacobi (2004) in that they

found that being married and also being unemployed were associated with increased rates of mental disorders, particularly for males. In concluding, Klose et al. proposed that “gender differences in the prevalence of mental disorders cannot be explained by the examined socio-demographic factors” (Klose & Jacobi, 2004, p. 145) and that impairments, disabilities and help seeking should be differentially investigated in women and men.

Negative affects such as disability, hopelessness, depression and anxiety were more severe for males than females. Males also had higher scores on the Psychological Distress factor. While males’ scores were lower on Dispositional Optimism, Satisfaction with Life, and Meaningfulness of Daily Activities.

Also females have higher DAQ-R on all subscales apart from Home Maintenance. There was no decrease in gender difference in this subscale. Females have higher MDAQ-R 1 Support, Caring and Interpersonal Relationships scores. This subscale includes items from DAQ-R 3 Interpersonal Contact, Leisure and Sensuality. (Visiting relatives, Hugging and cuddling and Sexual activity were not significantly different).

The frequency of performing Daily Activities, including Domestic Chores; Work, Health, Spirituality and Caring; and Interpersonal Contact and Social Support was also lower for males than females. Females had higher Meaningful Daily Activity, such as Support, Caring and Interpersonal Relationships and males found Home and Health Maintenance to be more meaningful than females did.

DAQ-R 2 Work, Health, Spirituality and Caring measures are all higher for females. (Care for family member; Attend a religious or spiritual service; Care for a friend; Work outside of the home in non paid employment; Offer support to a friend or family member.)

Meaningfulness of Daily Activities for males was evident in the higher scores they obtained on MDAQ-R for Home Maintenance and Health Maintenance. Males had significantly higher scores on the Home Maintenance item Work on the car ($p < .001$) but

none of the Health Maintenance items. The same item Work on the car on the DAQ-R was also more frequently done by males than females ($p < .01$). The observation that male CPP did not find any daily activities to be more meaningful than females, apart from working on the car, was not logically consistent with their reported frequency of participation in daily activities rated as being meaningful. For example MDAQ-R 2 Structured Tasks mean scores were 17.74 males and 18.37 females. However, on closer inspection of this finding the activities included in this subscale were not performed equally as frequently by males and females. As observed in washing the dishes (3.57 males, 4.97 females), Go grocery shopping (3.14 males, 4.40 females), Help with the house cleaning (2.86 males, 4.55 females), Prepare a meal (3.00 males, 4.93 females), Do a load of laundry (2.25 males, 4.79 females), work in paid employment was performed almost as frequently by males and females (2.86 males, 2.78 females). This finding reflects the employment of males and females in the community and is not necessarily peculiar to CPP (Australian Bureau of Statistics, 2004g).

The relationship between meaningfulness of activities and participation in these activities is not clear in the current study. One possible explanation for the higher frequency of participation in Domestic Chores by females than males may be the gender bias previously reported in Australia (Australian Bureau of Statistics, 2001c).and the United Kingdom (Warren, 2003).

The more curious aspect of the discrepancy between males and females performing Domestic Chores is that in the current study, males' rate these Domestic Chores as being equally as meaningful as females do but they perform these activities less often. Further investigation is required to determine why males rate the activities they do not perform as being meaningful and female CPP rate activities they perform very often as being equally as meaningful.

Another explanation for the discrepancy between males' meaningfulness rating of daily activities and their lack of participation in these activities rated as meaningful may be attributed to Psychological Distress, Pain, Disability, and low Dispositional Optimism. Physical and psychological effects of CP impact negatively on daily functioning. Having the motivation and the physical and emotional capacity to perform daily tasks may have been prevented by the severity of CP symptoms, and consequently may have prevented or inhibited participation in meaningful daily activities.

Items contained in the subscale MDAQ-R 1 Support, Caring and Interpersonal Relationships that were more meaningful for females than males included: Caring for a friend, Working outside of the home in non paid employment, and Attending a religious or spiritual service. Also caring and supporting was more often done by females than males. Current social research literature and previous population based studies conducted in Australia would tend to support this finding (Australian Bureau of Statistics, 2004e, 2008c, 2008g).

Employment status and gender have been found to affect negative CP symptoms and recovery of males who experienced back pain (Wasan, et al., 2010). Males who were in employment and were also satisfied with their occupation and employment status have been found to recover faster from back pain and were less likely to experience significant psychological distress as a result of pain (Australian Institute of Health and Welfare (AIHW), 2002). This finding is also observed in the current CP study, where males who were not in employment experienced more severe symptoms of pain, disability and psychological distress. Somewhat surprisingly this finding is also consistent with Frankl's concept of "unemployment neurosis" developed in 1946, where he proposed that "being jobless was equated with being useless, and being useless was equated with having a meaningless life" (Frankl, 1959/1963/1984, p. 165).

6.3.2 Work and Chronic Pain

Persons who were working in paid employment had significantly lower Pain and Disability and mean negative affect scores than those who were not working. These included: Pain and Disability factor (working -0.34, not working 0.36, $p = .001$), Depression (working 6.07, not working 8.23, $p = .05$), Anxiety (working 8.24, not working 10.63, $p = .01$), Hopelessness (working 4.56, not working 6.86, $p = .05$) and Psychological Distress factor (working -0.29, not working 0.27, $p = .050$). Employed persons also had higher positive affect as indicated in scores obtained on Dispositional Optimism (working 21.42, not working 18.54, $p = .05$).

Fifty-two percent of CP patients were working. This level of interference with daily activities would appear to be somewhat inconsistent with previous findings, where of those Australians who experienced CP, 11% of males and 13.5% of females reported some interference with daily activities caused by CP (Blyth, et al., 2001).

Chronic pain patients who were not working reported more severe symptoms: including pain, disability, hopelessness, depression and anxiety. This finding is relatively consistent with much of the published literature, where persons who reported more severe pain and disability, were less likely to be in the workforce (Blyth, et al., 2001; van der Windt et al., 2008). Not working has also been associated with higher prevalence of Psychological Distress (Comino, et al., 2003; Comino, et al., 2000; Halvorsen, 1998; Haugli, et al., 2003; L. E. Waters & Muller, 2003).

Chronic pain patients who were not working had low Dispositional Optimism scores and low scores on DAQ-R 2 Work, Health Spirituality and Caring; DAQ-R 3 Interpersonal Contact and Social Support, MDAQ-R 3 Sensory and Leisure Activity, and both of the Likert Scales; Satisfaction with Life and Meaningfulness of Daily Activities. Also CPP scores on

the revised Illness Perception Questionnaire, Causal Subscales: of: Psychological Attributions, and Immunity, were higher for those who were not working.

Differences between males and females experiences of working or not working varied. Female CPP who were not working reported higher sensory pain and chose more words to describe their pain. An important finding was that males who were not working experienced more severe psychological distress, including: hopelessness, depression and anxiety. Female CPP who were not working had lower scores on DAQ-R Work Health Spirituality and Caring and DAQ-R 3 Interpersonal Contact, Social Support and Leisure.

Overall, the impact of work status was greater for males than females. This was observed in the higher incidence of clinically significant diagnosis of depression, anxiety and hopelessness of male CPP who were not working. This observation may in part be explained by the model of unemployment, presented by Warr, Jackson and Banks (Warr, Cook, & Banks, 1979), where the negative effects of unemployment impinged on nine environmental features: opportunities for control; skill use; task variety; environmental clarity; externally generated goals; financial and physical security; social status; identity; and interpersonal contact. These areas would appear to have been more severely affected for the male CPP, who were not working, as evidenced in lower scores of these CPP, on global measures of Satisfaction with Life and Meaningfulness of Daily Activities. Also there was a general trend for male CPP to perform less Domestic Chores and participate in less Interpersonal Contact and Social Support. It is also quite likely, that male CPP who were not working would have less opportunity to: use their skills; engage in a variety of tasks; be provided with externally generated goals; have financial and physical security; maintain their social status; establish an identity (not related to work) and have interpersonal contact with others (Artazcoz, et al., 2004).

6.3.3 Work Injury and Chronic Pain

Persons who had sustained a work injury had significantly higher scores on Pain and Disability and negative affect than those who had not sustained a work injury: Pain and Disability factor (work injury 0.29, no work injury -0.20, $p = .01$), Depression (work injury 9.14, no work injury 5.71, $p = .001$), Anxiety (work injury 10.93, no work injury 8.34, $p = .01$), Hopelessness (work injury 7.40, no work injury 4.48, $p = .01$), Psychological Distress factor (work injury 0.41, no work injury -0.32, $p = .001$). Persons who had not sustained a work injury also had higher Positive Affect as indicated in scores obtained on Dispositional Optimism (work injury 18.51, no work injury 21.10, $p = .052$).

Sixty-one percent of the PTS had sustained a work injury, compared to 38.6% in the CS. Of all the persons who sustained a work injury 19 were males and 25 females. Given the unequal distribution of males (28.7%) to females (71.3%) in the sample, the proportion of males who had sustained a work injury was in keeping with the national trends, where males are more likely to have sustained a work injury than females.

In 2000 to 2001, 69% of all new cases of workers' compensation were males as opposed to 31% being female cases (Muscatello & Mitchell, 2001). Work injury statistics collected from NSW hospitals from 1999-2000, identified that 85% of attendees were male (Australian Safety and Compensation Council, August 2007) and for Victorian emergency departments in 2002, 79.6% were males (Muscatello & Mitchell, 2001). The most frequently identified reason for attending hospitals for treatments, was open wounds, fractures, muscular or tendon injuries of the wrist or hand, back pain, and other injuries caused by overextension, strenuous and repetitive movements (Australian Bureau of Statistics, 2004f).

The 2001 Australian National Health Survey (NHS) for a similar time period, captured data relating to persons who had sustained an injury in the four weeks preceding the survey. Over that time period in Australia (2001), 12% of the population (2.3 million persons) had

sustained some form of injury (Australian Bureau of Statistics, 2004f). Thirty one percent of those Australians who sustained an injury, identified working for an income as the activity they were performing when their injury occurred. In the Australian NHS (2001) the incidence of injuries occurring while undertaking different work related activities was not consistent for all age groups, occupations, or gender. Tradespersons in the construction, manufacturing and retail trade industries were the occupational groups that were most likely to sustain injuries while they worked (Britt et al., 2002). The occupation of participants was not obtained in the demographic survey of the current CP study, and no direct comparison can be made between a participant's occupation, and the industry they were working in when they sustained their injury.

However, the cause and location of pain was collected and differed for each of the PTS and CS participants. Each sample identified the respective causes of their pain to be either overwork (62%, 47.4%), accident or injury (86%, 60.3%), stress (46%, 43.9%) and chance or bad luck (30%, 34.5%). In addition to these identified causes of pain, the CS also identified their own behaviour (46%), heredity (31.6%), personality (35.1%) and altered immunity (15.6%) as being the cause of their pain. This difference in causes of pain may have been attributed to the CS having more persons who stated that their primary diagnosis was some form of arthritis (39.10 %), compared to the PTS, where 14% identified arthritis as the cause of their pain.

While the observed differences in the demographic composition of the two groups were important, from the data obtained in this study, it was not possible to determine the reasons for these differences. For example, whether participants who had reported sustaining a work injury had sustained the injury recently, or at some earlier time, was not able to be ascertained. Consequently, it could not be established whether a participant was currently

receiving treatment for a work related injury, or they had previously sustained a work related injury, and were not currently affected by that injury.

The most often identified locations or sites of pain for the PTS and CS was the neck (32%, 27.6%) shoulders, (18%, 10.3%) back (16%, 22.4%) and head (10%, 17.2%). These locations are consistent with the national Australian statistics regarding work injury, and the prevalence of pain locations, as assessed by the National Occupational Health and Safety Commission, 2000. Of all the reasons for work-related Australian GP encounters, 61.8% of those encounters were for musculoskeletal conditions (Victorian WorkCover Authority, 2005). The areas of the body Australian GPs most often identified for males, females and the Australian population treated for work related musculoskeletal pain were: the neck (males 42.8%, females 54.4%, 61.1% workers compensation), shoulder (males 57.7%, females 42.0%, 57.2% workers' compensation) and back (males 65.7%, females 33.2%, 60.2% workers compensation).

This may have been due to the participants who were recruited from each of the locations. The sample recruited for Study Two were patients from a hydrotherapy practice who were most likely influenced by work injury, work status and litigation (Australian Bureau of Statistics, 2002b, 2002c; Victorian WorkCover Authority, 1996, 2005). Therefore it is possible that CPP motivation to perform certain daily activities such as working in paid employment and performing home maintenance tasks were affected by work related variables. This unfortunate scenario may be the case because of the zealous observations made by private investigators that have litigants under surveillance prior to making a final settlement in a personal injury claim made on their employer.

The adversarial nature of medical assessment and interventions made by insurance companies may perpetuate and exacerbate pain and disability symptoms for two reasons. The first being that CPP are constantly being asked to complete measures of pain and disability by

their treating health professionals and the medical assessors they are required to attend for insurers and employers (Dush & Simons, 1994). Secondly, CPP experience high stress due to litigation, reduced or nonexistent income and these stressors exacerbate pain, impede functioning and decrease motivation to engage in various daily activities (Tait & Chibnall, 2001). This complex association however was not tested in the current study but there is some support for negative consequences of work injury and the subsequent processes that negatively impact on CPP symptoms and well-being (Blyth, March, Nicholas, et al., 2003; Stice & Moore, 2005; Whalen, 2004). Further exploration of this association is definitely warranted from the observations made in Study Two, particularly for males who are entangled in the Victorian WorkCover system.

6.3.4 Litigation and Chronic Pain

Persons who were litigating had significantly higher mean negative affect and Pain and Disability scores, than those who were not litigating including: the Pain and Disability factor (litigating 0.74, not litigating -0.15, $p < .001$); Depression (litigating 12.44, not litigating 6.05 $p < .001$); Anxiety (litigating 12.61, not litigating 8.76, $p < .001$); Hopelessness (litigating 8.72, not litigating 5.06, $p = .01$) and Psychological Distress factor (litigating 0.93, not litigating -0.21, $p < .001$). Also persons who were litigating had lower positive affect as indicated in scores obtained on Dispositional Optimism (litigating 16.22, not litigating 20.82 $p < .001$, $p < .01$).

In the PTS 26% were currently involved in litigation compared to 8.6% in the CS. The reason for litigation was not asked in the demographic questionnaire, however, on checking the cases of litigants in the data set, 48.18% of those persons who had sustained a work injury, were also litigating. The reason, or reasons for litigation, is then most likely to be Common Law claims, where employees had instigated proceedings against employers for work related personal injuries, losses incurred as the result of injuries and personal pain and

suffering caused by the injury. The VWCA reported Common Law payments for 2001/02, consisted of \$1.06 (\$M) settlement payments and \$62.9 (\$M) legal costs. Prior to that time, costs were higher, but due to changes in the Victorian Legislation, there was a period during which seriously injured employees, were not entitled to pursue Common Law claims for damages (Macfarlane, Thomas, & Croft, 1999). This area of interpretation is extremely complex, and requires an in-depth knowledge of the legislative Acts that were in place at the time a work injury was sustained. Further information about these Occupational Health and Safety Acts may be obtained from the Work Safe Victoria website, www.worksafe.vic.gov.au.

Seventy-seven percent of all persons who were litigants had sustained a work injury. There were four people who did not report a work injury (22.2%), and were currently involved in litigation. Three of these, had been involved in a motor vehicle accident. Of the total number of persons who were litigating, thirteen were males (72.2%) and five were females (27.8%), 77.8% were married and 88.9% had children. All of the litigants were taking some form of medication. Fifty percent were taking narcotic pain medication and 55.6% were taking antidepressants.

Most of the litigants were not in full time employment, seven were receiving WorkCover payments (38.9%), two were on disability pensions (11.1%), two were unemployed (11.1%) and one person was receiving income replacement from the Transport Accident Commission (TAC). Only two people who were currently litigating were working full time, three were working part time, and one person was employed on a casual basis.

The pain duration for litigants was longer than for non litigants. With the duration of litigants' pain, mainly being between 24 and 36+ months (72.2%). The possible explanation for this difference in pain duration of litigants and non litigants may also be related to income replacement payments to injured workers being time related. The income replacement for

injured workers has predominantly ceased after two years. However, the post injury duration when VWCA income replacement reduces and eventually ceases varies according to the legislation that was in place at the time when the injury occurred (www.worksafe.vic.gov.au). The cessation of weekly payments for injured workers, their entitlements and the basis on which they could seek common law damages is quite likely to be reflected in the pain duration of persons in the CP sample. The pain duration most likely would have been consistent with a stage in the WorkCover timeline, relating to injured workers litigating. It should also be noted that the legislation had changed in November 1997, and October 1999, and the rate of payment received and the grounds for litigation for the current study participants could have varied. Also some workers may have been working in industries that were adhering to the Australian Work Place Legislation, rather than Victorian legislation, such as Federal Government employees, who were under the auspices of Comcare.

Litigation status has also been identified as a factor that is influenced by the use of narcotic or opioid pain medication. In another study conducted by Blyth, March, Nicholas and Cousins (Blyth, March, Nicholas, et al., 2003) they found that 34.7% of persons who were litigating because of pain used narcotic pain medication, compared with 12.5% of non litigants. Although it is not clear from the available data whether these persons were more severely injured.

Another important observation was that all of the CPP who sustained a work injury were litigants, and were taking medication for their pain (n=18), nine persons were taking narcotic pain medication, 10 were taking antidepressants and there were nine taking anti-inflammatory medication. Of those persons who were receiving WorkCover income replacement, three persons were taking narcotic pain medication, antidepressants and NSAID's. Of the remaining litigants on WorkCover four were taking antidepressants and three were taking NSAID's. There were also two WorkCover clients, who indicated they took

medication but did not identify narcotic pain medication, antidepressants or NSAID's amongst their current medications.

6.3.5 Marital Status and Chronic Pain

Mean scores on the Pain and Disability factor of persons who were married or in a relationship were significantly lower than for people who were not in a relationship (-0.12 not in a relationship, -0.59 in a relationship, $p < .05$). However, relationship status did not have a significant impact on Negative Affect scores (Depression, Anxiety, Hopelessness, and Psychological Distress factor). Persons who were not in a relationship also had lower Positive Affect as indicated in scores obtained on Dispositional Optimism (in a relationship 18.92, not in a relationship 24.89, $p < .05$).

There is a general opinion that marriage or being in a relationship has a positive effect on health status. Golding (1989) explored role occupancy and role-specific stress and social support as predictors of depression. Marriage and employment have been linked to decreased depression. The participants were both male and female and were recruited from the general community in Los Angeles. Participants with high marital support reported less depression than participants with low marital support or participants who were unmarried. Golding also found that co-worker support was important for males. In the current CP sample for males who were not working this would have had a significant impact.

Hoft-Lunstad, Birmingham and Jones (2008) explored the relative importance of (1) marital status and quality, (2) whether unmarried persons benefitted from other close relationships and (3) if quality of marital relationships has more impact than other relationships. The findings were that marital adjustment and satisfaction was a significant predictor of SWL, stress, depression and ambulatory SBP. The important finding was that it is the quality of the marriage that provides protective health effects rather than marriage as a relationship status.

It has also been found that not being married and being unemployed were associated with increased rates of mental disorders in both males and females. Men who were divorced or widowed were associated with a higher likelihood of any mental disorders (*ORs* 1.6 to 4.2), depression in married Vs. separated/divorced/widowed men: 8% Vs. 20% whereas women were 16% Vs. 22% (Lauder, Mummery, Jones, & Caperchione, 2006).

Being married is generally advantageous compared to being divorced/widowed or never married however this is only true for those persons in happy marriages and affects the psychological well-being of both males and females (K. Williams, 2003).

Another interpretation of the benefits of social support that may be derived from a close relationship such as marriage was proposed in a comparison of lonely and non lonely persons in Queensland, Australia. This study compared the health and well-being of lonely and non-lonely adults. There were 35% (n=446) who were lonely and loneliness was more common in males, unmarried/unpartnered and unemployed participants. This study confirmed that “social support”, “social participation” and “social inclusion” were important in mediating positive health behaviours such as increasing physical activity and not smoking. Also loneliness was more common in males and unmarried and unemployed participants (Lauder, et al., 2006).

6.3.6 Education, Health Literacy and Chronic Pain

Chronic pain patients who had attained an educational level of less than year 12, had higher Pain and Disability and mean negative affect scores than those who were educated beyond year 12: Pain and Disability factor (0.23 less than year 12, -0.27 above year 12, $p < .01$), Depression (8.33 less than year 12, 5.72 above year 12, $p < .01$), Anxiety (less than year 12, 8.42 above year 12, $p < .05$), Hopelessness (7.13 less than year 12, 4.18 above year 12, $p < .01$), Psychological Distress factor (0.29 less than year 12, -0.35 above year 12, $I < .001$). Persons who had attained lower levels of education also had lower Positive Affect as

indicated in scores obtained on Dispositional Optimism (18.27 below year 12, 21.62 above year 12, $p < .01$).

A common finding in the CP research literature was that CPP who are less educated, experience more severe psychopathology and disability (Rethelyi, Berghammer, & Kopp, 2001; Roth & Geisser, 2002). This premise is to some extent supported in the current study, where less educated CPP who attained less than year 12, compared with those participants who attained a bachelor degree or higher, were less optimistic, less satisfied with their lives, and found their daily activities to be less meaningful.

Literacy and educational attainment have been identified as being important factors in access to healthcare, compliance with treatment and adjustment in a variety of illnesses. However these literacy influences on health outcomes and behaviours are not limited to a person's fluency in reading written prose (Institute of Medicine, 2004; Kickbusch, 2001). Fluency in health literacy also requires proficiency in document literacy, numeracy and problem solving (Canadian Council on Learning, 2007).

A recent report on the effect of health literacy on Australians would support the findings of the current study, in that persons with lower levels of health literacy rated their overall health as *fair* or *poor*, whereas persons who rated their health as excellent had higher health literacy scores (Australian Bureau of Statistics, 2008d). Apart from educational attainment additional factors that influenced health literacy were age, occupation, country of birth, labour force participation and social participation. Health literacy decreased after 40 years of age. Occupational disparities were also observed where 68% of Professional, Scientific and Technical Service Industry employees had a health literacy score of Level 3 or higher, whereas only 29% of employees in the Transport, Postal and Warehousing Industry achieved a health literacy score of 3 or more. Health literacy data was not collected in the current CP study. It may however be reasonable to make some comparisons between CPP

and Transport, Postal and Warehousing Industry employees. Because of the demographic profile of where the participants were recruited from and the types of injuries sustained by CPP in the workplace, these injuries were more likely to have occurred in manual professions (Australian Bureau of Statistics, 2002c, 2004f; Australian Safety and Compensation Council, August 2007).

Another possible explanation for this current observation is that persons who are less educated are not able to seek higher order goals and needs, are more dissatisfied with their life, and they experience greater negative psychological affects. In the current study, less educated CPP had higher scores on psychological affect measures, including depression anxiety and hopelessness, as well as pain related disability (Miller & Cano, 2009).

This finding may be related to Maslow's Hierarchy of Needs, humanistic theory of psychology (Maslow, 1943), individuals strive to achieve fundamental physiological and safety needs, and then aspire to achieve belonging needs such as love, to affiliate with others and be accepted by others. This need for belonging is achieved through work, family, and relationships in the community. After attaining belonging needs the individual then seeks to fulfil self esteem needs such as gaining approval and recognition from the workplace, and community, there is a need or motivation after achieving esteem needs to self actualization. Self actualization as described by Maslow varies from person to person "In one individual it may take the form of the desire to be an ideal mother, in another it may be expressed athletically, and in still another it may be expressed by painting pictures or in inventions. It is not necessarily a creative urge although in people who have any capacity for creation it will take this form." (1943, p. 376). Maslow also emphasized that motivation to achieve higher order needs is a strong drive in intelligent people "to know, to be aware of reality, to get to the facts, to satisfy curiosity" (1943, p. 377). This reference to the intelligence of persons

who ascribe to attain self actualization may be a factor in the current CP sample, but cannot be tested as intelligence was not screened for in this study.

As anticipated less educated CPP had higher scores on global measures of Satisfaction with Life, Meaningfulness of Daily Activities, and Dispositional Optimism scores on Negative Affect. This seemed somewhat inconsistent. In that, if less educated CPP were more severely depressed, anxious and had higher hopelessness, why did they have higher optimism, satisfaction with life and rate the meaningfulness of their daily activities as higher than more educated CPP (White, 2009).

However, in part some of these discrepancies may be attributed to less educated CPP engaging in less Interpersonal Contact and Social Support, and finding Sensory and Leisure Activities to be less meaningful than more educated CPP. This finding further highlights the importance of educational attainment for health and well-being. There was an association between satisfaction with life, overall meaningfulness of DA, and dispositional optimism, and these constructs need to be considered in future studies as possible measures of Positive or Negative Psychological Affect. There may also be other variables such as ethnicity that have influenced these results (Diener & Diener, 1995), that were not identified in the current study.

It is also of note that Satisfaction With Life is seen as an evaluative judgement of a person's life, rather than a measure of psychological wellbeing or psychopathology (Pavot & Diener, 1993) and unfortunately this was not observed in the current study. Higher scores on Satisfaction with Life were significantly associated with lower scores on all measures of psychological distress, and with higher Dispositional Optimism scores.

6.3.7 Leisure, Personally Meaningful Projects and Chronic Pain

Higher meaningfulness scores for DAQ R-3 Sensory and Leisure Activities of CPP were important in mediating the severity of Psychological Distress and Disability, but not necessarily Pain. The overall finding on this study was that Interpersonal Contact and Social

Support, Caring, Sensory and Leisure Activities affected the severity of psychopathology experienced by CPP, particularly male CPP, who did not appear to engage in structured and purposeful activity on a regular basis.

Leisure has been found to be an important component in the lives of persons who are not in paid employment. This is particularly important for persons who are disabled, suffer from psychiatric disorders, are intellectually handicapped or, for older persons who are retired from paid employment (Breslin, et al., 2006).

For males who are not currently working, have sustained a work injury and are litigating because of their work related injury, leisure activities and purposeful, goal directed activity appears to be very limited (Hutchinson, et al., 2003). This loss of purposeful activity is disruptive to male's gender identity and causes significant Negative Affect, as observed in the higher scores of males on measures of psychopathology, disability, and hopelessness, and low scores on Dispositional Optimism (Duke, Leventhal, Brownlee, & Leventhal, 2002).

Also males had low participation in Domestic Chores, Work Health Spirituality and Caring, Interpersonal Contact and Social Support, in contrast to female CPP who had significantly higher rates of participation in Domestic Chores, Work Health Spirituality and Caring, Interpersonal Contact and Social Support, as well as the MDAQ-R subscale Support Caring and Interpersonal Relationships. Females also had higher scores on positive affect measures.

6.3.8 Multiple Physical Disabilities, Comorbid Illnesses and Chronic Pain

In the current CPP there were many similarities between comorbidities and the general Australian population. Twelve persons in the PTS reported they suffered from multiple physical disabilities and seven persons with multiple physical disabilities had sustained a work injury. In the combined PTS and CS sample, 86.7% of people took medication, consisting of anti-inflammatories 46.7%, narcotic pain medications 26.7% and

antidepressants 26.7%. Of all persons with multiple health problems 80% were above the age of 45. Of those with multiple physical disabilities, no one had completed a university degree. This would appear to be consistent with current research where more educated persons enjoy better health status than people who have less access to health care services and engage in higher risk taking activities.

Only five persons who suffered from multiple physical health problems were employed and nine people were receiving some form of income replacement, either government allowances or WorkCover. Participants who reported multiple health problems were predominantly above the age of 45 years (Australian Institute of Health and Welfare (AIHW), 2006b). This is consistent with the onset of the major chronic illnesses in Australia including Type II diabetes, cardiovascular disease and arthritis (Australian Institute of Health and Welfare (AIHW), 2008b).

There has been a change in the nature of illnesses that have preoccupied Australian health researchers over the past decades. Chronic diseases have been recognized as being medical conditions that utilise a large proportion of the National Health Budget, with 10% of the population suffering from a chronic disease. Because of this large number of Australians who experienced a chronic health disorder there has been a concerted effort to minimize the personal and financial burden of these disorders. The chronic non-malignant disorders identified as Australian health priorities are: coronary heart disease, stroke, depression, diabetes, asthma, chronic obstructive pulmonary disease, chronic renal disease, arthritis and osteoporosis (Australian Bureau of Statistics, 2010b).

In the CP sample recruited for this study there were self-reported diagnoses of diabetes (8.3%) and psychiatric disorders (8.3%). Forty-six participants (42.6%) also reported they currently had additional health problems apart from the primary cause of their CP. These conditions were chronic diseases identified by the AIHW as being National Health Priority

Areas such as: cardiovascular disease (4.1%), diabetes (8.3%), and asthma (18.4%), mental health (anxiety 6.1% and depression 10.2%). The area of injury as a cause of chronic illness is also reflected in this study, where 40.74% of the participants had sustained a work injury. Other diseases of concern to the National Health Strategy for Australia were arthritis and musculoskeletal disorders and respiratory disorder (2.0%), rheumatoid arthritis (2.1%) and abdominal ulcers 6.1%). Apart from ulcers, all of these medical conditions were identified by *AIHW Chronic Diseases and Risk Factors 2006* (Australian Institute of Health and Welfare (AIHW), 2006b). Other diseases that have been documented as a cause for concern such as arthritis and musculoskeletal disease were also identified by many of the CP participants.

There were two biomedical risk factors reported by the CP participants: high cholesterol 6.1% and hypertension 22.4%. This self-reported coexistence of multiple health issues is also consistent with the medication that was taken for these conditions. With participants taking medication for a heart condition (15%), diabetes (5%), mental health problems (24% antidepressants and 5% anti-anxiety medication) and asthma (8%) Also 17% of participants were taking antihypertensives, 12% taking cholesterol reducers, and 44% taking antiarthritics.

Body Mass Index (BMI), fat, sugar and salt consumption, alcohol consumption and use of tobacco and other substances, fruit and vegetable intake and level of physical activity was not collected in this study and cannot be commented on.

In the current study the pain management strategies that CPP identified as being most helpful in managing their pain were: physical therapy (38.2%), medication (19.6%), exercise (6.9%), surgery (2.9%), behavioral strategies (16.7%), and cognitive strategies (8.8%). The ratings of the helpfulness of various methods of pain management, was not necessarily consistent with how CP is managed in general practice. The most frequently provided service in general practice is providing prescriptions for medication to manage medical conditions.

This is further emphasised by the small number of referrals that are made to allied health professionals overall by GPs (Bicer, Yazici, Camdeviren, Milcan, & Erdogan, 2005).

This prevalence of pain treatments was also reflected in the self reported use of health services for CP in New South Wales (n = 474), where 60% of the patients used medical practitioners and 28% used (n=140) used a physiotherapist. Other physical therapies used by participants in that study included chiropractic (12%), acupuncturist (7%), hydrotherapist (4%), masseur (16%), and osteopathy (4%) (Blyth, et al., 2004; Epidemiology and Surveillance Branch Public Health Division New South Wales Health Department, 1999).

6.4 Lessons learned and Limitations of the Study

6.4.1 The Chronic Pain Sample

- Some information was not collected such as: occupation, use of alcohol and substances, military service in Vietnam or other recent conflicts, when work injury occurred, if litigious proceedings were underway and for how long. Other important information not collected included: whether the injured worker was the sole provider for the family or not, the ethnicity of the patient, how long they had lived in Australia and their current financial status.

There was a small sample of 108 participants recruited for the CP study. For a clinical sample this was adequate, however the range of statistical techniques to analyse the data may have compromised by the sample size.

The sample was also selective, in that those persons who did not participate, may have opted out of the study because of poor literacy skills, too much pain, or low mood and lack of motivation. So the sample may over represent the number of work-injured persons, musculoskeletal CPP, and not be representative of other medical conditions that cause CP.

Another important issue was that there were no comparative samples to establish the differences between the meaningful daily activities of CP, acute pain, or medical conditions such as diabetes, or heart disease.

Another limitation of this study was the representativeness of the sample, 69.4% of the participants were married, this was higher than the registered marital status of Victorians of 51.6% in 2001 (Australian Bureau of Statistics, 2002f). Of the 108 participants 54.6% stated that they observed a religion, while the Australian 1991 Census data stated that 76.6% of the population had a religious affiliation (Australian Bureau of Statistics, 2001a) . There were no current data available for religious observance and participation of Australians.

The Australian Bureau of Statistics report that the educational trend, for all Australians aged 25-64 in 2002 was 33.9% did not complete the highest level of secondary education, in this study 33.3% of the participants, had not completed their secondary education. Australian National statistics for completing a bachelor degree or above in 2002 was 20.4% and there were 29.7% of the CPP in this study who had completed a bachelor degree or above. (ABS Australian Social Trends, Education and Training: National Summary Tables, 2003).

There were 45 persons employed in the CP sample (50.9%). In this sample, there were a number of unemployed participants who were receiving income replacement due to their health status and work related injury. Income replacement consisted of 13.0% unemployment benefits, 10.2% WorkCover, 13.9% disability pension and 7.4% received some other form of government payment. The unemployment rate of this CP sample was 13% of the participants were not employed. The Australia Bureau of Statistics reported that the March 2001, rate of unemployment was 5.7%, and the participation rate was 63.7% (ABS, Labour Force Australia, 6202.0, 08/04/2004) This was, however, not atypical of a CP population.

In the CP sample the number of work injured persons was disproportionately high for the Australian population (National Occupational Health and Safety Commission, 2003; Victorian WorkCover Authority, 2005). This may be due to the CPP being recruited from physical therapy practices and community agencies in the Western suburbs of Melbourne, where the residents would be employed in industries and occupations with a higher risk of injury. Therefore this sample was possibly a typical sample of CPP in that region (Australian Bureau of Statistics, 2002c, 2002e).

While it is most probable that CPP were in high risk occupations this was not able to be confirmed because the participant's occupation was not collected, however the level of education was obtained and the majority of work injured CPP patients had completed a trade or apprenticeship, a TAFE certificate or year twelve in secondary school. The occupations of

the injured participants in this location would generally have required physical work in industries that have been identified as “high risk” areas of injury such as: building, and construction, transport, manufacturing and retail or hospitality. The number of persons who were attending physical therapy for work related injury and were also litigating was probably also higher because of the location of the practices and the nature of injuries.

Ethnicity was not considered as a separate variable in the current study. Health and well-being research has identified that it is important to consider ethically variable that affects illness behaviour, gender roles, and the meaningfulness of various daily activities. This is particularly important when considering the effect of culturally specific gender roles within families. Ethnic traditional roles may have been important in the interpretation of data such as domestic chores and health behaviour. Interpersonal contact and social support may also be influenced by ethnicity, and could account for the differences between male and female CPP levels of psychological distress (R. R. Edwards, Moric, Husfeldt, Buvanendran, & Ivankovich, 2005; Riolo, Nguyen, Greden, & King, 2005).

Information about alcohol, tobacco and other substance use was not collected. This information may have been useful when considering the possible comorbidities of substance abuse and other psychopathologies (Alati et al., 2004) and the increased risk of substance abuse, injury and suicide (D'Onofrio & Degutis, 2004; Sakura, Kubo, Komoda, & Yamana, 2005; Vilhjalmsson, et al., 1998) .

This is important because previous research and epidemiological reviews have found there is a strong association between hopelessness, depression, the abuse of alcohol and other substances with suicidal ideation (Darke, et al., 2004; Norstrom, 1995). There is also an increased risk of completed suicide for persons who experience depression as a result of altered life circumstances and have a substance abuse disorder (Australian Institute of Health

and Welfare (AIHW), 2006a, 2008a; Sakura, et al., 2005; M. T. Smith, Edwards, Robinson, & Dworkin, 2004).

6.4.2 Defining Meaningfulness of Activities

Whilst it may be considered a shortcoming of the methodology, there was no definition of meaningfulness provided to the participants in the Pilot Study, Study One or Study Two, the fact that participants were left to their own devices to interpret what meaningfulness meant to them, and what activities they consequently rated as being meaningful, may also be regarded as a strength of the study. Because the CPP who were recruited for the Pilot Study were given the opportunity to identify activities that were important or meaningful to them, the activities deemed important by CPP were representative of activities that a clinical CP sample valued or found meaningful. These items were elicited without any prior contamination by providing definitions of what should or should not be deemed important or meaningful by CPP. Interestingly, the most often used measures of activity in CPP contain items that rate performance or the ability to perform activities of daily living, thereby identifying areas of functional limitation, rather than identifying daily activities that are restricted by pain and also important to the CPP. While this method was initially chosen to allow participants the freedom to choose what they found meaningful, the problem of such an open ended personal interpretation made it more difficult to verify the results of the psychometric properties of the MDAQ-R.

This possible uncertainty of what the measure was assessing seemed particularly apparent when the hierarchical regression analysis (HRA) was being performed. In the regression analyses where DAQ-R subscales made a significant contribution to the dependent variable (Psychological Distress, Pain and Disability and Dispositional Optimism). However, when the MDAQ-R subscales were added in the next step of the analysis there was no significant variance explained by Meaningfulness of Daily Activities. This is somewhat confusing because the MDAQ-R and the DAQ-R continued the same items overall, the only

variation was the self reported rating or either frequency of performing the activity or the meaningfulness of the activity.

Also the DAQ-R appeared to be easier for the participants to rate as the measure required them to rate how often they did the various activities on the measure and there was very little missing data on this measure. In contrast to this the MDAQ-R was asking participants to rate the meaningfulness of the activities they performed. This task did appear to be less straight forward to participants and there was more missing data.

Another possible example of the uncertainty of what meaningfulness of daily activities was meant to be was evident in the high meaningfulness of activities that male participants had for activities that they seldom performed. This finding, rather than being an indication of what was valued by the male participants and how often they performed these valued activities appeared to be ambiguous. One explanation for this finding may have been the interpretation of meaningfulness ratings, and this was influenced by a social desirability response of male participants to activities in the Domestic Chores subscale (Sigmon et al., 2005). Another alternative explanation for the high meaningfulness rating of Domestic Chores may be related to semantics; perhaps male CP interpreted the word “meaningful” to be equivalent to or the same as “important” or “valued”. These interpretations are often seen in the measures of Positive Affect and meaningfulness when patients are asked to identify valued, important or meaningful goals for therapy. While yet another explanation for this observation is that the meaningfulness of Domestic Chores for male CPP may also be related to the tangible benefits derived from someone performing Domestic Chores. Without someone to organise food, laundry and cleaning the general comfort and well-being of Male CPP would be significantly diminished. Whereby, they rated these activities as meaningful, although they seldom did these activities. These explanations while being unable to be substantiated do present some possible explanations for this occurrence.

If a general definition of meaningless had been provided the MDAQ-R would have been a more stable measure of meaningfulness of daily activities. Regardless of this failure to provide a definition and example of meaningful daily activity the items included in the DAQ-R were items that a sample of CPP identified as being important or meaningful. Therefore to some extent, by default, the DAQ-R does measure the participation in daily activities that were rated as important or meaningful by CPP.

The pattern of responses to activities that were performed more frequently by female CPP and the way that the frequency of performing these activities appeared to affect CP symptoms, particularly Psychological Distress, did suggest something more than frequency of a daily task was being tapped. For example female CPP who had higher scores on DAQ-R 3 Interpersonal Contact and Social Support, had lower scores on Psychological Distress. This negative association could perhaps also have been affected by female CPP having higher scores on Dispositional Optimism and we cannot draw any definitive conclusion from this observation.

On reflection, it would have been preferable to either define meaningfulness or alternatively to redesign the MDAQ-R and ask CPP to rate how Meaningful, Important or Valued the daily activities on the measure were (perhaps preferable). Thereby encompassing what was intended to be assessed when the measure was designed. To determine from a range of daily activities contained in the WHYMPI Activities Scale (Items 1-16 MDAQ-R and DAQ-R) and additional items rated as important or meaningful by a sample of CPP (Items 17-29 MDAQ-R, Items 17-28 DAQ-R) what daily activities were important, valued or meaningful (MDAQ-R) and how often they did these activities (DAQ-R).

6.4.3 Methodological Limitations

ITEMS NOT INCLUDED

- Measures that were not used that would have proven useful were the WHYPI Interferences Scale, IPQ-R full version of the measure and some measure of coping style. However the burden of completing the self report measures included in the study was already quite significant, requiring 60 plus minutes to complete.
- Not having an interview with CPP to determine the presence of psychological disorders in the CP sample.
- There were no clinical notes from doctors to substantiate the patients' disease status. Although information about medications were collected and patients did report some diseases on the demographic survey.
- There was no information about any return to work plans of injured workers and what the outcomes of their interventions and treatments were.
- Prior to conducting this study it was not anticipated that there would have been such a high proportion of male CPP who were work injured and currently litigating. More information about the specific circumstances of CPP would have proven very useful given the severity of psychopathology identified on the self reported HADS.
- If the cause of the current pain condition was a traumatic accident or injury, the possibility of PTSD cannot be determined from the available data. This may have confounded the psychopathology of male participants if they had sustained a traumatic injury in the workplace and were currently litigating or had been involved in a serious car accident or other traumatic incident.

6.4.4 Validity and Reliability of the MDAQ-R and DAQ-R

Validity of the MDAQ-R was established in Study One, and also in Study Two, by the correlations of the MDAQ-R subscales 1 Support, Caring and Interpersonal Relationships ($r=$

.35, $p < .01$), 3 Sensory and Leisure Activities ($r = .33$, $p < .01$), and the total MDAQ-R score ($r = .31$, $p < .01$) with the Likert Scale of MDA (Refer Table 35). However, unlike Study One, MDAQ-R 2 Structured Tasks and MDAQ-R 4 Home and Health Maintenance were not correlated with the Likert scale MDA. This would suggest that CPP (Study Two) and the Community Sample (Study One) do not share the same MDA. This is not necessarily a limitation because it would be expected that CPP with the usual psychosocial factors that affect CP symptoms that affect their MDA would be different to a community sample. These differences demonstrate how CPP lives are impacted on by CP symptoms. Chronic pain patients found Structured Tasks less meaningful and Home and Health Maintenance more meaningful. (Refer Table 35).

The validity of the DAQ-R was established in Study One and also in Study Two. By the correlations of the DAQ-R subscales 1 Domestic Chores ($r = .32$, $p < .01$), 2 Work, Health Spirituality and Caring ($r = .34$, $p < .01$), 3 Interpersonal Contact, Leisure and Sensuality ($r = .49$, $p < .01$), 4 i ($r = .22$, $p < .01$), and the total DAQ-R score ($r = .50$, $p < .01$) with the Likert Scale MDA (Refer Table 35). In Study One, DAQ-R 1 Domestic Chores and 2 Work, Health Spirituality and Caring, were not correlated with Likert Scale MDA. Once again, as found in the MDAQ-R, CPP and the Community Sample differed. In this instance, it was the frequency of engaging in Domestic Chores and Work, Health, Spirituality and Caring.

While the internal consistency of the MDAQ-R and DAQ-R total scores and subscales was established in studies One and Two, the reliability of the MDAQ-R and the DAQ-R was not established with other measures of MDA. Nor was there test retest reliability conducted.

On the results obtained from the CFA (Refer to Appendix E) short forms of the measures may be administered to validate the DAQ-R and MDAQ-R, and norms for clinical and non clinical populations established the validity of the DAQ-R and MDAQ-R.. When this study commenced (1997) there were no measures of meaningfulness of activity available to

use. Since that time, the Meaning in Life Questionnaire (Stegar, Frazier, Oishi, & Kaler, 2006) and the Personal Meaning Profile (Wong, 1998a) have been identified as well as one of these measures of Meaningfulness may be used along with the MDAQ to identify valid items for inclusion in a measure of Meaningful Daily Activity.

A revised measure would also consider items that were not included in 1998 but are important in 2011. Over the past decade the social impact of mobile phones, texting, email and Facebook has become most apparent. These items would constitute MDA for most Australians.

Also electronic information is extensively used by persons with an illness to find a cure, relief or support (Corcoran, Haigh, Seabrook, & Schug, 2010). For example Arthritis Victoria provide a website and information about arthritis, hydrotherapy groups and support groups for FM patients (www.arthritisvic.org.au). There are also additional health items that have been identified over the course of this study that need to be incorporated in the sociodemographic measure accompanying this study. Risk factors for the onset of chronic illness that need to be considered are: high BMI, lack of frequent exercise, smoking cigarettes, a high fat, salt and sugar diet, insufficient intake of fruit and vegetables and use of alcohol and substances at a high risk level. Whereas protective factors include such behaviours as maintaining an equitable balance between work, leisure and family and stress management. These factors would need to be included in a further study.

6.5. Relating Findings to Chronic Pain Theory

In Study Two psychological factors such as Positive Affect (Dispositional Optimism), Negative Affect (Depression, Anxiety and Hopelessness) and cognitive processes (Illness Beliefs – Psychological Attributions, Accident or Chance) either exacerbated, or reduced, the severity of CP symptoms. These symptoms included Pain, Disability, Depression, Anxiety and Hopelessness (Dworkin, et al., 2005; Gamsa, 1994; Gatchel & Turk, 1996; Geisser, et al., 1994; Jackson, et al., 1997; Melzack & Wall, 1988; Turk & Gatchel, 2002; Turk & Holzman, 1986; Turk & Okifuji, 2000).

6.5.1 Cognitive Factors

A cognitive behavioural perspective would propose that a CPP who is attentive to pain will be influenced by their pain perception in several ways. They may: “(a) be less influenced by other aspects of their environment, (b) engage in fewer productive and satisfying activities supported by prevailing non-pain circumstances, (c) fail to accrue the psychological and physical benefits of these activities, and they will (d) suffer more distress and disability” (Keogh, et al., 2000, p. 273). It seems highly likely that the current study confirms this point of view as CPP who engaged in less Meaningful Daily Activities were more debilitated and distressed by their pain. This is observed in the lower prevalence of Pain and Disability in CPP who engaged in more Home Maintenance.

As previously identified both attention (cognition) and activity (behaviour) are important factors in understanding pain severity and symptomatology. This was evident in the way that Psychological Attributions about the cause of pain and attending to pain impacted on the performance of various daily activities such as Domestic Chores and Home Maintenance. This association was also confirmed by the CPP reported behaviours about attending medical and allied health appointments and taking medication include in the

MDAQ-R 4 Home and Health Maintenance (items 17, 22 and 28) and DAQ-R 2 Work, Health Spirituality and Caring categories (items 17, 19 and 27) (Petrie & Broadbent, 2003).

6.5.2 Adjustment to and Acceptance of Pain

It is not possible to determine the degree to which CPP in the current study have accepted their CP or the specific coping strategies they have used to manage their pain. The only indications that the CPP in Study Two have accepted pain may be their participation in paid work and domestic chores, lower reports of disability and psychopathology, higher participation rates in social functioning and using less medication (McCracken, 1998, 1999; McCracken & Eccleston, 2003; McCracken, et al., 1999; Viane, et al., 2003).

CPP who engaged in less Meaningful Daily Activities were more debilitated and distressed by their pain. This is observed in the lower prevalence of Pain and Disability in CPP who engaged in more Home Maintenance (Petrie & Broadbent, 2003; Rief, et al., 2003).

There was a possible higher acceptance of CP and more use of problem focussed coping by female CPP. This was not tested in the current study but the current findings bear a strong similarity to the studies previously conducted that report a higher acceptance of pain being associated with active coping, less catastrophising and less depression and functional impairment (Borsbo, Peolsson, & Gerdle, 2009; Haythornthwaite, 2010). However passive coping increases negative CP symptoms including depression and anxiety (McCracken, 2007; McCracken, Carson, Eccleston, & Keefe, 2004; McCracken & Eccleston, 2003; McCracken & Velleman, 2010).

In the current study female CPP engage in more daily activities and report lower levels of depression, anxiety and hopelessness, whereas for male CPP there appears to be a reliance on passive coping and non acceptance of CP and accompanying symptoms. This may be attributed to the adversarial WorkCover system, catastrophic thinking and passive coping that

is the result of being encapsulated in such a system. Hence the higher Hopelessness Scores of male CPP on WorkCover.

Also CPP who use passive coping strategies use more medication and rely on treatments and seeking cures.

From the information provided by CPP about taking medications and what strategies were found to be most helpful in managing their pain, 23% of male CPP reported that medication was the most helpful pain management strategy compared with 17 % of female CPP. They also rated taking medication more often on the DAQ-R item Take medication. There were significant differences in the behavioural and cognitive strategies, exercise and emotional support used by male and female CPP. Behavioural strategies to manage CP were used by 9.7% of males and 18.4% of females. Also of note was the more frequent use of cognitive strategies by males 12.9% (6.6% females) and exercise was more frequently used by females 7.9% (3.2% males). There were 90% of male CPP who took medication and 83% of female CPP. Overall it would appear that males use more passive coping strategies than females and think about or re-interpret their pain more than females. This may also be related to what is measured on the IPQ-R as Psychological Attributions, but in the current instance this is not the case. Both male and female CPP had very similar scores on all of the IPQ-R subscales. The cognitive strategies that male CPP reported as being helpful in managing pain were not positive interpretations of pain because male CPP had significantly higher Hopelessness scores on the BHS than females did.

6.5.3 Finding Meaning

Frankl's three approaches to finding meaning (i) experiential values, (ii) creative values and (iii) attitudinal values. Logotherapy is the therapeutic technique used by Frankl.

Experiential values when an individual experiences "something" or "someone" they value (or love) in the current study where female CPP care for and support others and thereby

derive meaning from that activity. Whereas male CPP do less of these activities.. *Creative values* are essentially “doing a deed”, an activity whereby the individual derives some meaning from that activity. Initially Frankl proposed that creativity was related to the act of creating and often included activities such as producing art, music, writing and inventions. Contemporary examples of creative pursuits may include digital creative artwork, volunteering, hobbies, medical research, technological inventions and possibly caring for others who need help. Considering Frankl’s proposition of finding meaning through creativity, in the current study, it is possible that females would be more often involved in activities that they derive meaning from, such as participation in Work, Health, Spirituality and Caring. These activities include: volunteering, caring for others, attending a religious or spiritual service and supporting others. Consequently females may derive positive benefits from performing these meaningful tasks. Females also participate in more Interpersonal Contact and Social Support. This category of activity includes items that are experiential, such as going to a park or the beach, going out, visiting friends, intimacy and sexual activity. In the case of CPP, particularly male CPP in the current study, it seems as if most of their meaningful activity has been taken away and they have not found their way.

Attitudinal values as described by Frankl may be related to the Psychological Attributions to the cause of pain, where higher Psychological Attributions are associated with more pain and distress. Personal characteristics influence the meaning a person ascribes to their current life circumstances and determines their ability to cope with adverse life events. This concept of the intrinsic importance of attitudinal values in construction of personal meaning is highlighted in *Man’s Search for Meaning* where Frankl states that “everything can be taken away from a man but one thing: the last of human freedoms— to choose one’s attitude in any given set of circumstances, to choose one’s own way.” (Frankl, 1959/1963/1984, p. 104)

Frankl's premise of meaning was elaborated on by Clinebell (1966) who proposed that there are three ways to detect meaning: 1. Doing something worthwhile, 2. Experiencing an event such as a sunset or a relationship, and 3. Taking a constructive attitude toward even the worst event. Both Frankl and Clinebell recognised the spiritual aspect of meaning and this was observed in CPP who did not practise a religion and had lower MDA than persons who did practise a religion. Also CPP participated in less Meaningful Daily Activities if they did not practise a religion.

A central concept in most psychotherapy is that meaning is generally defined by the individual client or patient. Meaning or meaningfulness is associated with the activities and behaviours that are valued (Ball & Orford, 2002) and whether or not these activities are conscious or unconscious, are being pursued or participated in and whether or not there is any likelihood of the CPP achieving these identifiable meaningful life goals or pursuits (Brewin & Power, 1997; Moss, 1992; Power, 1997). There is less evidence in the research literature that describes how clinicians can measure or identify what is and is not meaningful or purposeful for a client or patient. The Purpose in Life Test (PIL) has however been used to identify the purpose in life of various clinical populations including rheumatoid arthritis (RA). In a study conducted by Verduin et al., (2008) better mental health status was associated with an optimistic coping style and higher PIL. Also higher participation in leisure and social activities was associated with a higher purpose in life and consequently higher purpose in life also improved mental health status of RA patients (Verduin et al., 2008).

6.6 Negative Affect

As previously found, depressed or anxious CPP experienced more severe pain symptoms (R. R. Edwards, et al., 2006; Main & Waddell, 2004; Michael & Burns, 2004). This somewhat challenges the studies that have reported there being no significant differences observed between depressed or anxious CPP and those who were not depressed or

anxious and the severity of reported pain symptoms. In the current study this was not the case (David A Fishbain, 2002).

In Study Two there were also instances where negative affect appeared to interfere with CPP normal functioning and activities, as observed in the DAQ-R 4 Home Maintenance and DAQ-R 1 Domestic Chores subscales. For example performance of Home Maintenance tasks was negatively associated with all measures of negative affect (Depression $r = -.44$, $p > .01$, Anxiety $r = -.28$, $p > .01$, Hopelessness $r = -.38$, $p > .01$ and the Psychological Distress factor $r = -.39$, $p > .01$). Also the frequency of performing Domestic Chores was negatively associated with all measures of negative affect (Depression $r = -.38$, $p > .01$, Anxiety $r = -.34$, $p > .01$, Hopelessness $r = -.32$, $p > .01$ and the Psychological Distress factor $r = -.39$, $p > .01$ and Domestic Chores, although a causal relationship was not confirmed.

Consistent with other CP samples, the reported consequences of pain in the current study included Psychological Distress (Dickens, et al., 2002), taking medications (McCracken, et al., 2006), not being in or having withdrawn from paid employment, not participating in leisure activities and reduced social contact (Guo, et al., 2007; Lee, et al., 2008; G. Macdonald & Leary, 2005). These negative consequences of pain were more apparent in male CPP, where male CPP experienced more severe Psychological Distress took more medication and participated in significantly less Interpersonal Contact and Social Support activities.

6.6.1 Fear avoidance

There is also some limited support for the *Fear Avoidance Model* of low back pain components represented in Figure 4. This model proposed there was a need for physicians to consider the impact of fear avoidance beliefs. Because avoidance of activity for persons with chronic low back pain resulted in disability and work loss and the consequences avoiding activity were disability and work loss. These negative experiences associated with work loss

also negatively impacted on psychological health. CPP who had lower scores on DAQ-R subscales did have higher scores on measure of psychological distress therefore avoiding some activities may have been related to fear avoidance behaviour. Unfortunately coping strategies and fear avoidance were not measured in the current study and this possible association could not be tested.

As previously found depressed or anxious CPP experienced more severe pain symptoms (R. R. Edwards, et al., 2006; Main & Waddell, 2004; Michael & Burns, 2004). This somewhat challenges the studies that have reported there being no significant differences observed between depressed or anxious CPP and those who were not depressed or anxious and the severity of reported pain symptoms. In the current study this was not the case (David A Fishbain, 2002).

Also CPP frequency of participation in home maintenance tasks, social activities, leisure, interpersonal relationships and sexual behaviour appears likely to have resulted in or triggered psychological distress for the CPP (Blyth, et al., 2001; Karoly & Ruehlman, 2007; Ruehlman, Karoly, Newton, & Aiken, 2005). This finding would also suggest that in the current CP sample women fulfilled dual roles of carers, and performed domestic roles in addition to their paid work and men predominantly ascribed their personal meaning and identity to their work roles (Warren, 2003). Consequently females in the current study who were affected by CP were more likely to continue performing their caring and domestic roles, even when they were unable to participate in paid employment (Woodhill & Samuels, 2003). Whereas males, who did not participate in paid employment did not perform their usual maintenance roles at home and were somewhat lacking in purpose and direction (Ball & Orford, 2002; Kay, 2000; R. A. Williams, 2007).

Lower attributed meaningfulness of Sensory and Leisure Activities were associated with higher Psychological Distress. Greater meaningfulness of Home and Health

Maintenance predicted more Psychological Distress. These findings are relatively consistent with previous research findings, where persons who participated in less sensory and leisure activities were more severely distressed (S. A. Harris, et al., 2003; Silvemark, Källmén, Portala, & Molander, 2008; Trenberth, 2005).

There was also a possible association between CPP adjustment to and acceptance of CP that has an impact on psychological health (McCracken, Vowles, & Eccleston, 2005), however this cannot be confirmed.

Sensory and Leisure Activities of the MDAQ-R subscale included seven of the original WHYMPI activities. Six of these activities were performed outside of the home, including going out to: eat; to a movie; to the park or beach, taking a ride in the car; or going on a trip. As well as the home based activities of working in the garden; playing cards or games; hobbies, crafts and making things. Two additional MDAQ-R items were also included in the Sensory and Leisure Activities of the MDAQ-R, sexual activity, and watching TV, reading or listening to music. All of the MDAQ-R Sensory and Leisure Activities, apart from playing cards and other games, were moderately - negatively associated with hopelessness, depression and anxiety scores of the CPP. These MDAQ-R activities have been identified by researchers in the field of depression and anxiety as having an effect on a person's psychological well-being (Lazarus, 2006). It has also been suggested that limited interpersonal contact, is often associated with Psychological Distress, particularly for the unemployed (Ball & Orford, 2002), and persons who experience CP (Rusu & Hasenbring, 2008).

Psychological Distress in this model reflects the significance, or meaningfulness, of Sensory and Leisure Activities in psychological well-being, and that taking antidepressants was also consistent with minimising psychological distress associated with depression, anxiety or hopelessness. Education was also a predictor of Psychological Distress, and it was

observed that CPP with higher levels of education experienced less severe psychological distress than participants who were less educated, a finding that is generally supported in previous research (Demakakos, Nazroo, Breeze, & Marmot, 2008; Rethelyi, et al., 2001; Stice & Moore, 2005). In the current study, this association between level of education and psychological distress may have been influenced by the high proportion of persons who had sustained work injuries (Australian Bureau of Statistics, 2004f; Begg, et al., 2007; Imriyas, Low, Teo, & Chan, 2008). Participants who were less educated were more likely to have been performing work related tasks that caused injury. Persons working as tradesmen or process workers were more likely to sustain injuries because of the tasks they performed at work (Australian Bureau of Statistics, 2001i, 2001j; Australian Safety and Compensation Council, August 2007)

Persons who had sustained a work injury were also more likely to have worked in semi skilled and manual occupations (Dunlop, 2004; McIlvane, Schiaffino, & Paget, 2007), have a lower level of formal education, and therefore less opportunity post injury, to actively manage their CP or to change their profession or work tasks (Australian Bureau of Statistics, 2004f, 2008d, 2009a). However, this explanation for education predicting psychological distress cannot be fully explained, as the occupation of the CP participants was not collected.

Home Maintenance and Health Maintenance activities included three of the Outdoor Activities of the WHYMPI, and three additional health items: Go to the doctors, Attend medical appointments other than doctors, and Take medication. For CPP taking medication was moderately positively associated with hopelessness scores, and Go to the doctors was also positively associated with anxiety scores. This finding is also consistent with previous research, where it has been found that persons who are not able to perform their normal roles, experience negative emotional responses to these limitations in activity (Horne & Weinman, 1999; Niles, Mori, Lambert, & Wolf, 2005). As a result of their illnesses, persons with CP

and other comorbid disorders, often require frequent medical interventions, appointments, and regularly take medication. As a result of this required high attendance and compliance with medical regimes, CPP would find these activities to be important in their lives, even when their engagement in such activities is not always helpful, or does not necessarily control the outcomes of these interventions (C. A. Brown, 2004; Middleton, 2004).

6.6.2 Depression and Anxiety and Chronic Pain

The prevalence of taking medication for psychological disorders, in the CP sample, did not appear to be consistent with self report HADS scores. Where 26 participants (24.1%) were classified as being clinically depressed, and 40 participants (37.0%) were classified as being clinically anxious. Also of note, was that that six males, and one female chronic pain patient, were in the severely depressed range, and nine males and four females, were in the severely anxious range. This prevalence of anxiety and depression, in the CP sample, is also somewhat higher than 18% prevalence for arthritis, and back pain patients, as reported in the study by (Magni, Caldieron, & Rigatti-Luchini, 1990).

There were a further 14 (13%) CPP who had a comorbid clinical diagnosis, of both depression and anxiety on the HADS, and only two of these individuals were taking prescribed anti anxiety and antidepressant medication for these disorders. There were also significant negative correlations between depression and gender, educational level attained, taking narcotic pain medication, having sustained a work injury, currently litigating ($p < .01$) and a positive correlation with employment status ($p < .05$). Significant negative correlations were also observed between anxiety, and gender, taking antidepressants or narcotic pain medication, having sustained a work injury, currently litigating ($p < .01$) and a positive correlation with employment status ($p < .05$).

The higher rate of depression and anxiety in the current Australian CP sample, is consistent with previous research, where the prevalence of psychological disorders was

higher for CP patients, than in a community sample (McWilliams, et al., 2003). In another study conducted by McWilliams, Goodwin and Cox (2004), the prevalence of depression and anxiety for participants with arthritis was 18.2% and 21.0% , and for back pain 5.6% and 6.2% (Magni, et al., 1990).

However, the prevalence of depression and anxiety is not entirely consistent with previous research where female gender has been identified as elevating scores on depression and anxiety (Grigoriadis & Robinson, 2007; Kessing, 2005). In the current study this is not necessarily the case, as the means score for depression and anxiety for females was: depression 1.91 (*SD* 0.95), anxiety 1.52 (*SD* 0.81), and for males; depression 2.27 (*SD* 1.17) 2.63 and anxiety (*SD* 1.16). This elevation in anxiety and depression of male CP participants is very likely because of male participants being more severely affected by demographic characteristics such as having sustained a work injury, currently litigating, and not working in paid employment. In the research literature there is a lack of consistency between the reported prevalence of psychological distress of male and female CPP. This difference in the findings of these studies may often be attributed to the source of CP and the characteristics of the participants in the sample. For example, in a study conducted in Sweden, by Mullersdorf and Soderback, it was found that females had a higher prevalence of depression than males (Mullersdorf & Soderback, 2000). In Hungary, there were no observed differences, between the prevalence of pain symptoms causing disability or severity of depressive symptoms between male and females (Rethelyi, et al., 2001).

These observed differences between CP symptoms, behaviours, and the degree of interference attributed to CP, may be attributed to the cause of pain, whether or not the CPP had sustained an injury, particularly work related, and whether they were able to continue with their paid employment and other daily activities (Alschuler, et al., 2008; Stice & Moore, 2005). Additional variables associated with CP symptomatology are: dispositional optimism

(Ironson, et al., 2005); personality (Slesinger, Archer, & Duane, 2002); ethnicity (Mellsop & Smith, 2007; Riolo, et al., 2005); pre-existing psychopathology; exposure to trauma (McCracken, et al., 1999); comorbid illnesses; use of alcohol, and other substances (Alati, et al., 2004). It has also been found by pain researchers that age; gender; marital status; and education also affect the wellbeing of persons who experience CP.

6.6.3 Hopelessness and Chronic Pain

There were 12 participants who were within the moderate range on the BHS, and 10 persons in the severe range of the measure. A BHS score of greater than nine was reported by the test authors to be predictive of suicide, in depressed suicide ideators. In the current sample there were twenty-two persons (10 males, 12 females) with BHS scores greater than nine, while 13 males and 13 females had moderate to severe HADS scores for depression and 17 males and 23 females had moderate to severe anxiety scores.

Sixteen chronic pain patients (nine males and seven females) had coexisting high scores on BHS, and HADS (anxiety and depression). Of the nine males who had coexisting moderate to severe psychological distress scores, five of these men had also sustained a work injury, were not working, and were currently litigating. This combination of symptom severity and demographic characteristics has been found to be potentially serious for male chronic pain patients (Norstrom, 1995; M. T. Smith, et al., 2004; Tang, 2006).

In the current study five men and four women with high scorers on the psychological measures (55.5% and 71.4%) were receiving treatment for psychological disorders in the form of antidepressants. However, from the data obtained in the current study, there is no certainty that these persons were receiving counselling, or psychotherapeutic intervention for their psychological disorders, because this information was not obtained from participants.

There is also a possibility of coexisting comorbid disorders, such as drug and alcohol substance use disorders that would further exacerbate psychopathologies (Darke, et al., 2004;

Spada & Wells, 2005). However, there was no way of assessing whether participants were also using alcohol or other substances as this information was not collected in this clinical sample. In Australia, there is some considerable documentation of the coexistence of drug and alcohol abuse with either anxiety or depression (Australian Bureau of Statistics, 2001h), these disorders have also been reported to be more prevalent in males (Alati, et al., 2004; Rabinowitz & Cochran, 2008). Persons who experience comorbid psychiatric disorders experience higher levels of disability as a result of their disorders. This is especially evident where multiple psychiatric disorders coexist with chronic illnesses, and often precludes these individuals from participating in vocational, social and health related activities to varying degrees.

The Australian comorbidity of mental disorders has varied for males and females (Andrews, Issakidis, & Slade, 2003). In that males were more likely to have a substance use disorder as well as a comorbid disorder, anxiety or an affective disorder, and these comorbid disorders were experienced by 66% of men who had a mental disorder. Whereas females more often experienced affective and anxiety mental disorder comorbidities (Teesson, Hall, Lynskey, & Degenhardt, 2000; Teesson & Proudfoot, 2003). The prevalence of alcohol and substance use disorders are also reflected in the WHO Burden of Disease Report (Lopez, 1996) where it was reported that 20% of the burden of diseases in society can be attributed to mental health and drug and alcohol use (Murray & Lopez, 1996a, 1996b). Andrews, Issakidasis and Slade (2003) explored the effects of comorbidity of mental disorders on the general Australia population. They found that 38% of males and 16% of females met the criteria for drug use or dependence. Therefore it is desirable that future studies collect data on the use of substances particularly for males who experience a mental disorder.

6.6.4 Illness Perception and Beliefs of Chronic Pain

Cognitive functions also affected the severity of Pain and Disability and Psychological Distress. The number of Psychological Attributions to the cause of pain, in the current study was associated with increased severity of Pain and Disability and Psychological Distress. However, in the Hierarchical regression analyses Psychological Attributions were not significant predictors of Pain and Disability when demographic variables, DAQ-R subscales and Psychological Distress were included in the analyses. Similarly Psychological Attributions were not significant in predicting Psychological Distress when Dispositional Optimism, and Pain and Disability were included in the analysis.

Attention to pain was pertinent to this study. Suls and Fletcher (1985) proposed that attentional strategies cause the patient to focus on the source of pain, by reappraising or seeking information about their pain. This was perhaps true, and was observed in the effect that the Psychological Attributions about the cause of pain had on the severity of Pain, Disability and Psychological Distress in the current study. More Psychological Attribution to the cause of pain was associated with more severe CP symptoms. This association is yet to be tested.

The association between having fewer Psychological Attributions about the cause of CP, and lower levels of Psychological Distress was observed in the current study. Items included in this subscale of the IPQ-R, such as Stress or worry, My mental attitude, thinking about life negatively, Family problems or worries, Overwork, My emotional state (feeling down, lonely, anxious, and empty), and My personality (Moss-Morris, et al., 2002). If these items were selected as being the cause of CP, there would be a very high prevalence of negative psychological attributions and this would most certainly increase the severity of CPP Psychological Distress (Deary, 2008; Shiloh, Rashuk-Rosenthal, & Benyamini, 2002; Whitmarsh, Koutantji, & Sidell, 2003).

CPP reported that the three most important causes of their CP in order of importance were Injury 33.6%, secondly Overwork 10.3%, and thirdly My own behaviour 6.5%. This would appear to be relatively consistent with the incidence of work injury in the CP study, 44 CPP (41%) reported they had sustained a work injury.

The IPQ-R authors also suggested that CPP were more likely to make Psychological Attributions for their illness or attribute the cause of pain or illness to Risk Factors. This was not confirmed in the current study. In the current study Risk Factors were not a predictor of either Pain and Disability or Psychological Distress. However CPP who reported more Psychological Attributions for their illness also reported higher levels of distress caused by their illness (Miles, Curran, Pearce, & Allan, 2005). In the current study, Psychological Attributions was correlated with the total MPQ PRI score and HADS Depression Scale, and was significant in the HRA as a predictor of Psychological Distress.

The impact of cognitive interpretations or Psychological Attributions to illness has been found, once again, to be very important in understanding how a person responds to illnesses such as CP. There is also a marked difference between male and female beliefs about CP and coping strategies. In the current study this difference may be attributed to gender role specific behaviours and the lack of replacement of these roles, with significant or meaningful activities by male CPP. There may also be issues such as literacy, education and leisure that further impact on male CPP. These factors need to be addressed in further studies to explore how male CPP may be assisted in the management of their pain and to increase participation in meaningful daily activities, with a view to consequently improving quality of life.

6.6.5 Pain and Disability

An interesting although logically consistent observation was that the inability to perform Home Maintenance tasks predicted pain and disability (This DAQ-R subscale consisted of five items from the WHYMPI and all of the items were home based, and were

performed outdoors). This is relatively consistent with previous findings, where persons who have a CP condition, reported that they are not able to perform home maintenance tasks. This is also very often the case for CPP who are work injured and also litigants (Dush & Simons, 1994; Tait & Chibnall, 2001; Waddell, 2004) and male.

Work status and marital status were also predictors of pain and disability. Once again, this finding is somewhat consistent with previous research where it has been reported that, persons who experience severe and chronic pain, and who are disabled as a result of this pain, are unlikely to be in the full time workforce (Pizzi, et al., 2005; Wynne-Jones, et al., 2008).

For CPP in the current study the areas of life that were identified as being most affected by pain on the Pain Disability Index (PDI) were recreation, occupation, and family/home. The mean PDI score was 34.42 out of a possible score of 70, and a *SD* of 16.21. In a study conducted with Turkish chronic low back pain patients (Bicer, et al., 2005) the mean PDI score was 20.34 (*SD* 12.98), these scores are considerably lower than those obtained in the current CP study.

The differences in the two populations may be explained by some of the differences in the psychosocial profiles of the two studies.

No comparison can be made between the current study and Turkish samples in relation to work injury and litigation and the medications used by the participants to manage their pain. This is important, as the negative correlations between taking any medication, sustaining a work injury and currently litigating, were all significant factors on the PDI. This finding is also consistent with pain research exploring the effects of work injury and litigation status on disability (Larrabee, 2003b; Tait & Chibnall, 2001). Larrabee (2003b) compared disability scores of a clinical pain group (*n*= 401) and 29 litigants who were assessed by the researcher as meeting the criteria for either a definite, or probable malingered neurocognitive dysfunction were compared on PDI scores. The clinical group and research group disability

scores were 45, *SD* 7.678 and 53.53, *SD* 9.57 respectively. The current CP study PDI mean score was lower than either of the clinical groups cited in Larrabee's study, however the *SD* was higher.

In another Swedish study conducted by Asenolof, Denison and Lindberg (2004), the mean PDI was 27 and the standard deviation was 14.5. This is also somewhat lower than in the current study, however the sample was recruited from an acute pain rather than a CP population, with pain duration of four weeks. Chronic pain patients disability scores have generally been found to be higher than those of acute pain patients (Crombez, Eccleston, Van Hamme, & De Vlieger, 2008). There was no information in this Swedish paper, regarding work injury or litigation, or medication used to manage pain.

For the current study there were also additional positive correlations between the PDI total mean score and employment status. Additional negative associations were also identified between the PDI and gender, educational level, and having multiple physical disabilities. The variation in the individual items of the PDI and demographics, are illustrated in Figure 13. Of note is the high mean disability score for males, persons with work injury, single persons, and persons in the physical therapy sample on the PDI items family/home, recreation and occupation.

6.6.6 Positive Affect, Optimism and Chronic Pain

From the observations of the current CPP there is some tenuous support for previous clinical research that experimental positive affect including mood or emotions reduce pain perception (Meagher, et al., 2001; Nezlek & Kuppens, 2008; Treharne, et al., 2007; Weisenberg, et al., 1998). In the current study CPP with higher scores on Dispositional Optimism subsequently did have lower scores on Psychological Distress when all other variables were controlled for in the HRA. However, positive affect had a less significant impact on pain symptoms. Variables such as Daily Activities performed, marital status, work

status and Psychological Distress were stronger predictors of Pain and Disability than positive affect was, including Dispositional Optimism (Zautra, Johnson, & Davis, 2005; Zelman, et al., 1991).

Dispositional Optimism was a predictor of Psychological Distress but not Pain and Disability (Chang, Sanna, & Yang, 2003). Dispositional Optimism and demographic variables were both negative and positive predictors of CP symptoms in Study Two.

In the current study, the total Dispositional Optimism score as rated on the Life Orientation Test (LOT) was *M* 20.02, *SD* 6.69. Of note was that this score was almost identical to a Nation Wide Study Swedish Study where the LOT *M* was 20.7 and *SD* 4.5 (B. Scott & Melin, 1998). The demographic profile of the Swedish study being 45.8% males and 52.2% females (N=1,538), from a random sample of Swedish adults aged between 18-83 years, the mean age of males was 42.4 and females 48.6 years. In the current CP study there were more females in the sample (71.30% females) and the mean age was higher for the current study 50.15 (*SD* 10.61).

Having more females in the CP study may have had an impact on the mean LOT score for the sample, as female CPP had higher scores on Dispositional Optimism than males (*M* 21.46, *SD* 6.24 females and *M* 17.17, *SD* 7.05 males) and lower mean scores on anxiety, depression and hopelessness. However, this finding was not the case in Scott and Melin's study, as female participants had lower scores on the LOT and higher scores for depression and anxiety than males.

The Swedish sample was drawn from a community population and there were no details about the participants' health or injury status reported by the authors. It is interesting that this large cohort of Swedish men and women had similar scores on the LOT to the current CP study. Although in a study conducted in the United States (Novy, et al., 1998), on a sample of 90 consecutive CP patients recruited from a hospital pain clinic (n= 61 female, 29

male), the mean LOT score 17.75 (*SD* 5.56) was lower than the Swedish study or the current Australian CP study.

In Novy et al.'s (1998) American study 76% of the participants were unemployed, compared with 12.9%, and 24.1% receiving WorkCover payments in the CP study. This difference in the number of persons unemployed would have an impact on the Dispositional Optimism of American CP participants, as work status does influence well-being and mental health.

This may suggest that while optimism is important in health behaviour and understanding how individuals respond to illness, optimism is a construct that would appear to be independent of health or illness. There are gender differences that have been observed in the two populations that may suggest females may adapt better to CP than males.

Overall, in the current CP study there were significant, strong, negative correlations between Dispositional Optimism and Hopelessness, Depression and Anxiety. There were positive associations between Dispositional Optimism and DAQ-R 2 Work, Health, Spirituality and Caring, DAQ-R 3 Interpersonal Contact and Social Support, MDAQ-R 1 Support Caring and Interpersonal Relationships and MDAQ-R 3 Sensory and Leisure Activities. These relationships are consistent with the noted assumption that optimism is diametrically opposed to negative effect, such as evidenced in Depression, Anxiety and Hopelessness scores of CPP, in relation to Dispositional Optimism scores.

These findings may support Erikson's developmental stage theory, where Generativity versus Stagnation is a major developmental life stage, involving producing things and ideas through work and also caring for the next generation (Lachman, 2004; Morfei, 1998). In this developmental stage Erikson proposed that insufficient productive endeavours lead to boredom, stagnation, and the absence of a sense of caring, and consequently this inability to perform productive activities resulted in psychological distress. Lack of productivity was

apparent in the CPP, this was especially apparent in men who were unemployed and did not perform domestic chores or were not caring for others (Erikson, 1959a, 1959b). This notion is further extended in a study conducted by Isaacowitz, Vaillant and Seligman (2003), where the capacity of middle aged individuals for loving relationships was the only predictor in life satisfaction. As the CP population fall within this life stage the higher well-being of female CPP may be accounted for in the frequency of performing caring tasks for others.

The association of Dispositional Optimism with positive health outcomes has previously been identified in the clinical research literature (Achat, et al., 2000; de Ridder, et al., 2004; Fournier, et al., 2002a). The research supports the premise that there are positive health outcomes for persons who are more optimistic in outlook towards their health, and also for patients' compliance with treatment regimes (Begley, Lee, & Czajka, 2000; Ironson, et al., 2005; Treharne et al., 2005). Possible health benefit of patients' Dispositional Optimism, has been researched for a range of illnesses including cardiac disease (Bedi & Brown, 2005), HIV (Ironson, et al., 2005), hypertension (Begley, et al., 2000) and CP (Benyamini, 2005; Salsman, Brown, Brechting, & Carlson, 2005).

Spirituality has previously been linked with Dispositional Optimism and improved health status, and practising a religion has been found to have some impact on the severity of a chronic health condition, and has affected how a person copes with chronic medical and psychological conditions (Ai, Peterson, Tice, Bolling, & Koenig, 2004).

In the current study, 54.6% of the CP sample participated in a religion. The specific religion and level of involvement, was not obtained from the participants, therefore it is difficult to draw any conclusions about the religious activity of this sample. Religious activity, while influential in helping various clinical populations, including cardiac and psychiatric patients, cope with illness (Ai, et al., 2004; Koenig, 2001; Salsman, et al., 2005), in the current study does not seem to indicate a strong association between religion and CP

symptoms. Positive associations between observance of a religion and improved health status have not been observed. There is a negative association between observing a religion and low scores on DAQ-R 1 Domestic Chores, DAQ-R 2 Work Health, Spirituality and Caring and MDAQ-R 1 Support, Caring, and Interpersonal Relationships.

6.6.7 Relationship between Psychological Distress, Pain and Disability

In the research model the Pain and Disability factor predicted Psychological Distress and the Psychological Distress factor predicted Pain and Disability. Also demographic variables including marital status and work status predicted Pain and Disability, were not demographic predictors of Psychological Distress.

The causality of this relationship was not extensively tested in the current study. However there were strong significant associations between Pain and Disability and Psychological Distress. This finding was also observed in the number of CPP who were identified as having a moderate to severe psychological disorder (males 54.8% anxiety and depression 42% and females 29.9% anxiety and depression 16.9%). There was also a strong relationship between Psychological Distress of participants in the current study and pain symptoms, because all of the participants experienced CP, this was an inclusion criterion for the study. However, the relationship between Disability and Psychological Distress was also significant. Many participants who experienced Psychological Distress also experienced Disability. Interestingly this relationship was not observed in cases where CPP patients had higher Psychological Distress Scores or clinically indicative scores of a depressive or anxiety disorder (Alschuler, et al., 2008).

6.7 Clinical Implications

6.7.1 Implications for Clinical Management of Illnesses Causing Chronic Pain

In the current study, biomedical risk factors reported by the CP participants, were high cholesterol 6.1% and hypertension 22.4%. This self-reported coexistence of multiple health risk factors is also consistent with the medications that CPP reported they were taking for these conditions. Chronic pain patients were taking medication for a heart condition (15%), diabetes (5%), mental health problems (24% antidepressants and 5% anti-anxiety medication), and asthma medication (8%). Also 17% of participants were taking antihypertensive medication, 12% taking cholesterol reducers, and 44% taking NSAID's.

The BMI of CPP was not collected, and the association of excess weight as a biomedical risk for chronic disease onset cannot be examined. Behavioural risks such as fat, sugar, and salt intake, alcohol consumption, and use of tobacco and other substances, are modifiable behaviours that were not explored in the current study (Yach, McKee, Lopez, & Novotny, 2005). Also increasing fruit and vegetable intake and level of physical activity can reduce disease onset (Australian Institute of Health and Welfare (AIHW), 2006b; Rodgers, et al., 2004).

In relation to the psychosocial variables that affect chronic disease, age and gender of CP participants was collected. In the current CP sample, it was noted that with advancing age, there was a higher prevalence of chronic disease such as arthritis, diabetes and heart disease (Australian Institute of Health and Welfare (AIHW), November 2007; Lopez, Mathers, Ezzati, Jamison, & Murray, 2006; I. A. Scott, 2008). It was also found that there was a difference between males and females' prevalence and severity of anxiety and depression, and their functional disability, pain, illness perception and optimism (Fullagar, 2003; Mellsoy & Smith, 2007). Personal characteristics such as indigenous status, ethnic background and genetic

makeup were not obtained and no comparison between chronic disease status and these factors can be made.

Details relating to CPP dietary habits, use of alcohol and information of smoking tobacco products were not collected in this study and cannot be analysed. However, using the information provided by CPP on the DAQ-R “other activities” it was possible to calculate a crude estimation of the activity levels of CPP. There were 17 CPP who reported that they participated in some form of physical activity on the DAQ-R. Of these persons who participated in some form of activity, the frequency of engaging in the activity was not able to be determined. Nor can it be assumed that other persons in the CP sample did not participate in any physical activity, as this question was not directly asked. Of some interest was the difference between males and females who stated they participated in physical activities. It was interesting to observe that 15 of the 17 persons who participated in physical activity were females (88%). This was somewhat surprising as there is usually a higher participation in physical leisure activity outside of the home by males than females (Kay, 2000; Raisborough, 2006) and this was certainly not observed in the current study.

DAQ-R and MDAQ-R items were related to activities outside of the home. These items included the following activities: Going out to eat; Going to a movie; Riding in a car; Visiting relatives; Taking a trip; Going to a park or the beach; Going to the doctor's; Attending meetings not related to paid work; Grocery shopping; working in paid employment; Attending medical appointments other than doctors; Attending a religious or spiritual service. Female CPP scored higher on all of these DAQ-R and MDAQ-R items except DAQ-R item 21 Work in paid employment, MDAQ-R item 5 Go grocery shopping and MDAQ-R item 17 Go to the doctors. The mean differences between males and females scores on these items were not statistically significant. Males identified structured activities as being more meaningful and this was also evident in the lower mean scores for males on social activities

that were located outside of the home. This finding is consistent with the research literature, where it has been found that females value social interaction, caring (Wilson, 2007), and utilise emotion focused coping (Hall & Nelson, 1996), while males find structured tasks and gender specific male roles more meaningful than females (Angst et al., 2002).

Meaningful Daily Activity and Daily Activity have been found to be related to measures of positive and negative affect. In particular the DAQ-R 3 Interpersonal Contact and Social Support is included in a factor of Negative and Positive Affect. Positive affect was measured with the Likert Scale Satisfaction with Life (SWL) and Meaningfulness of Daily Activities (MDA). While Negative Affects included BHS, HADS Anxiety and Depression, and the PDI, this finding would reaffirm the original clinical research question posed. In that, persons who engaged in MDA experienced less severe CP symptomatology, this would certainly appear to be the case for Psychological Distress.

The most meaningful activities were not the most frequently performed activities. However, there is some agreement between the WHYMPI factors, and the factors identified in the current study. The Domestic Chores, and Home Maintenance factors, tended to load on the MDAQ-R and DAQ-R PCA. There is a wide variation in the loading of the Activities Away From Home and Social Factors of the WHYMPI, this finding is consistent with other research where these items do not load on a single factor.

Meaningful Daily Activity may also be an important variable to consider with CPP who are work injured and suffering from severe Anxiety, Depression and possibly Hopelessness (David A. Fishbain, Bruns, Disorbio, & Lewis, 2009; Tang, 2006). This finding is extremely important. As persons with high scores on the Beck Hopelessness Scale, are likely to suicide (Beck & Weissman, 1974; M. J. Edwards & Holden, 2001).

6.7.2 Relating the Findings to Meaningfulness

The populations that have been recruited for previous studies when exploring meaningfulness are not seen as being economically productive, and the impetus for some of this research has been to identify activities that will minimise the costs of acute and rehabilitation health care costs (Ball & Orford, 2002; Gabassi, 1981; Lukas, 1998; Moore, 1997; Wong, 1998c). Ultimately these studies have tended to focus on enabling the individual to participate in activities that will distract, stimulate, socialize or rehabilitate. The current study has not focussed on the meaning of life, in a spiritual or existential sense, such as Frankl, Crumbaugh or Langle (Crumbaugh, 1977; Crumbaugh & Maholick, 1964; Frankl, 1959/1963/1984, 1986, 1992, 2000; Langle, 2005). Or the perspective of meaning, and meaningfulness in life, proposed by Wong, De Vogler-Ebersole and Ebersole, (De Vogler-Ebersole & Ebersole, 1985; Wong, 1998a).

While it is acknowledged that the meaningfulness of life is often located in an existential, spiritual or philosophical framework, the focus of this research is on what activities were valued, purposeful, and provided structure and satisfaction in the life of CPP. An unexpected finding was that there was no association between observing a religion and MDA. This may have been because of the CPP not actually participating in their religion due to their pain, although this cannot be proven. The emphasis in this study was on what a CPP can achieve in their daily life, for example participating in activities they personally value (L. A. King, Richards, & Stemmerich, 1998; Mastos, Miller, Eliasson, & Imms, 2007). Therefore, it is the actual doing of meaningful tasks, rather than the intrinsic worth of those tasks, that has been identified as being instrumental, in reducing the severity of depression, anxiety and disability in CPP (Hamilton, Karoly, & Kitzman, 2004).

This approach to CP management was conceptualized in the Self Regulation Model (SRM) of health proposed by Leventahl et al. (1984). The SRM combined with the coping

processes identified by Folkman and Lazarus (Folkman & Lazarus, 1980), would support a view that participating in meaningful daily activities is instrumental in a CPP adapting to, and accepting CP symptoms. Participating in MDA may be somewhat similar to applying active coping strategies and accepting CP thereby not being limited in functioning because of pain. Also this view would support the notion that taking ownership of health management has the potential to improve the outcomes for the patient.

6.7.3 Meaningful Daily Activity as a Treatment Goal of Chronic Pain Patients

The DAQ-R and MDAQ-R were predictors of Psychological Distress, including Hopelessness, Depression and Anxiety. The DAQ-R was a useful measure of participation in daily activities, to identify what activities were associated with less severe Psychological Distress, such as Depression, Anxiety and Hopelessness. The DAQ-R and MDAQ-R subscales may now be trialled as screening instruments for depression, anxiety and hopelessness, along with other measures of negative affect such as depression and anxiety and a clinical interview.

The infrequent participation in certain daily activities, identified on the DAQ-R, was associated with increased severity of these psychological disorders. Therefore, identifying activities that CP patients find meaningful, and ascertaining whether or not patients perform these activities regularly, is helpful for clinicians, especially in relation to the origin and maintenance of Psychological Distress. However, these measures were not helpful in identifying daily activities that effected pain severity and disability (McCracken, Vowles, & Eccleston, 2004). Personally Meaningful Daily Activities may be identified as goals of therapeutic intervention to decrease psychopathology of CPP.

6.7.4 Behaviour Change and Meaningful Daily Activities as Goals of Therapy

It would appear that findings in the current study are partially supportive of the popular approaches to changing health behaviours and management of illnesses (Bunton, Baldwin,

Flynn, & Whitelaw, 2000; Burns, Glenn, Lofland, Bruehl, & Harden, 2005; Feinstein & Feinstein, 2001; Prochaska & Di Clemente, 1983).

Models of behavioural change and self regulation are somewhat challenged by these findings because change cannot occur unless the patient is sufficiently motivated and able to change. This would certainly not appear to be the case for CPP, who were seriously affected by their CP and not in a position to make changes and pursue goals identified by health practitioners. Consequently, prior to facilitating any change for these male CPP, they need to engage in personally meaningful daily activities. Mastos, Miller, Eliasson and Imms (2007), proposed that goal-directed training increases the client's ability to engage in meaningful activities. The essential focus of this form of training requires the patient to (1) select a meaningful goal; (2) undertake an analysis of baseline performance; (3) devise an intervention strategy or regime and (4) to evaluate the outcomes of the interventions. Selecting a goal is somewhat similar to identifying what a patient defines as being a Meaningful Daily Activity.

If a patient identifies an activity on the MDAQ-R as being extremely meaningful and on the DAQ-R they indicate they never participate in this activity, this would indicate that increased participation in this activity should be a goal of the clinical intervention. The success of this therapeutic technique can be determined by establishing whether or not the goal selected by a patient was achieved.

A similar method of treatment was described by Mastos et al., (2007) recognising the need to identify meaningful patient goals, however their discussion was limited to persons who had suffered severe brain injuries. Therefore the activities they identified as "meaningful" were more related to maintaining normal physical functioning such as motor control and motor learning, rather than achieving higher order or altruistic functioning.

6.8 Summary of Findings and a Revised Model of Daily Activity and Chronic Pain Symptomatology

CPP recruited for this study confirmed that participating in certain daily activities, either positively or negatively, predicted: Disability; Hopelessness; Depression and Anxiety. Therefore simply engaging in these activities would appear to be in some way related to CP symptom severity. The activities in the DAQ-R were identified from a range of activities that CPP performed in the Pilot Study of this thesis. These items were deemed to be either important or meaningful to the CPP sample.

Hence regardless of meaningful daily activity (altruistic or MDA) or frequency of activity (DAQ) items identified by CPP as being either important or meaningful or items from the original WHYMPI did predict CPP scores on measure of Disability, Hopelessness, Depression and Anxiety.

To validate the MDAQ-R as a measure of MDA this would be done with a CPP, non pain sample. Cause of injury, diagnosis, treatments, gender, age, education, marital status, occupation, employment status, work injury, litigation status, current income replacement (if any) and pain duration would also be considered in this analysis as they were found to be influential in the current study.

In summary the daily activities that predicated Psychological Distress were Interpersonal Contact, Leisure and Sensuality, and Home Maintenance Activities. While the Meaningfully Daily Activities that predicted psychological distress were: Sensory, Leisure Activities, Home, and Health Maintenance.

The cause of illness, particularly Psychological Attributions predicted Psychological Distress, Pain, Disability and Dispositional Optimism of CPP. While the significance of Dispositional Optimism as a predictor of CP symptoms was not calculated in the current study, this construct was taken into consideration when revising the research model as a

schematic representation of the findings of this study (Figure 23). This revised model identifies the associations between MDA, DA, Illness Perception, Dispositional Optimism, Acceptance of Pain, Coping Strategies and the impact these constructs have on pain, disability, Psychological Distress, and both vocational and social functioning. These findings have implications for clinical practice. When a clinician is planning an intervention strategy for CPP, apart from pain, symptoms that must always be considered are: Psychological Distress including Depression, Anxiety and Hopelessness and Disability. Future studies to test the MDA model also need to consider demographic variables such as work injury, use of substances, occupation and ethnicity, service in the armed forces, physical activity and diet. This additional information will provide further findings relating to males who are depressed and feel that their life is relatively hopeless.

DA and MDA activities of significance are primarily associated with human interactions, leisure and sensuality, and structured or purposeful activity of the CPP. Including, regularly performing household and health maintenance tasks, participating in leisure activities and engaging in social and intimate activities with others.

Constructs that affected CPP symptoms have been combined and are represented in Figure 23. Additional factors that were not tested, but may be important when considering the impact of CP on depression, anxiety, suicidality and disability have been added, to expand on the findings of this study to be implemented in future research. This proposed research model illustrates how the individual and situational factors that have been found to affect the severity of CPP in the current study can now be applied to CP practice, and be further tested on clinical populations with CPP and possibly other chronic illnesses.

Acceptance, coping, Dispositional Optimism, Illness Perception, behavioral and life style issues have been identified as variables that may exacerbate the symptoms of CP. In

recognition of these findings a further model has been proposed for a future study (Figure 23.)

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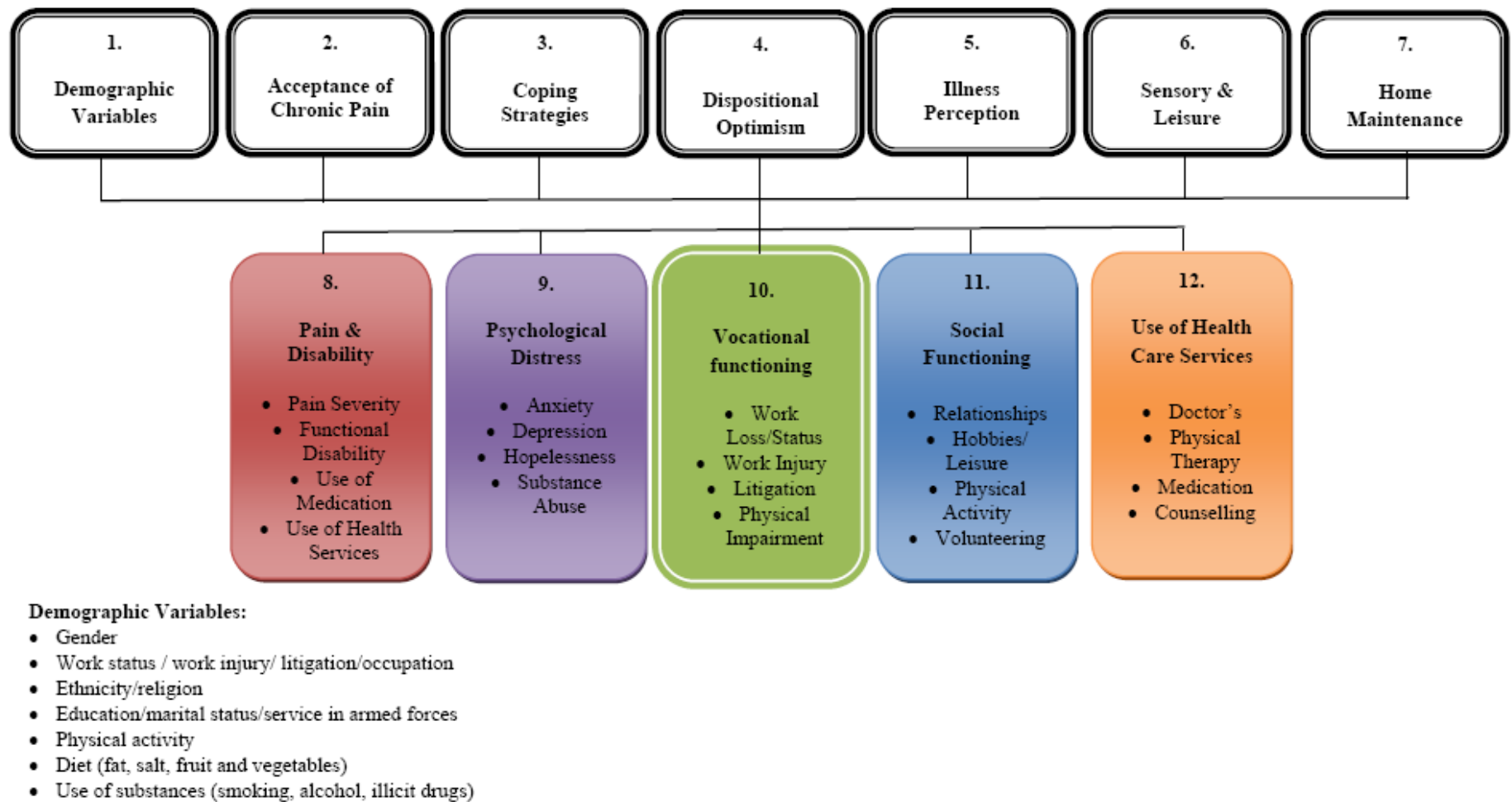


Figure 23. A Proposed Model to test the Positive and Negative Affect of Psychosocial Variables and Individual Behaviour of Chronic

Pain Patients.

The model proposed as depicted in Figure 23 expands on the significant findings of the current study. The model also includes additional personal characteristics, lifestyle and behavioral risk factors that are believed to adversely impact on health and wellbeing of CPP or persons who have a chronic illness. The proposed relationships to be tested in such a model are firstly whether 1, 2, 3 and 4 affect patients' participation in Sensory and Leisure Activities, and secondly whether higher participation rates in Sensory and Leisure Activities and Home Maintenance affect 1, 8, 9, 10 and 11. The results of testing such a model would further elaborate on the impact of participating in MDA on Pain and Disability, Psychological Distress, Vocational Functioning, Social Functioning and use of health care services.

Such a research project would require considerable inputs of expertise, time, financial resources and access to a large chronic pain population. Given the current focus on wellness and preventing illness a project investigating these negative and positive factors associated with health may warrant such a significant commitment of human and fiscal resources.

CHAPTER SEVEN: CLINICAL IMPLICATIONS OF FINDINGS

The proposed relationship between meaningful daily activities and CP symptoms was significant in the current study. No previous research has specifically explored the effect of MDA on CP symptoms; CP research has, however, identified a significant association between CP symptoms, DA (Miles, et al., 2005) pain, disability and psychological distress.

Also participation in valued activities and the pursuit of personally relevant goals has been proposed as a mediator of the severity of CP symptoms (McCracken & Yang, 2006). Identification and attainment of relevant and personally meaningful goals has also been found to be important in maintaining the psychological and physical health of CPP (Treharne, et al., 2007). In the current study there was evidence of CPP limited participation in valued activities. Especially in cases where CPP were not working, and also isolated from family, friends, fellow workers and their broader social network (Hawthorne, 2008; Steptoe, et al., 2004).

7.1 Meaningful Daily Activity

Adults who experienced CP (Study Two) and those in the broader Australian community (Study One) did not identify the same activities as being meaningful. The most meaningful activities for the Community Sample were interpersonal activities, including offering support to a friend or family member, taking a trip, caring for a family member and sexual activity (Isaacowitz, et al., 2003).

Meaningful activities reported by the CP Sample were similar to the Community Sample but also included medical activities such as going to the doctors, health related appointments and taking medication. This finding is logically consistent, in that health issues were more important for a cohort of persons who experienced CP than for persons who were recruited from the general community (Crooks & Chouinard, 2006). This is

further evidenced in the health care utilization of Australian adults with chronic health conditions (Britt, et al., December 2005; M. F. Harris & Zwar, 2007) .Australians with chronic health conditions take more medication.

Interpersonal Contact, Leisure and Sensuality activities such as: Going out to eat, Going to a movie, Taking a trip, Going to the park or beach, were more often performed by female CPP. However, there was no difference between males and females' rate of participation in Visiting family and friends, Hugging, cuddling, and Sexual activity. This observation appears to be different from previous studies, where males rated intimacy and sexuality, as being more meaningful than females (Schantz Laursen, Overvad, Schou Olesen, Delmar, & Arendt-Nielsen, 2006).

Female CP participants found their Support, Caring and Interpersonal Relationships were significantly more meaningful than males considered them to be and they did more of these activities than males (Strazdins & Broom, 2004). Activities that were considered significantly more meaningful by males than females were Home Maintenance Activities, and these activities were also performed more frequently by males (R. A. Williams, 2007).

7.2 Daily Activity

There was an observed association between Interpersonal Contact and Social Support activities negatively affecting both Psychological Distress and Disability. This association is important but must be cautiously interpreted. Further testing of this association is required before this association is affirmed

The Daily Activities of female CPP were not equally valued, nor were they performed as frequently by both genders. Male CPP in the current study reported that they did less Domestic Chores, Work, Health and Spirituality Activities and also less Interpersonal Contact and Social Support tasks than female CPP in the cohort. Males did, however, perform more Home Maintenance Tasks.

This finding has serious implications for the management of males with CP. If as observed in the current study males do engage in less activities that they can derive any pleasure or meaning from that would appear to be an issue that requires the attention of clinicians. The engagement of CPP in Daily Activities, particularly activities that are valued by the patient, or important to their emotional and physical well-being, requires prompt attention. Remediation of male CPP engagement in activities that they value, find important or meaningful is required. In the current study, there was a highly significant association between Pain and Disability and Daily Activities (DAQ-R). There was also a highly significant association between Daily Activity and Psychological Distress (Anxiety, Depression, Hopelessness) in male CPP participation particularly in Interpersonal Contact and Social Support, Daily Activities should be assessed and monitored by clinicians. These activities appear to Positively Affect CPP as observed in Table 36 PCA of all measures in Study Two.

7.3 Psychological Distress

In the current study clinically significant depression, anxiety and hopelessness were commonly experienced psychopathologies of both male and female CPP (Le Pine & Briley, 2004; K. M. Scott et al., 2007). The prevalence and severity of these psychopathologies in the current study was higher for males than females. Due to the small number of males in this cohort this association, while being significant, warrants further testing and must be treated with some caution. There may also be other variables that have been influential in either precipitating or exacerbating Psychological Distress.

Most of the male CPP had sustained work injuries and were currently litigating. The effect of these demographic variables on the prevalence and severity of Psychological Distress cannot be underestimated (Blyth, March, & Cousins, 2003). Psychological Distress was also more severe for males who experienced role losses such as not working

in paid employment, decreased ability to perform household maintenance, and inability to participate in active and passive leisure and social entertainment. These apparent losses experienced by males were both associated with traditional gender specific identity/roles, challenging CPP view of themselves and their worth as a result of not being able to perform these traditional masculine roles (Hobara, 2005). Therefore it was consistent with this *self perception* of male CPP *self discrepancy* that they experienced Psychological Distress (S. A. Harris, et al., 2003; S. J. Waters, Keefe, & Strauman, 2004).

Chronic pain patients who reported higher levels of Dispositional Optimism had less severe psychological distress including depression, anxiety, and hopelessness, Pain and Disability symptoms (Rozanski & Kubzansky, 2005). This was especially the case for female CPP (Affleck, et al., 2001; D. J. Jones, et al., 2004; Snyder, et al., 2000).

Chronic pain patients who were optimistic (as opposed to pessimistic) had more interpersonal contact, were often caring for others, worked, participated in sensory and leisure activities, were more satisfied with their life, and perceived their life to be meaningful. For CPP in the current study Optimism, Meaningfulness and Satisfaction with Life was associated with reduced severity of CP symptoms and better health outcomes (Bedi & Brown, 2005; Hirsch, et al., 2007; Ouwehand, de Ridder, & Bensing, 2008).

Also Pain and Disability was associated with Psychological Distress. This association was not confirmed in the current study. This observation has however often been reported in the research literature. From a clinical perspective it would seem highly desirable that persons who experience CP should be monitored for the onset of Psychological Distress and measure put in place to manage adverse mental health issues related to CP.

7.4 Pain and Disability

For the CPP in this study the severity of Pain and Disability was associated with the Illness Perceptions and Psychological Attributions and Risk Factors. Psychological Distress was also a very significant predictor of Pain and Disability. Consequently Psychological Distress should be routinely monitored and appropriately treated, in order to minimise the effects of Psychological Distress in Pain and Disability Symptoms of CPP.

7.5 Clinical Implications

Depression, anxiety, pain and functional disability are routinely examined in clinical practice and CP research. The current study explored cognitive factors, patient disposition and vocational circumstances that are less often explored. The clinical implications of this study are particularly important for health professionals treating CPP because five areas of some significance have been identified in this thesis that have not previously been simultaneously investigated in one CP study:

- (1) Participation in Daily Activity that is Meaningful
- (2) Dispositional Optimism, Spirituality or Practicing a Religion
- (3) Work status, work injury and litigation status of persons with CP

All of these factors were found to some extent to influence the severity of CP symptoms.

Meaningful Daily Activity of the clinical pain population, was particularly important because human interaction is often severely restricted as a result of CP or illness (Károlyi, Ruehlman, Aiken, Todd, & Newton, 2006). Daily Activities were interfered with and CPP needed to adapt to these changes to cope with CP and minimize the risk of severe physical and emotional loss (Palomino, et al., 2007).

Australian males who were not employed, had sustained a work injury, and were litigating, reported high levels of hopelessness, depression and anxiety and were potentially at a higher risk of self harm (Brownhill, Wilhelm, Barclay, & Schmied, 2005).

If the core activity of employment is taken away from males the onset of Psychological Distress and Disability is highly likely (Breslin, et al., 2006; Comino, et al., 2003; David A Fishbain, Bruns, & Disorbio, 2009; McPhedran & Baker, 2008) and needs to be considered when treating this clinical population. Because meaningful activity was found to mediate the severity of psychological distress, it is important to determine what activities are personally meaningful for this male population with a view to increasing Daily Activities that are meaningful for these individuals. It is likely that Home Maintenance activities are important to male CPP.

Males with CP did not engage in domestic chores, socialize, or care for others, as frequently as female CPP did. Activities that males previously found important may not be able to be performed anymore (Havitz & Mannell, 2005; L. E. Waters & Moore, 2002). These activities, may have included the roles of worker and financial provider to the family, and the inability to perform these roles, has previously been found to cause emotional and financial stress (S. A. Harris, et al., 2003), and vocational, social, and emotional identities are also challenged (Hobara, 2005). There was insufficient detail about the roles of CPP and their current financial circumstances to test this possible association.

It would also appear that female CPP, as evidenced in their higher levels of participation in domestic chores, caring and social interaction (Karniol, Grosz, & Schorr, 2003), and lower Psychological Distress derive some positive benefit from the Daily Activities they perform.. This association cannot however be tested because there was no information collected on the current and previous roles that were performed by females and if their roles had changed because of CP or not. This relationship between females' daily activities and their positive mental health needs to be considered in clinical practice, because interpersonal contact was important for female CPP.

Another observed difference between males and female CPP was participation in religion or spirituality was higher for females than males and may account for some

differences observed between male and female CPP symptoms (Simpson, et al., 2008). The significance of religious beliefs and practise of a religion has been considered recently by Australian medical practitioners (Koenig, 2007; Rumbold, 2007). It has been proposed that there is a possible association between spirituality or religious involvement and health status. This premise warrants further consideration, as spirituality was strongly associated with meaning and purpose in life in the current study. This finding may potentially affect the treatment modalities and outcomes that are most likely to be successful with patients who have certain religious beliefs (Ironson, et al., 2002; Salsman, et al., 2005). However this connection was not explored in this thesis, apart from identifying that CPP who did not practise a religion reported lower meaningful daily activity on the MDAQ-R and lower participation in daily activities on the DAQ-R. As previously reported, more females practised a religion than males, females had higher scores on MDAQ-R and DAQ-R and females experienced less severe psychopathology. The possible association between practicing a religion, mental health, meaningfulness and well-being does warrant further exploration.

How individuals who experience CP find new meaningful daily activities

The current CP study highlighted the “existential vacuum” defined by Frankl as “a feeling of emptiness and meaninglessness (Frankl, 1959/1963/1984, p. 166)”. This apparent existential vacuum that seemed to exist for CPP and the subsequent “meaninglessness of life” was a possible reason for the elevated levels of Psychological Distress reported by male CPP (Debats & Drost, 1995; Madden & Sim, 2006). While this association was not proven in the CP study it is important and requires further exploration (Crumbaugh & Maholick, 1964; Langle, 2005; Lukas, 1998; Mascaro & Rosen, 2005, 2006; B. W. Smith & Zautra, 2004).

When considering how individuals create their personal meaning of life, health, illness and wellbeing it is necessary to consider how illness perceptions are affected by health literacy, culture, personality, socio demographics, spirituality and optimism (Battista & Almond, 1973; Chamberlain & Zika, 1988b; Crooks & Chouinard, 2006; De Vogler & Ebersole, 1981; Diener & Diener, 1995; Schnell & Becker, 2006). In the process of creating individual meaning there are fixed and dynamic variables that determine the outcomes of changes in personal meaning. For example culture, age, gender and genetic determinants are not generally considered to be able to be changed, but health literacy and skills to manage and accept changes in health status and wellbeing are possible (M. J. Edwards & Holden, 2001; Power & Brewin, 1997; Raskin, 2002).

In the current study the findings may be interpreted in a parallel to logotherapy. In logotherapy there are essentially three ways in which meaning is created: creating a work or doing a deed; experiencing something or encountering someone; and by turning a personal tragedy into a triumph (Frankl, 2000, p. 170). Similarly, chronic pain patients, particularly females, create or do deeds in the domestic environment and the community; participate in social contact and interpersonal relationships; and develop a new focus or strategy to manage CP. In contrast to what females appeared to do in this study, males did not fare so well. This was reflected in the association of MDAQ-R 1 Support, Caring and Interpersonal Relationships, MDAQ-R 3 Sensory and Leisure Activities, subscales with the measures of Psychological Distress.

To Refine a Measure of Daily Activity that is Meaningful to a Chronic Pain Population

The DAQ-R 3 Interpersonal Contact, Leisure and Sensuality subscale can be trialled in a further study to validate this subscale as a possible measure of Positive Affect. The items included in this subscale included: Go out to eat, Go to a movie, Visit friends, Visit relatives, Take a trip, Go to a park or the beach, Hugging and cuddling and Sexual activity.

The measure if found to be valid and reliable may then be used in clinical trials to establish treatment objectives and determine outcomes of clinical populations. It is postulated that, by increasing the frequency of activity in Interpersonal Contact and Social Support, the severity of hopelessness, depression and anxiety will decrease. This is still to be tested.

It is essential that a further study be undertaken to determine whether or not a high or low score on a (DAQ-SF) Interpersonal Contact, Leisure and Sensuality subscale, can predict the presence or absence of anxiety, depression, or hopelessness. If this association was confirmed the DAQ-SF, could be trialled in clinical studies as a measure to formulate treatment plans with CPP, or indeed other patients suffering from chronic mental and physical conditions, as a possible measure of Psychological Distress. It is yet to be determined whether or not a revised scale could predict the presence or absence of psychopathology, including depression and anxiety.

Coping with CP and acceptance of CP has been identified by recent researchers as being important when considering the negative effects of CP (McCracken & Eccleston, 2006). Future research aimed at identifying coping strategies and acceptance of CP may be enhanced by including a measure of MDA such as the DAQ-R.

7.6 Future Research

Participation in Daily Activity needs to be considered further, in relation to the management of chronic health issues, particularly CPP. Meaningful Daily Activity is different for clinical and non clinical populations. Activities that are important or meaningful for specific clinical populations should be explored, as a matter of routine. Restrictions in Daily Activities vary depending on the disease and severity of symptoms; however changes in physical and interpersonal activity occur as a result of the onset and progression of a chronic illness and, consequently, the purposefulness and meaningfulness of daily activities change over the course of the illness.

There are three broad aims for further research. Firstly to refine the DAQ-R as a potential measure of participation in valued, important or meaningful Daily Activity. To achieve this aim, a study will be conducted with a large sample of clinical participants who experience pain and other illness, to establish the psychometric properties of the measures. The factor structure, reliability and validity of the measure will be tested.

Secondly the Interpersonal Contact and Social Support subscale of the DAQ-R, negatively loaded on a Positive /Negative affect Factor on a PCA of all measures in Study Two. The possible application of this subscale as measure of Positive Affect should also be explored in a further study. Because Satisfaction with Life, Dispositional Optimism, a Likert Scale of MDA and the MDAQ-R Interpersonal Contact and Social Support all loaded $\geq .70$ or higher on the Positive/Negative Affect Factor. The negative affect items included Psychological Distress, Beck Hopelessness Scale, HADS Depression Scale, HADS Anxiety Scale and the Pain and Disability Index. This finding warrants further consideration and testing with other Positive and Negative Affect measures in a study to validate the DAQ-R subscale Interpersonal Contact and Social Support as a possible measure of Positive Affect.

Thirdly to determine what cognitive, behavioural and emotional processes are involved in how males and females who experience CP find new meaningful, important or valued activities to replace activities that were previously meaningful but cannot be performed because of injury, pain, disability, psychological distress or personal circumstances. This may be tested in another study that considers, fear and avoidance, acceptance and interference (WHYMPI) as components that either exacerbate or reduce the severity of Pain and Disability and Psychological Distress.

The conceptual aims of future studies would include the following clinical tasks:

(i) identify what activities various clinical and normal populations find important, valued, or meaningful,

- (ii) to confirm the factor structure and reliability of the DAQ-R and
- (iii) administer the revised measure (DAQ-R-2, revised version) with the Interference Scale of the WHYMPI, and a validated and reliable measures of both Meaningful Daily Activity and Acceptance of Pain to a cohort of CPP.

Potential clinical intervention strategies to increase CPP participation in Valued, Important or Meaningful Activities would require clinician's who treat CPP to perform the following procedures:

- (i) Screen CPP for Positive and Negative Affect (anxiety, depression, hopelessness, disability, optimism, SWL and MDA),
- (ii) establish current and previously valued roles,
- (iii) identify what current activities are performed and whether or not these activities are valued by the CPP, and
- (iv) test the efficacy of increased participation in Valued, Important or Meaningful Daily Activity to decrease Psychological Distress or other clinical symptoms.

7.5 Conclusion

1. This study confirmed meaningfulness is a highly significant empirically tested concept consisting of interpersonal contact, home and health maintenance.

2. Meaningfulness was not the same for persons who experienced CP, compared with persons from the broader Australian community, as they did not find the same daily activities to be equally as meaningful. Nor did the CP sample participate in the same daily activities as often as the broader Australian community did.

3. Demographic variables such as gender, education, occupation, work status, work injury and litigation status affected the ratings of CPP Daily Activities and significantly affected CP symptoms.

4. In the current study income data was not collected. This obscures some of the MDA and DA data because income in some instances may have precluded CPP from vocational and social activities and health services. Income is also associated with health literacy and comorbid illnesses and therefore future studies should include information about income and occupation of CPP.

5. Male CPP experienced more severe anxiety, hopelessness and disability than female CPP. But pain symptoms were equally as severe for both males and females.. However, further exploration of these observations with a larger clinical sample is required to test this observation.

6. While it was observed that CPP who engaged in activities they found meaningful or purposeful experienced less severe Psychological Distress, prospective research is needed to determine the causal and sequential relationship of these disorders.

7. Daily Activities that most significantly lowered CPP Psychological Distress were: participation in Interpersonal Contact, Social Support, Sensory and Leisure

Activities (females) and the capacity to perform Home and Health Maintenance activities (males).

8. Dispositional Optimism affected the level of CPP Psychological Distress but not Pain and Disability.

9. There was a higher prevalence of clinical depression, anxiety and hopelessness in males. These findings combined with the high number of males who used prescribed narcotic pain medication, sleep medication, antidepressants and central nervous system suppressants, identified a male CPP population at high risk of self harm (McPhedran & Baker, 2008).

10. This study also confirmed that CPP Illness Perceptions, including higher Psychological Attributions and Risk Factors to the cause of their CP affected Pain, Disability, and mental health status.

11. Future research in the management of male CPP needs to explore the possible exacerbation of Psychological Distress caused by substance abuse, ethnicity, employment, income, litigation and work status. However the emphasis should be on males contributing at home via gender specific roles. Acceptance of CP and coping strategies would also be important when exploring these variables.

12. When clinicians assess the severity of CP symptoms they also need to consider the extent to which a CPP participates in MDA, and how increasing participation in valued Daily Activities may reduce the severity of symptoms experienced by CPP. Further testing of this construct and measure of MDA is required prior to use in clinical practice.

13. A further study to explore the altered meaningfulness of life for CPP is indicated from the results obtained in this study. To establish any causal relationships between CP, meaningfulness of life, gender, depression, anxiety and hopelessness.

14. The existential plight of male CPP is also consistent with Frankl's premise that "man is characterized by his search for meaning rather than his search for himself. The more he forgets himself - giving himself to a cause or another person - the more human he is. And the more immersed and absorbed in something or someone other than himself the more he really becomes himself" (Frankl, 2000, pp. 84-85). This observed association between logotherapy, the existential vacuum and wellbeing warrants further testing in light of the current findings.

15. Furthermore "unemployment neurosis" was a major finding in this study and would indicate therapeutic interventions aimed at changing behaviour will not be effective if CPP are not motivated or able to change. Finding activities that are equally as meaningful or valued as being engaged in paid employment is a dilemma for clinicians who are treating male CPP and does require further investigation.

16. Assessment of CPP should include measures of Psychological Distress, Illness Perception, Dispositional Optimism and a measure of how often the patient engages in Valued, Important or Meaningful Daily Activities. The current study would confirm that these measures are required as well as measures of Pain and Disability, functionality, and disease specific measures.

17. Therapeutic treatments for CPP may be more effective if they take into consideration the degree to which Positive and Negative Affect is likely to interfere with pain treatments outcomes.

18. A measure of CPP participation in valued, meaningful or important daily activities may now be refined in another study, to clarify items for inclusion in this activity measure and perform a confirmatory factor analysis on a brief version of the DAQ-R measure.

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APPENDIX A PILOT STUDY

A 1 HRETH Ethics Approval

Victoria University of Technology

St Albans Campus

Memorandum

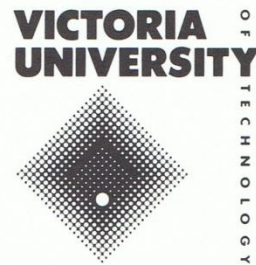
REF: ETH0169

TO: Dr Denise Charman
Dept of Psychology
St Albans Campus

FROM: A/Professor Ross Williams
Chair, Faculty of Arts
Human Research Ethics committee

DATE: 19 July 1999

SUBJECT: ***HRETH.FOA.0030/99 involving human subjects***



The Faculty of Arts Human Research Ethics Committee at its meeting on 16 July 1999 considered application for project:

The Effect of Meaningful Daily Activity on Symptomatology in Chronic Pain Patients

It was resolved to approve application HRETH.FOA.0030/99 from 1 August 1999 to 1 May 2000.


A/Professor Ross Williams

A 2 Pilot Study Consent Form
Victoria University of Technology
Consent Form for Participants Involved in Research
INFORMATION TO PILOT STUDY PARTICIPANTS:

The aim of this research study is to explore how participating in a range of daily activities effects the severity of pain, use of medication, functioning and mood. To explore the possible effects of daily activity on pain symptoms, a measure of daily activity is being developed for this study.

This measure will be used to establish the way that daily activity effects pain and pain symptoms. As a participant in this research study, you will be invited to complete a series of questionnaires and a general information sheet.

Your participation in this Pilot Study will assist the researchers in obtaining information about the types of daily activities performed over a seven day period.

You will not be required to perform any physical tasks or to undergo any form of physical examination in this Pilot Study. Your involvement in this research study is voluntary and you may withdraw at any time if you feel you are in any way distressed by completing the forms.

We would like to invite you to take part in a study designed to explore how the daily activities a chronic pain sufferer performs, affects their perceived severity of pain. As a participant in this Pilot Study you will assist the researchers to obtain information about what activities are regularly performed and how meaningful these daily activities are.

CERTIFICATION BY SUBJECT

I
of
.....

certify that I am at least 18 years old* and that I am voluntarily giving my consent to participate in the experiment entitled: ***The effect of meaningful daily activity on symptomatology in chronic pain patients***, being conducted at Victoria University of Technology by: Dr Denise Charman.

I certify that the objectives of the research, together with any risks to me associated with the procedures listed hereunder to be carried out in the research, have been fully explained to me by Jane Mulcahy and that I freely consent to participation involving the use on me of these procedures.

Procedures:

To complete seven Daily Activity Forms for a period of seven consecutive days.

You will not be required to perform and further tasks or assessments apart from the written measures.

Access to the information provided by you will not be available to anyone apart from the researcher.

The completed forms will not be identifiable, as your name will not be included on any of the measures used in the study.

It is anticipated that the time required to complete the forms will be approximately 20 to 30 minutes each day. In total the forms will take less than four hours.

I certify that I have had the opportunity to have any questions answered and that I understand that I can withdraw from this research at any time and that this withdrawal will not jeopardize me in any way.

I have been informed that the information I provide will be kept confidential.

Signed: }

Date:.....

Witness other than the researcher: }

Date:.....

A 3 Pilot Study Information to Participants

Victoria University of Technology

INFORMATION TO PILOT STUDY PARTICIPANTS:

The aim of this research is to explore how the daily activities a chronic pain patient is associated with their perceived severity of pain, use of medication, functioning and mood. To explore the possible effects of daily activity on pain symptoms a measure of daily activity is required. This measure will be used to explore how meaningful daily activity is associated with chronic pain symptoms.

A Pilot Study is being conducted to identify items for inclusion in a measure of Meaningful Daily Activity

Men and women who are aged between 18 & 65 years are being recruited for the Pilot Study.

As a participant in this Pilot Study, you will be invited to complete seven Daily Activity Forms for a period of seven consecutive days.

You will not be required to perform and further tasks or assessments.

Your responses to these forms will not be communicated to your treating clinicians or third parties and your name will not be used in any publications.

Access to the information provided by you will not be available to anyone apart from the researcher.

Your participation in this study will provide the researchers with a range of daily activities that are performed over a seven day period, and will also identify what activities you rated as being most meaningful.

This information you provide will then be used to develop a measure of Meaningful Daily Activity that will be used in a study to determine the effect of Meaningful Daily Activity on chronic pain symptoms

Your involvement in this Pilot Study is voluntary and you may withdraw at any time if you feel you are in any way distressed.

Any queries about your participation in this project may be directed to the researchers (Jane Mulcahy or Dr Denise Charman ph. (03) 9365 2536). If you have any queries or complaints about the way you have been treated, you may contact the Secretary, University Human Research Ethics Committee, Victoria University of Technology, PO Box 14428 MCMC, Melbourne, 8001 (telephone no: 03-9688 4710).

A 4 Pilot Study MDAL Participant Demographics

Date :/...../.....

Sex: Male ☐ Female ☐

Age 20-29☐, 30-39☐, 40-49☐, 50-59☐, 60-65 ☐

Marital Status:

Married with Children Living at Home ☐ Married no Children Living at Home ☐

De facto Relationship with Children Living at Home ☐ De facto Relationship with No Children Living at Home ☐

Divorced no Children Living at Home ☐ Divorced with Children Living at Home ☐

Widowed no Children Living at Home ☐ Widowed with Children Living at Home ☐

Single no Children Living at Home ☐ Single with Children Living at Home ☐

Occupational Status :

Full Time Work ☐ Part Time ☐ Casual ☐

Training/Apprenticeship ☐ Full Time Study ☐

Unemployed with Income Replacement or Pension ☐

Unemployed no Income Replacement ☐

Duration of any Current Pain Condition:

<3 months ☐ 3-6 months ☐ 6-9 months ☐ 9-12 months ☐ 12-18 months ☐ 24-36 months

A 5 Pilot Study MDAL List of Daily Activities

Time	Please write the <u>Activity</u> you are doing at this time For example you may be sleeping, in bed, working, cooking, eating, visiting, driving, gardening, reading, watching TV, at the doctors, shopping, etc.	Who was with you while you were doing this	Where were you doing this Activity	How Meaningful was this Activity to <u>you</u> ? Refer to Scale below and <u>enter the Number</u> (0-5) which Best Estimates the Meaningfulness of this activity	Please Rank the Activities You Have Performed Today in Order (1 to 24?) below. 1 being the Most Important Activity to 24? Least important
6am					
7am					
8am					
9am					
10am					
11am					
12pm					
1pm					
2pm					
3pm					
4pm					
5pm					
6pm					
7pm					
8pm					
9pm					
10pm					
11pm					
12am					
1am					
2am					
3am					
4am					
5am					

0 - 5 Numeric Meaningfulness of Daily Activity Scale

0	1	2	3	4	5
Not Meaningful	Slightly Meaningful	Meaningful	Moderately Meaningful	Most Meaningful	Extremely Meaningful

A 6 Pilot Study Range of Activities Participants Performed

Activity
1. Asleep/resting in bed
2. Attend film/concert/other entertainment
3. Attending a religious or spiritual service
4. Attending a sporting event
5. Attending hydrotherapy
6. Attending meetings
7. Care for a family member
8. Driving
9. Eating a meal
10. Feed & caring for animals
11. Gardening
12. Home repairs/maintenance
13. Housework
14. Paid work and working at home
15. Preparing a meal
16. Read
17. Shopping food
18. Shopping other
19. Shower/dress
20. Sitting talking with family member/friend
21. Taking a family member to activities/appointments
22. Taking/collecting children/grandchildren to activities
23. Talking on telephone
24. Travelling on public transport
25. Visit family member
26. Visiting doctor
27. Visiting friend/s
28. Visiting other health professional
29. Visiting physiotherapist
30. Visiting psychologist
31. Walk/exercise animals
32. Walking/exercising
33. Washing car
34. Watching TV, videos, DVD's
35. Working on a computer /studying

A 7 Pilot Study Summary of 15 Sequential Daily Activities

Activities	Sequential Activities 1-15															
	1	2	3	4	5	6	7	8	9	1	0	11	12	13	14	15
	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%
asleep/resting in bed	86.6	3.0	1.5	1.5	6.0	6.2	4.9	10.0	16.4	23.9	17.1	35.5	35.3	20.0	37.5	80.0
eating a meal	3.0	67.2	10.4	13.4	19.4	16.9	23.0	11.7	21.8	23.9	5.7	16.1	11.8			
watching TV, videos, DVD's			4.5	3.0	3.0	3.1	1.6	21.7	18.2	8.7	31.4	6.5	17.6	20.0	37.5	20.0
working on a computer /study				6.0	3.0	7.7	4.9	1.7			2.9					
visit family member				1.5	4.5	4.6	3.3	5.0								
read		1.5	9.0		1.5	3.1	6.6			4.3		9.7	5.9			
preparing a meal	1.5	3.0	3.0	3.0	4.5	6.2	9.8	6.7	9.1	6.5	2.9	6.5	5.9		12.5	
housework		1.5	10.4	10.4	4.5	1.5		5.0	5.5	4.3	8.6	6.5	11.8	10.0		
walking/exercising		3.0	10.4	4.5	9.0	4.6	4.9	5.0	1.8	2.2						
washing car			1.5	1.5												
home repairs/maintenance			3.0	1.5	1.5	1.5										
driving		4.5	17.9	13.4	6.0	16.9	9.8	13.3	14.5	6.5	2.9	6.5	5.9		12.5	
shopping food			1.5	3.0	3.0	4.6	3.3	3.3								
shopping other			3.0	6.0	4.5	3.1	3.3	1.7								
visiting doctor			1.5		3.0											
visiting physio			1.5		1.5	1.5										
visiting psychologist					1.5				1.8							
visiting other health professional				1.5			1.6	1.7								
attending meetings					1.5	1.5	1.6					3.2		10.0		
paid work and working at home		3.0	3.0	16.4	11.9	7.7	6.6	3.3		2.2	2.9					
visiting friend/s						1.5	1.6			2.2	2.9					
taking and collecting children, grandchildren to activities		4.5	4.5			3.1	4.9	1.7		2.2						
taking a family member to activities					1.5											
appointments																
attending a sporting event					1.5	1.5										
feed & caring for animals								1.7			8.6					
walk/exercise animals					1.5											
shower/dress	7.5	6.0	7.5	6.0			1.6		7.3	4.3	8.6	6.5				
attend film, concert, other entertainment						3.1	1.6	1.7					5.9			
attending hydrotherapy		1.5	1.5		1.5			1.7		2.2						
travelling on public transport	1.5		4.5	1.5	3.0				1.8							
sitting talking with family member/friend		1.5		1.5			3.3	3.3	1.8	4.3	2.9	3.2		30.0		
talking on telephone				1.5						2.2				10.0		
attending a religious or spiritual service				1.5	1.5											
care for a family member											2.9%					
gardening				1.5%			1.6%									
Total %	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100.0

A 8 Pilot Study Most Important Daily Activities

Activity	Frequency	Percent	Valid Percent
Paid work & working at home	8	10.3	12.7
Cooking, domestic cleaning, washing and chores	2	2.6	3.2
Watching TV/videos/DVD's	2	2.6	3.2
Reading	1	1.3	1.6
Walk/exercise	5	6.4	7.9
Eating at home	1	1.3	1.6
Playing a sport	1	1.3	1.6
Shopping for food & household supplies	1	1.3	1.6
Driving a family member	2	2.6	3.2
Study	3	3.8	4.8
Visiting parents	3	3.8	4.8
Visiting children	1	1.3	1.6
Visiting extended family members	1	1.3	1.6
Assisting & spending time with children	3	3.8	4.8
Walking and caring for pets	2	2.6	3.2
Sleeping/resting in bed	15	19.2	23.8
Medical/paramedical appointments	7	9.0	11.1
Gardening	1	1.3	1.6
Talking on telephone	1	1.3	1.6
Shower & dress	2	2.6	3.2
Going to the movies	1	1.3	1.6
Total	63	80.8	100.0

A 8 Pilot Study Second Most Important Daily Activities

Activity	Frequency	Percent	Valid Percent
Paid work & working at home	8	10.3	12.9
Cooking, domestic cleaning, washing and chores	2	2.6	3.2
Watching TV/videos/DVD's	1	1.3	1.6
Reading	3	3.8	4.8
Walk/exercise	5	6.4	8.1
Caring for family member	1	1.3	1.6
Caring for a friend	1	1.3	1.6
Eating at home	5	6.4	8.1
Eating outside of home	1	1.3	1.6
Going to a sporting event	1	1.3	1.6
Going to a meeting	3	3.8	4.8
Shopping for food & household supplies	2	2.6	3.2
Shopping for other goods	2	2.6	3.2
Driving a family member	3	3.8	4.8
Going to a religious service	1	1.3	1.6
Visiting parents	3	3.8	4.8
Visiting friends	1	1.3	1.6
Assisting & spending time with children	4	5.1	6.5
Sleeping/resting in bed	7	9.0	11.3
Medical/paramedical appointments	5	6.4	8.1
Home repairs	1	1.3	1.6
Taking/collecting grandchildren school/activities	1	1.3	1.6
Going to the movies	1	1.3	1.6
Total	62	79.5	100.0

A 8 Pilot Study Third Most Important Daily Activities

	Frequency	Percent	Valid Percent
Cooking, domestic cleaning, washing and chores	6	7.7	10.0
Watching TV/videos/DVD's	6	7.7	10.0
Reading	1	1.3	1.7
Walk/exercise	5	6.4	8.3
Caring for family member	3	3.8	5.0
Eating at home	11	14.1	18.3
Eating outside of home	1	1.3	1.7
Shopping for other goods	5	6.4	8.3
Driving a family member	1	1.3	1.7
Working on the computer	1	1.3	1.7
Study	1	1.3	1.7
Visiting extended family members	2	2.6	3.3
Visiting friends	1	1.3	1.7
Assisting & spending time with children	1	1.3	1.7
Sleeping/resting in bed	8	10.3	13.3
Medical/paramedical appointments	1	1.3	1.7
Travelling on public transport	1	1.3	1.7
Driving self	1	1.3	1.7
Gardening	1	1.3	1.7
Taking/collecting grandchildren school/activities	1	1.3	1.7
Talking on telephone	1	1.3	1.7
Going to the movies	1	1.3	1.7
Total	60	76.9	100.0

A 9 Pilot Study Person/s Present During Daily Activities

Persons Present During Activity 1

	Frequency	Percent	Valid Percent
alone	13	16.7	19.4
partner	52	66.7	77.6
child/children	1	1.3	1.5
family member/s	1	1.3	1.5
Total	67	85.9	100.0

Persons Present During Activity 2

	Frequency	Percent	Valid Percent
alone	32	41.0	48.5
partner	19	24.4	28.8
child/children	4	5.1	6.1
friend	1	1.3	1.5
family member/s	8	10.3	12.1
mother	1	1.3	1.5
grandchild	1	1.3	1.5
Total	66	84.6	100.0

Persons Present During Activity 3

	Frequency	Percent	Valid Percent
alone	47	60.3	70.1
partner	7	9.0	10.4
child/children	4	5.1	6.0
other worker/client/student	3	3.8	4.5
friend	1	1.3	1.5
health professional	3	3.8	4.5
family member/s	2	2.6	3.0
Total	67	85.9	100.0

A 10 Pilot Where Activities were Performed

Where First Sequential Daily Activities were Performed

	Frequency	Percent	Valid Percent
home indoors	66	84.6	98.5
public transport	1	1.3	1.5
Total	67	85.9	100.0

Where Second Sequential Daily Activities were Performed

	Frequency	Percent	Valid Percent
home indoors	57	73.1	85.1
work/university	3	3.8	4.5
outdoor walking or recreation venue	2	2.6	3.0
car	4	5.1	6.0
medical/paramedical office	1	1.3	1.5
Total	67	85.9	100.0

Where Third Sequential Daily Activities were Performed

	Frequency	Percent	Valid Percent
home indoors	30	38.5	44.8
home outdoors	4	5.1	6.0
work/university	2	2.6	3.0
outdoor walking or recreation venue	3	3.8	4.5
shops & other venues outside of the home	3	3.8	4.5
indoor leisure & recreation	3	3.8	4.5
car	15	19.2	22.4
park/beach/garden	1	1.3	1.5
medical/paramedical office	2	2.6	3.0
public transport	4	5.1	6.0
Total	67	85.9	100.0

A 11 Pilot Study Meaningfulness of Daily Activity for Participants

Meaningfulness of First Sequential Daily Activity for Participants

	Frequency	Percent	Valid Percent
not meaningful	8	10.3	11.9
slightly meaningful	6	7.7	9.0
meaningful	3	3.8	4.5
moderately meaningful	10	12.8	14.9
most meaningful	17	21.8	25.4
extremely meaningful	23	29.5	34.3
Total	67	85.9	100.0

Meaningfulness of Second Sequential Daily Activity for Participants

	Frequency	Percent	Valid Percent
not meaningful	4	5.1	6.0
slightly meaningful	8	10.3	11.9
meaningful	4	5.1	6.0
moderately meaningful	9	11.5	13.4
most meaningful	20	25.6	29.9
extremely meaningful	22	28.2	32.8
Total	67	85.9	100.0

Meaningfulness of Third Sequential Daily Activity for Participants

	Frequency	Percent	Valid Percent
not meaningful	2	2.6	3.0
slightly meaningful	12	15.4	17.9
meaningful	7	9.0	10.4
moderately meaningful	14	17.9	20.9
most meaningful	16	20.5	23.9
extremely meaningful	16	20.5	23.9

APPENDIX B STUDY ONE

B 1 Study One Consent Form for Participants Involved in Research

Victoria University of Technology INFORMATION TO PARTICIPANTS:

The aim of this research study is to explore how the daily activity a person performs effects the severity of pain, use of medication, functioning and mood. To explore the possible effects of daily activity on pain symptoms, a measure of daily activity is being developed for this study.

This measure will be used to establish the way that daily activity effects pain and pain symptoms. As a participant in this research study, you will be invited to complete a series of questionnaires and a general information sheet. Your participation in this study will assist the researchers in obtaining information about daily activities performed by the Australian adult population and the personal meaningfulness of these activities.

You will not be required to perform any physical tasks or to undergo any form of physical examination in this study. Your involvement in this research study is voluntary and you may withdraw at any time if you feel you are in any way distressed by completing the questionnaires.

We would like to invite you to take part in a study designed to explore participation in daily activities. As a participant in this research study you will assist the researchers to obtain information about the way in which daily activities are perceived by persons in the Australian community.

The responses you make to the questionnaires are not identifiable and will not be communicated to your treating practitioners or rehabilitation consultants.

CERTIFICATION BY SUBJECT

I.....
of
.....

Certify that I am at least 17 years old* and that I am voluntarily giving my consent to participate in the experiment entitled: The effect of meaningful daily activity on symptomatology in chronic pain patients, being conducted at Victoria University of Technology by: Dr Denise Charman.

I certify that the objectives of the research, together with any risks to me associated with the procedures listed hereunder to be carried out in the research, have been fully explained to me by Jane Mulcahy and that I freely consent to participation involving the use on me of these procedures.

Procedures: To complete a participant information sheet, a measure of daily activity and a measure of meaningful daily activity. You will be provided with a prepaid envelope to return the research material to the researcher at Victoria University. You will not be required to perform any physical tasks or to undergo any form of physical examination or interviews in this research study. It is anticipated that the time required to complete the written measures will be approximately one hour. You will not be required to perform any further tasks or interviews apart from the written measures. The completed information sheet and measures will not be identifiable, as your name will not be included on any of the measures used in the study.

I certify that I have had the opportunity to have any questions answered and that I understand that I can withdraw from this research at any time and that this withdrawal will not jeopardize me in any way.

I have been informed that the information I provide will be kept confidential.

Signed: }

Witness other than the researcher : } **Date:**

Any queries about your participation in this project may be directed to the researchers (Jane Mulcahy or Dr Denise Charman ph. (03) 9365 2536). If you have any queries or complaints about the way you have been treated, you may contact the Secretary, University Human Research Ethics Committee, Victoria University of Technology, PO Box 14428 MCMC, Melbourne, 8001 (telephone no: 03-9688 4710).

B 2 Study One Information to Participants

Victoria University

INFORMATION TO PARTICIPANTS:

The aim of this research study is to explore how daily activities are related to severity of pain, use of medication and mood. To explore the possible effects of daily activity on pain symptoms, a measure of daily activity is being developed for this study.

You are invited to participate in the first stage of this study.

As a participant in this study you will be asked to complete a survey and a general information sheet.

You will be provided with the survey and a postage paid envelope to return the completed survey to the researcher at Victoria University.

You will not be required to perform any physical tasks or to undergo any form of physical examination in this study.

Eligible participants for the study include:

Men and women who are aged between 25 & 65 years who reside in Melbourne and are able to complete the written forms in English are eligible to participate in the study.

Your involvement in this research study is voluntary and you may stop at any time.

All answers are confidential and access to the information provided by you in your questionnaires will not be available to anyone apart from the researcher.

Any queries about your participation in this project may be directed to the researchers (Jane Mulcahy or Dr Denise Charman ph. (03) 9365 2536). If you have any queries or complaints about the way you have been treated, you may contact the Secretary, University Human Research Ethics Committee, Victoria University, PO Box 14428 MCMC, Melbourne, 8001 (telephone no: 03-9688 4710).

B 3 Permission to Include WHYMPI Items in MDA Measure

John Mulcahy

From: Kerns, Robert [Robert.Kerns@med.va.gov]
Sent: Wednesday, 8 September 1999 2:59
To: 'John Mulcahy'
Subject: RE: WHYMPI

Thank you for your interest in our measure, and good luck in your research effort.

> -----

From: John Mulcahy[SMTP:Mulcahys@cpaonline.com.au]
Sent: Monday, September 06, 1999 2:42 AM
To: 'Robert.Kerns@med.va.gov'
Subject: WHYMPI

Thank you for your prompt response to Dr. Denise Charman, my clinical research supervisor at Victoria University. I am currently investigating the effect of meaningful daily activity on symptomatology in chronic pain patients. As there is not a suitable measure of meaningful daily activity for the purpose of this research I am devising a measure. With your permission we propose to use the activity items from the WHYMPI to measure (a) how often participants perform the activity and (b) how meaningful they find the activity. An additional number of items relating to work, medical visits and recreation will also be used in the MDAQ.

Should you require further details regarding the Masters Research project in psychology, either Dr. Charman or myself will provide whatever further information you may require.

My University email address is jane.mulcahy@vu.edu.au.

Thank you for your assistance with this matter

I look forward to hearing from you
Jane C Mulcahy

B 4 Study One Meaningful Daily Activities Questionnaire (MDAQ)

Listed below are some common daily activities. Please indicate **how meaningful** you currently find each of these activities by placing a number from **0 to 6** in the corresponding question box. for each activity.

	0	1	2	3	4	5	6
	(not at all meaningful)	(occasionally meaningful)				(extremely meaningful)	
	0 never	1	2	3	4	5	6 very often
1. Wash dishes.							
2. Mow the lawn.							
3. Go out to eat.							
4. Play cards or other games.							
5. Go grocery shopping.							
6. Work in the garden.							
7. Go to a movie.							
8. Visit friends.							
9. Help with the house cleaning.							
10. Work on the car.							
11. Take a ride in a car.							
12. Visit relatives.							
13. Prepare a meal.							
14. Wash the car.							
15. Take a trip.							
16. Go to a park or beach.							
17. Do a load of laundry.							
18. Work on a needed house repair.							
19. Go to the doctors.							
20. Hobbies, crafts or making things.							
21. Hugging and cuddling							
22. Attend meetings not related to paid work.							
23. Care for a family member..							
24. Work in paid employment							
25. Attend medical appointments other than doctors							
26. Watching TV, listening to music or the radio, reading or relaxing.							
27. Sexual activity.							
28. Attend a religious or spiritual service							
29. Care for a friend							
30. Work outside of the home in non paid employment.							
31. Take medication							
32. Offer support to a friend or family member.							

You may feel that there are other activities that you find meaningful which are not included in the questionnaire, please feel free to list them in the spaces provided below.

Activity

How meaningful is this activity to you?

Activity

How meaningful is this activity to you?

THANK YOU FOR COMPLETING THIS QUESTIONNAIRE

B 5 Study One Daily Activities Questionnaire (DAQ)

Listed below are some common daily activities. Please indicate **how often** you do each of these activities by placing a number from **0 to 6** in the corresponding question box. for each activity.

	<u>0</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>
	(never)(occasionally)				(very often)	
	0 never	1	2	3	4	5	6 very often
1. Wash dishes.							
2. Mow the lawn.							
3. Go out to eat.							
4. Play cards or other games.							
5. Go grocery shopping.							
6. Work in the garden.							
7. Go to a movie.							
8. Visit friends.							
9. Help with the house cleaning.							
10. Work on the car.							
11. Take a ride in a car.							
12. Visit relatives.							
13. Prepare a meal.							
14. Wash the car.							
15. Take a trip.							
16. Go to a park or beach.							
17. Do a load of laundry.							
18. Work on a needed house repair.							
19. Go to the doctors.							
20. Hobbies, crafts or making things.							
21. Hugging and cuddling.							
22. Attend meetings not related to paid work.							
23. Care for a family member.							
24. Work in paid employment.							
25. Attend medical appointments other than doctors.							
26. Watching TV, listening to music or the radio, reading or relaxing.							
27. Sexual activity.							
28. Attend a religious or spiritual service.							
29. Care for a friend.							
30. Work outside of the home in non paid employment.							
31. Take medication.							
32. Offer support to a friend or family member.							

You may feel that there are other activities that you do which are not included in the questionnaire, please feel free to list them in the spaces provided below.

Activity

How often do you do this activity?

Activity

How often do you do this activity?

Victoria University

B 6 Study One Participant Information Survey

1. Sex: Male ☐ Female ☐

2. Age: in years:

3. Do you observe any religion? Yes ☐ No ☐

4. Highest Level of education completed:

Primary School	<input type="checkbox"/>	Apprenticeship	<input type="checkbox"/>
Year 9	<input type="checkbox"/>	TAFE Course	<input type="checkbox"/>
Year 10	<input type="checkbox"/>	Trade Certificate	<input type="checkbox"/>
Year 11	<input type="checkbox"/>	University Degree	<input type="checkbox"/>
Year 12	<input type="checkbox"/>	Post Graduate Qualifications	<input type="checkbox"/>

Title of your qualifications:

.....

5. What is your occupation?.....

5a. What industry and occupation are you currently working in?

.....

6. Employment Status:

Full Time	<input type="checkbox"/>	Unemployment Benefits	<input type="checkbox"/>
Part Time	<input type="checkbox"/>	Work cover	<input type="checkbox"/>
Casual	<input type="checkbox"/>	Disability Pension	<input type="checkbox"/>
Unemployed	<input type="checkbox"/>	Other Social Security Payment	<input type="checkbox"/>

7. Marital Status:

Married ☐ De facto ☐ Separated ☐ Divorced ☐ Widowed ☐ Single ☐

8. Do you have children? Yes ☐ No ☐

8a How many children do you have?

8b How old are your children?.....

8c How many of your children live at home?

9. Have you previously had:

A Malignancy Yes ☐ No ☐

Multiple Physical Disabilities Yes ☐ No ☐

Diabetes Yes ☐ No ☐

A Psychiatric Illness Yes ☐ No ☐

10. What health problems if any do you have now?

.....
.....

11. If you answered YES to question 10 please describe the health condition you have and the treatment you currently receive for it.

Condition

Treatment

.....

Condition

Treatment

.....

Condition

Treatment

.....

12. Are you taking any medication prescribed by your doctor? Yes ☐ No ☐

12b. If you answered Yes to question 12 please list the current medication/s you are currently taking.

Medication	Dose.....
Medication	Dose.....
Medication	Dose.....
Medication	Dose.....

13. Have you suffered a work related accident or injury? Yes ☐ No ☐

14. Have you been involved in a motor vehicle accident causing a physical or psychological injury? Yes ☐ No ☐

15. Are you currently involved in legal proceedings as a result of a personal injury or an accident? Yes ☐ No ☐

16. Overall how satisfied are you with your life?

Please circle the number on the scale below that best describes your current satisfaction with life.

<u>0</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>
(not at all satisfied)			(occasionally satisfied)			(extremely satisfied)

17. Overall how meaningful are your daily activities?

Please circle the number on the scale below that best describes how meaningful your current daily activities are.

<u>0</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>
(not at all meaningful)			(occasionally meaningful)			(extremely meaningful)

Thank you for taking part in this research study.

B 7 Study One MDAQ Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
mda1	202	.00	6.00	2.0792	2.02317	.605	.171	-.931	.341
mda2	201	.00	6.00	1.6816	1.93083	.851	.172	-.565	.341
mda3	200	.00	6.00	3.9650	1.52163	-.468	.172	-.225	.342
mda4	202	.00	6.00	2.5149	2.00057	.251	.171	-1.133	.341
mda5	201	.00	6.00	2.7463	1.99507	.134	.172	-1.166	.341
mda6	202	.00	6.00	3.3366	1.99391	-.329	.171	-1.033	.341
mda7	201	.00	6.00	3.2637	1.86685	-.278	.172	-.936	.341
mda8	198	.00	6.00	4.5505	1.47224	-1.011	.173	.561	.344
mda9	201	.00	6.00	2.7612	2.02551	.122	.172	-1.221	.341
mda10	202	.00	6.00	1.2376	1.64905	1.315	.171	.939	.341
mda11	202	.00	6.00	3.2475	1.90263	-.237	.171	-.885	.341
mda12	201	.00	6.00	4.3632	1.53702	-.953	.172	.700	.341
mda13	200	.00	6.00	3.7600	1.73998	-.499	.172	-.541	.342
mda14	202	.00	6.00	1.7030	1.86374	.985	.171	-.040	.341
mda15	199	.00	6.00	4.6030	1.43484	-1.048	.172	.531	.343
mda16	198	.00	6.00	4.1970	1.74128	-.912	.173	.031	.344
mda17	201	.00	6.00	2.2637	2.12723	.503	.172	-1.096	.341
mda18	199	.00	6.00	2.3467	1.91891	.289	.172	-1.021	.343
mda19	201	.00	6.00	2.2736	2.03464	.450	.172	-1.052	.341
mda20	201	.00	6.00	3.4677	2.09767	-.419	.172	-1.094	.341
mda21	200	.00	6.00	4.9350	1.54360	-1.480	.172	1.326	.342
mda22	202	.00	6.00	2.5842	2.08891	.224	.171	-1.239	.341
mda23	198	.00	6.00	4.5202	1.76172	-1.055	.173	.106	.344
mda24	197	.00	6.00	4.3046	1.90559	-1.083	.173	.124	.345
mda25	197	.00	6.00	1.8680	1.92800	.724	.173	-.685	.345
mda26	199	.00	6.00	4.3065	1.53462	-.646	.172	-.240	.343
mda27	202	.00	6.00	4.5000	1.73707	-1.202	.171	.663	.341
mda28	201	.00	6.00	2.6070	2.32158	.237	.172	-1.469	.341
mda29	201	.00	6.00	4.3433	1.70780	-.961	.172	.069	.341
mda30	201	.00	6.00	2.8458	1.99276	.012	.172	-1.112	.341
mda31	201	.00	6.00	1.8905	2.09236	.801	.172	-.726	.341
mda32	201	.00	6.00	4.8159	1.55272	-1.535	.172	1.962	.341
Valid N (listwise)	169								

B 8 Study One Pearson Product Moment Correlation Matrix MDAQ Items 1-32

	MDA 1	MDA 2	MDA 3	MDA 4	MDA 5	MDA 6	MDA 7	MDA 8	MDA 9	MDA 10	MDA 11	MDA 12	MDA 13	MDA 14	MDA 15	MDA 16
MDA 1	1.00	0.42**	-0.17*	-0.09	0.57	0.12	-0.19**	-0.08	0.61	0.28	0.25	0.00	0.46**	0.40**	-0.08	-0.12
MDA 2		1.00	0.03	0.00	0.30	0.34**	-0.15*	-0.05	0.32	0.41	0.13	0.00	0.20**	0.50**	0.07	-0.03
MDA 3			1.00	0.39**	-0.01	0.26**	0.51**	0.48**	-0.03	0.05	0.24	0.24**	0.06	0.10	0.31**	0.25**
MDA 4				1.00	-0.07	0.04	0.29**	0.18*	-0.02	0.17	0.14	0.18*	0.01	0.03	0.06	0.16*
MDA 5					1.00	0.22**	-0.02	-0.04	0.57	0.19	0.22	0.01	0.52**	0.24**	-0.06	-0.05
MDA 6						1.00	0.18**	0.22**	0.21	0.18	0.20	0.17*	0.18**	0.25**	0.20**	0.21**
MDA 7							1.00	0.42**	-0.08	-0.07	0.08	0.20**	0.00	-0.04	0.18**	0.25**
MDA 8								1.00	0.08	0.01	0.13	0.57**	0.12	0.00	0.45**	0.42**
MDA 9									1.00	0.26**	0.12	0.09	0.63**	0.39**	0.04	0.01
MDA 10										1.00	0.24**	0.08	0.15*	0.49**	0.03	-0.13
MDA 11											1.00	0.11	0.20**	0.32**	0.15*	0.12
MDA 12												1.00	0.19**	0.01	0.31**	0.32**
MDA 13													1.00	0.25**	0.06	0.10
MDA 14														1.00	0.15*	-0.06
MDA 15															1.00	0.42**
MDA 16																1.00
MDA 17																
MDA 18																
MDA 19																
MDA 20																
MDA 21																
MDA 22																
MDA 23																
MDA 24																
MDA 25																
MDA 26																
MDA 27																
MDA 28																
MDA 29																
MDA 30																
MDA 31																
MDA 32																
	201	200	199	201	200	201	201	197	200	201	201	200	199	201	198	197

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

B 8 (Continued) Correlation matrix MDAQ Items 1-32

	MDA 17	MDA 18	MDA 19	MDA 20	MDA 21	MDA 22	MDA 23	MDA 24	MDA 25	MDA 26	MDA 27	MDA 28	MDA 29	MDA 30	MDA 31	MDA 32
MDA 1	0.69**	0.33**	0.26**	0.03	-0.02	-0.03	0.07	0.20**	0.25**	0.13	-0.14	0.01	0.03	0.02	0.24**	0.04
MDA 2	0.30**	0.52**	0.24**	0.06	-0.03	0.02	0.06	0.21**	0.30**	0.04	0.03	0.02	-0.01	-0.02	0.25**	0.04
MDA 3	-0.09	0.01	0.20**	0.26**	0.24**	0.29**	0.16*	0.10	0.14	0.26**	0.29**	0.11	0.18*	0.15*	0.11	0.28**
MDA 4	-0.12	-0.01	0.07	0.36**	0.11	0.31**	0.08	-0.06	-0.06	0.09	0.10	0.04	0.10	0.24**	-0.09	0.15*
MDA 5	0.55**	0.22**	0.34**	0.14*	0.06	0.06	0.15*	0.21**	0.27**	0.16*	0.02	0.05	0.09	0.00	0.32**	0.18*
MDA 6	0.23**	0.26**	0.13	0.19**	0.20**	0.10	0.24**	0.18*	0.12	0.21**	0.29**	0.12	0.21**	0.11	0.14*	0.25**
MDA 7	-0.11	-0.05	0.05	0.18*	0.21**	0.23**	0.14*	0.09	0.05	0.23**	0.19**	0.22**	0.21**	0.21**	-0.01	0.24**
MDA 8	0.00	-0.03	0.02	0.19**	0.37**	0.24**	0.38**	0.06	0.10	0.27**	0.39**	0.26**	0.50**	0.29**	-0.06	0.47**
MDA 9	0.70**	0.35**	0.32**	0.10	0.08	0.02	0.26**	0.24**	0.25**	0.16*	0.00	0.04	0.16*	0.03	0.15*	0.17*
MDA 10	0.10	0.41**	0.25**	0.13	-0.09	0.22**	0.16*	0.10	0.23**	-0.05	0.06	0.02	0.06	0.12	0.18*	0.14*
MDA 11	0.24**	0.14	0.20**	0.11	-0.06	0.18*	0.00	0.18*	0.09	0.30**	0.05	-0.02	-0.06	0.01	0.16*	-0.01
MDA 12	0.05	0.04	0.12	0.24**	0.41**	0.22**	0.62**	0.09	0.11	0.11	0.22**	0.28**	0.54**	0.31**	0.00	0.51**
MDA 13	0.55**	0.31**	0.31**	0.20**	0.12	0.18*	0.29**	0.15*	0.21**	0.20**	0.09	0.06	0.21**	0.11	0.18**	0.19**
MDA 14	0.36**	0.33**	0.34**	0.01	-0.15*	0.08	0.12	0.17*	0.29**	0.22**	0.00	0.04	0.04	0.10	0.20**	0.12
MDA 15	-0.04	0.11	0.07	0.24**	0.29**	0.15*	0.29**	0.07	0.16*	0.22**	0.25**	0.20**	0.36**	0.19**	0.01	0.27**
MDA 16	-0.06	0.01	-0.09	0.15*	0.45**	0.12	0.28**	0.13	0.07	0.20**	0.37**	0.21**	0.27**	0.18*	-0.19**	0.18*
MDA 17	1.00	0.30**	0.30**	0.01	-0.06	0.03	0.06	0.24**	0.25**	0.22**	-0.11	0.07	0.04	0.01	0.26**	0.03
MDA 18		1.00	0.34**	0.17*	0.06	0.14*	0.16*	0.14*	0.26**	-0.03	0.11	0.08	0.05	0.05	0.31**	0.11
MDA 19			1.00	0.17*	0.00	0.19**	0.16*	0.07	0.58**	0.09	0.08	0.19**	0.12	0.10	0.62**	0.21**
MDA 20				1.00	0.28**	0.23**	0.19**	0.03	0.03	0.18*	0.23**	0.19**	0.14	0.15*	0.05	0.24**
MDA 21					1.00	0.11	0.40**	0.07	0.01	0.12	0.54**	0.21**	0.43**	0.15*	-0.09	0.40**
MDA 22						1.00	0.22**	0.02	0.22**	0.07	0.19**	0.25**	0.27**	0.58**	0.20**	0.28**
MDA 23							1.00	0.13	0.17*	0.09	0.22**	0.27**	0.65**	0.37**	0.07	0.63**
MDA 24								1.00	0.17*	0.08	0.26**	0.06	0.01	0.13	0.07	0.00
MDA 25									1.00	0.08	0.05	0.18	0.20**	0.28**	0.48**	0.25**
MDA 26										1.00	0.01	0.11	0.08	0.05	0.01	0.24**
MDA 27											1.00	0.23**	0.29**	0.19**	0.02	0.23**
MDA 28												1.00	0.43**	0.34**	0.07	0.27**
MDA 29													1.00	0.45**	0.02	0.61**
MDA 30														1.00	0.11	0.37**
MDA 31															1.00	0.15*
MDA 32																1.00
	200	198	200	200	199	201	197	196	196	198	201	200	200	200	200	201

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

LEGEND B 8 Study One Pearson Product Moment Correlation Matrix MDAQ

Items 1-32

MDA 1 Wash the dishes
MDA 2 Mow the lawn
MDA 3 Go out to eat
MDA 4 Play cards or other games
MDA 5 Go grocery shopping
MDA 6 Work in the garden
MDA 7 Go to a movie
MDA 8 Visit friends
MDA 9 Help with house cleaning
MDA 10 Work on the car
MDA 11 Take a ride in the car
MDA 12 Visit relatives
MDA 13 Prepare a meal
MDA 14 Wash the car
MDA 15 Take a trip
MDA 16 Go to a park or beach
MDA 17 Do a load of laundry
MDA 18 Work on a needed house repair
MDA 19 Go to the doctors
MDA 20 Hobbies, crafts or making things
MDA 21 Hugging and cuddling
MDA 22 Attend meetings not related to paid work
MDA 23 Care for a family member
MDA 24 Work in paid employment
MDA 25 Attend medical appointments other than doctors
MDA 26 Watching TV, listening to music or the radio, reading or relaxing
MDA 27 Sexual activity
MDA 28 Attend a religious or spiritual service
MDA 29 Care for a friend
MDA 30 Work outside of the home in non paid employment
MDA 31 Take medication
MDA 32 Offer support to a friend or family member

B 9 Study One MDAQ Factor Loadings Rotated Component Matrix

	Component			
	1	2	3	4
MDA1	-1.648E-02	.752	-.129	.282
MDA2	-.109	.388	7.329E-02	.559
MDA3	.129	-9.208E-02	.725	.161
MDA4	7.356E-02	-.313	.499	.173
MDA5	6.473E-02	.684	-2.258E-02	.288
MDA6	5.443E-02	.286	.431	.171
MDA7	.186	-9.695E-02	.557	-2.583E-02
MDA8	.524	5.211E-02	.557	-.163
MDA9	.140	.808	-4.799E-02	.185
MDA10	1.270E-02	5.674E-02	6.193E-02	.628
MDA11	-.265	.239	.488	.221
MDA12	.700	3.065E-02	.272	-3.443E-02
MDA13	.181	.682	6.508E-02	.135
MDA14	-7.240E-02	.455	.128	.548
MDA15	.309	4.634E-02	.532	-1.285E-02
MDA16	.256	8.097E-02	.607	-.259
MDA17	-1.077E-02	.806	-5.154E-02	.183
MDA18	-2.126E-04	.299	7.383E-02	.545
MDA19	.112	.239	1.020E-02	.685
MDA20	.143	-2.784E-03	.480	.160
MDA21	.527	.136	.369	-.268
MDA22	.359	-.217	.313	.372
MDA23	.799	.145	9.774E-02	7.622E-02
MDA24	-7.796E-03	.426	.220	9.334E-02
MDA25	.247	.209	1.634E-02	.646
MDA26	5.307E-02	.373	.458	-.116
MDA27	.288	4.659E-02	.439	-6.999E-02
MDA28	.494	7.627E-03	6.627E-02	.107
MDA29	.858	6.934E-02	.121	9.349E-03
MDA30	.564	-.144	.200	.272
MDA31	7.357E-02	.133	-8.406E-02	.677
MDA32	.785	.103	.180	.131

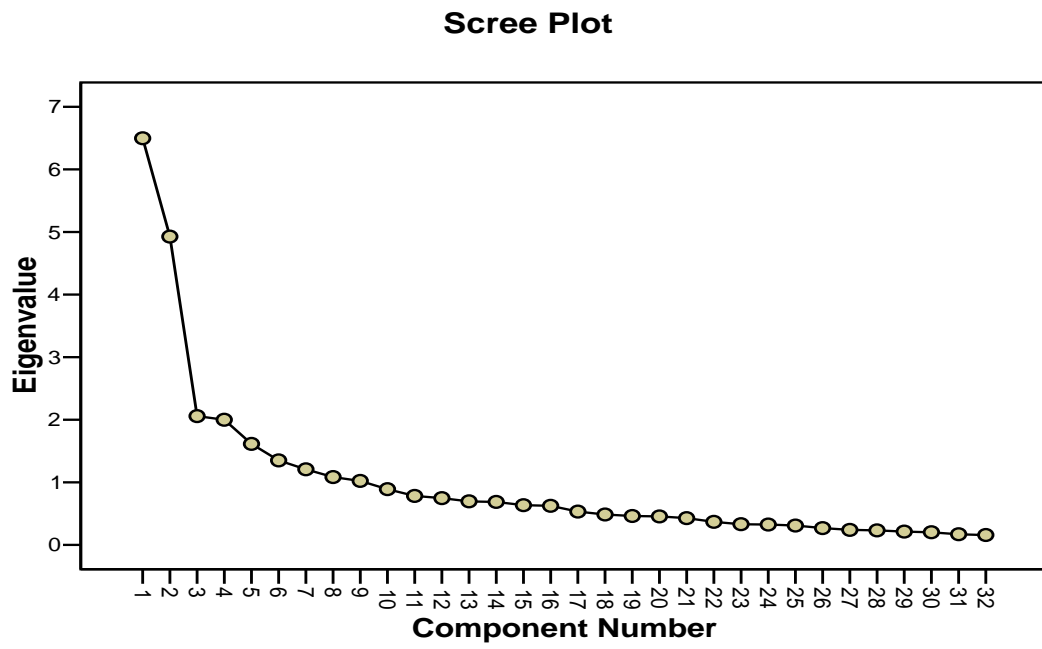
Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
a Rotation converged in 8 iterations.

B 10 Study One MDAQ Total Variance Explained by Factors

Component	Initial Eigenvalues			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	6.498	20.305	20.305	4.273	13.353	13.353
2	4.926	15.395	35.700	4.083	12.761	26.114
3	2.058	6.430	42.130	3.625	11.329	37.443
4	2.000	6.249	48.379	3.500	10.936	48.379
5	1.614	5.045	53.424			
6	1.350	4.220	57.644			
7	1.208	3.774	61.418			
8	1.084	3.388	64.806			
9	1.022	3.194	68.000			
10	.890	2.782	70.782			
11	.783	2.445	73.227			
12	.747	2.334	75.562			
13	.695	2.173	77.735			
14	.686	2.145	79.880			
15	.635	1.985	81.864			
16	.624	1.951	83.815			
17	.532	1.664	85.479			
18	.486	1.518	86.997			
19	.462	1.443	88.440			
20	.455	1.423	89.863			
21	.428	1.336	91.199			
22	.368	1.151	92.349			
23	.330	1.033	93.382			
24	.325	1.017	94.399			
25	.309	.967	95.366			
26	.268	.839	96.205			
27	.240	.751	96.956			
28	.232	.724	97.680			
29	.213	.665	98.345			
30	.202	.630	98.976			
31	.170	.532	99.507			
32	.158	.493	100.000			

Extraction Method: Principal Component Analysis.

B 11 Study One MDAQ Scree Plot of Components



NB Four Factors before curve levels out

B 12 Study One DAQ Descriptive Statistics

	N	Minimum	Maximum	Mean	Std.		Skewness	Kurtosis	
					Deviation	Error		Statistic	Error
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic
da1	232	.00	6.00	4.3319	1.73760	-.801	.160	-.337	.318
da2	232	.00	6.00	1.9526	2.16473	.625	.160	-1.073	.318
da3	230	.00	6.00	3.2391	1.30476	-.059	.160	.000	.320
da4	233	.00	6.00	1.8069	1.61126	.686	.159	-.195	.318
da5	230	.00	6.00	4.3217	1.66152	-.724	.160	-.346	.320
da6	232	.00	6.00	3.2112	1.94808	-.141	.160	-1.025	.318
da7	232	.00	6.00	2.4310	1.50741	.348	.160	-.399	.318
da8	232	.00	6.00	3.6164	1.48711	-.428	.160	-.213	.318
da9	228	.00	6.00	4.4254	1.78310	-.970	.161	-.113	.321
da10	234	.00	6.00	1.4017	1.71617	1.142	.159	.317	.317
da11	230	.00	6.00	4.4957	1.82115	-.949	.160	-.333	.320
da12	233	.00	6.00	3.5150	1.70218	-.240	.159	-.659	.318
da13	230	.00	6.00	4.4826	1.71740	-1.006	.160	.047	.320
da14	231	.00	6.00	2.1991	1.82118	.533	.160	-.706	.319
da15	231	.00	6.00	3.0390	1.51607	.047	.160	-.584	.319
da16	230	.00	6.00	3.2739	1.80458	-.119	.160	-1.031	.320
da17	229	.00	6.00	4.3362	1.99243	-.983	.161	-.355	.320
da18	231	.00	6.00	2.3333	1.84783	.423	.160	-.876	.319
da19	231	.00	6.00	1.9307	1.29362	.774	.160	.308	.319
da20	229	.00	6.00	2.5371	1.88360	.323	.161	-1.017	.320
da21	228	.00	6.00	3.7982	1.90376	-.527	.161	-.819	.321
da22	231	.00	6.00	2.2121	2.04366	.490	.160	-1.066	.319
da23	231	.00	6.00	2.9957	2.07992	.029	.160	-1.228	.319
da24	232	.00	6.00	5.0172	1.87017	-1.896	.160	2.210	.318
da25	228	.00	6.00	1.3026	1.59033	1.237	.161	.772	.321
da26	232	.00	6.00	4.8147	1.43100	-1.342	.160	1.427	.318
da27	227	.00	6.00	3.2621	1.77576	-.449	.162	-.773	.322
da28	232	.00	6.00	1.6681	1.95118	1.011	.160	-.196	.318
da29	230	.00	6.00	2.2043	1.66573	.455	.160	-.602	.320
da30	232	.00	6.00	1.6509	1.84311	.938	.160	-.207	.318
da31	232	.00	6.00	1.9397	2.17538	.918	.160	-.633	.318
da32	233	.00	6.00	3.8369	1.70168	-.447	.159	-.513	.318
Valid N (listwise)	179								

B 13 Study One DAQ Factor Loadings Rotated Component Matrix

	Component			
	1	2	3	4
DA1	.602	4.937E-02	-7.071E-02	.189
DA2	-.245	-4.970E-02	-6.380E-02	.732
DA3	-9.346E-02	-9.184E-02	.600	-.188
DA4	-.144	.154	.309	5.762E-02
DA5	.703	.200	2.474E-02	-6.106E-02
DA6	.282	.154	.282	.496
DA7	-4.675E-02	-2.251E-02	.569	-9.758E-02
DA8	5.170E-02	.222	.646	-8.139E-02
DA9	.815	8.138E-02	.108	1.962E-02
DA10	-.188	4.566E-02	-.176	.708
DA11	.403	9.169E-02	.141	.422
DA12	.324	.153	.508	.277
DA13	.781	.179	-3.888E-03	-5.165E-02
DA14	.133	3.600E-02	9.070E-03	.720
DA15	5.989E-02	.242	.523	-5.958E-02
DA16	.140	.147	.495	8.458E-02
DA17	.817	9.437E-02	.104	-.212
DA18	1.238E-02	3.384E-02	-2.829E-04	.687
DA19	.228	.570	-9.477E-02	6.721E-02
DA20	-.186	.295	.228	.218
DA21	.212	5.601E-02	.640	.144
DA22	-.267	.515	.288	.217
DA23	.230	.516	7.793E-02	.233
DA24	-.100	-.400	8.484E-02	.178
DA25	.102	.473	3.387E-02	6.144E-02
DA26	.349	-7.903E-02	.252	-2.505E-02
DA27	.119	-.230	.587	8.961E-02
DA28	8.761E-03	.530	.164	3.495E-03
DA29	.138	.641	.277	1.825E-02
DA30	-.289	.668	6.344E-02	8.433E-02
DA31	.176	.587	-5.625E-02	-8.879E-02
DA32	.375	.468	.325	.215

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
a. Rotation converged in 6 iterations.

B 14 Study One Pearson Product Moment Correlation Matrix DAQ Items 1-32

	DA 1	DA 2	DA 3	DA 4	DA 5	DA 6	DA 7	DA 8	DA 9	DA 10	DA 11	DA 12	DA 13	DA 14	DA 15	DA 16
DA 1	1.00	0.08	-0.10	0.02	0.35**	0.14*	0.08	0.07	0.38**	0.05	0.10	0.15*	0.47**	0.16*	-0.01	0.03
DA 2		1.00	-0.05	0.06	-0.20**	0.28**	-0.09	-0.12	-0.18**	0.41**	0.06	-0.05	-0.24**	0.44**	-0.01	-0.04
DA 3			1.00	0.09	0.04	0.07	0.41**	0.28	-0.01	-0.16*	-0.03	0.16*	-0.01	-0.03	0.34**	0.16*
DA 4				1.00	-0.04	0.05	0.17**	0.23**	-0.01	0.08	-0.07	0.15*	0.03	-0.01	0.02	0.03
DA 5					1.00	0.25**	0.05	0.17**	0.44**	-0.15*	0.24**	0.22**	0.58**	0.02	0.08	0.15*
DA 6						1.00	0.04	0.14**	0.25**	0.08	0.22**	0.31**	0.16*	0.35**	0.13**	0.10
DA 7							1.00	0.44**	-0.02	-0.02	-0.07	0.30**	0.01	-0.05	0.20**	0.19**
DA 8								1.00	0.08	-0.06	0.07	0.37**	0.16*	-0.02	0.29**	0.22**
DA 9									1.00	-0.19**	0.30**	0.21**	0.51**	0.10	0.00	0.17**
DA 10										1.00	0.10	0.00	-0.17*	0.37**	-0.06	-0.08
DA 11											1.00	0.34**	0.19**	0.32**	0.21**	0.12
DA 12												1.00	0.19**	0.21**	0.29**	0.26**
DA 13													1.00	0.04	0.02	0.18**
DA 14														1.00	0.12	-0.03
DA 15															1.00	0.30**
DA 16																1.00
DA 17																
DA 18																
DA 19																
DA 20																
DA 21																
DA 22																
DA 23																
DA 24																
DA 25																
DA 26																
DA 27																
DA 28																
DA 29																
DA 30																
DA 31																
DA 32																
	231	231	229	232	229	231	231	231	227	233	229	232	229	230	230	229

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

B 14 (Continued) Study One Pearson Product Moment Correlation Matrix DAQ Items 1-32

	DA 17	DA 18	DA 19	DA 20	DA 21	DA 22	DA 23	DA 24	DA 25	DA 26	DA 27	DA 28	DA 29	DA 30	DA 31	DA 32
DA 1	0.43**	0.07	0.16*	-0.04	0.01	-0.04	0.12	0.02	0.08	0.12	-0.05	0.07	0.16*	-0.06	0.11	0.18**
DA 2	-0.29**	0.41**	0.00	0.03	0.03	-0.03	0.03	0.13	0.08	-0.09	0.01	0.04	-0.10	0.10	-0.05	-0.01
DA 3	0.04	-0.14*	0.06	0.00	0.18**	0.01	-0.18**	0.04	0.04	0.13*	0.29**	0.00	0.01	-0.07	0.14*	0.06
DA 4	0.06	0.05	0.03	0.28**	0.10	0.08	0.13	-0.17*	-0.04	-0.01	0.09	0.00	0.13	0.12	-0.07	0.07
DA 5	0.49**	-0.11	0.26**	-0.08	0.13	-0.07	0.24**	-0.16*	0.11	0.20**	0.02	0.06	0.18**	-0.06	0.24**	0.32**
DA 6	0.15*	0.27**	0.06	0.18**	0.24**	0.18**	0.28**	0.07	0.11	0.19**	0.16*	0.06	0.11	0.05	0.10	0.29**
DA 7	0.1	-0.09	0.02	0.00	0.21**	0.10	-0.02	-0.01	0.05	0.13	0.13	0.08	0.15*	0.03	-0.05	0.05
DA 8	0.21**	-0.04	0.15*	0.12	0.33**	0.22**	0.03	-0.08	0.10	0.16*	0.27**	0.20**	0.30**	0.00	0.11	0.30**
DA 9	0.65**	0.09	0.24**	-0.03	0.19**	-0.14*	0.20**	0.02	0.05	0.25**	0.08	0.11	0.23**	-0.14*	0.14*	0.27**
DA 10	-0.25**	0.37**	0.02	0.16*	-0.09	0.07	0.10	0.05	-0.01	-0.12	-0.08	-0.05	0.03	0.04	-0.05	0.04
DA 11	0.20**	0.15*	0.19**	-0.02	0.21**	0.13*	0.19**	0.04	-0.01	0.19**	0.16*	0.04	0.09	0.01	0.13	0.32**
DA 12	0.23**	0.04	0.13*	0.13*	0.33**	0.21**	0.27**	-0.04	0.07	0.19**	0.15*	0.23**	0.19**	0.11	0.03	0.31**
DA 13	0.65**	0.03	0.20**	0.00	0.09	-0.03	0.20**	-0.11	0.12	0.15*	-0.05	0.02	0.16*	-0.11	0.13*	0.22**
DA 14	-0.03	0.36**	0.12	0.08	0.08	0.12	0.17*	-0.01	0.09	0.11	0.05	-0.01	0.09	0.06	0.04	0.23**
DA 15	0.01	-0.12	0.10	0.05	0.20**	0.18**	0.08	0.00	0.20**	0.23**	0.11	0.17**	0.17*	0.13	0.14*	0.26**
DA 16	0.12	0.08	0.05	0.12	0.26**	0.18**	0.24**	0.09	0.14*	0.12	0.15*	0.14*	0.25**	0.08	-0.05	0.29**
DA 17	1.00	-0.04	0.22**	-0.06	0.18**	-0.10	0.16*	-0.09	0.10	0.24**	0.09	0.07	0.20**	-0.16*	0.15*	0.26**
DA 18		1.00	0.00	0.21**	0.10	0.13	0.16*	0.09	0.04	-0.08	0.02	-0.01	0.11	0.08	-0.05	0.15*
DA 19			1.00	0.06	0.10	0.10	0.17**	-0.16*	0.34**	0.06	-0.04	0.12	0.28**	0.09	0.43**	0.22**
DA 20				1.00	0.14**	0.33**	0.16*	-0.07	-0.01	0.05	0.04	0.15*	0.13	0.21**	0.08	0.15*
DA 21					1.00	0.20**	0.21**	0.02	0.03	0.18**	0.49**	0.15*	0.27**	0.00	0.08	0.31**
DA 22						1.00	0.14*	-0.10	0.09	0.04	0.05	0.28**	0.24**	0.54**	0.10	0.19**
DA 23							1.00	-0.04	0.24**	-0.04	-0.08	0.22**	0.43**	0.16*	0.10	0.40**
DA 24								1.00	0.04	0.02	0.03	-0.08	-0.02	-0.19**	-0.18**	-0.09
DA 25									1.00	0.02	-0.08	0.10	0.27**	0.12	0.29**	0.21**
DA 26										1.00	0.16*	0.01	0.05	-0.01	0.13	0.22**
DA 27											1.00	-0.03	0.08	-0.09	-0.07	0.15*
DA 28												1.00	0.38**	0.28**	0.09	0.22**
DA 29													1.00	0.28**	0.25**	0.51**
DA 30														1.00	0.15*	0.17**
DA 31															1.00	0.35**
DA 32																1.00
	228	230	230	228	227	230	230	231	227	231	226	231	229	231	231	233

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

Legend B 14 Study One Pearson Product Moment Correlation Matrix DAQ

Items 1-32

- DA 1 Wash the dishes
- DA 2 Mow the lawn
- DA 3 Go out to eat
- DA 4 Play cards or other games
- DA 5 Go grocery shopping
- DA 6 Work in the garden
- DA 7 Go to a movie
- DA 8 Visit friends
- DA 9 Help with house cleaning
- DA 10 Work on the car
- DA 11 Take a ride in the car
- DA 12 Visit relatives
- DA 13 Prepare a meal
- DA 14 Wash the car
- DA 15 Take a trip
- DA 16 Go to a park or beach
- DA 17 Do a load of laundry
- DA 18 Work on a needed house repair
- DA 19 Go to the doctors
- DA 20 Hobbies, crafts or making things
- DA 21 Hugging and cuddling
- DA 22 Attend meetings not related to paid work
- DA 23 Care for a family member
- DA 24 Work in paid employment
- DA 25 Attend medical appointments other than doctors
- DA 26 Watching TV, listening to music or the radio, reading or relaxing
- DA 27 Sexual activity
- DA 28 Attend a religious or spiritual service
- DA 29 Care for a friend
- DA 30 Work outside of the home in non paid employment
- DA 31 Take medication
- DA 32 Offer support to a friend or family member

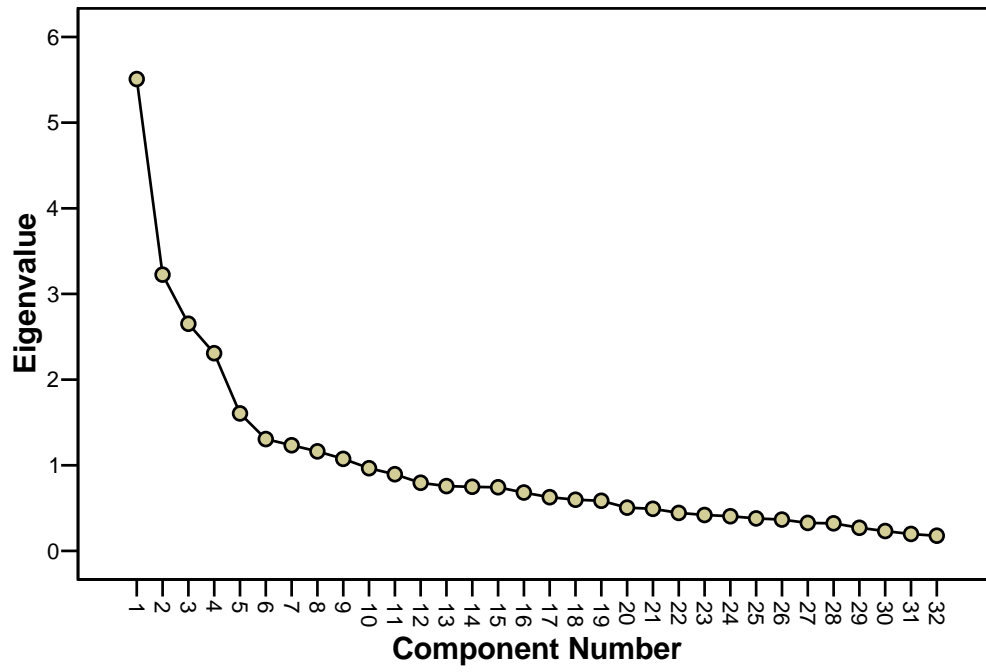
B 15 Study One DAQ Total Variance Explained by Factors

Component	Initial Eigenvalues			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	5.509	17.216	17.216	4.001	12.504	12.504
2	3.225	10.079	27.294	3.405	10.641	23.145
3	2.652	8.288	35.583	3.328	10.401	33.547
4	2.307	7.211	42.793	2.959	9.247	42.793
5	1.605	5.014	47.807			
6	1.305	4.080	51.887			
7	1.233	3.854	55.741			
8	1.162	3.631	59.373			
9	1.074	3.358	62.730			
10	.966	3.017	65.748			
11	.895	2.796	68.544			
12	.795	2.485	71.029			
13	.757	2.365	73.393			
14	.748	2.338	75.732			
15	.743	2.322	78.054			
16	.681	2.128	80.182			
17	.627	1.960	82.142			
18	.598	1.867	84.009			
19	.585	1.827	85.837			
20	.505	1.578	87.414			
21	.491	1.535	88.949			
22	.444	1.386	90.335			
23	.419	1.310	91.645			
24	.404	1.264	92.909			
25	.379	1.185	94.094			
26	.366	1.142	95.236			
27	.326	1.020	96.256			
28	.322	1.006	97.262			
29	.270	.844	98.106			
30	.232	.724	98.830			
31	.197	.617	99.447			
32	.177	.553	100.000			

Extraction Method: Principal Component Analysis.

B 16 Study One DAQ Scree Plot of Components

Scree Plot



B 17 Study One Regression Analysis of MDAQ Subscales 1-4

MDAF 1

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.362	.131	.097	8.2767

a Predictors: (Constant), Employment Status, Marital Status, RELIGION, EDUC, SEX, AGE, recoded children

b Dependent Variable: MDAF1

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1841.033	7	263.005	3.839	.001
	Residual	12193.665	178	68.504		
	Total	14034.698	185			

a Predictors: (Constant), Employment Status, Marital Status, RELIGION, EDUC, SEX, AGE, recoded children

b Dependent Variable: MDAF1

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Co linearity Statistics
Model		B	Std. Error	Beta			Tolerance VIF
1	(Constant)	23.042	4.437		5.193	.000	
	Age	-7.339E-02	.067	-.089	-1.098	.274	.739 1.353
	Sex	3.949	1.259	.226	3.138	.002	.938 1.066
	Marital Status	1.319	1.375	.071	.960	.339	.896 1.116
	Recoded children	-1.150	1.554	-.061	-.740	.460	.720 1.388
	Religion	-4.185	1.223	-.240	-3.421	.001	.991 1.009
	Education	.612	.327	.134	1.871	.063	.947 1.056
	Employment Status	.282	.361	.058	.780	.436	.888 1.127

a Dependent Variable: MDAF1

MDAF 2

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.212	.045	.007	8.7997

a Predictors: (Constant), Employment Status, Marital Status, RELIGION, EDUC, SEX, AGE, recoded children

b Dependent Variable: MDAF2

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	642.056	7	91.722	1.185	.314
	Residual	13706.010	177	77.435		
	Total	14348.066	184			

a Predictors: (Constant), Employment Status, Marital Status, RELIGION, EDUC, SEX, AGE, recoded children

b Dependent Variable: MDAF2

Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients		t	Sig.	Co linearity Statistics	
	B	Std. Error	Beta				Tolerance	VIF
(Constant)	20.774	4.730			4.392	.000		
Age	2.388E-02	.071	.029		.335	.738	.739	1.353
Sex	.134	1.342	.008		.100	.920	.938	1.066
Marital Status	-1.986	1.465	-.105		-1.355	.177	.896	1.116
Recoded children	-3.670	1.657	-.192		-2.214	.028	.720	1.388
Religion	-.832	1.304	-.047		-.638	.524	.991	1.009
Education	-.140	.349	-.030		-.401	.689	.947	1.056
Employment Status	-.216	.385	-.044		-.561	.575	.888	1.127

a Dependent Variable: MDAF2

MDAF3

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.390	.152	.118	9.0290

a Predictors: (Constant), Employment Status, Marital Status, RELIGION, EDUC, SEX, AGE, recoded children

b Dependent Variable: MDAF3

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2555.681	7	365.097	4.478	.000
	Residual	14266.476	175	81.523		
	Total	16822.157	182			

a Predictors: (Constant), Employment Status, Marital Status, RELIGION, EDUC, SEX, AGE, recoded children

b Dependent Variable: MDAF3

Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	25.653	4.880		5.257	.000		
	Age	4.806E-02	.073	.053	.654	.514	.739	1.353
	Sex	6.350	1.384	.330	4.587	.000	.938	1.066
	Marital Status	.362	1.512	.018	.240	.811	.896	1.116
	Recoded children	-3.387	1.710	-.162	-1.981	.049	.720	1.388
	Religion	-1.985	1.345	-.103	-1.476	.142	.991	1.009
	Education	.410	.360	.081	1.138	.257	.947	1.056
	Employment Status	-.339	.397	-.063	-.854	.394	.888	1.127

a Dependent Variable: MDAF3

MDAF 4

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.334	.112	.077	7.6399

a Predictors: (Constant), Employment Status, Marital Status, RELIGION, EDUC, SEX, AGE, recoded children

b Dependent Variable: MDAF4

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1313.256	7	187.608	3.214	.003
	Residual	10447.992	179	58.369		
	Total	11761.247	186			

a Predictors: (Constant), Employment Status, Marital Status, RELIGION, EDUC, SEX, AGE, recoded children

b Dependent Variable: MDAF4

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Co linearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	7.849	4.085		1.921	.056		
	Age	.179	.062	.239	2.911	.004	.739	1.353
	Sex	-2.738	1.159	-.172	-2.363	.019	.938	1.066
	Marital Status	-.685	1.265	-.040	-.541	.589	.896	1.116
	Recoded children	-1.486	1.431	-.086	-1.038	.301	.720	1.388
	Religion	-.683	1.126	-.043	-.607	.545	.991	1.009
	Education	.125	.301	.030	.415	.679	.947	1.056
	Employment Status	7.813E-02	.332	.018	.235	.814	.888	1.127

a Dependent Variable: COMPUTE MDAF4

B 18 Study One Regression Analysis of DAQ Subscales 1-4

DAF 1

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.584	.341	.318	5.7062

a Predictors: (Constant), Employment Status, Marital Status, RELIGION, EDUC, SEX, AGE, recoded children

b Dependent Variable: DAF1

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3335.784	7	476.541	14.636	.000
	Residual	6446.989	198	32.561		
	Total	9782.773	205			

a Predictors: (Constant), Employment Status, Marital Status, RELIGION, EDUC, SEX, AGE, recoded children

b Dependent Variable: DAF1

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Co linearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	18.328	2.908		6.302	.000		
	Age	-.117	.044	-.179	-2.673	.008	.739	1.353
	Sex	6.740	.824	.487	8.175	.000	.938	1.066
	Marital Status	.164	.900	.011	.182	.856	.896	1.116
	Recoded children	-1.607	1.018	-.107	-1.579	.116	.720	1.388
	Religion	-1.842	.801	-.133	-2.299	.023	.991	1.009
	Education	-.256	.214	-.071	-1.195	.234	.947	1.056
	Employment Status	.565	.236	.146	2.389	.018	.888	1.127

a Dependent Variable: DAF1

DAF 2

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.447	.200	.172	8.4603

a Predictors: (Constant), Employment Status, Marital Status, RELIGION, EDUC, SEX, AGE, recoded children

b Dependent Variable: DAF2

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3523.600	7	503.371	7.033	.000
	Residual	14100.625	197	71.577		
	Total	17624.226	204			

a Predictors: (Constant), Employment Status, Marital Status, RELIGION, EDUC, SEX, AGE, recoded children

b Dependent Variable: DAF2

Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Co linearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	8.965	4.322		2.074	.039		
	AGE	.205	.065	.234	3.158	.002	.739	1.353
	SEX	3.649	1.225	.196	2.978	.003	.938	1.066
	Marital Status	-.549	1.338	-.028	-.410	.682	.896	1.116
	recoded children	-1.752	1.513	-.087	-1.158	.248	.720	1.388
	RELIGION	-5.298	1.191	-.285	-4.449	.000	.991	1.009
	EDUC	.912	.319	.187	2.861	.005	.947	1.056
	Employment Status	-.264	.351	-.051	-.753	.453	.888	1.127

a Dependent Variable: DAF2

DAF 3

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.409	.167	.137	7.0830

a Predictors: (Constant), Employment Status, Marital Status, RELIGION, EDUC, SEX, AGE, recoded children

b Dependent Variable: DAF3

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1931.523	7	275.932	5.500	.000
	Residual	9632.440	192	50.169		
	Total	11563.964	199			

a Predictors: (Constant), Employment Status, Marital Status, RELIGION, EDUC, SEX, AGE, recoded children

b Dependent Variable: DAF3

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Co linearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	16.397	3.663		4.476	.000		
	AGE	-6.014E-02	.055	-.084	-1.091	.277	.739	1.353
	SEX	4.772	1.039	.313	4.594	.000	.938	1.066
	Marital Status	2.582	1.134	.158	2.277	.024	.896	1.116
	recoded children	-.105	1.283	-.006	-.082	.935	.720	1.388
	RELIGION	-1.090	1.009	-.071	-1.080	.282	.991	1.009
	EDUC	.834	.270	.209	3.087	.002	.947	1.056
	Employment Status	-.281	.298	-.066	-.943	.347	.888	1.127

a Dependent Variable: DAF3

DAF 4

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.450	.203	.176	5.9463

a Predictors: (Constant), Employment Status, Marital Status, RELIGION, EDUC, SEX, AGE, recoded children

b Dependent Variable: DAF4

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1859.201	7	265.600	7.512	.000
	Residual	7319.245	207	35.359		
	Total	9178.445	214			

a Predictors: (Constant), Employment Status, Marital Status, RELIGION, EDUC, SEX, AGE, recoded children

b Dependent Variable: DAF4

Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients		t	Sig.	Co linearity Statistics	
		B	Std. Error	Beta				Tolerance	VIF
1	(Constant)	17.188	2.967			5.792	.000		
	AGE	1.178E-02	.045	.019	.264	.792	.739	.938	1.353
	SEX	-4.009	.841	-.306	-4.767	.000	.938	.938	1.066
	Marital Status	1.197	.918	.085	1.304	.194	.896	.896	1.116
	recoded children	-4.324	1.038	-.305	-4.164	.000	.720	.720	1.388
	RELIGION	.175	.817	.013	.215	.830	.991	.991	1.009
	EDUC	6.548E-02	.219	.019	.300	.765	.947	.947	1.056
	Employment Status	-.184	.241	-.050	-.764	.446	.888	.888	1.127

a Dependent Variable: DAF4

B 19 Study One Pearson Product Moment Correlations of DAQ, MDAQ, SWL and MDA

		DAQ	MDAQ	SWL	MDA
DAQ	Pearson Correlation	1.000	.521**	.182*	.183*
	Sig. (2-tailed)	.	.000	.015	.015
	Sum of Squares and Cross-products	66554.156	33676.979	698.061	676.978
	Covariance	359.752	232.255	3.922	3.825
	N	186	146	179	178
MDAQ	Pearson Correlation	.521**	1.000	.058	.289**
	Sig. (2-tailed)	.000	.	.459	.000
	Sum of Squares and Cross-products	33676.979	93329.692	253.430	1220.098
	Covariance	232.255	545.788	1.545	7.485
	N	146	172	165	164
SWL	Pearson Correlation	.182*	.058	1.000	.513**
	Sig. (2-tailed)	.015	.459	.	.000
	Sum of Squares and Cross-products	698.061	253.430	309.125	153.013
	Covariance	3.922	1.545	1.386	.689
	N	179	165	224	223
MDA	Pearson Correlation	.183*	.289**	.513**	1.000
	Sig. (2-tailed)	.015	.000	.000	.
	Sum of Squares and Cross-products	676.978	1220.098	153.013	289.357
	Covariance	3.825	7.485	.689	1.298
	N	178	164	223	224

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

B 20 Study One Pearson Product Moment Correlations MDAQ Subscales *SWL* and *MDA*

		MDAF1	MDAF2	MDAF3	MDAF4	SWL	MDA
MDAF1	Pearson Correlation	1.000	.151*	.460**	.169*	.033	.179*
	Sig. (2-tailed)	.	.040	.000	.020	.651	.015
	Sum of Squares	14565.741	2132.243	7064.864	2168.235	61.812	318.843
	and Cross-products						
	Covariance	75.863	11.588	38.606	11.657	.334	1.733
MDAF2	N	193	185	184	187	186	185
	Pearson Correlation	.151*	1.000	.129	.478**	.015	.235**
	Sig. (2-tailed)	.040	.	.082	.000	.839	.001
	Sum of Squares	2132.243	14893.917	1977.516	6265.292	28.303	408.565
	and Cross-products						
MDAF3	Covariance	11.588	77.979	10.926	34.050	.154	2.233
	N	185	192	182	185	185	184
	Pearson Correlation	.460**	.129	1.000	.174*	.140	.218**
	Sig. (2-tailed)	.000	.082	.	.019	.059	.003
	Sum of Squares	7064.864	1977.516	17469.163	2400.495	294.809	421.824
MDAF4	and Cross-products						
	Covariance	38.606	10.926	92.429	13.262	1.620	2.331
	N	184	182	190	182	183	182
	Pearson Correlation	.169*	.478**	.174*	1.000	-.036	.157*
	Sig. (2-tailed)	.020	.000	.019	.	.625	.033
SWL	Sum of Squares	2168.235	6265.292	2400.495	12140.642	-62.737	252.211
	and Cross-products						
	Covariance	11.657	34.050	13.262	63.233	-.339	1.371
	N	187	185	182	193	186	185
	Pearson Correlation	.033	.015	.140	-.036	1.000	.513**
MDA	Sig. (2-tailed)	.651	.839	.059	.625	.	.000
	Sum of Squares	61.812	28.303	294.809	-62.737	309.125	153.013
	and Cross-products						
	Covariance	.334	.154	1.620	-.339	1.386	.689
	N	186	185	183	186	224	223
MDA	Pearson Correlation	.179*	.235**	.218**	.157*	.513**	1.000
	Sig. (2-tailed)	.015	.001	.003	.033	.000	.
	Sum of Squares	318.843	408.565	421.824	252.211	153.013	289.357
	and Cross-products						
	Covariance	1.733	2.233	2.331	1.371	.689	1.298
	N	185	184	182	185	223	224

* Correlation is significant at the 0.05 level (2-tailed).

** Correlation is significant at the 0.01 level (2-tailed).

B 21 Study One Pearson Product Moment Correlations of DAQ Subscales *SWL* and *MDA*

		DAF1	DAF2	DAF3	DAF4	SWL	MDA
DAF1	Pearson Correlation	1.000	.217**	.199**	-.025	-.056	.045
	Sig. (2-tailed)		.002	.005	.712	.419	.517
	Sum of Squares and Cross-products	10259.981	2757.897	2008.859	-239.906	-92.654	73.942
	Covariance	47.721	13.653	10.146	-1.137	-.448	.357
	N	216	203	199	212	208	208
DAF2	Pearson Correlation	.217**	1.000	.342**	.197**	.057	.039
	Sig. (2-tailed)	.002		.000	.004	.419	.581
	Sum of Squares and Cross-products	2757.897	18488.158	4794.459	2570.370	128.777	83.863
	Covariance	13.653	86.393	24.587	12.240	.628	.411
	N	203	215	196	211	206	205
DAF3	Pearson Correlation	.199**	.342**	1.000	.054	.289**	.158*
	Sig. (2-tailed)	.005	.000		.440	.000	.025
	Sum of Squares and Cross-products	2008.859	4794.459	12086.957	537.441	512.507	267.713
	Covariance	10.146	24.587	58.110	2.647	2.563	1.345
	N	199	196	209	204	201	200
DAF4	Pearson Correlation	-.025	.197**	.054	1.000	.095	.242**
	Sig. (2-tailed)	.712	.004	.440		.164	.000
	Sum of Squares and Cross-products	-239.906	2570.370	537.441	9650.235	148.657	383.444
	Covariance	-1.137	12.240	2.647	42.890	.691	1.783
	N	212	211	204	226	216	216
SWL	Pearson Correlation	-.056	.057	.289**	.095	1.000	.513**
	Sig. (2-tailed)	.419	.419	.000	.164		.000
	Sum of Squares and Cross-products	-92.654	128.777	512.507	148.657	309.125	153.013
	Covariance	-.448	.628	2.563	.691	1.386	.689
	N	208	206	201	216	224	223
MDA	Pearson Correlation	.045	.039	.158*	.242**	.513**	1.000
	Sig. (2-tailed)	.517	.581	.025	.000	.000	
	Sum of Squares and Cross-products	73.942	83.863	267.713	383.444	153.013	289.357
	Covariance	.357	.411	1.345	1.783	.689	1.298
	N	208	205	200	216	223	224

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

B 22 Study One Missing Data MDAQ

Meaningful Daily Activity Factors and Total Score Missing Data

	N	Mean	Std. Deviation	Missing Count	Percent
MDAF1	193	28.3472	8.7100	41	17.5
MDAF2	192	18.0208	8.8306	42	17.9
MDAF3	190	37.4579	9.6140	44	18.8
MDAF4	193	11.1503	7.9519	41	17.5
Total MDA	172	93.5872	23.3621	62	26.5

Meaningful Daily Activity Items 1-32 Missing Data

	N	Mean	Std. Deviation	Missing Count	Percent
MDA1	202	2.0792	2.0232	32	13.7
MDA2	201	1.6816	1.9308	33	14.1
MDA3	200	3.9650	1.5216	34	14.5
MDA4	202	2.5149	2.0006	32	13.7
MDA5	201	2.7463	1.9951	33	14.1
MDA6	202	3.3366	1.9939	32	13.7
MDA7	201	3.2637	1.8668	33	14.1
MDA8	198	4.5505	1.4722	36	15.4
MDA9	201	2.7612	2.0255	33	14.1
MDA10	202	1.2376	1.6491	32	13.7
MDA11	202	3.2475	1.9026	32	13.7
MDA12	201	4.3632	1.5370	33	14.1
MDA13	200	3.7600	1.7400	34	14.5
MDA14	202	1.7030	1.8637	32	13.7
MDA15	199	4.6030	1.4348	35	15.0
MDA16	198	4.1970	1.7413	36	15.4
MDA17	201	2.2637	2.1272	33	14.1
MDA18	199	2.3467	1.9189	35	15.0
MDA19	201	2.2736	2.0346	33	14.1
MDA20	201	3.4677	2.0977	33	14.1
MDA21	200	4.9350	1.5436	34	14.5
MDA22	202	2.5842	2.0889	32	13.7
MDA23	198	4.5202	1.7617	36	15.4
MDA24	197	4.3046	1.9056	37	15.8
MDA25	197	1.8680	1.9280	37	15.8
MDA26	199	4.3065	1.5346	35	15.0
MDA27	202	4.5000	1.7371	32	13.7
MDA28	201	2.6070	2.3216	33	14.1
MDA29	201	4.3433	1.7078	33	14.1
MDA30	201	2.8458	1.9928	33	14.1
MDA31	201	1.8905	2.0924	33	14.1
MDA32	201	4.8159	1.5527	33	14.1

B 23 Study One Missing Data DAQ
Daily Activity Factors and Total Score Missing Data

	N	Mean	Std. Deviation	Missing Count	Percent
DAF1	216	21.9907	6.9080	18	7.7
DAF2	215	24.7860	9.2948	19	8.1
DAF3	209	26.3038	7.6230	25	10.7
DAF4	226	11.1106	6.5490	8	3.4
Total DA	186	84.4570	18.9671	48	20.5

Daily Activity Items 1-32 Missing Data

	N	Mean	Std. Deviation	Missing Count	Percent
DA1	232	4.3319	1.7376	2	.9
DA2	232	1.9526	2.1647	2	.9
DA3	230	3.2391	1.3048	4	1.7
DA4	233	1.8069	1.6113	1	.4
DA5	230	4.3217	1.6615	4	1.7
DA6	232	3.2112	1.9481	2	.9
DA7	232	2.4310	1.5074	2	.9
DA8	232	3.6164	1.4871	2	.9
DA9	228	4.4254	1.7831	6	2.6
DA10	234	1.4017	1.7162	0	.0
DA11	230	4.4957	1.8211	4	1.7
DA12	233	3.5150	1.7022	1	.4
DA13	230	4.4826	1.7174	4	1.7
DA14	231	2.1991	1.8212	3	1.3
DA15	231	3.0390	1.5161	3	1.3
DA16	230	3.2739	1.8046	4	1.7
DA17	229	4.3362	1.9924	5	2.1
DA18	231	2.3333	1.8478	3	1.3
DA19	231	1.9307	1.2936	3	1.3
DA20	229	2.5371	1.8836	5	2.1
DA21	228	3.7982	1.9038	6	2.6
DA22	231	2.2121	2.0437	3	1.3
DA23	231	2.9957	2.0799	3	1.3
DA24	232	5.0172	1.8702	2	.9
DA25	228	1.3026	1.5903	6	2.6
DA26	232	4.8147	1.4310	2	.9
DA27	227	3.2621	1.7758	7	3.0
DA28	232	1.6681	1.9512	2	.9
DA29	230	2.2043	1.6657	4	1.7
DA30	232	1.6509	1.8431	2	.9
DA31	232	1.9397	2.1754	2	.9
DA32	233	3.8369	1.7017	1	.4

Study One Males and Females DAQ Scores Items 1- 32

Group Statistics

Gender			N	Mean	Std. Deviation	Std. Error Mean
da1	dimension1	male	106.00	3.94	1.76	0.17
		female	126.00	4.66	1.66	0.15
da2	dimension1	male	106.00	3.11	2.21	0.21
		female	126.00	0.98	1.57	0.14
da3	dimension1	male	106.00	3.07	1.42	0.14
		female	124.00	3.39	1.18	0.11
da4	dimension1	male	106.00	1.80	1.58	0.15
		female	127.00	1.81	1.64	0.15
da5	dimension1	male	105.00	3.61	1.63	0.16
		female	125.00	4.92	1.45	0.13
da6	dimension1	male	106.00	2.83	1.97	0.19
		female	126.00	3.53	1.88	0.17
da7	dimension1	male	106.00	2.16	1.46	0.14
		female	126.00	2.66	1.51	0.13
da8	dimension1	male	106.00	3.18	1.52	0.15
		female	126.00	3.98	1.36	0.12
da9	dimension1	male	104.00	3.62	1.80	0.18
		female	124.00	5.10	1.46	0.13
da10	dimension1	male	107.00	2.00	1.78	0.17
		female	127.00	0.90	1.50	0.13
da11	dimension1	male	106.00	4.22	1.88	0.18
		female	124.00	4.73	1.74	0.16
da12	dimension1	male	107.00	3.04	1.68	0.16
		female	126.00	3.92	1.62	0.14
da13	dimension1	male	105.00	3.69	1.69	0.16
		female	125.00	5.15	1.44	0.13
da14	dimension1	male	107.00	2.36	1.82	0.18
		female	124.00	2.06	1.82	0.16
da15	dimension1	male	107.00	2.87	1.49	0.14
		female	124.00	3.19	1.53	0.14
da16	dimension1	male	105.00	3.08	1.81	0.18
		female	125.00	3.44	1.79	0.16
da17	dimension1	male	103.00	3.06	2.03	0.20
		female	126.00	5.38	1.20	0.11
da18	dimension1	male	106.00	2.77	1.84	0.18
		female	125.00	1.96	1.78	0.16
da19	dimension1	male	105.00	1.70	1.20	0.12
		female	126.00	2.12	1.34	0.12
da20	dimension1	male	105.00	2.50	1.86	0.18
		female	124.00	2.56	1.91	0.17
da21	dimension1	male	105.00	3.28	1.92	0.19
		female	123.00	4.24	1.78	0.16
da22	dimension1	male	105.00	2.21	2.03	0.20
		female	126.00	2.21	2.07	0.18
da23	dimension1	male	106.00	2.60	1.99	0.19
		female	125.00	3.33	2.11	0.19
da24	dimension1	male	106.00	5.30	1.60	0.16
		female	126.00	4.78	2.05	0.18
da25	dimension1	male	106.00	1.19	1.51	0.15
		female	122.00	1.40	1.65	0.15
da26	dimension1	male	106.00	4.43	1.65	0.16
		female	126.00	5.13	1.13	0.10
da27	dimension1	male	104.00	3.18	1.81	0.18
		female	123.00	3.33	1.75	0.16
da28	dimension1	male	107.00	1.59	1.93	0.19
		female	125.00	1.74	1.98	0.18
da29	dimension1	male	106.00	1.74	1.47	0.14
		female	124.00	2.60	1.72	0.15
da30	dimension1	male	107.00	1.79	1.84	0.18
		female	125.00	1.53	1.84	0.16
da31	dimension1	male	106.00	1.66	2.05	0.20
		female	126.00	2.17	2.26	0.20
da32	dimension1	male	107.00	3.33	1.75	0.17
		female	126.00	4.27	1.54	0.14

Study One Males and Females MDAQ Scores Items 1- 32

Group Statistics

Gender			N	Mean	Std. Deviation	Std. Error Mean
mda1	dimension1	male	87.00	2.21	1.87	0.20
		female	115.00	1.98	2.14	0.20
mda2	dimension1	male	87.00	2.25	1.96	0.21
		female	114.00	1.25	1.80	0.17
mda3	dimension1	male	85.00	3.48	1.32	0.14
		female	115.00	4.32	1.56	0.15
mda4	dimension1	male	87.00	2.49	1.79	0.19
		female	115.00	2.53	2.15	0.20
mda5	dimension1	male	87.00	2.83	1.91	0.20
		female	114.00	2.68	2.06	0.19
mda6	dimension1	male	87.00	2.75	1.97	0.21
		female	115.00	3.78	1.90	0.18
mda7	dimension1	male	86.00	2.72	1.63	0.18
		female	115.00	3.67	1.94	0.18
mda8	dimension1	male	85.00	4.00	1.59	0.17
		female	113.00	4.96	1.23	0.12
mda9	dimension1	male	86.00	2.64	1.93	0.21
		female	115.00	2.85	2.10	0.20
mda10	dimension1	male	87.00	1.60	1.77	0.19
		female	115.00	0.97	1.50	0.14
mda11	dimension1	male	87.00	2.87	1.89	0.20
		female	115.00	3.53	1.87	0.17
mda12	dimension1	male	86.00	3.94	1.68	0.18
		female	115.00	4.68	1.34	0.13
mda13	dimension1	male	87.00	3.59	1.76	0.19
		female	113.00	3.89	1.72	0.16
mda14	dimension1	male	87.00	1.79	1.84	0.20
		female	115.00	1.63	1.88	0.18
mda15	dimension1	male	86.00	4.17	1.57	0.17
		female	113.00	4.93	1.23	0.12
mda16	dimension1	male	84.00	3.92	1.72	0.19
		female	114.00	4.40	1.73	0.16
mda17	dimension1	male	87.00	2.02	1.94	0.21
		female	114.00	2.45	2.25	0.21
mda18	dimension1	male	85.00	2.72	1.92	0.21
		female	114.00	2.07	1.88	0.18
mda19	dimension1	male	87.00	2.25	2.08	0.22
		female	114.00	2.29	2.01	0.19
mda20	dimension1	male	87.00	3.23	1.99	0.21
		female	114.00	3.65	2.17	0.20
mda21	dimension1	male	86.00	4.57	1.72	0.19
		female	114.00	5.21	1.34	0.13
mda22	dimension1	male	87.00	2.63	1.92	0.21
		female	115.00	2.55	2.22	0.21
mda23	dimension1	male	84.00	4.08	1.88	0.21
		female	114.00	4.84	1.60	0.15
mda24	dimension1	male	84.00	4.44	1.72	0.19
		female	113.00	4.20	2.03	0.19
mda25	dimension1	male	85.00	1.73	1.88	0.20
		female	112.00	1.97	1.97	0.19
mda26	dimension1	male	86.00	3.71	1.59	0.17
		female	113.00	4.76	1.32	0.12
mda27	dimension1	male	87.00	4.54	1.76	0.19
		female	115.00	4.47	1.73	0.16
mda28	dimension1	male	87.00	2.54	2.32	0.25
		female	114.00	2.66	2.33	0.22
mda29	dimension1	male	86.00	3.74	1.89	0.20
		female	115.00	4.79	1.41	0.13
mda30	dimension1	male	86.00	2.86	1.74	0.19
		female	115.00	2.83	2.17	0.20
mda31	dimension1	male	87.00	2.11	2.11	0.23
		female	114.00	1.72	2.07	0.19
mda32	dimension1	male	86.00	4.44	1.71	0.18
		female	115.00	5.10	1.37	0.13

Study One MDAQ-R and DAQ-R Scores Males and Females

Group Statistics

Gender			N	Mean	Std. Deviation	Std. Error Mean
DAQ-R 1 Domestic Chores	dimension1	male	96.00	17.91	6.68	0.68
		female	120.00	25.26	5.13	0.47
DAQ-R 2 Work, Health, Spirituality and Caring	dimension1	male	100.00	23.28	9.85	0.98
		female	115.00	26.10	8.62	0.80
DAQ-R 3 Interpersonal Contact, Leisure and Sensuality	dimension1	male	98.00	20.90	7.13	0.72
		female	112.00	24.22	6.04	0.57
DAQ-R 4 Home Maintenance	dimension1	male	105.00	13.15	7.41	0.72
		female	121.00	9.34	5.10	0.46
Sum DAQ-R	dimension1	male	84.00	78.61	20.57	2.24
		female	102.00	89.27	16.11	1.59
MDAQ-R 1 Support, Caring and Interpersonal Relationships	dimension1	male	81.00	26.14	10.37	1.15
		female	112.00	29.95	6.90	0.65
MDAQ-R 2 Structured Tasks	dimension1	male	83.00	19.58	9.12	1.00
		female	109.00	19.72	10.27	0.98
MDAQ-R 3 Sensory and Leisure Activities	dimension1	male	80.00	31.08	7.42	0.83
		female	110.00	36.51	9.31	0.89
MDAQ-R 4 Home and Health Maintenance	dimension1	male	84.00	14.52	9.25	1.01
		female	109.00	11.45	8.66	0.83
Sum MDAQ-R	dimension1	male	74.00	89.50	23.37	2.72
		female	98.00	96.67	22.99	2.32

B 24 Study One MDAQ-R and DAQ-R Subscales Tests of Normality

	Kolmogorov-Smirnov(a)			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
VAS SWL	.270	140	.000	.822	140	.000
VAS MDA	.262	140	.000	.879	140	.000
DAQ-R 1 Domestic Chores	.123	140	.000	.920	140	.000
DAQ-R 2 Work, Health, Spirituality and Caring	.072	140	.069	.979	140	.031
DAQ-R 3 Interpersonal Contact, Leisure and Sensuality	.075	140	.052	.983	140	.085
DAQ-R 4 Home Maintenance	.113	140	.000	.960	140	.000
MDAQ-R 1 Support, Caring and Interpersonal Relationships	.107	140	.001	.946	140	.000
MDAQ-R 2 Structured Tasks	.083	140	.019	.971	140	.004
MDAQ-R 3 Sensory and Leisure Activities	.063	140	.200(*)	.989	140	.357
MDAQ-R 4 Home and Health Maintenance	.130	140	.000	.938	140	.000
Sum MDAQ-R	.060	140	.200(*)	.982	140	.066
Sum DAQ-R	.045	140	.200(*)	.990	140	.408

* This is a lower bound of the true significance.

a Lilliefors Significance Correction

B 25 Study One Pearson Product Moment Correlation 18 Items: (a) MDAQ and (b) DAQ (c) DAQ and MDAQ Combined

(a) MDAQ items 1-18

	MD A 1	MDA 2	MDA 3	MDA 4	MDA 5	MDA 6	MDA 7	MDA 8	MDA 9	MDA 10	MDA 11	MDA 12	MDA 13	MDA 14	MDA 15	MDA 16	MDA 17	MDA 18
MDA 1 Wash the dishes	1.00	0.42**	-0.17*	-0.09	0.57**	0.12	-0.19**	-0.08	0.61**	0.28**	0.25	0.00	0.46**	0.40**	-0.08	-0.12	0.69	0.33
MDA 2 Mow the lawn		1.00	0.03	0.00	0.30**	0.34**	-0.15*	-0.05	0.32**	0.41**	0.13	0.00	0.20**	0.50**	0.07	-0.03	0.30	0.52
MDA 3 Go out to eat			1.00	0.39**	-0.01	0.26**	0.51**	0.48**	-0.03	0.05	0.24**	0.24**	0.06	0.10	0.31	0.25	-0.09	0.01
MDA 4 Play cards or other games				1.00	-0.07	0.04	0.29**	0.18*	-0.02	0.17*	0.14*	0.18*	0.01	0.03	0.06	0.16	-0.12	-0.01
MDA 5 Go grocery shopping					1.00	0.22**	-0.02	-0.04	0.57**	0.19**	0.22	0.01	0.52**	0.24**	-0.06	-0.05	0.55	0.22
MDA 6 Work in the garden						1.00	0.18**	0.22**	0.21**	0.18*	0.20**	0.17*	0.18**	0.25**	0.20	0.21	0.23	0.26
MDA 7 Go to a movie							1.00	0.42**	-0.08	-0.07	0.08	0.20**	0.00	-0.04	0.18	0.25	-0.11	-0.05
MDA 8 Visit friends								1.00	0.08	0.01	0.13	0.57**	0.12	0.00	0.45	0.42	0.00	-0.03
MDA 9 Help with house cleaning									1.00	0.26**	0.12	0.09	0.63**	0.39**	0.04	0.01	0.70	0.35
MDA 10 Work on the car										1.00	0.24**	0.08	0.15*	0.49**	0.03	-0.13	0.10	0.41**
MDA 11 Take a ride in the car											1.00	0.11	0.20**	0.32**	0.15*	0.12	0.24**	0.14
MDA 12 Visit relatives												1.00	0.19**	0.01	0.31**	0.32**	0.05	0.04
MDA 13 Prepare a meal													1.00	0.25**	0.06	0.10	0.55**	0.31
MDA 14 Wash the car														1.00	0.15*	-0.06	0.36**	0.33**
MDA 15 Take a trip															1.00	0.42**	-0.04	0.11
MDA 16 Go to a park or beach																1.00	-0.06	0.01
MDA 17 Do a load of laundry																	1.00	0.30**
MDA 18 Work on a needed house repair																		1.00
N	199	198	197	199	198	199	198	195	198	199	199	199	197	199	196	196	198	199

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

(b) DAQ items 1-18

	DA 1	DA 2	DA 3	DA 4	DA 5	DA 6	DA 7	DA 8	DA 9	DA 10	DA 11	DA 12	DA 13	DA 14	DA 15	DA 16	DA 17	DA 18
DA 1 Wash the dishes	1.00	0.08	-0.10	0.02	0.35**	0.14*	0.08	0.07	0.38**	0.05	0.10	0.15*	0.47**	0.16*	-0.01	0.03	0.43	0.07
DA 2 Mow the lawn		1.00	-0.05	0.06	-0.20**	0.28**	-0.09	-0.12	-0.18**	0.41**	0.06	-0.05	-0.24**	0.44**	-0.01	-0.04	-0.29	0.41
DA 3 Go out to eat			1.00	0.09	0.04	0.07	0.41**	0.27**	-0.01	-0.16*	-0.03	0.16*	-0.01	-0.03	0.33**	0.16	0.04	-0.14
DA 4 Play cards or other games				1.00	-0.04	0.05	0.17*	0.23**	-0.01	0.08	-0.07	0.15*	0.03	-0.01	0.02	0.03	0.06	0.05
DA 5 Go grocery shopping					1.00	0.25**	0.05	0.17*	0.44**	-0.15*	0.24**	0.22**	0.58**	0.02	0.08	0.15	0.49	-0.11
DA 6 Work in the garden						1.00	0.04	0.14*	0.25**	0.08	0.22**	0.31**	0.16**	0.35**	0.13*	0.10	0.15	0.27
DA 7 Go to a movie							1.00	0.44**	-0.02	-0.01	-0.07	0.30**	0.01	-0.05	0.20**	0.19	0.10	-0.09
DA 8 Visit friends								1.00	0.08	-0.06	0.07	0.37**	0.16**	-0.02	0.29**	0.22	0.21	-0.04
DA 9 Help with house cleaning									1.00	-0.18**	0.30**	0.21**	0.51**	0.10	0.00	0.17	0.65	0.09
DA 10 Work on the car										1.00	0.10	0.00	-0.17**	0.37**	-0.06	-0.07	-0.25	0.37
DA 11 Take a ride in the car											1.00	0.33**	0.19**	0.32**	0.21**	0.12	0.20	0.15
DA 12 Visit relatives												1.00	0.19**	0.21**	0.29**	0.26	0.23	0.04
DA 13 Prepare a meal													1.00	0.04	0.02	0.18	0.65	0.03
DA 14 Wash the car														1.00	0.12	-0.02	-0.03	0.36
DA 15 Take a trip															1.00	0.30**	0.01	-0.11
DA 16 Go to a park or beach																1.00	0.12	0.08
DA 17 Do a load of laundry																	1.00	-0.04
DA 18 Work on a needed house repair																		1.00
N	230	229	228	230	229	229	229	230	226	231	229	230	228	228	228	228	226	231

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

B 25 (c) Study One Pearson product Moment Correlation Matrix Combined DAQ and MDAQ Items 1- 18

	DA 1	DA 2	DA 3	DA 4	DA 5	DA 6	DA 7	DA 8	DA 9	DA 10	DA 11	DA 12	DA 13	DA 14	DA 15	DA 16	DA 17	DA 18	
DA 1 Wash the dishes	1.00	0.08	-0.10	0.02	0.35**	0.14*	0.08	0.07	0.38**	0.05	0.10	0.15*	0.47**	0.16*	-0.01	0.03	0.43**	0.07	
DA 2 Mow the lawn		1.00	-0.05	0.06	-0.20**	0.28**	-0.09	-0.12	-0.18**	0.41**	0.06	-0.05	-0.24**	0.44**	-0.01	-0.04	-0.29**	0.41**	
DA 3 Go out to eat			1.00	0.09	0.04	0.07	0.41**	0.27**	-0.01	-0.16*	-0.03	0.16*	-0.01	-0.03	0.33**	0.16*	0.04	-0.14*	
DA 4 Play cards or other games				1.00	-0.04	0.05	0.17*	0.23**	-0.01	0.08	-0.07	0.15*	0.03	-0.01	0.02	0.03	0.06	0.05	
DA 5 Go grocery shopping					1.00	0.25	0.05	0.17**	0.44**	-0.15*	0.24**	0.22**	0.58**	0.02	0.08	0.15*	0.49**	-0.11	
DA 6 Work in the garden						1.00	0.04	0.14*	0.25**	0.08	0.22**	0.31**	0.16*	0.35**	0.13*	0.10	0.15*	0.27**	
DA 7 Go to a movie							1.00	0.44**	-0.02	-0.01	-0.07	0.30**	0.01	-0.05	0.20**	0.19**	0.10	-0.09	
DA 8 Visit friends								1.00	0.08	-0.06	0.07	0.37**	0.16*	-0.02	0.29**	0.22**	0.21**	-0.04	
DA 9 Help with house cleaning									1.00	-0.18**	0.30**	0.21**	0.51**	0.10	0.00	0.17*	0.65**	0.09	
DA 10 Work on the car										1.00	0.10	0.00	-0.17*	0.37**	-0.06	-0.07	-0.25**	0.37**	
DA 11 Take a ride in the car											1.00	0.33**	0.19**	0.32**	0.21**	0.12	0.20**	0.15*	
DA 12 Visit relatives												1.00	0.19**	0.21**	0.29**	0.26**	0.23**	0.04	
DA 13 Prepare a meal													1.00	0.04	0.02	0.18**	0.65**	0.03	
DA 14 Wash the car														1.00	0.12	-0.02	-0.03	0.36**	
DA 15 Take a trip															1.00	0.30**	0.01	-0.11	
DA 16 Go to a park or beach																1.00	0.12	0.08	
DA 17 Do a load of laundry																	1.00	-0.04	
DA 18 Work on a needed house repair																		1.00	
MDA 1 Wash the dishes																			
MDA 2 Mow the lawn																			
MDA 3 Go out to eat																			
MDA 4 Play cards or other games																			
MDA 5 Go grocery shopping																			
MDA 6 Work in the garden																			
MDA 7 Go to a movie																			
MDA 8 Visit friends																			
MDA 9 Help with house cleaning																			
MDA 10 Work on the car																			
MDA 11 Take a ride in the car																			
MDA 12 Visit relatives																			
MDA 13 Prepare a meal																			
MDA 14 Wash the car																			
MDA 15 Take a trip																			
MDA 16 Go to a park or beach																			
MDA 17 Do a load of laundry																			
MDA18 Work on house repair																			
	N	198	199	196	198	195	199	197	197	195	199	195	198	196	196	197	197	195	196

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

B 25 (c) (continued) Study One Pearson product Moment Correlation Matrix Combined DAQ and MDAQ Items 1- 18

	MDA 1	MDA 2	MDA 3	MDA 4	MDA 5	MDA 6	MDA 7	MDA 8	MDA 9	MDA 10	MDA 11	MDA 12	MDA 13	MDA 14	MDA 15	MDA 16	MDA 17	MDA 18	
DA 1	0.20**	0.07	0.01	-0.09	0.04	0.09	0.02	0.09	0.19**	0.03	0.05	0.09	0.22**	0.14	0.07	0.03	0.12	-0.01	
DA 2	0.15*	0.56**	-0.12	-0.02	0.04	0.06	-0.17*	-0.17*	0.07	0.39**	0.01	-0.09	0.02	0.29**	-0.09	-0.12	-0.03	0.30**	
DA 3	-0.25**	-0.04	0.25**	0.02	-0.11	-0.03	0.21**	0.07	-0.18*	-0.09	-0.05	0.10	-0.18*	-0.11	0.19**	0.01	-0.14*	-0.06	
DA 4	0.01	0.03	0.06	0.52**	-0.10	-0.11	0.04	-0.03	-0.10	0.15*	0.17*	0.05	-0.03	0.00	-0.03	-0.09	-0.06	-0.07	
DA 5	-0.05	-0.12	0.03	-0.06	0.13	0.09	0.10	0.22**	-0.01	-0.14	0.01	0.18*	0.02	-0.14*	0.09	0.11	0.01	-0.18*	
DA 6	0.04	0.22**	0.11	0.07	-0.02	0.61**	0.08	0.17*	0.06	0.16*	0.14	0.18**	-0.04	0.15*	0.16*	0.17*	-0.01	0.15**	
DA 7	-0.17*	-0.17*	0.19**	0.12	-0.09	-0.04	0.56**	0.22**	-0.16*	-0.09	0.08	0.11	-0.21**	-0.12	0.04	0.09	-0.14*	-0.09	
DA 8	-0.07	-0.10	0.37**	0.16*	-0.07	0.06	0.29**	0.50**	-0.05	-0.10	0.18*	0.25**	0.02	-0.04	0.23**	0.17*	-0.01	-0.10	
DA 9	0.10	-0.03	0.13	-0.03	0.05	0.15*	0.10	0.28**	0.33**	-0.14	0.06	0.27**	0.24**	0.00	0.16*	0.22**	0.20**	0.00	
DA 10	0.13	0.29**	-0.07	0.01	-0.02	0.02	-0.13	-0.07	0.01	0.61**	0.11	0.02	-0.10	0.39**	-0.07	-0.13	-0.08	0.28**	
DA 11	0.08	0.04	0.06	0.05	0.10	0.11	0.05	0.21**	0.12	0.08	0.26**	0.29**	0.15*	0.11	0.11	0.09	0.08	0.04	
DA 12	0.05	-0.01	0.28**	0.28**	-0.02	0.14	0.35**	0.35**	0.09	0.09	0.23**	0.47**	0.09	0.11	0.03	0.09	0.04	-0.02	
DA 13	0.05	-0.03	0.09	0.05	0.08	0.19**	0.05	0.19**	0.22**	-0.13	0.01	0.13	0.21**	0.02	0.07	0.09	0.20**	-0.05	
DA 14	0.14*	0.38**	0.04	-0.06	0.01	0.14	-0.04	0.06	0.15*	0.32**	0.23**	0.15*	0.07	0.45**	0.17*	-0.05	0.00	0.27**	
DA 15	-0.04	0.06	0.20**	0.07	0.00	0.03	0.14	0.13	-0.03	0.02	0.11	0.14	0.03	0.09	0.35**	0.20**	-0.02	0.04	
DA 16	-0.08	0.00	0.13	0.13	-0.10	0.07	0.18*	0.24**	0.02	-0.06	0.10	0.28**	0.09	-0.08	0.08	0.58**	0.06	0.03	
DA 17	0.15*	-0.02	0.19**	0.06	0.10	0.22**	0.09	0.38**	0.29**	-0.17*	0.06	0.27**	0.26**	0.06	0.17*	0.18*	0.29**	-0.10	
DA 18	0.12	0.38**	-0.08	0.12	0.10	0.21**	-0.15*	-0.02	0.25**	0.44**	0.10	0.04	0.19**	0.21**	-0.05	0.04	0.09	0.53**	
MDA 1	1.00	0.42**	-0.17*	-0.09	0.57**	0.12	-0.19**	-0.08	0.61**	0.28**	0.25**	0.00	0.46**	0.40**	-0.08	-0.12	0.69**	0.33**	
MDA 2		1.00	0.03	0.00	0.30**	0.34**	-0.15*	-0.05	0.32**	0.41**	0.13	0.00	0.20**	0.50**	0.07	-0.03	0.30**	0.52**	
MDA 3			1.00	0.39**	-0.01	0.26**	0.51**	0.48**	-0.03	0.05	0.24**	0.24**	0.06	0.10	0.31**	0.25**	-0.09	0.01	
MDA 4				1.00	-0.07	0.04	0.29**	0.18*	-0.02	0.17*	0.14*	0.18*	0.01	0.03	0.06	0.16*	-0.12	-0.01	
MDA 5					1.00	0.22**	-0.02	-0.04	0.57**	0.19**	0.22**	0.01	0.52**	0.24**	-0.06	-0.05	0.55**	0.22**	
MDA 6						1.00	0.18**	0.22**	0.21**	0.18*	0.20**	0.17*	0.18**	0.25**	0.20**	0.21**	0.23**	0.26**	
MDA 7							1.00	0.42**	-0.08	-0.07	0.08	0.20**	0.00	-0.04	0.18**	0.25**	-0.11	-0.05	
MDA 8								1.00	0.08	0.01	0.13	0.57**	0.12	0.00	0.45**	0.42**	0.00	-0.03	
MDA 9									1.00	0.26**	0.12	0.09	0.63**	0.39**	0.04	0.01	0.70**	0.35**	
MDA 10										1.00	0.24**	0.08	0.15*	0.49**	0.03	-0.13	0.10	0.41**	
MDA 11											1.00	0.11	0.20**	0.32**	0.15*	0.12	0.24**	0.14	
MDA 12												1.00	0.19**	0.01	0.31**	0.32**	0.05	0.04	
MDA 13													1.00	0.25**	0.06	0.10	0.55**	0.31**	
MDA 14														1.00	0.15*	-0.06	0.36**	0.33**	
MDA 15															1.00	0.42**	-0.04	0.11	
MDA 16																1.00	-0.06	0.01	
MDA 17																	1.00	0.30**	
MDA 18																		1.00	
	199	198	197	199	198	199	198	195	198	199	199	199	199	197	199	196	196	198	199

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

B 26 Study One Factor Analysis DAQ and MDAQ Items 1-18.
MDAQ Items 1-18 Rotated Component Matrix (a)

	Component				
	1	2	3	4	5
MDA 17 Do a load of laundry	.844	.105	-.006	-.126	.146
MDA 9 Help with house cleaning	.824	.251	.071	-.043	-.066
MDA 1 Wash the dishes	.772	.266	-.107	-.132	.087
MDA 5 Go grocery shopping	.766	.137	-.110	.058	.172
MDA 13 Prepare a meal	.765	.120	.146	.066	-.019
MDA 10 Work on the car	.043	.785	-.074	.206	-.033
MDA 2 Mow the lawn	.255	.772	-.022	-.096	.086
MDA 18 Work on a needed house repair	.236	.699	.041	-.038	.001
MDA 14 Wash the car	.296	.657	.052	-.098	.307
MDA 8 Visit friends	.065	-.037	.778	.333	-.022
MDA 15 Take a trip	-.098	.124	.771	-.084	.237
MDA 16 Go to a park or beach	-.026	-.110	.696	.099	.161
MDA 12 Visit relatives	.084	.066	.679	.256	-.294
MDA 4 Play cards or other games	-.121	.125	.023	.771	-.086
MDA 7 Go to a movie	.031	-.175	.265	.699	.153
MDA 3 Go out to eat	-.053	.066	.380	.645	.322
MDA 11 Take a ride in the car	.145	.103	.068	.115	.800
MDA 6 Work in the garden	.158	.349	.261	.150	.368

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a Rotation converged in 6 iterations.

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1.00	4.55	25.28	25.28	4.55	25.28	25.28	3.46	19.20	19.20
2.00	3.24	18.02	43.30	3.24	18.02	43.30	2.53	14.04	33.24
3.00	1.61	8.93	52.22	1.61	8.93	52.22	2.49	13.85	47.09
4.00	1.15	6.38	58.61	1.15	6.38	58.61	1.83	10.19	57.29
5.00	1.01	5.59	64.20	1.01	5.59	64.20	1.24	6.91	64.20
6.00	.88	4.90	69.09						
7.00	.80	4.47	73.57						
8.00	.69	3.85	77.41						
9.00	.60	3.36	80.77						
10.00	.57	3.16	83.93						
11.00	.51	2.83	86.76						
12.00	.48	2.69	89.45						
13.00	.46	2.57	92.02						
14.00	.41	2.26	94.28						
15.00	.31	1.72	96.00						
16.00	.26	1.42	97.43						
17.00	.25	1.38	98.80						
18.00	.22	1.20	100.00						

Extraction Method: Principal Component Analysis.

DAQ Items 1-18 Rotated Component Matrix(a)

	Component			
	1	2	3	4
DA 13 Prepare a meal	.840	-.069	.088	.064
DA 17 Do a load of laundry	.834	-.202	.102	.047
DA 9 Help with house cleaning	.798	-.026	.023	.147
DA 5 Go grocery shopping	.726	-.060	.071	.147
DA 1 Wash the dishes	.664	.231	.022	-.078
DA 2 Mow the lawn	-.237	.769	-.030	-.076
DA 10 Work on the car	-.158	.740	-.088	-.053
DA 18 Work on a needed house repair	.053	.685	-.028	.001
DA 14 Wash the car	.056	.685	-.061	.348
DA 6 Work in the garden	.294	.498	.189	.201
DA 7 Go to a movie	.026	-.014	.737	-.131
DA 8 Visit friends	.160	-.024	.725	.065
DA 3 Go out to eat	-.104	-.191	.621	.121
DA 4 Play cards or other games	.043	.134	.501	-.344
DA 12 Visit relatives	.288	.159	.483	.479
DA 16 Go to a park or beach	.133	.017	.462	.163
DA 11 Take a ride in the car	.250	.216	-.039	.745
DA 15 Take a trip	-.090	-.111	.505	.546

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

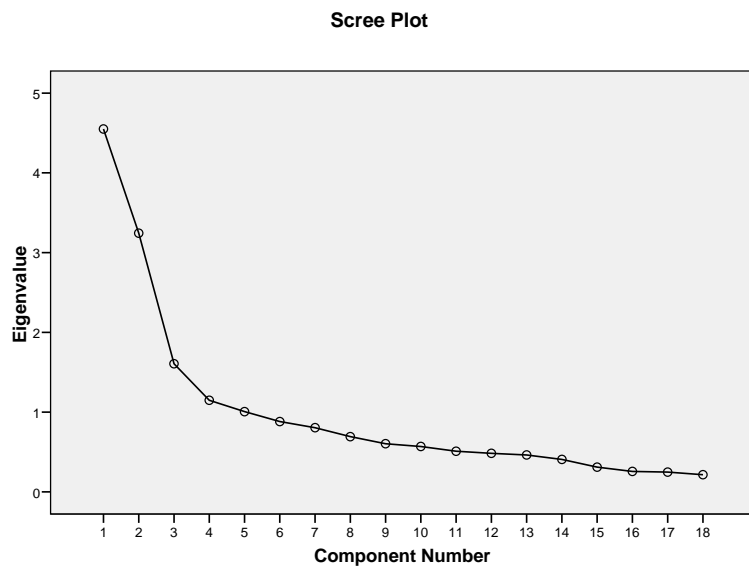
a Rotation converged in 5 iterations.

Total Variance Explained

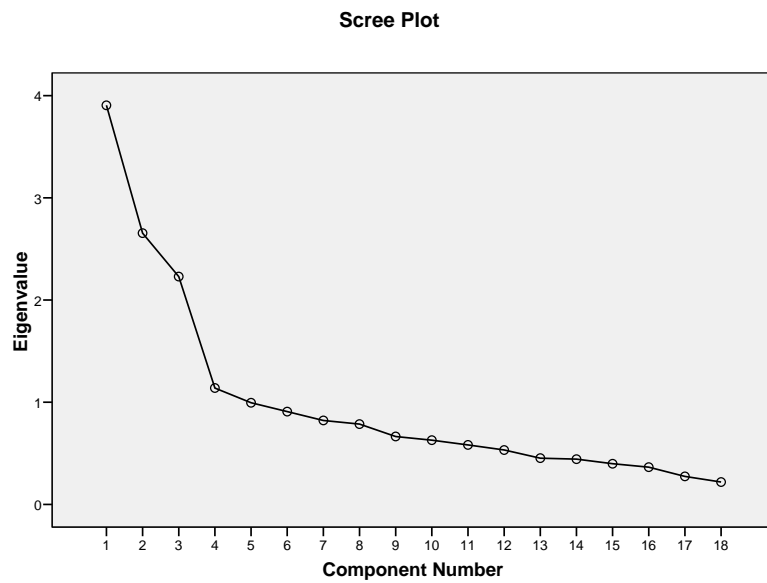
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1.00	3.91	21.70	21.70	3.91	21.70	21.70	3.39	18.84	18.84
2.00	2.65	14.75	36.44	2.65	14.75	36.44	2.57	14.26	33.10
3.00	2.23	12.38	48.83	2.23	12.38	48.83	2.48	13.78	46.89
4.00	1.14	6.33	55.15	1.14	6.33	55.15	1.49	8.27	55.15
5.00	.99	5.53	60.68						
6.00	.91	5.05	65.73						
7.00	.82	4.57	70.29						
8.00	.79	4.37	74.66						
9.00	.66	3.69	78.35						
10.00	.63	3.49	81.85						
11.00	.58	3.23	85.08						
12.00	.53	2.96	88.04						
13.00	.45	2.52	90.56						
14.00	.44	2.46	93.02						
15.00	.40	2.21	95.23						
16.00	.36	2.03	97.26						
17.00	.27	1.53	98.78						
18.00	.22	1.22	100.00						

Extraction Method: Principal Component Analysis.

B 27 Study One Scree Plot DAQ and MDAQ Items 1-18
MDAQ Items Factor Analysis Items 1-18



DAQ Items Factor Analysis Items 1-18

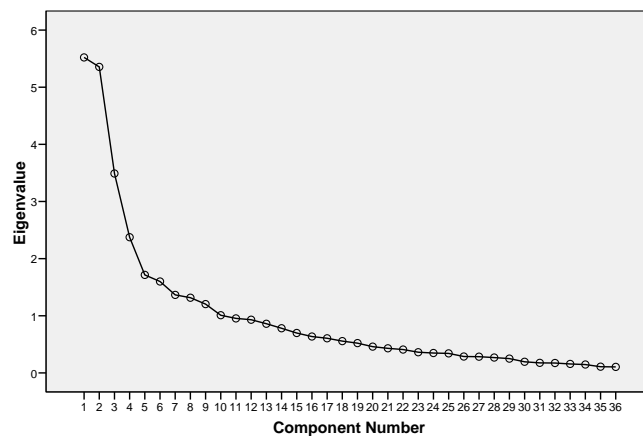


B 28 Study One Factor Analysis Combined DAQ and MDAQ Items 1-18.

Rotated Component Matrix ^a										
	Component									
	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	9.00	10.00
MDA17 Do a load of laundry	.85	-.06	.11	-.08	.01	.04	-.05	.02	-.03	.09
MDA9 Help with house cleaning	.83	.13	.18	.05	-.09	.00	-.09	.04	-.09	-.10
MDA1 Wash the dishes	.79	.16	.06	-.13	-.04	-.05	.02	-.07	-.10	.15
MDA5 Go grocery shopping	.79	.02	.03	-.02	.04	.09	-.02	-.14	.03	.09
MDA13 Prepare a meal	.77	.03	.12	.12	-.09	-.06	-.04	.15	.02	-.04
DA 10 Work on the car	-.06	.80	-.13	-.04	.09	-.06	-.01	-.04	-.21	.13
DA 2 Mow the lawn	.03	.75	-.16	-.22	-.10	.03	.03	.12	.04	-.03
DA 14 Wash the car	-.05	.72	.20	.13	-.07	-.05	-.15	-.16	.12	.17
MDA10 Work on the car	.19	.67	-.18	.14	.04	.09	.17	-.16	-.09	-.01
DA 18 Work on a needed house repair	.15	.67	.08	-.12	.01	.23	.06	.29	-.19	-.18
MDA2 Mow the lawn	.44	.58	-.11	-.08	-.19	.28	.11	-.02	.15	-.04
MDA14 Wash the car	.44	.50	-.03	.16	-.20	.12	-.09	-.18	.13	.26
MDA18 Work on a needed house repair	.46	.48	-.18	.01	.07	.26	-.05	.08	.07	-.23
DA 13 Prepare a meal	.16	-.11	.79	.04	-.01	.13	.13	.03	.04	-.03
DA 9 Help with house cleaning	.13	-.17	.75	.22	-.03	.05	-.06	.14	-.08	-.08
DA 17 Do a load of laundry	.24	-.27	.75	.21	-.01	.10	-.01	.05	.03	-.07
DA 5 Go grocery shopping	-.09	-.09	.73	.03	.10	.13	.00	-.09	.06	.07
DA 1 Wash the dishes	.13	.13	.59	-.07	.07	-.02	-.18	.12	-.03	-.01
DA 11 Take a ride in the car	-.01	.25	.43	.26	-.09	-.25	.00	-.03	.19	.28
DA 12 Visit relatives	-.02	.25	.40	.35	.38	-.19	.26	-.02	-.01	.19
MDA8 Visit friends	-.02	-.03	.21	.79	.16	.02	-.06	.25	-.05	.08
MDA12 Visit relatives	.02	.15	.28	.70	.19	-.17	.10	.11	.01	-.04
MDA3 Go out ot eat	-.02	-.14	-.02	.66	.11	.35	.21	.01	.16	.03
MDA15 Take a trip	-.02	-.03	.00	.58	-.19	.20	-.16	.15	.45	.14
MDA7 Go to a movie	.00	-.13	.02	.55	.54	.18	.10	-.02	.02	.00
DA 7 Go to a movie	-.09	-.01	.01	.09	.86	-.03	.00	.07	.15	.06
DA 8 Visit friends	-.08	-.08	.20	.27	.47	.05	.09	.26	.16	.22
MDA6 Work in the garden	.16	.16	.19	.20	.00	.80	-.04	.04	-.02	.11
DA 6 Work in the garden	-.15	.35	.43	.04	.04	.63	.07	.07	.02	.12
MDA4 Play cards or other games	-.08	.01	-.07	.34	.00	.11	.82	.12	-.03	-.09
DA 4 Play cards or other games	-.09	.06	.00	-.14	.08	-.07	.82	.08	.09	.16
DA 16 Go to a park or beach	.00	.02	.13	.10	.24	-.06	.22	.79	.10	-.03
MDA16 Go to a park or beach	-.02	-.09	.05	.41	-.10	.20	-.01	.74	.11	.10
DA 15 Take a trip	.00	.00	.10	.06	.12	-.06	.11	.16	.82	.12
DA 3 Go out ot eat	-.16	-.15	-.10	.09	.42	.05	-.03	-.04	.64	-.24
MDA11 Take a ride in the car	.20	.07	-.07	.10	.17	.17	.09	.05	.01	.82

Extraction Method: Principal Component Analysis.
 Rotation Method: Varimax with Kaiser Normalization.
 a. Rotation converged in 12 iterations.

Scree Plot



**B 29 Study One Factor Analysis Combined DAQ and MDAQ Items 1-18 Four
Factors Selected for Extraction**

Rotated Component Matrix^a

	Component			
	1.00	2.00	3.00	4.00
MDA3 Go out ot eat	.70	.04	-.05	.03
MDA8 Visit friends	.67	.03	-.04	.31
MDA7 Go to a movie	.67	.00	-.10	.05
DA 8 Visit friends	.59	-.09	-.07	.20
MDA12 Visit relatives	.58	.01	.10	.33
MDA16 Go to a park or beach	.57	.06	-.05	.13
MDA15 Take a trip	.54	.09	-.01	.07
MDA4 Play cards or other games	.50	-.12	.12	-.10
DA 7 Go to a movie	.50	-.16	-.05	-.04
DA 16 Go to a park or beach	.49	-.02	.01	.13
DA 15 Take a trip	.45	.00	-.04	.01
DA 12 Visit relatives	.44	-.08	.23	.38
DA 3 Go out ot eat	.41	-.17	-.21	-.17
MDA11 Take a ride in the car	.34	.23	.20	-.04
DA 4 Play cards or other games	.23	-.18	.15	-.11
MDA17 Do a load of laundry	-.06	.84	-.04	.10
MDA9 Help with house cleaning	-.09	.82	.11	.20
MDA5 Go grocery shopping	-.02	.78	.05	.02
MDA13 Prepare a meal	.06	.77	.01	.13
MDA1 Wash the dishes	-.17	.77	.18	.04
DA 10 Work on the car	-.10	-.10	.78	-.09
DA 2 Mow the lawn	-.17	.00	.74	-.16
MDA10 Work on the car	.07	.16	.70	-.16
DA 18 Work on a needed house repair	-.06	.13	.68	.12
DA 14 Wash the car	-.01	-.05	.67	.22
MDA2 Mow the lawn	-.05	.45	.63	-.11
MDA14 Wash the car	.02	.48	.53	.00
MDA18 Work on a needed house repair	.05	.46	.48	-.16
MDA6 Work in the garden	.28	.25	.31	.28
DA 9 Help with house cleaning	.13	.15	-.19	.78
DA 13 Prepare a meal	.08	.16	-.10	.76
DA 17 Do a load of laundry	.16	.26	-.27	.75
DA 5 Go grocery shopping	.07	-.09	-.09	.72
DA 1 Wash the dishes	-.07	.12	.08	.60
DA 6 Work in the garden	.19	-.10	.46	.48
DA 11 Take a ride in the car	.18	-.01	.21	.43

Extraction Method: Principal Component Analysis.
Rotation Method: Varimaxwith Kaiser Normalization.
a. Rotation converged in 7 iterations.

APPENDIX C

C 1 Study Two Letter to Recruit Chronic Pain Participants

Meaningful Daily Activities and Symptoms in Chronic Pain Patients

Dear

Participants are being recruited for a research study exploring chronic pain symptomatology, being conducted by a PhD Research Student, in the Department of Psychology at Victoria University, St Albans Campus. This research will investigate the relationship between meaningful daily activity and symptomatology in chronic pain patients.

Participants are being recruited from both specialist and general medical practices and community agencies in Victoria. The criteria for inclusion in this study are that the participant has a chronic pain condition of at least six months duration, aged between twenty- five and sixty-five years. Participants will be asked to complete a meaningful daily activity questionnaire specifically developed for this study, as well as additional measures of current level of pain, illness beliefs, functional disability and mood.

If you should have any queries and require any further details of the research study methodology or the research aims, please contact Jane Mulcahy by telephone on either 9525 76767 or 0414 834040, Fax 9525 2977 or Email jane.mulcahy@vu.edu.au.

I look forward to any comments or suggestions you would care to make regarding the conduct of this research and look forward to personally contacting you in the near future.

Jane C Mulcahy
MAPS

Dr Denise Charman
MAPS

C 2 Study Two Agency Agreement to Participate in Chronic Pain Study

Dear

Could you please sign the attached letter and return it to Jane Mulcahy, at the Department of Psychology, St. Albans Campus (S089), Victoria University, PO Box 14428, Melbourne City Mail Centre, Victoria 8001, if your agency or practice agrees in principle for this study to be conducted at your agency or practice.

Agreement in Principle to Participate in Research Study

Agency:

.....
.....

Address:

.....
.....
.....

Telephone:

Fax:

Email:

I am stating that this agency agrees in principle to being involved in the project being undertaken at Victoria University, investigating the effect of meaningful daily activity on symptomatology in chronic pain patients, for the purpose of your research.

Position at the Agency or Practice:

.....
Name:

Signed: }

Date:

Witness other than the researcher : }

Name:

Signed: }

Date:

Victoria University

C 3 Study Two Consent Form for Participating Agencies Involved in Research

INFORMATION TO PARTICIPATING AGENCIES:

We would like to invite your agency/practice to participate in a study designed to explore *how the daily activities a chronic pain sufferer performs, affects their perceived severity of pain, and other pain related symptomatology*. As a participating agency/practice you will assist the researchers to locate participants to be included in this study. Data collected in the research will be used to explore the way in which daily activities and chronic pain symptoms may affect the life of a chronic pain sufferer. A group of 100 male and female participants aged between 25 and 65 years, who suffer from a chronic pain condition, are being recruited from pain clinics, health practices and community agencies that currently treat chronic pain patients to take part in this study. Participants not suitable for inclusion in this research are individuals who have an additional significant illness such as diabetes, a malignancy, multiple physical disabilities other than the cause of the current pain condition, have a previous history of psychiatric illness, or are unable to read and write English.

CERTIFICATION BY AGENCY

Agency:.....

Address:.....

Postcode:

Telephone: Fax:

Email:

The extent of this agency / practice's involvement will be limited to providing access to patients or clients who are considered to be suitable for inclusion in the research study as outlined above.

I am voluntarily giving my consent for this agency / practice to participate in the study entitled: The effect of meaningful daily activity on symptomatology in chronic pain patients, being conducted at Victoria University of Technology by: Dr Denise Charman and Jane Mulcahy. I certify that the objectives of the research, together with any risks associated with the procedures listed hereunder to be carried out in the research, have been fully explained to me by Jane Mulcahy and that I freely consent to participation involving the use of patients / clients attending this agency/practice undertaking the following procedures.

Procedures: Participants selected for the study will be asked to complete a participant's consent form, (1) a participant information sheet, (2) a meaningful daily activity questionnaire and (3) other written measures of pain perception, functioning, and distress (mood). The completed participant information sheet and other measures will not be identifiable, as no names of participants, agencies or practices will be included on any of the measures used in the study. Participants will not be required to perform any physical tasks or to undergo any form of physical examination throughout this research study. It is anticipated that the time required to complete the questionnaires will be approximately thirty minutes. No further involvement will be required of participants, apart from completing the written measures listed above.

I certify that I have had the opportunity to have any questions answered and that I understand that participants can withdraw from this study at any time.

I have been informed that the information participants and agencies provide will be kept confidential.

Position at the Agency or Practice:.....

Name:

Signed: } Date:

Witness other than the researcher : }

Name:

Signed: } Date:

Any queries about your participation in this project may be directed to the researchers (Jane Mulcahy and Dr Denise Charman ph. (03) 9365 2536). If you have any queries or complaints about the way you have been treated, you may contact the Secretary, University Human Research Ethics Committee, Victoria University, PO Box 14428 MCMC, Melbourne, 8001 (telephone no: 03-9688 4710).

C 4 Study Two Flyer to Recruit Chronic Pain Participants

Victoria University of Technology

PO Box 14428
Melbourne City
MC 8001 Australia

Telephone:
(03) 9688 4000
Facsimile:
(03) 9689 4069

**VICTORIA
UNIVERSITY**

OF TECHNOLOGY

VOLUNTEERS ARE BEING RECRUITED

TO PARTICIPATE IN A RESEARCH STUDY EXAMINING
HOW DAILY ACTIVITY EFFECTS PAIN SYMPTOMS

WHO DO WE NEED FOR THE STUDY?

- MEN AND WOMEN
- AGED BETWEEN 25 AND 65 YEARS
- WHO HAVE PAIN THAT HAS LASTED FOR MORE THAN 6 MONTHS

As a volunteer in this study you will be required to complete a survey that will take approximately 30 minutes.

If you are willing to participate in the study please leave your name and contact details with reception or call/email **Jane Mulcahy on 9525 7676** or **jane.mulcahy@vu.edu.au** to arrange a convenient time for you to complete the survey.

You may alternatively be provided with a return prepaid envelope if you would prefer to complete the survey at home.

All of the information you provide is confidential and will not be communicated to your treating practitioners. Access to the questionnaires will not be available to anyone apart from the researcher.

Jane Mulcahy
B.A. MAPS

C 5 Study Two Information to Chronic Pain Participants

VICTORIA UNIVERSITY

INFORMATION TO PARTICIPANTS:

The aim of this research study is to explore how daily activities are related to severity of pain, use of medication and mood. To explore the possible effects of daily activity on pain symptoms, a measure of daily activity has been developed for this study.

Men and women who are aged between 25 & 65 yrs who suffer from a chronic pain condition (pain lasting for six months or more) are being recruited.

You are invited to complete a survey and a general information sheet. You will not be required to perform any physical tasks or to undergo any form of physical examination in this study. Your involvement in this research study is voluntary and you may stop at any time. Participation in your current pain management programs will not be affected by your participation in this research.

All answers are confidential and will not be communicated to your treating practitioners or rehabilitation consultants. Access to the information provided by you in your questionnaires will not be available to anyone apart from the researcher.

Any queries about your participation in this project may be directed to the researchers (Jane Mulcahy or Dr Denise Charman ph. (03) 9365 2536). If you have any queries or complaints about the way you have been treated, you may contact the Secretary, University Human Research Ethics Committee, Victoria University, PO Box 14428 MCMC, Melbourne, 8001 (telephone no: 03-9688 4710).

C 6 Study Two Consent Form for Chronic Pain Participants Involved in Research

INFORMATION TO PARTICIPANTS:

The aim of this research study is to explore how the daily activities a person performs effects the severity of pain, use of medication, functioning and mood. To explore the possible effects of daily activity on pain symptoms, a measure of daily activity has been developed for this study. This measure will be used to establish the way that daily activity effects pain and pain symptoms. As a participant in this research study, you will be invited to complete a series of questionnaires and a general information sheet. Your participation in this study will assist the researchers in obtaining information about the way in which daily activities and chronic pain symptoms may affect the quality of life of chronic pain sufferers. You will not be required to perform any physical tasks or to undergo any form of physical examination in this study. Your involvement in this research study is voluntary and you may withdraw at any time if you feel you are in any way distressed by completing the questionnaires.

We would like to invite you to take part in a study designed to explore how the daily activities a chronic pain sufferer performs, effects their perceived severity of pain, and other pain related symptoms As a participant in this research study you will assist the researchers to obtain information about the way in which daily activities and chronic pain symptoms may affect the life of chronic pain sufferers.

Participation in your current pain management treatments will continue, regardless of your participation in this research. The responses you make to the questionnaires are not identifiable and will not be communicated to your treating practitioners or rehabilitation consultants.

CERTIFICATION BY SUBJECT

I.....
of

.....
certify that I am at least 17 years old* and that I am voluntarily giving my consent to participate in the experiment entitled: The effect of meaningful daily activity on symptomatology in chronic pain patients, being conducted at Victoria University of Technology by: Dr Denise Charman.

I certify that the objectives of the research, together with any risks to me associated with the procedures listed hereunder to be carried out in the research, have been fully explained to me by Jane Mulcahy and that I freely consent to participation involving the use on me of these procedures.

Procedures: To complete the following questionnaires: a participant information sheet, a measure of daily activity and other written measures of pain severity, coping strategies, functioning, and distress (mood). The completed information sheet and other measures will not be identifiable, as your name will not be included on any of the measures used in the study. You will not be required to perform any physical tasks or to undergo any form of physical examination throughout this research study. It is anticipated that the time required to complete the written measures will be approximately one hour. You will not be required to perform any further tasks or interviews apart from the written measures.

I certify that I have had the opportunity to have any questions answered and that I understand that I can withdraw from this research at any time and that this withdrawal will not jeopardize me in any way.

I have been informed that the information I provide will be kept confidential.

Signed: }

Witness other than the researcher : }

Date:

.....}

Any queries about your participation in this project may be directed to the researchers (Jane Mulcahy or Dr Denise Charman ph. (03) 9365 2536). If you have any queries or complaints about the way you have been treated, you may contact the Secretary, University Human Research Ethics Committee, Victoria University of Technology, PO Box 14428 MCMC, Melbourne, 8001 (telephone no: 03-9688 4710).

Victoria University

C 7 Study Two. Participant Demographic Survey

Please  (tick) the answer of your choice in the corresponding box

1. Sex: Male ☐ Female ☐

2. Age: in years:

3. Do you observe any religion? Yes ☐ No ☐

4. Highest Level of education completed:

Primary School	<input type="checkbox"/>	Apprenticeship	<input type="checkbox"/>
Year 9	<input type="checkbox"/>	TAFE Course	<input type="checkbox"/>
Year 10	<input type="checkbox"/>	Trade Certificate	<input type="checkbox"/>
Year 11	<input type="checkbox"/>	University Degree	<input type="checkbox"/>
Year 12	<input type="checkbox"/>	Post Graduate Qualifications	<input type="checkbox"/>

5. Employment Status:

Full Time	<input type="checkbox"/>	Unemployment Benefits	<input type="checkbox"/>
Part Time	<input type="checkbox"/>	Work cover	<input type="checkbox"/>
Casual	<input type="checkbox"/>	Disability Pension	<input type="checkbox"/>
Unemployed	<input type="checkbox"/>	Other Social Security Payment	<input type="checkbox"/>

6. Marital Status:

Married	<input type="checkbox"/>	De facto	<input type="checkbox"/>	Separated	<input type="checkbox"/>
Divorced	<input type="checkbox"/>	Widowed	<input type="checkbox"/>	Single	<input type="checkbox"/>

7. Do you have children? Yes ☐ No ☐

8. Are you caring for someone at home? Yes ☐ No ☐

If so whom?

9. Have you previously had:

A Malignancy	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Multiple Physical Disabilities	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Diabetes	Yes <input type="checkbox"/>	No <input type="checkbox"/>
A Psychiatric Illness	Yes <input type="checkbox"/>	No <input type="checkbox"/>

10. Do you have any health problems apart from your pain? Yes ☐ No ☐

If so please describe

11. Are you taking any medication prescribed by your doctor? Yes ☐ No ☐

11. b. If you answered Yes please list the medication/s you are currently taking.

Medication.....

Medication.....

Medication.....

Medication.....

12. Have you suffered a work related accident or injury?

Yes ☐ No ☐

13. Have you been involved in a motor vehicle accident causing a physical or psychological injury?

Yes ☐ No ☐

14. Are you currently involved in legal proceedings as a result of a personal injury or an accident?

Yes ☐ No ☐

15. Overall how satisfied are you with your life?

Please circle the number on the scale below that best describes your current satisfaction with life.

0 1 2 3 4 5 6
(not at all satisfied) (occasionally satisfied) (extremely satisfied)

16. Overall how meaningful are your daily activities?

Please circle the number on the scale below that best describes how meaningful your current daily activities are.

0 1 2 3 4 5 6
(not at all meaningful) (occasionally meaningful) (extremely meaningful)

17. How long have you had your pain condition? Please tick the duration of your pain.

<3 months	3-6 months	6-9 months	9-12 months	12-18 months	24-36 months
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

18. What is your diagnosis?.....

19. What do you believe has been most helpful in relieving or managing your pain?

.....
.....

20. Please indicate how often you do each of these activities by circling a number on the scale listed below each activity.

Play cards or other games

0 1 2 3 4 5 6
(never) (occasionally) (very often)

Take a ride in the car

0 1 2 3 4 5 6
(never) (occasionally) (very often)

Hobbies, crafts, or making things

0 1 2 3 4 5 6
(never) (occasionally) (very often)

C 8 Study Two Meaningful Daily Activities Questionnaire (MDAQ-R)

Listed below are some common daily activities. Please indicate how meaningful you currently find each of these activities by placing a number from 0 to 6 in the corresponding question box for each activity.

	0	1	2	3	4	5	6
	(not at all meaningful)	(occasionally meaningful)			(extremely meaningful)		
	0 not at all meaningful	1	2	3 occasionally meaningful	4	5	6 extremely meaningful
1. Wash dishes							
2. Mow the lawn							
3. Go out to eat							
4. Play cards or other games							
5. Go grocery shopping							
6. Work in the garden							
7. Go to a movie							
8. Help with the house cleaning							
9. Work on the car							
10. Take a ride in a car							
11. Visit relatives							
12. Prepare a meal							
13. Take a trip							
14. Go to a park or beach							
15. Do a load of laundry							
16. Work on a needed house repair							
17. Go to the doctors							
18. Hobbies, crafts or making things							
19. Hugging and cuddling							
20. Care for a family member							
21. Work in paid employment							
22. Attend medical appointments other than doctors							
23. Watching TV, listening to music or the radio, reading or relaxing							
24. Sexual activity							
25. Attend a religious or spiritual service							
26. Care for a friend							
27. Work outside of the home in non paid employment							
28. Take medication.							
29. Offer support to a friend or family member.							

You may feel that there are other activities that you find meaningful which are not included in the questionnaire, please feel free to list them in the spaces provided below

Activity

How meaningful is this activity to you?

Activity

How meaningful is this activity to you?

C 9 Study Two Daily Activities Questionnaire (DAQ-R)

Listed below are some common daily activities. Please indicate how often you do each of these activities by placing a number from 0 to 6 in the corresponding question box for each activity.

	<u>0</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>
	(never)	(occasionally)			(very often)		
	0 never	1	2	3 occasionally	4	5	6 very often
1. Wash dishes							
2. Mow the lawn							
3. Go out to eat							
4. Go grocery shopping							
5. Work in the garden							
6. Go to a movie							
7. Visit friends.							
8. Help with the house cleaning							
9. Work on the car							
10. Visit relatives							
11. Prepare a meal							
12. Wash the car							
13. Take a trip							
14. Go to a park or beach							
15. Do a load of laundry							
16. Work on a needed house repair							
17. Go to the doctors							
18. Hugging and cuddling.							
19. Attend meetings not related to paid work							
20. Care for a family member							
21. Work in paid employment							
22. Attend medical appointments other than doctors							
23. Sexual activity							
24. Attend a religious or spiritual service							
25. Care for a friend							
26. Work outside of the home in non paid employment							
27. Take medication							
28. Offer support to a friend or family member							

You may feel that there are other activities that you do which are not included in the questionnaire, please feel free to list them in the spaces provided below

Activity

How often do you do this activity?

Activity

How often do you do this activity?

C 10 Study Two McGill Pain Questionnaire

Date:

What is your pain condition called?
.....

When did it begin?
.....

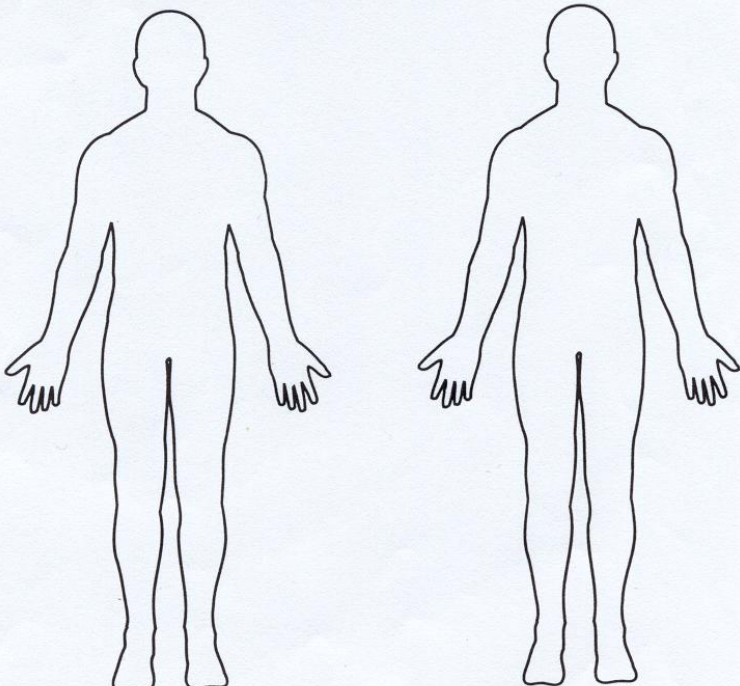
When did you last take medication for your pain?
Type of medication:.....
Dosage:
Time taken:

This questionnaire has been designed to tell us more about your pain. Four major questions we ask are:

1. Where is your pain?
2. What does it feel like?
3. How does it change with time?
4. How strong is it?

Part 1. Where is your pain?

Please mark, on the drawing below, the areas where you feel pain. Put E if external, or I if internal, near the areas which you mark. Put EI if both external and internal.



FRONT **BACK**

Part 2. What does your pain feel like?

Some of the words below describe your *present* pain. Circle *ONLY* those words that best describe it. Leave out any category that is not suitable. Use only a single word in each appropriate category – the one that applies best.

1 Flickering Quivering Pulsing Throbbing Beating Pounding	2 Jumping Flashing Shooting	3 Pricking Boring Drilling Stabbing Lancinating	4 Sharp Cutting Lacerating
5 Pinching Pressing Gnawing Cramping Crushing	6 Tugging Pulling Wrenching	7 Hot Burning Scalding Searing	8 Tingling Itchy Smarting Stinging
9 Dull Sore Hurting Aching Heavy	10 Tender Taut Rasping Splitting	11 Tiring Exhausting	12 Sickening Suffocating
13 Fearful Frightful Terrifying	14 Punishing Gruelling Cruel Vicious Killing	15 Wretched Blinding	16 Annoying Troublesome Miserable Intense Unbearable
17 Spreading Radiating Penetrating Piercing	18 Tight Numb Drawing Squeezing Tearing	19 Cool Cold Freezing	20 Nagging Nauseating Agonizing Dreadful Torturing

Part 3. How does your pain change with time?

1. Which word or words would you use to describe the *pattern* of your pain?

1 Continuous Steady Constant	2 Rhythmic Periodic Intermittent	3 Brief Momentary Transient
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2. What kind of things *relieve* your pain?

3. What kind of things *increase* your pain?

Part 4. How strong is your pain?

People agree that the following 5 words represent pain of increasing intensity. They are:

1 Mild	2 Discomforting	3 Distressing	4 Horrible	5 Excruciating
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To answer each question below, write the number of the most appropriate word in the space beside the question.

- Which word describes your pain right now?
- Which word describes it at its worst?
- Which word describes it when it is at its least?
- Which word describes the worst toothache you ever had?
- Which word describes the worst headache you ever had?
- Which word describes the worst stomach-ache you ever had?

C 11 Study Two Pain Disability Index

The rating scales below are designed to measure the degree to which several aspects of your life are presently disrupted by chronic pain. In other words, we would like to know how much your pain is preventing you from doing what you would normally do, or from doing it as well as you normally would.

Respond to each category by indicating the *overall* impact of pain in your life, not just when the pain is at its worst.

For each of the seven categories of life activity listed, please circle the number on the scale that describes the level of disability you typically experience.

A score of **“0”** means no disability at all, and a score of **“10”** signifies that all of the activities in which you would normally be involved have been totally disrupted or prevented by your pain.

1. **Family/Home Responsibilities.** This category refers to activities related to the home or family. It includes chores and duties performed around the house (e.g. Yard work) and errands or favors for other family members (e.g. driving the children to school).

0	1	2	3	4	5	6	7	8	9	10
“no disability”									“total disability”	

- 2. Recreation.** This category includes hobbies, sports, and other similar leisure time activities.

0	1	2	3	4	5	6	7	8	9	10		
"no disability"											"total disability"	

3. **Social Activity.** This category of activity refers to activities that involve participation with friends and acquaintances other than family members. It includes parties, heater, concerts, dining out, and other social functions.

0 1 2 3 4 5 6 7 8 9 10
 “no disability” “total disability”

4. **Occupation.** This category refers to activities that are a part of or directly related to one's job. This includes non-paying jobs as well, such as that of a housewife or volunteer workers.

0 1 2 3 4 5 6 7 8 9 10
 “no disability” “total disability”

- 5. Sexual Behaviour.** This category of activity refers to the frequency and quality of one's sex life.

0 1 2 3 4 5 6 7 8 9 10
 “no disability” “total disability”

6. **Self Care.** This category includes activities which involve personal maintenance and independent daily living (e.g. taking a shower, driving, getting dressed etc.)

0	1	2	3	4	5	6	7	8	9	10
“no disability”									“total disability”	

- 7. Life Support Activity.** This category refers to basic life supporting behaviors such as eating, sleeping, and breathing.

0 1 2 3 4 5 6 7 8 9 10
 “no disability” “total disability”



LIFE ORIENTATION TEST


Name:

Date: **Record Number:**

Please be as honest and accurate as you can be throughout. Try not to let your response to one statement influence your responses to other statements. There are no 'correct' or 'incorrect' answers. Answer according to your **own** feelings, rather than how you think 'most people' would answer. Using the scale below, write the appropriate letter in the box beside each statement.

A	B	C	D	E
<i>I agree a lot</i>	<i>I agree a little</i>	<i>I neither agree or disagree</i>	<i>I disagree a little</i>	<i>I disagree a lot</i>

- | | |
|--|--------------------------|
| 1. In uncertain times, I usually expect the best. | <input type="checkbox"/> |
| 2. It's easy for me to relax. | <input type="checkbox"/> |
| 3. If something can go wrong for me, it will . | <input type="checkbox"/> |
| 4. I always look on the bright side. | <input type="checkbox"/> |
| 5. I'm always optimistic about my future. | <input type="checkbox"/> |
| 6. I enjoy my friends a lot. | <input type="checkbox"/> |
| 7. It's important for me to keep busy. | <input type="checkbox"/> |
| 8. I hardly ever expect things to go my way. | <input type="checkbox"/> |
| 9. Things never work out the way I want them to. | <input type="checkbox"/> |
| 10. I don't get upset easily. | <input type="checkbox"/> |
| 11. I'm a believer in the idea that 'every cloud has a silver lining'. | <input type="checkbox"/> |
| 12. I rarely count on good things happening to me. | <input type="checkbox"/> |



Name

Date

Clinicians are aware that emotions play an important part in most illnesses. If your clinician knows more about these feelings she or he will be able to help you more. This questionnaire is designed to help your clinician to know how you feel. Read each item and underline the reply which comes closest to how you have been feeling in the past week. Don't take too long over your replies; your immediate reaction to each item will probably be more accurate than a long thought-out response.

Please underline the answer that best describes how you feel.

I feel tense or wound up:

- Most of the time
- A lot of the time
- From time to time, occasionally
- Not at all

I still enjoy the things I used to enjoy:

- Definitely as much
- Not quite so much
- Only a little
- Hardly at all

I get a sort of frightened feeling as if something awful is about to happen:

- Very definitely and quite badly
- Yes, but not too badly
- A little, but it doesn't worry me
- Not at all

I can laugh and see the funny side of things:

- As much as I always could
- Not quite so much now
- Definitely not so much now
- Not at all

Worrying thoughts go through my mind:

- A great deal of the time
- A lot of the time
- From time to time but not too often
- Only occasionally

I feel cheerful:

- Not at all
- Not often
- Sometimes
- Most of the time

I can sit at ease and feel relaxed:

Definitely
Usually
Not often
Not at all

I feel as if I am slowed down:

Nearly all the time
Very often
Sometimes
Not at all

I get a sort of frightened feeling like “butterflies” in the stomach:

Not at all
Occasionally
Quite often
Very often

I have lost interest in my appearance:

Definitely
I don’t take as much care as I should
I may not take quite as much care
I take as much care as ever

I feel restless as if I have to be on the move:

Very much indeed
Quite a lot
Not very much
Not at all

I look forward with enjoyment to things:

A much as ever I did
Rather less than I used to
Definitely less than I used to
Hardly at all

I get sudden feelings of panic:

Very often indeed
Quite often
Not very often
Not at all

I can enjoy a good book or radio or TV programme:

Often
Sometimes
Not often
Very seldom

Now check that you have answered all the questions

C 14 Study Two Beck Hopelessness Scale



Date: _____

Name: _____ Marital Status: _____ Age: _____ Sex: _____

Occupation: _____ Education: _____

This questionnaire consists of 20 statements. Please read the statements carefully one by one. If the statement describes your attitude for the **past week including today**, darken the circle with a 'T' indicating TRUE in the column next to the statement. If the statement does not describe your attitude, darken the circle with an 'F' indicating FALSE in the column next to this statement. **Please be sure to read each statement carefully.**

- | | | |
|--|-------------------------|-------------------------|
| 1. I look forward to the future with hope and enthusiasm. | <input type="radio"/> T | <input type="radio"/> F |
| 2. I might as well give up because there is nothing I can do about making things better for myself. | <input type="radio"/> T | <input type="radio"/> F |
| 3. When things are going badly, I am helped by knowing that they cannot stay that way forever. | <input type="radio"/> T | <input type="radio"/> F |
| 4. I can't imagine what my life would be like in ten years. | <input type="radio"/> T | <input type="radio"/> F |
| 5. I have enough time to accomplish the things I want to do. | <input type="radio"/> T | <input type="radio"/> F |
| 6. In the future, I expect to succeed in what concerns me most. | <input type="radio"/> T | <input type="radio"/> F |
| 7. My future seems dark to me. | <input type="radio"/> T | <input type="radio"/> F |
| 8. I happen to be particularly lucky, and I expect to get more of the good things in life than the average person. | <input type="radio"/> T | <input type="radio"/> F |
| 9. I just can't get the breaks, and there's no reason I will in the future. | <input type="radio"/> T | <input type="radio"/> F |
| 10. My past experiences have prepared me well for the future. | <input type="radio"/> T | <input type="radio"/> F |
| 11. All I can see ahead of me is unpleasantness rather than pleasantness. | <input type="radio"/> T | <input type="radio"/> F |
| 12. I don't expect to get what I really want. | <input type="radio"/> T | <input type="radio"/> F |
| 13. When I look ahead to the future, I expect that I will be happier than I am now. | <input type="radio"/> T | <input type="radio"/> F |
| 14. Things just won't work out the way I want them to. | <input type="radio"/> T | <input type="radio"/> F |
| 15. I have great faith in the future. | <input type="radio"/> T | <input type="radio"/> F |
| 16. I never get what I want, so it's foolish to want anything. | <input type="radio"/> T | <input type="radio"/> F |
| 17. It's very unlikely that I will get any real satisfaction in the future. | <input type="radio"/> T | <input type="radio"/> F |
| 18. The future seems vague and uncertain to me. | <input type="radio"/> T | <input type="radio"/> F |
| 19. I can look forward to more good times than bad times. | <input type="radio"/> T | <input type="radio"/> F |
| 20. There's no use in really trying to get anything I want because I probably won't get it. | <input type="radio"/> T | <input type="radio"/> F |



We are interested in what you consider may have been the cause of your chronic pain (CP). As people are very different, there is no correct answer for this question. We are most interested in your own views about the factors that caused your CP rather than what others including doctors or family may have suggested to you. Below is a list of possible causes for your CP. Please indicate how much you agree or disagree that they were causes for you by ticking the appropriate box.

	POSSIBLE CAUSES	Strongly Disagree	Disagree	Neither Agree, nor Disagree	Agree	Strongly Agree
C1	Stress or worry					
C2	Heredity – it runs in my family					
C3	A germ or virus					
C4	Dieting or eating habits					
C5	Chance or bad luck					
C6	Poor medical care in my past					
C7	Pollution in the environment					
C8	My own behaviour					
C9	My mental attitude e.g. thinking about life Negatively					
C10	Family problems or worries					
C11	Overwork					
C12	My emotional state e.g. feeling down, lonely, Anxious or empty					
C13	Ageing					
C14	Alcohol					
C15	Smoking					
C16	Accident or injury					
C17	My personality					
C18	Altered immunity					

In the table below please list in rank-order the three most important factors that you now believe caused YOUR CP. You may use any of the items from the box above, or you may have additional ideas of your own.

The most important causes for me:-

1.
2.
3.

C 16 Study Two Demographic Characteristics of Chronic Pain Participants

Source of Chronic Pain Participants

Source	Frequency	%	Cumulative %
Physical Therapy Practices	50	46.3	46.3
Community Sample	58	53.7	100.0
Total	108	100.0	

Diagnosed Chronic Pain Disorders

Diagnostic Category	Primary Diagnosis		Diagnosis 2		Diagnosis 3		Diagnosis 4	
	Count	%	Count	%	Count	%	Count	%
Musculoskeletal	81	75.0%	18	81.8%	1	50.0%	1	100.0%
Injuries	7	6.5%	1	4.5%	0	0	0	
Nervous System Disorders	7	6.5%	1	4.5%	1	50.0%	0	
Digestive System Disorders	0	0	1	4.5%	0		0	
Malignant Neoplasm	1	.9%	0		0		0	
No Specific Diagnosis	2	1.9%	1	4.5%	0		0	
Missing/Not Stated	10	9.3%	0		0		0	
Total	108	100.0 %	22	100.0%	2	100.0%	1	100.0%

Chronic Pain participants Reported Chronic Pain Condition/s

Diagnostic Category	McGill Diagnosis 1		McGill Diagnosis 2	
	Count	%	Count	%
Musculoskeletal Diseases	74	68.5%	15	71.4%
Injuries	19	17.6%	2	9.5%
Nervous System Disorders	6	5.6%	2	9.5%
Malignant Neoplasm	1	.9%	1	4.8%
Other Neoplasm	1	.9%		
No specific Diagnosis	2	1.9%		
Not Stated	5	4.6%	1	4.8%
Total	108	100.0%	21	100.0%

Number of CP Participants who Used all Types of Medication

Category of Medication	Med1 Count%		Med2 Count%		Med3 Count%		Med4 Count%		Med5 Count%		Med6 Count%	
Non Narcotic pain killers	7	7.5%	6	8.8%	4	9.3%	3	9.4%	1	12.5%	3	50.0%
Anti anxiety			2	2.9%			3	9.4%				
Anti arthritic	20	21.5%	14	20.6%	6	14.0%	3	9.4%			1	16.7%
Anti impotence					1	2.3%						
Anti Nausea			1	1.5%			2	6.3%				
Anti seizure	1	1.1%	3	4.4%	3	7.0%	1	3.1%				
Anticoagulant	1	1.1%			1	2.3%						
Antidepressants	10	10.8%	6	8.8%	6	14.0%	1	3.1%	1	12.5%		
Antihistamine	1	1.1%										
Antihypertensive	7	7.5%	4	5.9%	3	7.0%	1	3.1%	2	25.0%		
Antineoplastic	2	2.2%										
Antiprotozoals			1	1.5%								
Antiprozoals			1	1.5%								
Antipschoriatic (systemic)	1	1.1%										
Antipsychotic					1	2.3%						
Anti-Ulcer	2	2.2%	5	7.4%	4	9.3%	6	18.8%			1	16.7%
Asthma/Respiratory	2	2.2%	2	2.9%	1	2.3%	1	3.1%	1	12.5%	1	16.7%
Autoimmune suppressant							1	3.1%				
Beta/Alpha Blocker	3	3.2%	3	4.4%			2	6.3%				
Bone Resorption Inhibitor			2	2.9%	1	2.3%	1	3.1%				
Bowel disease inflammatory suppressant	1	1.1%										
Calcium Blocker	2	2.2%	1	1.5%			1	3.1%				
Cholesterol Reducer	4	4.3%	5	7.4%	2	4.7%			1	12.5%		
CNS Depressants	3	3.2%	2	2.9%	3	7.0%			1	12.5%		
Corticosteroids	1	1.1%										
Corticosteroids (topical)							1	3.1%				
Diabetes	3	3.2%			2	4.7%						
Diuretic					1	2.3%						
HRT	4	4.3%	3	4.4%	2	4.7%	2	6.3%				
Immunosuppressant			1	1.5%								
Narcotic Pain Killers*	17	18.3%	5	7.4%	1	2.3%	2	6.3%	1	12.5%		
Not stated	1	1.1%										
Other Coronary Medication			1	1.5%								
Potassium Supplement					1	2.3%	1	3.1%				
Total	93		68		43		32		8		6	

CP Participants Self Reported Diagnosis of Pain Condition

Diagnostic Disease Category	Reported Diagnosis	n	%	Cumulative Percent
Musculoskeletal Disease	Arthritis	14	13.0	13.0
Musculoskeletal Disease	Rheumatoid Arthritis	3	2.8	15.7
Musculoskeletal Disease	Osteoarthritis	13	12.0	27.8
Musculoskeletal Disease s	Soft Tissue Injury	8	7.4	35.2
Neurological Disease	Occipital Neuralgia	1	.9	36.1
N/A	Not Sure	2	1.9	38.0
Musculoskeletal Disease	Low Back Pain	7	6.5	44.4
Injuries	Chronic Pain after Physical Trauma	9	8.3	52.8
Musculoskeletal Disease	Spondylosis	1	.9	53.7
Musculoskeletal Disease	Prolapsed Disk	8	7.4	61.1
Musculoskeletal Disease	Torn Cartilage	2	1.9	63.0
Musculoskeletal Disease	Degenerative Shoulder Condition	1	.9	63.9
Musculoskeletal Disease	Scoliosis (low back pain)	3	2.8	66.7
Neurological Disease	Meningioma	1	.9	67.6
Musculoskeletal Disease	Back Pain	8	7.4	75.0
N/A	No specific diagnosis	2	1.9	76.9
Musculoskeletal Disease	Foot and knee pain	1	.9	77.8
N/A	Not stated	3	2.8	80.6
Musculoskeletal Disease	Musculoskeletal Disorder	2	1.9	82.4
Neurological Disease	Migraine	2	1.9	84.3
Lymphatic System Disease	Lymphoedema	1	.9	85.2
Musculoskeletal Disease	Disk Disorder	6	5.6	90.7
Neurological Disease	Brachial plexus	2	1.9	92.6
Musculoskeletal Disease	Lupus	3	2.8	95.4
Musculoskeletal Disease	Knee Pain	1	.9	96.3
Neurological Disease	Neuropathy	2	1.9	98.1
Musculoskeletal Disease	Fibromyalgia	1	.9	99.1
Neurological Disease	Transverse Myelitis	1	.9	100.0
Total		108	100.0	

CP Participants Reported Duration of Pain

Duration	Frequency	Percent	Valid Percent	Cumulative Percent
3-6 months	3	2.8	2.8	2.8
6-9 months	8	7.4	7.4	10.2
9-12 months	4	3.7	3.7	13.9
12-18 months	15	13.9	13.9	27.8
24-36 months	36	33.3	33.3	61.1
36 >Months	42	38.9	38.9	100.0
Total	108	100.0	100.0	

CP Participants Recoded Diagnoses

	Frequency	Percent	Cumulative Percent
Musculoskeletal Diseases	81	75.0	75.0
Injuries	7	6.5	81.5
Nervous System/Sense Organ Disorders	7	6.5	88.0
Malignant Neoplasm's	1	.9	88.9
No specific diagnosis	2	1.9	90.7
Missing/Not Stated	10	9.3	100.0
Total	108	100.0	

CP Medications: Trade Name of Medications

Drug Name	Frequency	Percent	Valid %	Cumulative %
Celebrex	9	8.3	8.7	8.7
Digesic	2	1.9	1.9	69.9
Dolobid	1	.9	1.0	80.6
Herbal/Alternative Medication	1	.9	1.0	98.1
Mersyndol	4	3.7	3.9	90.3
MS Contin	3	2.8	2.9	15.5
Naprosyn	3	2.8	2.9	86.4
Neurofen	1	.9	1.0	99.0
Neurontin	3	2.8	2.9	11.7
none	19	17.6	18.4	52.4
NSAID	7	6.5	6.8	97.1
Oxynorm	1	.9	1.0	12.6
Pain killer not stated name	1	.9	1.0	100.0
Panadene	5	4.6	4.9	57.3
Panadene Forte	11	10.2	10.7	33.0
Panadol	9	8.3	8.7	68.0
Paralgin	1	.9	1.0	34.0
Pethadene infusion pump	1	.9	1.0	81.6
Predisilone	2	1.9	1.9	83.5
Tramal	7	6.5	6.8	22.3
Valium	2	1.9	1.9	59.2
Vioxx	7	6.5	6.8	79.6
Voltaren	3	2.8	2.9	72.8
Total	103	95.4	100.0	
System Missing	5	4.6		
Total	108	100.0		

McGill Pain Questionnaire Trade Name of 1st, 2nd and 3rd Pain Medications Used

	1st		2nd		3rd		Total
	Count	%	Count	%	Count	%	
Arava					1	16.7%	1
Aropax			1	4.5%			1
Celebrex	9	8.7%					9
Didronel			1	4.5%			1
Digesic	2	1.9%					2
Dolobid	1	1.0%					1
En dep					1	16.7%	1
Eplim					1	16.7%	1
Herbal/Alternative	1	1.0%					1
Mersyndol	4	3.9%					4
MS Contin	3	2.9%					3
Naprosyn	3	2.9%					3
Neurofen	1	1.0%					1
Neurontin	3	2.9%	1	4.5%			4
none	19	18.4%	1	4.5%			38
NSAID	7	6.8%					7
Oxynorm	1	1.0%					1
Pain killer not stated name	1	1.0%	1	4.5%			2
Panadene	5	4.9%					5
Panadene Forte	11	10.7%	1	4.5%			12
Panadol	9	8.7%	3	13.6%	1	16.7%	13
Paralgin	1	1.0%					1
Pethadene infusion pump	1	1.0%					1
Pethadene injection			1	4.5%			1
Predisilone	2	1.9%	1	4.5%			3
Tegratol			2	9.1%			2
Tramal	7	6.8%	2	9.1%			9
Valium	2	1.9%	4	18.2%			2
Vioxx	7	6.8%	2	9.1%			9
Voltaren	3	2.9%			1	16.7%	4
Zantac			1	4.5%			1
Zoloft					1	16.7%	1
Total	103	100.0%	22	100.0%	6	100.0%	145.00

Strategies CP Participants Found Most Helpful in Managing Pain

Intervention Pain Management Strategy	Count	%
Acupuncture	5	4.6%
Aids	1	1.9%
Anti arthritic medication	13	12.0%
Antidepressant medication	3	2.8%
Chiropractic treatment	5	4.6%
Counseling	0	
Distraction/keeping busy	8	7.4%
Exercise	17	15.7%
Exercise in the water	2	1.9%
Heat	12	11.1%
Hydrotherapy	31	28.7%
Massage	9	8.3%
Modifying activities	11	10.2%
Moral support & encouragement	1	.9%
Myotherapy	4	3.7%
Naturopathy	0	
Not sure what was helpful in managing pain	6	5.6%
Osteopathy	4	3.7%
Other medication	7	6.5%
Pain management programs	4	3.7%
Pain medication	25	23.1%
Patience	1	.9%
Physiotherapy	20	18.5%
Physiotherapy exercises	4	3.7%
Positive thinking	3	2.8%
Relaxation	3	2.8%
Rest	10	9.3%
Self	5	4.6%
Surgery	3	2.8%
Swimming	3	2.8%
TENS machine	1	.9%
Walking	8	7.4%
Yoga/meditation	5	4.6%

Demographic Variables and Sample Sources

		Yes		No		Total	
Source of Sample		Count	%	Count	%	Count	%
Physical Therapy Sample	Religion	32	64.0%	18	36.0%	50	100.0%
	Malignancy	4	8.0%	46	92.0%	50	100.0%
	Disability	12	24.0%	38	76.0%	50	100.0%
	Diabetes	4	8.0%	46	92.0%	50	100.0%
	Psychiatric Ill.	4	8.0%	46	92.0%	50	100.0%
	Health Problems	21	42.0%	29	58.0%	50	100.0%
	Medication	43	86.0%	7	14.0%	50	100.0%
	Work Injury	27	54.0%	23	46.0%	50	100.0%
	Motor Accident	13	26.0%	37	74.0%	50	100.0%
	Litigation	13	26.0%	37	74.0%	50	100.0%
Community Sample	Religion	27	46.6%	31	53.4%	58	100.0%
	Malignancy	3	5.2%	55	94.8%	58	100.0%
	Disability	3	5.2%	55	94.8%	58	100.0%
	Diabetes	5	8.6%	53	91.4%	58	100.0%
	Psychiatric Ill.	5	8.6%	53	91.4%	58	100.0%
	Health Problems	25	43.1%	33	56.9%	58	100.0%
	Medication	49	84.5%	9	15.5%	58	100.0%
	Work Injury	17	29.3%	41	70.7%	58	100.0%
	Motor Accident	9	15.5%	49	84.5%	58	100.0%
	Litigation	5	8.6%	53	91.4%	58	100.0%

MPQ Pain Drawing Locations (1-9)

		Pain Sites 1- 9								
Pain Location		1 st	2 nd	3 rd	4 th	5 th	6 th	7 th	8 th	9 th
Neck	Count	32	11	2	1	1				
	%	29.6%	12.6%	2.9%	2.0%	3.2%				
Wrist/s	Count	2	1	4	3	2	1			
	%	1.9%	1.1%	5.9%	5.9%	6.5%	5.6%			
Finger/s and hand/s	Count	1	3	3	9	5	1			
	%	.9%	3.4%	4.4%	17.6%	16.1%	5.6%			
Shoulder/s	Count	15	27	8						
	%	13.9%	31.0%	11.8%						
Hp/s	Count	8	10	8	11	1	2	2		
	%	7.4%	11.5%	11.8%	21.6%	3.2%	11.1%	25.0%		
Knee/s	Count	8	5	4	7	6	5	1	1	
	%	7.4%	5.7%	5.9%	13.7%	19.4%	27.8%	12.5%	33.3%	
Ankle/s	Count	1	1	1	1	2	3	2	1	1
	%	.9%	1.1%	1.5%	2.0%	6.5%	16.7%	25.0%	33.3%	50.0%
Toes / feet	Count		2		4	1	1	2		1
	%		2.3%		7.8%	3.2%	5.6%	25.0%		50.0%
Back	Count	21	14	17	4	9	4		1	
	%	19.4%	16.1%	25.0%	7.8%	29.0%	22.2%		33.3%	
Chest	Count		1							
	%		1.1%							
Abdominal	Count	1								
	%	.9%								
Head	Count	15			2					
	%	13.9%			3.9%					
Face	Count		1							
	%		1.1%							
Arm/s	Count	2	3	13	3					
	%	1.9%	3.4%	19.1%	5.9%					
Whole of body joints	Count	1								
	%	.9%								
Leg/s	Count		5	8	3	4	1	1		
	%		5.7%	11.8%	5.9%	12.9%	5.6%	12.5%		
Pelvis	Count	1								
	%	.9%								
Elbow/s	Count		3		3					
	%		3.4%		5.9%					
Total	Count	108	87	68	51	31	18	8	3	2
Percent of Total	%	100%	80.56 %	60.19 %	47.22 %	28.70 %	16.67 %	.07%	.03%	.02%

C 17 Study Two Results Measures Scores

Descriptive Statistics of Measures

Descriptive Statistics Study Two

	N	Minimum	Maximum	Mean	Std.	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Number of Pain Sites	.00								
PRI Sensory	108.00	.00	37.00	13.62	8.27	.61	.23	-.38	.46
PRI Affective	108.00	.00	11.00	2.60	2.88	1.23	.23	.69	.46
PRI Evaluative	108.00	.00	5.00	2.38	1.68	.21	.23	-1.28	.46
PRI Misc.	108.00	.00	13.00	4.11	3.32	.55	.23	-.58	.46
MPQ Sum	108.00	.00	62.00	22.71	14.09	.69	.23	-.27	.46
MPQ NWC	108.00	.00	20.00	9.12	4.97	.31	.23	-.79	.46
MPQ PPI	108.00	1.00	5.00	2.18	.94	.76	.23	.45	.46
Pain Disability Index	108.00	.00	64.00	34.42	16.21	-.28	.23	-.80	.46
Pain & Disability Factor	108.00	-1.86	2.26	.00	1.00	.33	.23	-.51	.46
Beck Hopelessness Scale	103.00	.00	20.00	5.70	5.05	1.06	.24	.35	.47
HADS Depression	106.00	1.00	21.00	7.13	4.67	.72	.23	-.05	.47
HADS Anxiety	106.00	2.00	19.00	9.42	4.37	.37	.23	-.68	.47
Psychological Distress Factor	102.00	-1.56	2.50	-.01	1.01	.71	.24	-.27	.47
DAQ-R 1 Domestic Chores	101.00	3.00	30.00	21.20	7.62	-.57	.24	-.77	.48
DAQ-R 2 Work, Health, Spirituality & Caring	101.00	12.00	51.00	27.35	9.17	.45	.24	-.27	.48
DAQ-R 3 Interpersonal Contact & Social Support	101.00	1.00	47.00	22.43	9.06	-.23	.24	-.31	.48
DAQ-R 4 Home Maintenance	101.00	.00	24.00	7.89	5.67	.52	.24	-.47	.48
DAQ-R Sum	101.00	26.00	139.00	78.86	22.57	.02	.24	-.16	.48
MDAQ-R 1 Support, Caring & Interpersonal Relationships	94.00	.00	42.00	24.90	9.80	-.45	.25	-.30	.49
MDAQ-R 2 Structured Tasks	94.00	.00	36.00	18.19	9.02	.09	.25	-.80	.49
MDAQ-R 3 Sensory & Leisure Activities	94.00	3.00	60.00	34.10	12.86	-.42	.25	-.49	.49
MDAQ-R 4 Home Maintenance & Health Maintenance	94.00	.00	36.00	14.54	7.68	.41	.25	.48	.49
MDAQ-R Sum	94.00	12.00	174.00	91.73	30.67	-.12	.25	.31	.49
VAS Satisfaction with Life	108.00	.00	6.00	3.93	1.32	-.90	.23	.85	.46
VAS Meaningfulness of Daily Activities	108.00	.00	6.00	4.09	1.32	-.60	.23	.41	.46
IPQRF1 Psychological Attributions	106.00	6.00	28.00	15.72	5.95	.19	.23	-.67	.47
IPQRF2 Risk Factors	107.00	7.00	27.00	15.86	5.19	-.20	.23	-.88	.46
IPQRF3 Immunity	107.00	3.00	14.00	5.71	2.64	.93	.23	.43	.46
IPQRF4 Accident or Chance	107.00	2.00	10.00	6.61	2.05	-.24	.23	-.22	.46
LOT Positive Life Orientation	103.00	6.00	32.00	20.02	6.69	.00	.24	-.79	.47
Valid N (listwise)	.00								

C 18 Study Two Measure Tests of Normality

	Kolmogorov-Smirnov(a)			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
PRI Sensory	.10	82.00	.04	.96	82.00	.01
PRI Affective	.26	82.00	.00	.81	82.00	.00
PRI Evaluative	.18	82.00	.00	.90	82.00	.00
PRI Misc.	.12	82.00	.00	.94	82.00	.00
MPQ Sum	.11	82.00	.02	.95	82.00	.00
MPQ NWC	.10	82.00	.03	.98	82.00	.11
MPQ PPI	.30	82.00	.00	.84	82.00	.00
Pain Disability Index	.06	82.00	.20(*)	.97	82.00	.10
Pain & Disability Factor	.06	82.00	.20(*)	.97	82.00	.07
LOT Positive Life Orientation	.09	82.00	.16	.97	82.00	.09
Beck Hopelessness Scale	.17	82.00	.00	.89	82.00	.00
HADS Depression	.12	82.00	.01	.94	82.00	.00
HADS Anxiety	.15	82.00	.00	.95	82.00	.01
Psychological Distress Factor	.12	82.00	.01	.94	82.00	.00
DAQ-R 1 Domestic Chores	.12	82.00	.01	.92	82.00	.00
DAQ-R 2 Work, Health, Spirituality & Caring	.09	82.00	.07	.97	82.00	.06
DAQ-R 3 Interpersonal Contact & Social Support	.09	82.00	.20(*)	.98	82.00	.17
DAQ-R 4 Home Maintenance	.10	82.00	.04	.94	82.00	.00
DAQ-R Sum	.05	82.00	.20(*)	.99	82.00	.78
MDAQ-R 1 Support, Caring & Interpersonal Relationships	.12	82.00	.00	.96	82.00	.01
MDAQ-R 2 Structured Tasks	.10	82.00	.04	.97	82.00	.05
MDAQ-R 3 Sensory & Leisure Activities	.13	82.00	.00	.96	82.00	.01
MDAQ-R 4 Home Maintenance & Health Maintenance	.09	82.00	.07	.98	82.00	.18
MDAQ-R Sum	.07	82.00	.20(*)	.98	82.00	.33
VAS Satisfaction with Life	.21	82.00	.00	.88	82.00	.00
VAS Meaningfulness of Daily Activities	.17	82.00	.00	.92	82.00	.00
IPQRF1 Psychological Attributions	.07	82.00	.20(*)	.97	82.00	.06
IPQRF2 Risk Factors	.10	82.00	.06	.96	82.00	.02
IPQRF3 Immunity	.15	82.00	.00	.89	82.00	.00
IPQRF4 Accident or Chance	.15	82.00	.00	.95	82.00	.00

* This is a lower bound of the true significance.

a Lilliefors Significance Correction

C 19 McGill Pain Questionnaire
MPQ Present Pain Intensity (PPI)

	Frequency	Percent	Valid Percent	Cumulative Percent
Mild	5	23.1	23.1	23.1
Discomforting	51	47.2	47.2	70.4
Distressing	22	20.4	20.4	90.7
Horrible	8	7.4	7.4	98.1
Excruciating	2	1.9	1.9	100.0
Total	108	100.0	100.0	

MPQ Number of Words Chosen (NWC) N= 108

Mean	9.12
Std. Deviation	4.98
Range	20
Sum	985

MPQ Number of Words Chosen (0-20)

	Words 1-20	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	1	.9	.9	.9
	1	4	3.7	3.7	4.6
	2	4	3.7	3.7	8.3
	3	4	3.7	3.7	12.0
	4	6	5.6	5.6	17.6
	5	10	9.3	9.3	26.9
	6	11	10.2	10.2	37.0
	7	7	6.5	6.5	43.5
	8	7	6.5	6.5	50.0
	9	10	9.3	9.3	59.3
	10	2	1.9	1.9	61.1
	11	8	7.4	7.4	68.5
	12	4	3.7	3.7	72.2
	13	4	3.7	3.7	75.9
	14	6	5.6	5.6	81.5
	15	6	5.6	5.6	87.0
	16	5	4.6	4.6	91.7
	17	5	4.6	4.6	96.3
	19	1	.9	.9	97.2
	20	3	2.8	2.8	100.0
	Total	108	100.0	100.0	

C 20 Pain Disability Index (PDI)

N=108

	PDI 1 Family/Home	PDI 2 Recreation	PDI 3 Social Activity	PDI 4 Occupation	PDI 5 Sexual Behavior	PDI 6 Self Care	PDI 7 Life Support
Mean	5.68	6.45	4.43	6.03	5.22	3.21	3.38
Std. Deviation	2.54	2.45	3.02	3.08	3.81	2.74	2.95
Sum	613.00	697.00	479.00	652.00	564.00	347.00	365.00

IPQ-R Four Factors

		Psychological Attributions (6 items)	Risk factors (7 items)	Immunity (3 items)	Accident/chance (2 items)
N	Valid	107	107	107	107
	Missing	1	1	1	1
Mean		15.75	15.86	5.71	6.61
Std. Deviation		5.94	5.19	2.64	2.05
Sum		1685.00	1697.00	611.00	707.00

C 21 IPQ-R Important Causes of Chronic Pain Identified by Participants N=107

Cause of Chronic Pain	Cause 1		Cause 2		Cause 3	
	N	%	N	%	N	%
IPQ-R Item						
1. Stress or worry	6	5.6	8	7.4	8	7.4
2. Heredity - it runs in my family	5	4.6	3	2.8	4	3.7
3. A germ or virus	0	0	0	0	0	0
4. Dieting or eating habits	1	0.9	3	2.8	0	0
5. Chance or bad luck	2	1.9	5	4.6	3	2.8
6. Poor medical care in my past	0	0	1	0.9	2	1.9
7. Pollution in the environment	1	0.9	0	0	0	0
8. My own behaviour	7	6.5	5	4.6	6	5.6
9. My mental attitude e.g. Thinking about life negatively	0	0	3	2.8	3	2.8
10. Family problems or worries	0	0	1	0.9	1	0.9
11. Overwork	11	10.2	17	15.7	6	5.6
12. My emotional state e.g. Feeling down, lonely, anxious or empty	0	0	1	0.9	2	1.9
13. Ageing	4	3.7	7	6.5	7	6.5
14. Alcohol	0	0	1	0.9	0	0
15. Smoking	0	0	0	0	1	0.9
16. Accident or injury	36	33.3	8	7.4	4	3.7
17. My personality	0	0	0	0	0	0
18. Altered immunity	1	0.9	0	0	0	0
ADDITIONAL CATEGORIES IDENTIFIED						
Not stated	21	19.4	34	31.5	53	49.1
Badly designed workplace	5	4.6	3	2.8	2	1.9
The weather	0	0	2	1.9	1	0.9
Medical Condition	2	1.9	2	1.9	0	0
Delay in Treatment	1	0.9	1	0.9	0	0
Daily living	3	2.8	1	0.9	1	0.9
Sport	1	0.9	1	0.9	0	0
No danger signs	0	0	0	0	1	0.9
Insufficient medical treatment	0	0	0	0	1	0.9
	N=107	100%	N=107	100%	N=106	100%

C 22 Psychological Distress
Hospital Anxiety and Depression Scale (HADS) N=106

	Depression	Anxiety
Mean	7.13	9.42
Std. Deviation	4.67	4.37
Range	20.00	17.00
Sum	756.00	998.00

Beck Hopelessness Scale BHS N=103

Mean	5.70
Std. Deviation	5.05
Range	20.00
Sum	587.00

Dispositional Optimism (LOT) N=103

	Negative	Positive	Total Score LOTE
Mean	9.77	10.25	20.02
Std. Deviation	4.05	3.88	6.69
Range	15.00	15.00	26.00
Sum	1006.00	1056.00	2062.00

C 23 Study Two Significance of Demographics
Correlation Matrix of Demographic Variables

N=108	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
(1) Source of Sample	1																	
(2) Gender	.07	1																
(3) Age	-.01	.16	1															
(4) Religion	.18	-.12	-.16	1														
(5) Education	.11	.13	-.07	.12	1													
(6) Employment Status	-.14	.05	.41**	-.04	-.21	1												
(7) Marital Status	-.18	.15	.02	.10	.05	.21	1											
(8) Children	-.09	.12	-.43**	.23*	.24*	-.12	.47**	1										
(9) Malignancy	.06	-.08	-.14	.16	.05	-.10	-.21*	-.03	1									
(10) Disability	.27**	-.08	-.05	-.01	.23*	-.12	-.16	.04	.11	1								
(11) Diabetes	-.01	-.12	-.23*	.01	-.11	-.32**	-.14	.01	.19*	-.02	1							
(12) Psychiatric Ill.	-.01	-.04	.07	-.13	-.10	.11	-.17	-.07	-.08	.07	.03	1						
(13) Health Problems	-.01	-.09	-.25*	-.04	-.06	-.23*	-.12	.00	.23*	.03	.22*	.15	1					
(14) Medication	.02	.09	-.15	-.07	.13	-.18	-.01	.07	.00	.02	.03	.13	.20	1				
(15) Work Injury	.25**	.27**	.07	-.15	.05	.01	.14	.11	.01	.05	.09	-.05	-.10	.08	1			
(16) Motor Accident	.13	-.02	-.08	.09	-.14	.07	.11	-.04	.15	-.14	.10	.10	.17	.08	.05	1		
(17) Litigation	.23*	.43**	.15	.06	.20*	-.12	.09	.14	-.12	.04	-.14	.05	-.23*	.19	.34**	-.04	1	.
(18) Pain Duration	-.04	.08	.23*	.07	.09	.34**	.12	.13	-.09	-.09	-.19	.06	-.20*	-.19	-.01	-.13	.04	1

C 24 ANOVAS Comparing Groups Factor Litigation

		Sum of Squares	df	Mean Square	F	Sig.
Education	Between Groups	22.28	1	22.28	3.98	.05
	Within Groups	587.79	105	5.60		
	Total	610.08	106			
Religion	Between Groups	.09	1	.09	.36	.55
	Within Groups	26.68	106	.25		
	Total	26.77	107			
Employment. Status	Between Groups	11.85	1	11.85	1.66	.20
	Within Groups	758.11	106	7.15		
	Total	769.96	107			
Marital Status	Between Groups	3.42	1	3.42	.90	.35
	Within Groups	402.90	106	3.80		
	Total	406.32	107			
Medication	Between Groups	.47	1	.47	3.82	.05
	Within Groups	13.16	106	.12		
	Total	13.63	107			
Pain Duration	Between Groups	.31	1	.31	.18	.68
	Within Groups	190.01	106	1.79		
	Total	190.32	107			
Gender	Between Groups	4.09	1	4.09	24.08	.00
	Within Groups	18.01	106	.17		
	Total	22.10	107			
Age	Between Groups	11.67	1	11.67	2.52	.12
	Within Groups	481.23	104	4.63		
	Total	492.91	105			

ANOVA Comparing Groups Factor Gender

		Sum of Squares	df	Mean Square	F	Sig.
Education	Between Groups	9.58	1	9.58	1.68	.20
	Within Groups	600.49	105	5.72		
	Total	610.08	106			
Religion	Between Groups	.39	1	.39	1.57	.21
	Within Groups	26.38	106	.25		
	Total	26.77	107			
Employment. Status	Between Groups	1.87	1	1.87	.26	.61
	Within Groups	768.10	106	7.25		
	Total	769.96	107			
Marital Status	Between Groups	9.67	1	9.67	2.59	.11
	Within Groups	396.65	106	3.74		
	Total	406.32	107			
Medication	Between Groups	.12	1	.12	.90	.35
	Within Groups	13.52	106	.13		
	Total	13.63	107			
Pain Duration	Between Groups	1.19	1	1.19	.67	.42
	Within Groups	189.14	106	1.78		
	Total	190.32	107			
Age	Between Groups	12.93	1	12.93	2.80	.10
	Within Groups	479.97	104	4.62		
	Total	492.91	105			
Litigation	Between Groups	2.78	1	2.78	24.08	.00
	Within Groups	12.22	106	.12		
	Total	15.00	107			
Work Injury	Between Groups	1.84	1	1.84	8.03	.01
	Within Groups	24.24	106	.23		
	Total	26.07	107			
Sample	Between Groups	4.56	1	4.56	1.22	.27
	Within Groups	396.18	106	3.74		
	Total	400.74	107			

ANOVA Comparing Groups Factor Age

		Sum of Squares	df	Mean Square	F	Sig.
Education	Between Groups	50.290	8	6.286	1.121	.356
	Within Groups	538.472	96	5.609		
	Total	588.762	104			
Religion	Between Groups	1.878	8	.235	.934	.493
	Within Groups	24.386	97	.251		
	Total	26.264	105			
Employment. Status	Between Groups	185.839	8	23.230	3.918	.000
	Within Groups	575.151	97	5.929		
	Total	760.991	105			
Marital Status	Between Groups	58.653	8	7.332	2.067	.046
	Within Groups	343.998	97	3.546		
	Total	402.651	105			
Medication	Between Groups	1.062	8	.133	1.029	.420
	Within Groups	12.523	97	.129		
	Total	13.585	105			
Pain Duration	Between Groups	19.917	8	2.490	1.423	.196
	Within Groups	169.668	97	1.749		
	Total	189.585	105			
Litigation	Between Groups	1.566	8	.196	1.419	.198
	Within Groups	13.378	97	.138		
	Total	14.943	105			
Work Injury	Between Groups	3.437	8	.430	1.884	.071
	Within Groups	22.119	97	.228		
	Total	25.557	105			
Sample	Between Groups	27.873	8	3.484	.927	.498
	Within Groups	364.731	97	3.760		
	Total	392.604	105			
Gender	Between Groups	2.854	8	.357	1.855	.076
	Within Groups	18.655	97	.192		
	Total	21.509	105			

ANOVA Comparing Groups Factor Work Injury

		Sum of Squares	df	Mean Square	F	Sig.
Education	Between Groups	1.361	1	1.361	.235	.629
	Within Groups	608.714	105	5.797		
	Total	610.075	106			
Religion	Between Groups	.625	1	.625	2.534	.114
	Within Groups	26.143	106	.247		
	Total	26.769	107			
Employment Status	Between Groups	.054	1	.054	.007	.932
	Within Groups	769.909	106	7.263		
	Total	769.963	107			
Marital Status	Between Groups	7.597	1	7.597	2.020	.158
	Within Groups	398.727	106	3.762		
	Total	406.324	107			
Medication	Between Groups	.088	1	.088	.692	.407
	Within Groups	13.541	106	.128		
	Total	13.630	107			
Pain Duration	Between Groups	.033	1	.033	.018	.893
	Within Groups	190.291	106	1.795		
	Total	190.324	107			
Litigation	Between Groups	1.705	1	1.705	13.590	.000
	Within Groups	13.295	106	.125		
	Total	15.000	107			
Sample	Between Groups	21.013	1	21.013	5.866	.017
	Within Groups	379.727	106	3.582		
	Total	400.741	107			
Gender	Between Groups	1.556	1	1.556	8.030	.006
	Within Groups	20.545	106	.194		
	Total	22.102	107			
Age	Between Groups	.123	1	.123	.026	.872
	Within Groups	492.783	104	4.738		
	Total	492.906	105			

C 25 Comparing Groups Factor PPI

		Sum of Squares	df	Mean Square	F	Sig.
Education	Between Groups	31.392	4	7.848	1.383	.245
	Within Groups	578.683	102	5.673		
	Total	610.075	106			
Religion	Between Groups	1.457	4	.364	1.482	.213
	Within Groups	25.312	103	.246		
	Total	26.769	107			
Employment Status	Between Groups	27.734	4	6.933	.962	.432
	Within Groups	742.229	103	7.206		
	Total	769.963	107			
Marital Status	Between Groups	19.563	4	4.891	1.303	.274
	Within Groups	386.761	103	3.755		
	Total	406.324	107			
Medication	Between Groups	2.125	4	.531	4.757	.001
	Within Groups	11.504	103	.112		
	Total	13.630	107			
Pain Duration	Between Groups	6.727	4	1.682	.943	.442
	Within Groups	183.597	103	1.782		
	Total	190.324	107			
Litigation	Between Groups	2.516	4	.629	5.190	.001
	Within Groups	12.484	103	.121		
	Total	15.000	107			
Sample	Between Groups	23.650	4	5.912	1.615	.176
	Within Groups	377.091	103	3.661		
	Total	400.741	107			
Gender	Between Groups	1.047	4	.262	1.281	.282
	Within Groups	21.055	103	.204		
	Total	22.102	107			
Age	Between Groups	5.659	4	1.415	.293	.882
	Within Groups	487.247	101	4.824		
	Total	492.906	105			
Work Injury	Between Groups	1.548	4	.387	1.625	.174
	Within Groups	24.526	103	.238		
	Total	26.074	107			
Health Problems	Between Groups	2.208	4	.552	2.349	.059
	Within Groups	24.200	103	.235		
	Total	26.407	107			
Psychiatric Illness	Between Groups	.031	4	.008	.096	.984
	Within Groups	8.219	103	.080		
	Total	8.250	107			
Diabetes	Between Groups	.146	4	.036	.463	.763
	Within Groups	8.104	103	.079		
	Total	8.250	107			
Disability	Between Groups	2.208	4	.552	5.310	.001
	Within Groups	10.708	103	.104		
	Total	12.917	107			
Malignancy	Between Groups	.065	4	.016	.260	.903
	Within Groups	6.481	103	.063		
	Total	6.546	107			

C 26 DAQ-R (28 item) Scores Males and Females

Group Statistics

	Gender	N	Mean	Std. Dev	Std. E M.	P
DARQ-R 1 Wash dishes	dimension1 male	28.00	3.57	2.15	0.41	.00
	female	73.00	4.97	1.56	0.18	
DARQ-R 2 Mow the lawn	dimension1 male	28.00	1.86	2.19	0.41	.01
	female	73.00	0.60	1.29	0.15	
DARQ-R 3 Go out to eat	dimension1 male	28.00	2.21	1.29	0.24	.00
	female	73.00	3.33	1.72	0.20	
DARQ-R 4 Go grocery shopping	dimension1 male	28.00	3.14	1.63	0.31	.00
	female	73.00	4.40	1.69	0.20	
DARQ-R 5 Work in the garden	dimension1 male	28.00	2.79	1.91	0.36	NS
	female	73.00	2.92	2.17	0.25	
DARQ-R 6 Go to a movie	dimension1 male	28.00	1.25	1.17	0.22	.05
	female	73.00	1.95	1.58	0.18	
DARQ-R 7 Visit friends	dimension1 male	28.00	2.86	1.43	0.27	NS
	female	73.00	3.47	1.69	0.20	
DARQ-R 8 Help with the house cleaning	dimension1 male	28.00	2.86	1.88	0.36	.00
	female	73.00	4.55	1.77	0.21	
DARQ-R 9 Work on the car	dimension1 male	28.00	1.25	1.48	0.28	.01
	female	73.00	0.47	0.91	0.11	
DARQ-R 10 Visit relatives	dimension1 male	28.00	2.75	1.58	0.30	NS
	female	73.00	3.21	1.76	0.21	
DARQ-R 11 Prepare a meal	dimension1 male	28.00	3.00	1.98	0.37	.00
	female	73.00	4.93	1.58	0.18	
DARQ-R 12 Wash the car	dimension1 male	28.00	1.61	1.91	0.36	NS
	female	73.00	1.29	1.70	0.20	
DARQ-R 13 Take a trip	dimension1 male	28.00	1.82	1.83	0.35	.01
	female	73.00	2.88	1.65	0.19	
DARQ-R 14 Go to a park or beach	dimension1 male	28.00	2.11	1.59	0.30	.00
	female	73.00	3.29	1.79	0.21	
DARQ-R 15 Do a load of laundry	dimension1 male	28.00	2.25	1.69	0.32	.00
	female	73.00	4.79	1.69	0.20	
DARQ-R 16 Work on a needed house repair	dimension1 male	28.00	1.96	1.73	0.33	NS
	female	73.00	2.01	1.75	0.21	
DARQ-R 17 Go to the doctors	dimension1 male	28.00	3.25	1.84	0.35	NS
	female	73.00	3.56	1.62	0.19	
DARQ-R 18 Hugging and cuddling	dimension1 male	28.00	3.00	2.18	0.41	NS
	female	73.00	3.73	1.92	0.22	
DARQ-R 19 Attend meetings not related to paid work	dimension1 male	28.00	1.57	1.75	0.33	.05
	female	73.00	2.52	1.82	0.21	
DARQ-R 20 Care for a family member	dimension1 male	28.00	1.64	1.85	0.35	.00
	female	73.00	3.12	2.31	0.27	
DARQ-R 21 Work in paid employment	dimension1 male	28.00	2.86	2.93	0.55	NS
	female	73.00	2.78	2.67	0.31	
DARQ-R 22 Attend medical appointments other than doctors	dimension1 male	28.00	2.75	2.15	0.41	NS
	female	73.00	3.14	1.99	0.23	
DARQ-R 23 Sexual activity	dimension1 male	28.00	2.32	1.63	0.31	NS
	female	73.00	2.16	1.91	0.22	
DARQ-R 24 Attend a religious or spiritual service	dimension1 male	28.00	0.75	1.35	0.26	.00
	female	73.00	1.75	1.92	0.22	
DARQ-R 25 Care for a friend	dimension1 male	28.00	0.82	1.31	0.25	.00
	female	73.00	2.29	1.90	0.22	
DARQ-R 26 Work outside of the home in non paid employment	dimension1 male	28.00	0.61	0.99	0.19	.00
	female	73.00	1.56	1.94	0.23	
DARQ-R 27 Take medication	dimension1 male	28.00	4.64	1.93	0.36	NS
	female	73.00	4.44	1.89	0.22	
DARQ-R 28 Offer support to a friend or family member	dimension1 male	28.00	2.36	1.81	0.34	.00
	female	73.00	4.52	1.63	0.19	

C 27 MDAQ-R (29 item) Scores Males and Females

Group Statistics							
	Gender		N	Mean	Std. Dev	Std. Error Mean	P
MDAQ-R 1 Wash the dishes	male		27.00	2.70	2.18	0.42	NS
	female		67.00	2.66	2.17	0.27	
MDAQ-R 2 Mow the lawn	male		27.00	1.93	2.45	0.47	NS
	female		67.00	1.28	1.98	0.24	
MDAQ-R 3 Go out to eat	male		27.00	3.00	1.66	0.32	NS
	female		67.00	3.73	1.79	0.22	
MDAQ-R 4 Play cards and other games	male		27.00	1.59	1.55	0.30	NS
	female		67.00	2.03	1.79	0.22	
MDAQ-R 5 Go grocery shopping	male		27.00	3.00	1.82	0.35	NS
	female		67.00	2.93	1.92	0.23	
MDAQ-R 6 Working the garden	male		27.00	3.19	2.24	0.43	NS
	female		67.00	3.07	2.22	0.27	
MDAQ-R 7 Go to a movie	male		27.00	2.52	1.99	0.38	NS
	female		67.00	2.72	1.96	0.24	
MDAQ-R 8 Help with the house cleaning	male		27.00	3.30	1.94	0.37	NS
	female		67.00	3.00	1.91	0.23	
MDAQ-R 9 Work on the car	male		27.00	1.96	2.21	0.43	.00
	female		67.00	0.52	1.21	0.15	
MDAQ-R 10 Take a ride in the car	male		27.00	3.52	1.74	0.33	NS
	female		67.00	3.94	1.78	0.22	
MDAQ-R 11 Visit relatives	male		27.00	3.33	1.82	0.35	NS
	female		67.00	3.91	1.86	0.23	
MDAQ-R 12 Prepare a meal	male		27.00	3.70	1.94	0.37	NS
	female		67.00	3.64	1.86	0.23	
MDAQ-R 13 Take a trip	male		27.00	3.48	2.19	0.42	NS
	female		67.00	4.25	1.88	0.23	
MDAQ-R 14 Go to a park or beach	male		27.00	3.48	2.08	0.40	NS
	female		67.00	4.00	1.92	0.23	
MDAQ-R 15 Do a load of laundry	male		27.00	2.22	2.04	0.39	NS
	female		67.00	2.91	2.04	0.25	
MDAQ-R 16 Work on a needed house repair	male		27.00	2.70	2.27	0.44	NS
	female		67.00	1.79	2.00	0.24	
MDAQ-R 17 Go to the doctors	male		27.00	3.85	1.81	0.35	NS
	female		67.00	3.24	1.98	0.24	
MDAQ-R 18 Hobbies, crafts or making things	male		27.00	2.93	2.40	0.46	NS
	female		67.00	3.58	2.28	0.28	
MDAQ-R 19 Hugging or cuddling	male		27.00	4.00	2.06	0.40	NS
	female		67.00	4.54	1.98	0.24	
MDAQ-R 20 Care for a family member	male		27.00	3.52	1.91	0.37	NS
	female		67.00	4.25	2.00	0.24	
MDAQ-R 21 Work in paid employment	male		27.00	2.81	2.73	0.53	NS
	female		67.00	3.24	2.44	0.30	
MDAQ-R 22 Attend medical appointments other than doctors	male		27.00	3.19	1.98	0.38	NS
	female		67.00	3.22	2.29	0.28	
MDAQ-R 23 Watching TV, listening to music or the radio, reading or relaxing	male		27.00	4.19	1.47	0.28	NS
	female		67.00	4.70	1.37	0.17	
MDAQ-R 24 Sexual activity	male		27.00	3.85	2.32	0.45	NS
	female		67.00	3.01	2.29	0.28	
MDAQ-R 25 Attend a religious or spiritual service	male		27.00	0.96	1.65	0.32	.00
	female		67.00	2.61	2.31	0.28	
MDAQ-R 26 Care for a friend	male		27.00	2.85	2.09	0.40	.05
	female		67.00	3.93	1.77	0.22	
MDAQ-R 27 Work outside of the home in non paid employment	male		27.00	1.56	1.80	0.35	.01
	female		67.00	2.81	2.19	0.27	
MDAQ-R 28 Take medication	male		27.00	4.00	2.15	0.41	NS
	female		67.00	3.24	2.23	0.27	
MDAQ-R 29 Offer support to a friend or family member	male		27.00	3.96	1.97	0.38	NS
	female		67.00	4.76	1.72	0.21	

C 28 Measures Scores and Gender Males and Females

Group Statistics

	Gender	N	Mean	Std. Deviation	Std. Error Mean	<i>P</i>
Pain & Disability Factor	— male	31.00	0.22	1.02	0.18	NS
	— female	77.00	-0.09	0.99	0.11	
Positive Life Orientation	— male	29.00	17.17	7.05	1.31	.01
	— female	74.00	21.14	6.24	0.73	
Beck Hopelessness Scale	— male	29.00	7.93	5.79	1.07	.01
	— female	74.00	4.82	4.48	0.52	
HADS Depression	— male	30.00	9.87	5.22	0.95	.001
	— female	76.00	6.05	3.97	0.46	
HADS Anxiety	— male	30.00	11.77	4.55	0.83	.001
	— female	76.00	8.49	3.95	0.45	
Psychological Distress Factor	— male	29.00	0.61	1.08	0.20	.000
	— female	73.00	-0.25	0.88	0.10	
DAQ-R 1 Domestic Chores	— male	28.00	14.82	7.02	1.33	.000
	— female	73.00	23.64	6.35	0.74	
DAQ-R 2 Work, Health, Spirituality & Caring	— male	28.00	21.25	5.67	1.07	.000
	— female	73.00	29.68	9.21	1.08	
DAQ-R 3 Interpersonal Contact & Social Support	— male	28.00	18.32	8.37	1.58	.01
	— female	73.00	24.00	8.87	1.04	
DAQ-R 4 Home Maintenance	— male	28.00	9.46	6.57	1.24	NS
	— female	73.00	7.29	5.21	0.61	
DAQ- R Sum	— male	28.00	63.86	19.89	3.76	.000
	— female	73.00	84.62	20.92	2.45	
MDAQ-R 1 Support, Caring & Interpersonal Relationships	— male	27.00	20.19	9.11	1.75	.01
	— female	67.00	26.81	9.48	1.16	
MDAQ-R 2 Structured Tasks	— male	27.00	17.74	8.98	1.73	NS
	— female	67.00	18.37	9.10	1.11	
MDAQ-R 3 Sensory & Leisure Activities	— male	27.00	31.74	13.69	2.63	NS
	— female	67.00	35.04	12.49	1.53	
MDAQ-R 4 Home Maintenance & Health Maintenance	— male	27.00	17.63	6.71	1.29	.01
	— female	67.00	13.30	7.73	0.94	
MDAQ-R Sum	— male	27.00	87.30	31.65	6.09	NS
	— female	67.00	93.52	30.32	3.70	

C 29 Measures Scores and Working/Not Working

Group Statistics							
	Working or Not Working		N	Mean	Std. Deviation	Std. Error Mean	P
Pain & Disability Factor	dimension1	working	56.00	-0.34	0.84	0.11	.000
		not working	52.00	0.36	1.04	0.14	
Positive Life Orientation	dimension1	working	53.00	21.42	6.99	0.96	.05
		not working	50.00	18.54	6.07	0.86	
Beck Hopelessness Scale	dimension1	working	52.00	4.56	4.68	0.65	.05
		not working	51.00	6.86	5.20	0.73	
HADS Depression	dimension1	working	54.00	6.07	4.26	0.58	.05
		not working	52.00	8.23	4.85	0.67	
HADS Anxiety	dimension1	working	54.00	8.24	3.78	0.51	.01
		not working	52.00	10.63	4.64	0.64	
Psychological Distress Factor	dimension1	working	51.00	-0.29	0.90	0.13	.05
		not working	51.00	0.27	1.04	0.15	
DAQ-R 1 Domestic Chores	dimension1	working	51.00	21.78	7.55	1.06	NS
		not working	50.00	20.60	7.72	1.09	
DAQ-R 2 Work, Health, Spirituality & Caring	dimension1	working	51.00	29.55	9.19	1.29	.01
		not working	50.00	25.10	8.68	1.23	
DAQ-R 3 Interpersonal Contact & Social Support	dimension1	working	51.00	25.12	8.82	1.24	.01
		not working	50.00	19.68	8.53	1.21	
DAQ-R 4 Home Maintenance	dimension1	working	51.00	8.31	5.30	0.74	NS
		not working	50.00	7.46	6.06	0.86	
DAQ- R Sum	dimension1	working	51.00	84.76	20.57	2.88	.01
		not working	50.00	72.84	23.12	3.27	
MDAQ-R 1 Support, Caring & Interpersonal Relationships	dimension1	working	48.00	26.31	8.70	1.26	NS
		not working	46.00	23.43	10.73	1.58	
MDAQ-R 2 Structured Tasks	dimension1	working	48.00	19.56	8.24	1.19	NS
		not working	46.00	16.76	9.65	1.42	
MDAQ-R 3 Sensory & Leisure Activities	dimension1	working	48.00	36.71	12.09	1.74	.05
		not working	46.00	31.37	13.20	1.95	
MDAQ-R 4 Home Maintenance & Health Maintenance	dimension1	working	48.00	14.06	7.64	1.10	NS
		not working	46.00	15.04	7.76	1.14	
MDAQ-R Sum	dimension1	working	48.00	96.65	26.61	3.84	NS
		not working	46.00	86.61	33.94	5.00	

C 29 Measures Scores and Married/Single

Group Statistics

Marital Status			N	Mean	Std. Deviation	Std. Error Mean	P
Pain & Disability Factor	dimension1	married	66.00	-0.12	0.93	0.11	.05
		defacto	9.00	-0.59	0.48	0.16	
Positive Life Orientation	dimension1	married	63.00	18.92	7.17	0.90	.05
		defacto	9.00	24.89	6.70	2.23	
Beck Hopelessness Scale	dimension1	married	62.00	5.52	5.32	0.68	NS
		defacto	9.00	4.22	6.02	2.01	
HADS Depression	dimension1	married	64.00	7.45	4.82	0.60	NS
		defacto	9.00	5.67	5.41	1.80	
HADS Anxiety	dimension1	married	64.00	9.36	4.42	0.55	NS
		defacto	9.00	8.11	3.10	1.03	
Psychological Distress Factor	dimension1	married	61.00	0.00	1.05	0.13	NS
		defacto	9.00	-0.34	1.09	0.36	
DAQ-R 1 Domestic Chores	dimension1	married	62.00	21.18	7.74	0.98	NS
		defacto	9.00	22.78	7.90	2.63	
DAQ-R 2 Work, Health, Spirituality & Caring	dimension1	married	62.00	27.26	9.06	1.15	NS
		defacto	9.00	25.89	3.55	1.18	
DAQ-R 3 Interpersonal Contact & Social Support	dimension1	married	62.00	23.77	9.10	1.16	NS
		defacto	9.00	24.22	7.89	2.63	
DAQ-R 4 Home Maintenance	dimension1	married	62.00	7.94	5.53	0.70	NS
		defacto	9.00	9.00	8.09	2.70	
DAQ- R Sum	dimension1	married	62.00	80.15	23.94	3.04	NS
		defacto	9.00	81.89	17.17	5.72	
MDAQ-R 1 Support, Caring & Interpersonal Relationships	dimension1	married	57.00	25.44	10.34	1.37	NS
		defacto	9.00	24.89	8.55	2.85	
MDAQ-R 2 Structured Tasks	dimension1	married	57.00	18.37	8.72	1.16	NS
		defacto	9.00	18.67	10.59	3.53	
MDAQ-R 3 Sensory & Leisure Activities	dimension1	married	57.00	35.19	13.45	1.78	NS
		defacto	9.00	34.56	14.99	5.00	
MDAQ-R 4 Home Maintenance & Health Maintenance	dimension1	married	57.00	14.47	7.70	1.02	NS
		defacto	9.00	13.33	10.38	3.46	
MDAQ-R Sum	dimension1	married	57.00	93.47	31.93	4.23	NS
		defacto	9.00	91.44	39.47	13.16	

C 30 Measures Scores and Litigating/Not Litigating

Group Statistics

Litigating/Not Litigating			N	Mean	Std. Deviation	Std. Error Mean	P
Pain & Disability Factor	dimension1	yes	18.00	0.74	0.93	0.22	.00
		no	90.00	-0.15	0.95	0.10	
Positive Life Orientation	dimension1	yes	18.00	16.22	6.91	1.63	.01
		no	85.00	20.82	6.39	0.69	
Beck Hopelessness Scale	dimension1	yes	18.00	8.72	5.43	1.28	.01
		no	85.00	5.06	4.76	0.52	
HADS Depression	dimension1	yes	18.00	12.44	4.85	1.14	.000
		no	88.00	6.05	3.83	0.41	
HADS Anxiety	dimension1	yes	18.00	12.61	4.75	1.12	.000
		no	88.00	8.76	4.01	0.43	
Psychological Distress Factor	dimension1	yes	18.00	0.93	1.01	0.24	.000
		no	84.00	-0.21	0.89	0.10	
DAQ-R 1 Domestic Chores	dimension1	yes	17.00	14.24	8.50	2.06	.01
		no	84.00	22.61	6.64	0.72	
DAQ-R 2 Work, Health, Spirituality & Caring	dimension1	yes	17.00	22.41	8.55	2.07	.05
		no	84.00	28.35	9.02	0.98	
DAQ-R 3 Interpersonal Contact & Social Support	dimension1	yes	17.00	14.06	7.25	1.76	.000
		no	84.00	24.12	8.45	0.92	
DAQ-R 4 Home Maintenance	dimension1	yes	17.00	3.71	4.06	0.98	.00
		no	84.00	8.74	5.60	0.61	
DAQ- R Sum	dimension1	yes	17.00	54.41	19.17	4.65	.000
		no	84.00	83.81	19.89	2.17	
MDAQ-R 1 Support, Caring & Interpersonal Relationships	dimension1	yes	18.00	19.61	11.25	2.65	.01
		no	76.00	26.16	9.06	1.04	
MDAQ-R 2 Structured Tasks	dimension1	yes	18.00	16.83	10.22	2.41	NS
		no	76.00	18.51	8.76	1.00	
MDAQ-R 3 Sensory & Leisure Activities	dimension1	yes	18.00	26.94	15.17	3.58	.01
		no	76.00	35.79	11.73	1.35	
MDAQ-R 4 Home Maintenance & Health Maintenance	dimension1	yes	18.00	15.33	7.35	1.73	NS
		no	76.00	14.36	7.79	0.89	
MDAQ-R Sum	dimension1	yes	18.00	78.72	35.83	8.44	NS
		no	76.00	94.82	28.73	3.30	

C 31 Measures Scores and Work Injury Yes/No

Group Statistics

Sustained Work Injury		N	Mean	Std. Deviation	Std. Error Mean	P
Pain & Disability Factor	yes	44.00	0.29	0.93	0.14	.01
	no	64.00	-0.20	1.01	0.13	
Positive Life Orientation	yes	43.00	18.51	6.99	1.07	.052
	no	60.00	21.10	6.30	0.81	
Beck Hopelessness Scale	yes	43.00	7.40	5.56	0.85	.01
	no	60.00	4.48	4.31	0.56	
HADS Depression	yes	44.00	9.14	4.86	0.73	.000
	no	62.00	5.71	3.99	0.51	
HADS Anxiety	yes	44.00	10.93	4.62	0.70	.01
	no	62.00	8.34	3.87	0.49	
Psychological Distress Factor	yes	43.00	0.41	1.06	0.16	.000
	no	59.00	-0.32	0.85	0.11	
DAQ-R 1 Domestic Chores	yes	40.00	19.02	7.92	1.25	.05
	no	61.00	22.62	7.13	0.91	
DAQ-R 2 Work, Health, Spirituality & Caring	yes	40.00	27.40	8.39	1.33	NS
	no	61.00	27.31	9.72	1.24	
DAQ-R 3 Interpersonal Contact & Social Support	yes	40.00	20.50	8.91	1.41	NS
	no	61.00	23.69	9.00	1.15	
DAQ-R 4 Home Maintenance	yes	40.00	7.08	5.73	0.91	NS
	no	61.00	8.43	5.62	0.72	
DAQ- R Sum	yes	40.00	74.00	23.43	3.70	NS
	no	61.00	82.05	21.58	2.76	
MDAQ-R 1 Support, Caring & Interpersonal Relationships	yes	41.00	23.68	10.05	1.57	NS
	no	53.00	25.85	9.60	1.32	
MDAQ-R 2 Structured Tasks	yes	41.00	19.44	9.53	1.49	NS
	no	53.00	17.23	8.57	1.18	
MDAQ-R 3 Sensory & Leisure Activities	yes	41.00	32.80	14.76	2.30	NS
	no	53.00	35.09	11.22	1.54	
MDAQ-R 4 Home Maintenance & Health Maintenance	yes	41.00	16.54	7.98	1.25	.05
	no	53.00	13.00	7.13	0.98	
MDAQ-R Sum	yes	41.00	92.46	34.58	5.40	NS
	no	53.00	91.17	27.60	3.79	

C 32 Measures Scores Education Less Than/Above Year 12 Level

Group Statistics

Education Above/Below Year 12			N	Mean	Std. Deviation	Std. Error Mean	P
Pain & Disability Factor	dimension1	Less than year 12	56.00	0.23	1.02	0.14	.01
		Beyond Year 12	51.00	-0.27	0.92	0.13	
Positive Life Orientation	dimension1	Less than year 12	52.00	18.27	6.41	0.89	.01
		Beyond Year 12	50.00	21.64	6.50	0.92	
Beck Hopelessness Scale	dimension1	Less than year 12	53.00	7.13	5.56	0.76	.01
		Beyond Year 12	49.00	4.18	4.02	0.57	
HADS Depression	dimension1	Less than year 12	55.00	8.33	4.50	0.61	.01
		Beyond Year 12	50.00	5.72	4.50	0.64	
HADS Anxiety	dimension1	Less than year 12	55.00	10.38	4.20	0.57	.05
		Beyond Year 12	50.00	8.42	4.38	0.62	
Psychological Distress Factor	dimension1	Less than year 12	53.00	0.29	1.00	0.14	.001
		Beyond Year 12	48.00	-0.35	0.94	0.13	
DAQ-R 1 Domestic Chores	dimension1	Less than year 12	52.00	20.88	7.95	1.10	NS
		Beyond Year 12	49.00	21.53	7.33	1.05	
DAQ-R 2 Work, Health, Spirituality & Caring	dimension1	Less than year 12	52.00	26.98	9.37	1.30	NS
		Beyond Year 12	49.00	27.73	9.04	1.29	
DAQ-R 3 Interpersonal Contact & Social Support	dimension1	Less than year 12	52.00	19.85	9.10	1.26	.01
		Beyond Year 12	49.00	25.16	8.25	1.18	
DAQ-R 4 Home Maintenance	dimension1	Less than year 12	52.00	7.33	5.42	0.75	NS
		Beyond Year 12	49.00	8.49	5.93	0.85	
DAQ- R Sum	dimension1	Less than year 12	52.00	75.04	23.15	3.21	NS
		Beyond Year 12	49.00	82.92	21.42	3.06	
MDAQ-R 1 Support, Caring & Interpersonal Relationships	dimension1	Less than year 12	50.00	22.82	10.22	1.45	.01
		Beyond Year 12	43.00	27.53	8.76	1.34	
MDAQ-R 2 Structured Tasks	dimension1	Less than year 12	50.00	16.82	9.05	1.28	NS
		Beyond Year 12	43.00	19.86	8.91	1.36	
MDAQ-R 3 Sensory & Leisure Activities	dimension1	Less than year 12	50.00	30.22	12.93	1.83	.01
		Beyond Year 12	43.00	39.00	11.02	1.68	
MDAQ-R 4 Home Maintenance & Health Maintenance	dimension1	Less than year 12	50.00	13.90	7.17	1.01	NS
		Beyond Year 12	43.00	15.42	8.27	1.26	
MDAQ-R Sum	dimension1	Less than year 12	50.00	83.76	29.03	4.11	.01
		Beyond Year 12	43.00	101.81	29.85	4.55	

C 33 Measures Scores Age Below 45/ 46-65 years

Group Statistics

	Age Below 45 year	N	Mean	Std. Deviation	Std. Error Mean	P
Pain & Disability Factor	Below 45 – Years	33.00	0.12	0.96	0.17	NS
	46-65years	73.00	-0.06	1.03	0.12	
Positive Life Orientation	Below 45 – Years	30.00	18.63	8.02	1.46	NS
	46-65years	71.00	20.62	6.11	0.73	
Beck Hopelessness Scale	Below 45 – Years	29.00	5.34	4.97	0.92	NS
	46-65years	72.00	5.58	4.94	0.58	
HADS Depression	Below 45 – Years	33.00	7.79	4.77	0.83	NS
	46-65years	71.00	6.69	4.60	0.55	
HADS Anxiety	Below 45 – Years	33.00	10.42	4.56	0.79	NS
	46-65years	71.00	8.85	4.21	0.50	
Psychological Distress Factor	Below 45 – Years	29.00	0.10	1.05	0.20	NS
	46-65years	71.00	-0.09	0.98	0.12	
DAQ-R 1 Domestic Chores	Below 45 – Years	31.00	19.84	7.71	1.38	NS
	46-65years	69.00	21.90	7.57	0.91	
DAQ-R 2 Work, Health, Spirituality & Caring	Below 45 – Years	31.00	25.61	8.17	1.47	NS
	46-65years	69.00	28.14	9.61	1.16	
DAQ-R 3 Interpersonal Contact & Social Support	Below 45 – Years	31.00	22.35	8.72	1.57	NS
	46-65years	69.00	22.48	9.33	1.12	
DAQ-R 4 Home Maintenance	Below 45 – Years	31.00	8.06	5.13	0.92	NS
	46-65years	69.00	7.90	5.93	0.71	
DAQ- R Sum	Below 45 – Years	31.00	75.87	17.83	3.20	NS
	46-65years	69.00	80.42	24.47	2.95	
MDAQ-R 1 Support, Caring & Interpersonal Relationships	Below 45 – Years	31.00	23.29	8.43	1.51	NS
	46-65years	61.00	25.92	10.47	1.34	
MDAQ-R 2 Structured Tasks	Below 45 – Years	31.00	19.10	8.19	1.47	NS
	46-65years	61.00	17.80	9.57	1.23	
MDAQ-R 3 Sensory & Leisure Activities	Below 45 – Years	31.00	35.77	10.09	1.81	NS
	46-65years	61.00	33.51	14.17	1.81	
MDAQ-R 4 Home Maintenance & Health Maintenance	Below 45 – Years	31.00	14.94	8.62	1.55	NS
	46-65years	61.00	14.25	7.26	0.93	
MDAQ-R Sum	Below 45 – Years	31.00	93.10	23.58	4.23	NS
	46-65years	61.00	91.48	34.15	4.37	

C 34 Measures Scores Observes a Religion Yes/No

Group Statistics

Practices a Religion			N	Mean	Std. Deviation	Std. Error Mean	P
Pain & Disability Factor	dimension1	yes	59.00	-0.03	1.01	0.13	NS
		no	49.00	0.04	1.00	0.14	
Positive Life Orientation	dimension1	yes	56.00	20.09	6.72	0.90	NS
		no	47.00	19.94	6.71	0.98	
Beck Hopelessness Scale	dimension1	yes	57.00	5.47	4.86	0.64	NS
		no	46.00	5.98	5.33	0.79	
HADS Depression	dimension1	yes	57.00	7.19	4.67	0.62	NS
		no	49.00	7.06	4.71	0.67	
HADS Anxiety	dimension1	yes	57.00	9.47	4.31	0.57	NS
		no	49.00	9.35	4.48	0.64	
Psychological Distress Factor	dimension1	yes	56.00	-0.01	0.99	0.13	NS
		no	46.00	-0.01	1.04	0.15	
DAQ-R 1 Domestic Chores	dimension1	yes	56.00	22.57	7.67	1.02	.05
		no	45.00	19.49	7.29	1.09	
DAQ-R 2 Work, Health, Spirituality & Caring	dimension1	yes	56.00	29.18	9.67	1.29	.05
		no	45.00	25.07	8.04	1.20	
DAQ-R 3 Interpersonal Contact & Social Support	dimension1	yes	56.00	23.34	9.02	1.21	NS
		no	45.00	21.29	9.08	1.35	
DAQ-R 4 Home Maintenance	dimension1	yes	56.00	7.48	5.56	0.74	NS
		no	45.00	8.40	5.84	0.87	
DAQ- R Sum	dimension1	yes	56.00	82.57	23.87	3.19	NS
		no	45.00	74.24	20.15	3.00	
MDAQ-R 1 Support, Caring & Interpersonal Relationships	dimension1	yes	52.00	27.27	9.17	1.27	.01
		no	42.00	21.98	9.87	1.52	
MDAQ-R 2 Structured Tasks	dimension1	yes	52.00	18.94	8.43	1.17	NS
		no	42.00	17.26	9.73	1.50	
MDAQ-R 3 Sensory & Leisure Activities	dimension1	yes	52.00	35.21	12.88	1.79	NS
		no	42.00	32.71	12.85	1.98	
MDAQ-R 4 Home Maintenance & Health Maintenance	dimension1	yes	52.00	14.94	7.89	1.09	NS
		no	42.00	14.05	7.46	1.15	
MDAQ-R Sum	dimension1	yes	52.00	96.37	28.75	3.99	NS
		no	42.00	86.00	32.32	4.99	

C 35 Correlations of Demographics and Factor Scores and Dispositional Optimism Scores

			Correlations								
			Gender	Education	Work Status	Marital Status	Work Injury	Litigating	Pain & Disability Factor	Positive Life Orientation	Psychological Distress Factor
Spearman's rho	Gender		1.00	0.01	0.00	0.15	0.27**	0.43**	-0.13	0.26**	-0.37**
		Sig. (2-tailed)	.	0.90	0.98	0.11	0.01	0.00	0.17	0.01	0.00
	Education	Correlation Coefficient	0.01	1.00	-0.29**	-0.07	-0.02	0.16	-0.24*	0.25*	-0.35**
		Sig. (2-tailed)	0.90	.	0.00	0.47	0.84	0.10	0.01	0.01	0.00
	Working or Not Working	Correlation Coefficient	0.00	-0.29**	1.00	0.17	0.01	-0.17	0.34**	-0.22*	0.30**
		Sig. (2-tailed)	0.98	0.00	.	0.09	0.94	0.09	0.00	0.02	0.00
	Marital Status	Correlation Coefficient	0.15	-0.07	0.17	1.00	0.10	0.08	0.27**	0.09	0.08
		Sig. (2-tailed)	0.11	0.47	0.09	.	0.30	0.41	0.01	0.35	0.41
	Work Injury	Correlation Coefficient	0.27**	-0.02	0.01	0.10	1.00	0.34**	-0.26**	0.18	-0.37**
		Sig. (2-tailed)	0.01	0.84	0.94	0.30	.	0.00	0.01	0.07	0.00
	Litigating	Correlation Coefficient	0.43**	0.16	-0.17	0.08	0.34**	1.00	-0.33**	0.26**	-0.41**
		Sig. (2-tailed)	0.00	0.10	0.09	0.41	0.00	.	0.00	0.01	0.00
	Pain & Disability Factor	Correlation Coefficient	-0.13	-0.24*	0.34**	0.27**	-0.26**	-0.33**	1.00	-0.29**	0.65**
		Sig. (2-tailed)	0.17	0.01	0.00	0.01	0.01	0.00	.	0.00	0.00
	Positive Life Orientation	Correlation Coefficient	0.26**	0.25*	-0.22*	0.09	0.18	0.26**	-0.29**	1.00	-0.62**
		Sig. (2-tailed)	0.01	0.01	0.02	0.35	0.07	0.01	0.00	.	0.00
	Psychological Distress Factor	Correlation Coefficient	-0.37**	-0.35**	0.30**	0.08	-0.37**	-0.41**	0.65**	-0.62**	1.00
		Sig. (2-tailed)	0.00	0.00	0.00	0.41	0.00	0.00	0.00	0.00	.

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

C 36 Correlations of Factor Scores, Measures and DAQ-R and MDAQ-R Scores

Correlations

			Psychological Distress Factor	BHS	HADS D	HADS A	DAQ-R Sum	MDAQ-R Sum	P & D Factor	MPQ Sum	MPQ PPI	PDI	Positive Life Orientation
Spearman's rho	Psychological Distress Factor	Correlation Coefficient	1.00	0.84**	0.91**	0.87**	-0.62**	-0.29**	0.65**	0.35**	0.38**	0.71**	-0.62**
	Beck Hopelessness Scale	Correlation Coefficient	0.84**	1.00	0.67**	0.61**	-0.50**	-0.33**	0.46**	0.15	0.32**	0.60**	-0.61**
	HADS Depression	Correlation Coefficient	0.91**	0.67**	1.00	0.70**	-0.63**	-0.33**	0.61**	0.33**	0.38**	0.66**	-0.55**
	HADS Anxiety	Correlation Coefficient	0.87**	0.61**	0.70**	1.00	-0.47**	-0.04	0.58**	0.39**	0.30**	0.59**	-0.52**
	DAQ- R Sum	Correlation Coefficient	-0.62**	-0.50**	-0.63**	-0.47**	1.00	0.55**	-0.40**	-0.19	-0.14	-0.48**	0.38**
	MDAQ-R Sum	Correlation Coefficient	-0.29**	-0.33**	-0.33**	-0.04	0.55**	1.00	-0.22*	-0.07	-0.16	-0.27**	0.14
	Pain & Disability Factor	Correlation Coefficient	0.65**	0.46**	0.61**	0.58**	-0.40**	-0.22*	1.00	0.80**	0.44**	0.84**	-0.29**
	MPQ Sum	Correlation Coefficient	0.35**	0.15	0.33**	0.39**	-0.19	-0.07	0.80**	1.00	0.28**	0.40**	-0.12
	MPQ PPI	Correlation Coefficient	0.38**	0.32**	0.38**	0.30**	-0.14	-0.16	0.44**	0.28**	1.00	0.46**	-0.13
	Pain Disability Index	Correlation Coefficient	0.71**	0.60**	0.66**	0.59**	-0.48**	-0.27**	0.84**	0.40**	0.46**	1.00	-0.34**
	Positive Life Orientation	Correlation Coefficient	-0.62**	-0.61**	-0.55**	-0.52**	0.38**	0.14	-0.29**	-0.12	-0.13	-0.34**	1.00

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

C 37 Correlations of Factor Scores, DAQ-R, MDAQ-R and Dispositional Optimism Scores

		Correlations													
		Psy Factor	P & D Factor	PDI	LOT	MDAQR 1	MDAQR 2	MDAQR 3	MDAQR4	MDAQR	DAQR 1	DAQR 2	DAQR 3	DAQR 4	DAQR
Spearman's rho	Psychological Distress Factor	1.00	0.65**	0.71**	-0.62**	-0.39**	-0.13	-0.38**	0.12	-0.29**	-0.39**	-0.33**	-0.65**	-0.38**	-0.62**
	P & D Factor	0.65**	1.00	0.84**	-0.29**	-0.24*	-0.13	-0.25*	-0.02	-0.22*	-0.25*	-0.07	-0.46**	-0.47**	-0.40**
	PDI	0.71**	0.84**	1.00	-0.34**	-0.29**	-0.14	-0.34**	0.07	-0.27**	-0.32**	-0.13	-0.55**	-0.48**	-0.48**
	LOT	-0.62**	-0.29**	-0.34**	1.00	0.21*	0.08	0.22*	-0.21*	0.14	0.17	0.28**	0.46**	0.09	0.38**
	MDAQR-1 Support, Caring & Interpersonal Relationships	-0.39**	-0.24*	-0.29**	0.21*	1.00	0.42**	0.62**	0.27**	0.78**	0.44**	0.51**	0.44**	0.22*	0.57**
	MDAQR-2 Structured Tasks	-0.13	-0.13	-0.14	0.08	0.42**	1.00	0.40**	0.49**	0.71**	0.35**	0.23*	0.18	0.24*	0.33**
	MDAQR-3 Sensory & Leisure Activities	-0.38**	-0.25*	-0.34**	0.22*	0.62**	0.40**	1.00	0.28**	0.83**	0.30**	0.36**	0.57**	0.44**	0.56**
	MDAQR-4 Home Maintenance & Health Maintenance	0.12	-0.02	0.07	-0.21*	0.27**	0.49**	0.28**	1.00	0.59**	-0.04	0.09	-0.03	0.24*	0.06
	MDAQR-R	-0.29**	-0.22*	-0.27**	0.14	0.78**	0.71**	0.83**	0.59**	1.00	0.34**	0.43**	0.44**	0.40**	0.55**
	DAQ-R 1 Domestic Chores	-0.39**	-0.25*	-0.32**	0.17	0.44**	0.35**	0.30**	-0.04	0.34**	1.00	0.42**	0.42**	0.17	0.71**
	DAQ-R 2 Work, Health, Spirituality & Caring	-0.33**	-0.07	-0.13	0.28**	0.51**	0.23*	0.36**	0.09	0.43**	0.42**	1.00	0.42**	0.11	0.73**
	DAQ-R 3 Interpersonal Contact & Social Support	-0.65**	-0.46**	-0.55**	0.46**	0.44**	0.18	0.57**	-0.03	0.44**	0.42**	0.42**	1.00	0.36**	0.80**
	DAQ-R 4 Home Maintenance	-0.38**	-0.47**	-0.48**	0.09	0.22*	0.24*	0.44**	0.24*	0.40**	0.17	0.11	0.36**	1.00	0.48**
	DAQ-R- R	-0.62**	-0.40**	-0.48**	0.38**	0.57**	0.33**	0.56**	0.06	0.55**	0.71**	0.73**	0.80**	0.48**	1.00

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

C 38 Correlations of Pain and Disability and Psychological Distress Factor Scores, Pain and Psychological Distress Measures, DAQ-R, MDAQ-R and Dispositional Optimism Scores

	Psych Distress Factor	BHS	HADS D	HADS A	P & D Factor	MPQ	MPQ PPI	PDI	LOT	MDAQ- R1	MDAQ- R2	MDAQ- R3	MDAQ- R4	MDAQ- R	DAQ- R 1	DAQ- R 2	DAQ- R 3	DAQ- R 4	DAQ-R
Psychological Distress Factor	1.00	0.84**	0.91**	0.87**	0.65**	0.35**	0.38**	0.71**	-0.62**	-0.39**	-0.13	-0.38**	0.12	-0.29**	-0.39**	-0.33**	-0.65**	-0.38**	-0.62**
Beck Hopelessness Scale	0.84**	1.00	0.67**	0.61**	0.46**	0.15	0.32**	0.60**	-0.61**	-0.38**	-0.18	-0.41**	0.12	-0.33**	-0.32**	-0.27**	-0.59**	-0.23**	-0.50**
HADS Depression	0.91**	0.67**	1.00	0.70**	0.61**	0.33**	0.38**	0.66**	-0.55**	-0.38**	-0.18	-0.40**	0.02	-0.33**	-0.38**	-0.33**	-0.67**	-0.44**	-0.63**
HADS Anxiety	0.87**	0.61**	0.70**	1.00	0.58**	0.39**	0.30**	0.59**	-0.52**	-0.23**	0.03	-0.10	0.16	-0.04	-0.34**	-0.27**	-0.47**	-0.27**	-0.47**
Pain & Disability Factor	0.65**	0.46**	0.61**	0.58**	1.00	0.80**	0.44**	0.84**	-0.29**	-0.24**	-0.13	-0.25**	-0.02	-0.22**	-0.25**	-0.07	-0.46**	-0.47**	-0.40**
MPQ Sum	0.35**	0.15	0.33**	0.39**	0.80**	1.00	0.28**	0.40**	-0.12**	-0.09	-0.05	-0.04	-0.09	-0.07	-0.10	-0.01	-0.21**	-0.28**	-0.19
MPQ PPI	0.38**	0.32**	0.38**	0.30**	0.44**	0.28**	1.00	0.46**	-0.13**	-0.24	-0.07	-0.20	-0.02	-0.16	-0.20	0.06	-0.17	-0.24	-0.14
Pain Disability Index	0.71**	0.60**	0.66**	0.59**	0.84**	0.40**	0.46**	1.00	-0.34**	-0.29**	-0.14	-0.34**	0.07	-0.27**	-0.32**	-0.13	-0.55**	-0.48**	-0.48**
Positive Life Orientation	-0.62**	-0.61**	-0.55**	-0.52**	-0.29**	-0.12	-0.13	-0.34**	1.00	0.21	0.08	0.22**	-0.21	0.14	0.17	0.28**	0.46**	0.09	0.38**
MDAQ-R 1 Support, Caring & Interpersonal Relationships	-0.39**	-0.38**	-0.38**	-0.23**	-0.24**	-0.09	-0.24	-0.29**	0.21**	1.00	0.42**	0.62**	0.27**	0.78**	0.44**	0.51**	0.44**	0.22	0.57**
MDAQ-R 2 Structured Tasks	-0.13	-0.18	-0.18	0.03	-0.13	-0.05	-0.07	-0.14	0.08**	0.42**	1.00	0.40**	0.49**	0.71**	0.35**	0.23**	0.18	0.24	0.33**
MDAQ-R 3 Sensory & Leisure Activities	-0.38**	-0.41**	-0.40**	-0.10	-0.25**	-0.04	-0.20	-0.34**	0.22**	0.62**	0.40**	1.00	0.28	0.83**	0.30**	0.36**	0.57**	0.44	0.56**
MDAQ-R 4 Home Maintenance & Health Maintenance	0.12	0.12	0.02	0.16	-0.02	-0.09	-0.02	0.07	-0.21**	0.27**	0.49**	0.28**	1.00	0.59**	-0.04	0.09	-0.03	0.24	0.06
MDAQ-R Sum	-0.29**	-0.33**	-0.33**	-0.04	-0.22**	-0.07	-0.16	-0.27**	0.14**	0.78**	0.71**	0.83**	0.59**	1.00	0.34**	0.43**	0.44**	0.40**	0.55**
DAQ-R 1 Domestic Chores	-0.39**	-0.32**	-0.38**	-0.34**	-0.25**	-0.10	-0.20	-0.32**	0.17**	0.44**	0.35**	0.30**	-0.04	0.34**	1.00	0.42**	0.42**	0.17	0.71**
DAQ-R 2 Work, Health, Spirituality & Caring	-0.33**	-0.27**	-0.33**	-0.27**	-0.07**	-0.01	0.06	-0.13	0.28**	0.51**	0.23	0.36**	0.09	0.43**	0.42**	1.00	0.42**	0.11	0.73**
DAQ-R 3 Interpersonal Contact & Social Support	-0.65**	-0.59**	-0.67**	-0.47**	-0.46**	-0.21	-0.17	-0.55**	0.46**	0.44**	0.18	0.57**	-0.03	0.44**	0.42**	0.42**	1.00	0.36**	0.80**
DAQ-R 4 Home Maintenance	-0.38**	-0.23**	-0.44**	-0.27**	-0.47**	-0.28**	-0.24	-0.48**	0.09**	0.22**	0.24	0.44**	0.24	0.40**	0.17	0.11	0.36**	1.00	0.48**
DAQ-R Sum	-0.62**	-0.50**	-0.63**	-0.47**	-0.40**	-0.19	-0.14	-0.48**	0.38**	0.57**	0.33**	0.56**	0.06	0.55**	0.71**	0.73**	0.80**	0.48**	1.00

C 39 Pearson Product Moment Correlation Pain and Disability Factor, Psychological Distress Factor, Dispositional Optimism, MDAQ-R Subscales and IPQ-R Subscales

	Pain & Disability	Psych. Distress	Dispositional Optimism	M 1	M 2	M 3	M 4	IP 1	IP 2	IP 3	IP 4
Pain & Disability Factor	1	.60**	-.28**	-.25*	-.15	-.29**	-.02	.26**	-.11	.13	.17
N	108	102	103	94	94	94	94	106	107	107	107
Psychological Distress Factor		1	-.63**	-.45**	-.17	-.47**	.16	.20*	-.05	.07	.36**
N	102	102	101	88	88	88	88	100	101	101	101
Dispositional Optimism			1	.25*	.06	.24*	-.23*	-.31**	-.11	-.04	-.24*
N	103	101	103	90	90	90	90	101	102	102	102
MDAQ-R 1				1	.46**	.69**	.30**	.06	.14	-.01	-.20
N	94	88	90	94	94	94	94	92	93	93	93
MDAQ-R 2					1	.45**	.51**	-.06	.06	-.20	-.01
N	94	88	90	94	94	94	94	92	93	93	93
MDAQ-R 3						1	.33**	.10	.12	-.04	-.08
N	94	88	90	94	94	94	94	92	93	93	93
MDAQ-R 4							1	-.03	.16	.00	.06
N	94	88	90	94	94	94	94	92	93	93	93
IPQ-R 1								1	.54**	.47**	.15
N	106	100	101	92	92	92	92	106	106	106	106
IPQ-R 2									1	.49**	.01
N	107	101	102	93	93	93	93	106	107	107	107
IPQ-R 3 I										1	.01
N	107	101	102	93	93	93	93	106	107	107	107
IPQ-R 4											1
N	107	101	102	93	93	93	93	106	107	107	107

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

C 40 Pearson Product Moment Correlation of Demographic Variables

N=108	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
(1). Source of Sample	1																	
(2). Gender	.07	1																
(3) Age	-.01	.16	1															
(4) Religion	.18	-.12	-.16	1														
(5). Education	.11	.13	-.07	.12	1													
(6). Employment Status	-.14	.05	.41**	-.04	-.21	1												
(7). Marital Status	-.18	.15	.02	.10	.05	.21	1											
(8). Children	-.09	.12	-.43**	.23*	.24*	-.12	.47**	1										
(9). Malignancy	.06	-.08	-.14	.16	.05	-.10	-.21*	-.03	1									
(10). Disability	.27**	-.08	-.05	-.01	.23*	-.12	-.16	.04	.11	1								
(11). Diabetes	-.01	-.12	-.23*	.01	-.11	-.32**	-.14	.01	.19*	-.02	1							
(12). Psychiatric Ill.	-.01	-.04	.07	-.13	-.10	.11	-.17	-.07	-.08	.07	.03	1						
(13). Health Problems	-.01	-.09	-.25*	-.04	-.06	-.23*	-.12	.00	.23*	.03	.22*	.15	1					
(14). Medication	.02	.09	-.15	-.07	.13	-.18	-.01	.07	.00	.02	.03	.13	.20	1				
(15). Work Injury	.25**	.27**	.07	-.15	.05	.01	.14	.11	.01	.05	.09	-.05	-.10	.08	1			
(16). Motor Accident	.13	-.02	-.08	.09	-.14	.07	.11	-.04	.15	-.14	.10	.10	.17	.08	.05	1		
(17). Litigation	.23*	.43**	.15	.06	.20*	-.12	.09	.14	-.12	.04	-.14	.05	-.23*	.19	.34**	-.04	1	.
(18). Pain Duration	-.04	.08	.23*	.07	.09	.34**	.12	.13	-.09	-.09	-.19	.06	-.20*	-.19	-.01	-.13	.04	1

Appendix C 41 Study Two Total Variance Explained by Model Seven Factor Model of all Measures

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total
1.00	9.96	33.19	33.19	9.96	33.19	33.19	8.83
2.00	4.71	15.68	48.87	4.71	15.68	48.87	6.43
3.00	2.89	9.64	58.51	2.89	9.64	58.51	4.62
4.00	2.26	7.52	66.03	2.26	7.52	66.03	2.61
5.00	1.22	4.06	70.09	1.22	4.06	70.09	5.13
6.00	1.10	3.66	73.75	1.10	3.66	73.75	4.14
7.00	1.04	3.47	77.22	1.04	3.47	77.22	2.89
8.00	.90	3.01	80.22				
9.00	.82	2.75	82.97				
10.00	.62	2.07	85.04				
11.00	.59	1.97	87.01				
12.00	.55	1.84	88.85				
13.00	.51	1.70	90.55				
14.00	.48	1.60	92.15				
15.00	.40	1.34	93.48				
16.00	.35	1.17	94.65				
17.00	.31	1.04	95.69				
18.00	.27	.90	96.60				
19.00	.24	.82	97.41				
20.00	.19	.62	98.03				
21.00	.17	.58	98.62				
22.00	.15	.49	99.11				
23.00	.12	.38	99.49				
24.00	.09	.31	99.80				
25.00	.06	.20	100.00				
26.00	.00	.00	100.00				
27.00	.00	.00	100.00				
28.00	.00	.00	100.00				
29.00	.00	.00	100.00				
30.00	.00	.00	100.00				

Extraction Method: Principal Component Analysis.

a. When components are correlated, sums of squared loadings cannot be added to obtain a total variance.

Appendix C 42 Beck Hopeless Scale Scores for Males and Females

Group Statistics

Gender			N	Mean	Std. Deviation	Std. Error Mean
BHS	dimension1	male	29.00	0.38	0.49	0.09
		female	74.00	0.19	0.39	0.05
BHS	dimension1	male	29.00	0.28	0.45	0.08
		female	74.00	0.07	0.25	0.03
BHS	dimension1	male	29.00	0.21	0.41	0.08
		female	74.00	0.09	0.29	0.03
BHS	dimension1	male	29.00	0.69	0.47	0.09
		female	74.00	0.54	0.50	0.06
BHS	dimension1	male	29.00	0.48	0.51	0.09
		female	74.00	0.36	0.48	0.06
BHS	dimension1	male	29.00	0.31	0.47	0.09
		female	74.00	0.24	0.43	0.05
BHS	dimension1	male	29.00	0.41	0.50	0.09
		female	74.00	0.15	0.36	0.04
BHS	dimension1	male	29.00	0.72	0.45	0.08
		female	74.00	0.58	0.50	0.06
BHS	dimension1	male	29.00	0.31	0.47	0.09
		female	74.00	0.09	0.29	0.03
BHS	dimension1	male	29.00	0.28	0.45	0.08
		female	74.00	0.22	0.41	0.05
BHS	dimension1	male	29.00	0.28	0.45	0.08
		female	74.00	0.08	0.27	0.03
BHS	dimension1	male	29.00	0.59	0.50	0.09
		female	74.00	0.36	0.48	0.06
BHS	dimension1	male	29.00	0.34	0.48	0.09
		female	74.00	0.39	0.49	0.06
BHS	dimension1	male	29.00	0.45	0.51	0.09
		female	74.00	0.28	0.45	0.05
BHS	dimension1	male	29.00	0.41	0.50	0.09
		female	74.00	0.30	0.46	0.05
BHS	dimension1	male	29.00	0.24	0.44	0.08
		female	74.00	0.09	0.29	0.03
BHS	dimension1	male	29.00	0.31	0.47	0.09
		female	74.00	0.14	0.34	0.04
BHS	dimension1	male	29.00	0.66	0.48	0.09
		female	74.00	0.36	0.48	0.06
BHS	dimension1	male	29.00	0.28	0.45	0.08
		female	74.00	0.18	0.38	0.04
BHS	dimension1	male	29.00	0.31	0.47	0.09
		female	74.00	0.09	0.29	0.03

APPENDIX D STUDY TWO TESTING THE MDA MODEL

Research Model Pain and Disability

D 1 Analysis One Hierarchical Regression Analysis Dependent Variable: Pain & Disability Factor

Model Summary^f

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1.00	0.55 ^a	0.30	0.26	0.84	0.30	8.38	4.00	79.00	0.00	1.92
2.00	0.60 ^b	0.35	0.29	0.83	0.06	1.65	4.00	75.00	0.17	
3.00	0.62 ^c	0.38	0.31	0.81	0.03	3.49	1.00	74.00	0.07	
4.00	0.70 ^d	0.49	0.40	0.76	0.11	3.73	4.00	70.00	0.01	
5.00	0.71 ^e	0.51	0.38	0.77	0.01	0.46	4.00	66.00	0.76	

a. Predictors: (Constant), Working or Not Working, Married/Defacto or Single, Litigating/Not Litigating, Pain Duration 3-18 /19 -36+months

b. Predictors: (Constant), Working or Not Working, Married/Defacto or Single, Litigating/Not Litigating, Pain Duration 3-18 /19 -36+months, IPQRF1 Psychological Attributions, IPQRF4 Accident or Chance, IPQRF3 Immunity, IPQRF2 Risk Factors

c. Predictors: (Constant), Working or Not Working, Married/Defacto or Single, Litigating/Not Litigating, Pain Duration 3-18 /19 -36+months, IPQRF1 Psychological Attributions, IPQRF4 Accident or Chance, IPQRF3 Immunity, IPQRF2 Risk Factors, LOT Positive Life Orientation

d. Predictors: (Constant), Working or Not Working, Married/Defacto or Single, Litigating/Not Litigating, Pain Duration 3-18 /19 -36+months, IPQRF1 Psychological Attributions, IPQRF4 Accident or Chance, IPQRF3 Immunity, IPQRF2 Risk Factors, LOT Positive Life Orientation, DAQ-R 2 Work, Health, Spirituality & Caring, DAQ-R 4 Home Maintenance, DAQ-R 1 Domestic Chores, DAQ-R 3 Interpersonal Contact & Social Support

e. Predictors: (Constant), Working or Not Working, Married/Defacto or Single, Litigating/Not Litigating, Pain Duration 3-18 /19 -36+months, IPQRF1 Psychological Attributions, IPQRF4 Accident or Chance, IPQRF3 Immunity, IPQRF2 Risk Factors, LOT Positive Life Orientation, DAQ-R 2 Work, Health, Spirituality & Caring, DAQ-R 4 Home Maintenance, DAQ-R 1 Domestic Chores, DAQ-R 3 Interpersonal Contact & Social Support, MDAQ-R 2 Structured Tasks, MDAQ-R 4 Home Maintenance & Health Maintenance, MDAQ-R 1 Support, Caring & Interpersonal Relationships, MDAQ-R 3 Sensory & Leisure Activities

f. Dependent Variable: **Pain & Disability Factor**

ANOVA^f

Model		Sum of Squares	df	Mean Square	F	Sig.
1.00	Regression	23.64	4.00	5.91	8.38	0.00 ^a
	Residual	55.69	79.00	0.70		
	Total	79.33	83.00			
2.00	Regression	28.14	8.00	3.52	5.16	0.00 ^b
	Residual	51.18	75.00	0.68		
	Total	79.33	83.00			
3.00	Regression	30.45	9.00	3.38	5.12	0.00 ^c
	Residual	48.88	74.00	0.66		
	Total	79.33	83.00			
4.00	Regression	39.05	13.00	3.00	5.22	0.00 ^d
	Residual	40.28	70.00	0.58		
	Total	79.33	83.00			
5.00	Regression	40.15	17.00	2.36	3.98	0.00 ^e
	Residual	39.18	66.00	0.59		
	Total	79.33	83.00			

a. Predictors: (Constant), Working or Not Working, Married/Defacto or Single, Litigating/Not Litigating, Pain Duration 3-18 /19 -36+months

b. Predictors: (Constant), Working or Not Working, Married/Defacto or Single, Litigating/Not Litigating, Pain Duration 3-18 /19 -36+months, IPQRF1 Psychological Attributions, IPQRF4 Accident or Chance, IPQRF3 Immunity, IPQRF2 Risk Factors

c. Predictors: (Constant), Working or Not Working, Married/Defacto or Single, Litigating/Not Litigating, Pain Duration 3-18 /19 -36+months, IPQRF1 Psychological Attributions, IPQRF4 Accident or Chance, IPQRF3 Immunity, IPQRF2 Risk Factors, LOT Positive Life Orientation

d. Predictors: (Constant), Working or Not Working, Married/Defacto or Single, Litigating/Not Litigating, Pain Duration 3-18 /19 -36+months, IPQRF1 Psychological Attributions, IPQRF4 Accident or Chance, IPQRF3 Immunity, IPQRF2 Risk Factors, LOT Positive Life Orientation, DAQ-R 2 Work, Health, Spirituality & Caring, DAQ-R 4 Home Maintenance, DAQ-R 1 Domestic Chores, DAQ-R 3 Interpersonal Contact & Social Support

e. Predictors: (Constant), Working or Not Working, Married/Defacto or Single, Litigating/Not Litigating, Pain Duration 3-18 /19 -36+months, IPQRF1 Psychological Attributions, IPQRF4 Accident or Chance, IPQRF3 Immunity, IPQRF2 Risk Factors, LOT Positive Life Orientation, DAQ-R 2 Work, Health, Spirituality & Caring, DAQ-R 4 Home Maintenance, DAQ-R 1 Domestic Chores, DAQ-R 3 Interpersonal Contact & Social Support, MDAQ-R 2 Structured Tasks, MDAQ-R 4 Home Maintenance & Health Maintenance, MDAQ-R 1 Support, Caring & Interpersonal Relationships, MDAQ-R 3 Sensory & Leisure Activities

f. **Dependent Variable: Pain & Disability Factor**

Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Correlations			Collinearity Statistics	
	B	Std. Error	Beta			Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance	VIF
1.00 (Constant)	-0.27	0.63		-0.43	0.67	-1.52	0.98					
Married/Defacto or Single	0.53	0.21	0.24	2.53	0.01	0.11	0.95	0.26	0.27	0.24	0.96	1.04
Litigating/Not Litigating	-0.85	0.24	-0.34	-3.54	0.00	-1.32	-0.37	-0.36	-0.37	-0.33	0.95	1.05
Pain Duration 3-18 /19 - 36+months	0.30	0.21	0.14	1.42	0.16	-0.12	0.72	0.23	0.16	0.13	0.91	1.10
Working Not Working	0.44	0.20	0.23	2.23	0.03	0.05	0.83	0.36	0.24	0.21	0.87	1.15
2.00 (Constant)	-0.49	0.79		-0.62	0.54	-2.07	1.08					
Married/Defacto or Single	0.49	0.21	0.22	2.27	0.03	0.06	0.91	0.26	0.25	0.21	0.89	1.12
Litigating/Not Litigating	-0.73	0.29	-0.30	-2.57	0.01	-1.30	-0.17	-0.36	-0.28	-0.24	0.65	1.55
Pain Duration	0.21	0.22	0.10	1.00	0.32	-0.21	0.64	0.23	0.11	0.09	0.84	1.19
Working Not Working	0.39	0.20	0.20	1.93	0.06	-0.01	0.79	0.36	0.22	0.18	0.80	1.25
IPQRF1 Psychological	0.05	0.02	0.29	2.35	0.02	0.01	0.09	0.23	0.26	0.22	0.55	1.81
IPQRF2 Risk Factors	-0.04	0.03	-0.24	-1.75	0.08	-0.10	0.01	-0.07	-0.20	-0.16	0.46	2.20
IPQRF3 Immunity	0.02	0.04	0.06	0.55	0.59	-0.06	0.11	0.11	0.06	0.05	0.62	1.61
IPQRF4 Accident	0.01	0.05	0.03	0.24	0.81	-0.09	0.11	0.13	0.03	0.02	0.79	1.27
3.00 (Constant)	-0.01	0.82		-0.01	0.99	-1.64	1.62					
Married/Defacto or Single	0.48	0.21	0.22	2.26	0.03	0.06	0.89	0.26	0.25	0.21	0.89	1.12
Litigating/Not Litigating	-0.56	0.30	-0.23	-1.89	0.06	-1.15	0.03	-0.36	-0.21	-0.17	0.58	1.72
Pain Duration	0.27	0.21	0.13	1.25	0.22	-0.16	0.69	0.23	0.14	0.11	0.82	1.21
Working or Not Working	0.35	0.20	0.18	1.74	0.09	-0.05	0.75	0.36	0.20	0.16	0.79	1.27
IPQRF1	0.04	0.02	0.23	1.83	0.07	0.00	0.08	0.23	0.21	0.17	0.52	1.94
IPQRF2	-0.05	0.03	-0.27	-1.98	0.05	-0.10	0.00	-0.07	-0.22	-0.18	0.45	2.22
IPQRF3 I	0.03	0.04	0.09	0.79	0.43	-0.05	0.11	0.11	0.09	0.07	0.61	1.64
IPQRF4	0.00	0.05	0.01	0.06	0.95	-0.10	0.10	0.13	0.01	0.01	0.78	1.28
LOT	-0.03	0.02	-0.20	-1.87	0.07	-0.06	0.00	-0.35	-0.21	-0.17	0.73	1.37
4.00 (Constant)	-0.69	0.83		-0.84	0.40	-2.34	0.95					
Married/Defacto or Single	0.47	0.22	0.21	2.16	0.03	0.04	0.90	0.26	0.25	0.18	0.74	1.35
Litigating/Not Litigating	-0.27	0.31	-0.11	-0.85	0.40	-0.89	0.36	-0.36	-0.10	-0.07	0.45	2.22
Pain Duration	0.13	0.21	0.06	0.62	0.53	-0.28	0.54	0.23	0.07	0.05	0.76	1.31
Working or Not Working	0.50	0.20	0.26	2.46	0.02	0.09	0.90	0.36	0.28	0.21	0.67	1.49
IPQRF1	0.04	0.02	0.24	2.00	0.05	0.00	0.08	0.23	0.23	0.17	0.51	1.95
IPQRF2	-0.04	0.02	-0.22	-1.64	0.11	-0.09	0.01	-0.07	-0.19	-0.14	0.42	2.40
IPQRF3	0.02	0.04	0.05	0.44	0.66	-0.06	0.10	0.11	0.05	0.04	0.57	1.75
IPQRF4	0.02	0.05	0.04	0.41	0.68	-0.08	0.12	0.13	0.05	0.03	0.69	1.45

	LOT	-0.03	0.02	-0.23	-2.08	0.04	-0.06	0.00	-0.35	-0.24	-0.18	0.60	1.68
	DAQ-R 1 Domestic Chores	-0.01	0.01	-0.10	-0.97	0.34	-0.04	0.01	-0.25	-0.11	-0.08	0.63	1.58
	DAQ-R 2 Work, Health, Spirituality & Caring	0.03	0.01	0.24	2.39	0.02	0.00	0.05	-0.07	0.27	0.20	0.70	1.42
	DAQ-R 3 Interpersonal Contact & Social Support	0.00	0.01	-0.01	-0.05	0.96	-0.03	0.03	-0.42	-0.01	0.00	0.40	2.50
	DAQ-R 4 Home Maintenance	-0.05	0.02	-0.29	-2.86	0.01	-0.09	-0.02	-0.40	-0.32	-0.24	0.68	1.46
5.00	(Constant)	-0.58	0.87		-0.67	0.51	-2.32	1.16					
	Married/Defacto or Single	0.45	0.22	0.21	2.04	0.04	0.01	0.89	0.26	0.24	0.18	0.73	1.36
	Litigating/Not Litigating	-0.34	0.33	-0.14	-1.03	0.31	-0.99	0.32	-0.36	-0.13	-0.09	0.43	2.33
	Pain Duration 3-18 /19 - 36+months	0.12	0.21	0.06	0.58	0.56	-0.30	0.55	0.23	0.07	0.05	0.74	1.35
	Working or Not Working	0.47	0.21	0.24	2.24	0.03	0.05	0.89	0.36	0.27	0.19	0.63	1.58
	IPQRF1 Psychological Attributions	0.04	0.02	0.25	2.00	0.05	0.00	0.08	0.23	0.24	0.17	0.47	2.13
	IPQRF2 Risk Factors	-0.04	0.03	-0.20	-1.45	0.15	-0.09	0.01	-0.07	-0.18	-0.13	0.40	2.52
	IPQRF3 Immunity	0.01	0.04	0.03	0.30	0.77	-0.07	0.09	0.11	0.04	0.03	0.56	1.79
	IPQRF4 Accident or Chance	0.00	0.05	0.01	0.06	0.95	-0.10	0.11	0.13	0.01	0.01	0.64	1.55
	LOT	-0.03	0.02	-0.20	-1.65	0.10	-0.06	0.01	-0.35	-0.20	-0.14	0.52	1.92
	DAQ-R 1 Domestic Chores	-0.01	0.02	-0.04	-0.34	0.74	-0.04	0.03	-0.25	-0.04	-0.03	0.49	2.05
	DAQ-R 2 Work, Health, Spirituality & Caring	0.03	0.01	0.28	2.50	0.01	0.01	0.06	-0.07	0.29	0.22	0.62	1.62
	DAQ-R 3 Interpersonal Contact & Social Support	0.00	0.02	-0.01	-0.04	0.97	-0.03	0.03	-0.42	0.00	0.00	0.34	2.90
	DAQ-R 4 Home Maintenance	-0.06	0.02	-0.31	-2.75	0.01	-0.10	-0.02	-0.40	-0.32	-0.24	0.59	1.68
	MDAQ-R 1 Support, Caring & Interpersonal Relationships	-0.02	0.01	-0.18	-1.22	0.23	-0.05	0.01	-0.28	-0.15	-0.11	0.35	2.88
	MDAQ-R 2 Structured Tasks	-0.01	0.01	-0.06	-0.47	0.64	-0.03	0.02	-0.20	-0.06	-0.04	0.48	2.10
	MDAQ-R 3 Sensory & Leisure Activities	0.01	0.01	0.09	0.57	0.57	-0.02	0.03	-0.31	0.07	0.05	0.32	3.17
	MDAQ-R 4 Home Maintenance & Health Maintenance	0.01	0.02	0.06	0.48	0.63	-0.03	0.04	0.04	0.06	0.04	0.43	2.30

a. Dependent Variable: Pain & Disability Factor

D 2 Analysis Two Hierarchical Regression Analysis Dependent Variable: Pain & Disability Factor (also Psychological Distress Factor)

Model Summary^g

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1.00	0.54 ^a	0.30	0.26	0.83	0.30	8.07	4.00	77.00	0.00	1.81
2.00	0.58 ^b	0.34	0.27	0.83	0.04	1.19	4.00	73.00	0.32	
3.00	0.61 ^c	0.37	0.30	0.81	0.04	4.17	1.00	72.00	0.04	
4.00	0.70 ^d	0.49	0.39	0.75	0.11	3.76	4.00	68.00	0.01	
5.00	0.71 ^e	0.51	0.38	0.76	0.02	0.59	4.00	64.00	0.67	
6.00	0.76 ^f	0.58	0.46	0.71	0.07	11.06	1.00	63.00	0.00	

a. Predictors: (Constant), Working or Not Working, Married/Defacto or Single, Litigating/Not Litigating, Pain Duration 3-18 /19 -36+months

b. Predictors: (Constant), Working or Not Working, Married/Defacto or Single, Litigating/Not Litigating, Pain Duration 3-18 /19 -36+months, IPQRF1 Psychological Attributions, IPQRF4 Accident or Chance, IPQRF3 Immunity, IPQRF2 Risk Factors

c. Predictors: (Constant), Working or Not Working, Married/Defacto or Single, Litigating/Not Litigating, Pain Duration 3-18 /19 -36+months, IPQRF1 Psychological Attributions, IPQRF4 Accident or Chance, IPQRF3 Immunity, IPQRF2 Risk Factors, LOT Positive Life Orientation

d. Predictors: (Constant), Working or Not Working, Married/Defacto or Single, Litigating/Not Litigating, Pain Duration 3-18 /19 -36+months, IPQRF1 Psychological Attributions, IPQRF4 Accident or Chance, IPQRF3 Immunity, IPQRF2 Risk Factors, LOT Positive Life Orientation, DAQ-R 2 Work, Health, Spirituality & Caring, DAQ-R 4 Home Maintenance, DAQ-R 1 Domestic Chores, DAQ-R 3 Interpersonal Contact & Social Support

e. Predictors: (Constant), Working or Not Working, Married/Defacto or Single, Litigating/Not Litigating, Pain Duration 3-18 /19 -36+months, IPQRF1 Psychological Attributions, IPQRF4 Accident or Chance, IPQRF3 Immunity, IPQRF2 Risk Factors, LOT Positive Life Orientation, DAQ-R 2 Work, Health, Spirituality & Caring, DAQ-R 4 Home Maintenance, DAQ-R 1 Domestic Chores, DAQ-R 3 Interpersonal Contact & Social Support, MDAQ-R 2 Structured Tasks, MDAQ-R 4 Home Maintenance & Health Maintenance, MDAQ-R 1 Support, Caring & Interpersonal Relationships, MDAQ-R 3 Sensory & Leisure Activities

f. Predictors: (Constant), Working or Not Working, Married/Defacto or Single, Litigating/Not Litigating, Pain Duration 3-18 /19 -36+months, IPQRF1 Psychological Attributions, IPQRF4 Accident or Chance, IPQRF3 Immunity, IPQRF2 Risk Factors, LOT Positive Life Orientation, DAQ-R 2 Work, Health, Spirituality & Caring, DAQ-R 4 Home Maintenance, DAQ-R 1 Domestic Chores, DAQ-R 3 Interpersonal Contact & Social Support, MDAQ-R 2 Structured Tasks, MDAQ-R 4 Home Maintenance & Health Maintenance, MDAQ-R 1 Support, Caring & Interpersonal Relationships, MDAQ-R 3 Sensory & Leisure Activities, Psychological Distress Factor

g. **Dependent Variable: Pain & Disability Factor**

ANOVA^g

Model		Sum of Squares	df	Mean Square	F	Sig.
1.00	Regression	22.36	4.00	5.59	8.07	0.00 ^a
	Residual	53.32	77.00	0.69		
	Total	75.69	81.00			
2.00	Regression	25.62	8.00	3.20	4.67	0.00 ^b
	Residual	50.06	73.00	0.69		
	Total	75.69	81.00			
3.00	Regression	28.36	9.00	3.15	4.80	0.00 ^c
	Residual	47.32	72.00	0.66		
	Total	75.69	81.00			
4.00	Regression	36.94	13.00	2.84	4.99	0.00 ^d
	Residual	38.75	68.00	0.57		
	Total	75.69	81.00			
5.00	Regression	38.31	17.00	2.25	3.86	0.00 ^e
	Residual	37.37	64.00	0.58		
	Total	75.69	81.00			
6.00	Regression	43.89	18.00	2.44	4.83	0.00 ^f
	Residual	31.79	63.00	0.50		
	Total	75.69	81.00			

a. Predictors: (Constant), Working or Not Working, Married/Defacto or Single, Litigating/Not Litigating, Pain Duration 3-18 /19 -36+months

b. Predictors: (Constant), Working or Not Working, Married/Defacto or Single, Litigating/Not Litigating, Pain Duration 3-18 /19 -36+months, IPQRF1 Psychological Attributions, IPQRF4 Accident or Chance, IPQRF3 Immunity, IPQRF2 Risk Factors

c. Predictors: (Constant), Working or Not Working, Married/Defacto or Single, Litigating/Not Litigating, Pain Duration 3-18 /19 -36+months, IPQRF1 Psychological Attributions, IPQRF4 Accident or Chance, IPQRF3 Immunity, IPQRF2 Risk Factors, LOT Positive Life Orientation

d. Predictors: (Constant), Working or Not Working, Married/Defacto or Single, Litigating/Not Litigating, Pain Duration 3-18 /19 -36+months, IPQRF1 Psychological Attributions, IPQRF4 Accident or Chance, IPQRF3 Immunity, IPQRF2 Risk Factors, LOT Positive Life Orientation, DAQ-R 2 Work, Health, Spirituality & Caring, DAQ-R 4 Home Maintenance, DAQ-R 1 Domestic Chores, DAQ-R 3 Interpersonal Contact & Social Support

e. Predictors: (Constant), Working or Not Working, Married/Defacto or Single, Litigating/Not Litigating, Pain Duration 3-18 /19 -36+months, IPQRF1 Psychological Attributions, IPQRF4 Accident or Chance, IPQRF3 Immunity, IPQRF2 Risk Factors, LOT Positive Life Orientation, DAQ-R 2 Work, Health, Spirituality & Caring, DAQ-R 4 Home Maintenance, DAQ-R 1 Domestic Chores, DAQ-R 3 Interpersonal Contact & Social Support, MDAQ-R 2 Structured Tasks, MDAQ-R 4 Home Maintenance & Health Maintenance, MDAQ-R 1 Support, Caring & Interpersonal Relationships, MDAQ-R 3 Sensory & Leisure Activities

f. Predictors: (Constant), Working or Not Working, Married/Defacto or Single, Litigating/Not Litigating, Pain Duration 3-18 /19 -36+months, IPQRF1 Psychological Attributions, IPQRF4 Accident or Chance, IPQRF3 Immunity, IPQRF2 Risk Factors, LOT Positive Life Orientation, DAQ-R 2 Work, Health, Spirituality & Caring, DAQ-R 4 Home Maintenance, DAQ-R 1 Domestic Chores, DAQ-R 3 Interpersonal Contact & Social Support, MDAQ-R 2 Structured Tasks, MDAQ-R 4 Home Maintenance & Health Maintenance, MDAQ-R 1 Support, Caring & Interpersonal Relationships, MDAQ-R 3 Sensory & Leisure Activities, Psychological Distress Factor

g. **Dependent Variable: Pain & Disability Factor**

Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Correlations			Collinearity Statistics	
	B	Std. Error	Beta			Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance	VIF
1.00 (Constant)	-0.26	0.62		-0.41	0.68	-1.50	0.99					
Married/Single	0.51	0.21	0.24	2.45	0.02	0.10	0.93	0.25	0.27	0.23	0.96	1.04
Litigating/Not Litigating	-0.84	0.24	-0.35	-3.52	0.00	-1.31	-0.36	-0.36	-0.37	-0.34	0.95	1.05
Pain Duration	0.33	0.21	0.16	1.56	0.12	-0.09	0.75	0.25	0.18	0.15	0.90	1.12
Working Not Working	0.41	0.20	0.21	2.06	0.04	0.01	0.80	0.35	0.23	0.20	0.86	1.16
2.00 (Constant)	-0.42	0.80		-0.52	0.60	-2.00	1.17					
Married/Single	0.48	0.22	0.22	2.22	0.03	0.05	0.91	0.25	0.25	0.21	0.90	1.12
Litigating/Not Litigating	-0.75	0.29	-0.31	-2.63	0.01	-1.33	-0.18	-0.36	-0.29	-0.25	0.65	1.54
Pain Duration	0.25	0.22	0.12	1.11	0.27	-0.19	0.68	0.25	0.13	0.11	0.82	1.23
Working or Not Working	0.38	0.20	0.20	1.84	0.07	-0.03	0.78	0.35	0.21	0.18	0.80	1.25
IPQRF1	0.04	0.02	0.27	2.06	0.04	0.00	0.09	0.21	0.23	0.20	0.54	1.85
IPQRF2	-0.04	0.03	-0.21	-1.44	0.15	-0.09	0.01	-0.06	-0.17	-0.14	0.43	2.32
IPQRF3	0.02	0.04	0.05	0.43	0.67	-0.07	0.10	0.09	0.05	0.04	0.61	1.64
IPQRF4	0.01	0.05	0.01	0.10	0.92	-0.10	0.11	0.12	0.01	0.01	0.78	1.28
3.00 (Constant)	0.13	0.82		0.16	0.87	-1.51	1.77					
Married/Single	0.46	0.21	0.22	2.19	0.03	0.04	0.88	0.25	0.25	0.20	0.90	1.12
Litigating/Not Litigating	-0.57	0.30	-0.23	-1.92	0.06	-1.15	0.02	-0.36	-0.22	-0.18	0.59	1.71
Pain Duration	0.31	0.22	0.15	1.44	0.15	-0.12	0.75	0.25	0.17	0.13	0.80	1.26
Working or Not Working	0.32	0.20	0.17	1.60	0.11	-0.08	0.73	0.35	0.18	0.15	0.79	1.27
IPQRF1	0.03	0.02	0.19	1.45	0.15	-0.01	0.07	0.21	0.17	0.14	0.50	2.00
IPQRF2	-0.04	0.03	-0.23	-1.61	0.11	-0.09	0.01	-0.06	-0.19	-0.15	0.43	2.33
IPQRF3	0.03	0.04	0.08	0.64	0.52	-0.06	0.11	0.09	0.08	0.06	0.60	1.66
IPQRF4	-0.01	0.05	-0.01	-0.13	0.90	-0.11	0.09	0.12	-0.02	-0.01	0.77	1.30
LOT	-0.03	0.02	-0.22	-2.04	0.04	-0.06	0.00	-0.37	-0.23	-0.19	0.72	1.39
4.00 (Constant)	-0.53	0.83		-0.64	0.53	-2.19	1.13					
Married/Single	0.44	0.22	0.21	2.05	0.04	0.01	0.88	0.25	0.24	0.18	0.74	1.36
Litigating/Not Litigating	-0.28	0.31	-0.12	-0.90	0.37	-0.90	0.34	-0.36	-0.11	-0.08	0.45	2.20
Pain Duration	0.18	0.21	0.09	0.84	0.40	-0.25	0.60	0.25	0.10	0.07	0.73	1.37
Working Not Working	0.47	0.20	0.24	2.28	0.03	0.06	0.88	0.35	0.27	0.20	0.66	1.51
IPQRF1	0.03	0.02	0.20	1.60	0.11	-0.01	0.07	0.21	0.19	0.14	0.50	2.01
IPQRF2	-0.03	0.03	-0.18	-1.29	0.20	-0.08	0.02	-0.06	-0.15	-0.11	0.40	2.52
IPQRF3	0.01	0.04	0.04	0.32	0.75	-0.07	0.09	0.09	0.04	0.03	0.57	1.76
IPQRF4	0.01	0.05	0.02	0.18	0.86	-0.09	0.11	0.12	0.02	0.02	0.68	1.48
LOT	-0.04	0.02	-0.25	-2.22	0.03	-0.07	0.00	-0.37	-0.26	-0.19	0.59	1.68
DAQ-R 1	-0.01	0.01	-0.10	-0.93	0.36	-0.04	0.01	-0.24	-0.11	-0.08	0.63	1.58
DAQ-R 2	0.03	0.01	0.25	2.45	0.02	0.01	0.05	-0.05	0.28	0.21	0.71	1.41

	DAQ-R 3	0.00	0.01	-0.02	-0.16	0.87	-0.03	0.03	-0.42	-0.02	-0.01	0.40	2.53
	DAQ-R 4	-0.05	0.02	-0.29	-2.80	0.01	-0.09	-0.01	-0.40	-0.32	-0.24	0.68	1.46
5.00	(Constant)	-0.52	0.87		-0.59	0.55	-2.25	1.22					
	Married/Single	0.42	0.22	0.20	1.92	0.06	-0.02	0.86	0.25	0.23	0.17	0.73	1.37
	Litigating/Not Litigating	-0.33	0.32	-0.14	-1.03	0.31	-0.98	0.31	-0.36	-0.13	-0.09	0.43	2.32
	Pain Duration	0.16	0.22	0.08	0.75	0.46	-0.27	0.59	0.25	0.09	0.07	0.72	1.39
	Working Not Working	0.45	0.21	0.23	2.11	0.04	0.02	0.87	0.35	0.25	0.19	0.63	1.58
	IPQRF1	0.03	0.02	0.21	1.63	0.11	-0.01	0.08	0.21	0.20	0.14	0.46	2.19
	IPQRF2	-0.03	0.03	-0.16	-1.10	0.27	-0.08	0.02	-0.06	-0.14	-0.10	0.38	2.65
	IPQRF3	0.01	0.04	0.02	0.16	0.87	-0.08	0.09	0.09	0.02	0.01	0.55	1.81
	IPQRF4	-0.01	0.05	-0.02	-0.17	0.86	-0.11	0.09	0.12	-0.02	-0.02	0.63	1.58
	LOT	-0.03	0.02	-0.21	-1.71	0.09	-0.06	0.00	-0.37	-0.21	-0.15	0.52	1.92
	DAQ-R 1	0.00	0.02	-0.04	-0.28	0.78	-0.04	0.03	-0.24	-0.03	-0.02	0.49	2.04
	DAQ-R 2	0.03	0.01	0.28	2.50	0.01	0.01	0.06	-0.05	0.30	0.22	0.62	1.61
	DAQ-R 3	0.00	0.02	-0.03	-0.19	0.85	-0.03	0.03	-0.42	-0.02	-0.02	0.33	2.99
	DAQ-R 4	-0.06	0.02	-0.33	-2.89	0.01	-0.10	-0.02	-0.40	-0.34	-0.25	0.59	1.68
	MDAQ-R 1	-0.02	0.01	-0.19	-1.33	0.19	-0.05	0.01	-0.26	-0.16	-0.12	0.36	2.78
	MDAQ-R 2	-0.01	0.01	-0.06	-0.45	0.65	-0.03	0.02	-0.16	-0.06	-0.04	0.50	2.01
	MDAQ-R 3	0.01	0.01	0.12	0.77	0.44	-0.01	0.03	-0.28	0.10	0.07	0.33	3.07
	MDAQ-R 4	0.01	0.02	0.10	0.80	0.42	-0.02	0.05	0.12	0.10	0.07	0.46	2.16
6.00	(Constant)	-1.42	0.85		-1.67	0.10	-3.12	0.28					
	Married/Single	0.47	0.21	0.22	2.29	0.03	0.06	0.88	0.25	0.28	0.19	0.72	1.38
	Litigating/Not Litigating	-0.25	0.30	-0.10	-0.82	0.42	-0.85	0.36	-0.36	-0.10	-0.07	0.43	2.33
	Pain Duration	0.02	0.21	0.01	0.08	0.93	-0.39	0.43	0.25	0.01	0.01	0.69	1.46
	Working Not Working	0.46	0.20	0.24	2.33	0.02	0.07	0.85	0.35	0.28	0.19	0.63	1.59
	IPQRF1	0.03	0.02	0.19	1.53	0.13	-0.01	0.07	0.21	0.19	0.13	0.45	2.20
	IPQRF2	-0.03	0.02	-0.16	-1.17	0.25	-0.08	0.02	-0.06	-0.15	-0.10	0.38	2.65
	IPQRF3	0.00	0.04	0.00	-0.01	0.99	-0.08	0.08	0.09	0.00	0.00	0.55	1.81
	IPQRF4	-0.04	0.05	-0.08	-0.73	0.47	-0.13	0.06	0.12	-0.09	-0.06	0.62	1.62
	LOT	0.00	0.02	-0.01	-0.07	0.95	-0.04	0.03	-0.37	-0.01	-0.01	0.41	2.47
	DAQ-R 1	0.00	0.01	0.02	0.13	0.90	-0.03	0.03	-0.24	0.02	0.01	0.48	2.07
	DAQ-R 2	0.03	0.01	0.30	2.87	0.01	0.01	0.06	-0.05	0.34	0.23	0.62	1.62
	DAQ-R 3	0.01	0.01	0.10	0.69	0.49	-0.02	0.04	-0.42	0.09	0.06	0.31	3.22
	DAQ-R 4	-0.05	0.02	-0.27	-2.53	0.01	-0.09	-0.01	-0.40	-0.30	-0.21	0.58	1.73
	MDAQ-R 1	-0.02	0.01	-0.18	-1.33	0.19	-0.04	0.01	-0.26	-0.16	-0.11	0.36	2.78
	MDAQ-R 2	-0.01	0.01	-0.06	-0.50	0.62	-0.03	0.02	-0.16	-0.06	-0.04	0.50	2.01
	MDAQ-R 3	0.01	0.01	0.18	1.22	0.23	-0.01	0.03	-0.28	0.15	0.10	0.32	3.11
	MDAQ-R 4	0.01	0.02	0.05	0.44	0.66	-0.02	0.04	0.12	0.06	0.04	0.46	2.19
	Psychological Distress Factor	0.48	0.15	0.51	3.33	0.00	0.19	0.77	0.59	0.39	0.27	0.28	3.55

a. Dependent Variable: Pain & Disability Factor

D 3 Analysis Three Hierarchical Regression Analysis Dependent Variable: Pain & Disability Factor (also Psychological Distress Factor)

Model Summary^e

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
dimension0 1.00	0.43 ^a	0.19	0.17	0.89	0.19	10.85	2.00	94.00	0.00	2.10
2.00	0.43 ^b	0.19	0.16	0.89	0.00	0.07	1.00	93.00	0.79	
3.00	0.61 ^c	0.37	0.34	0.79	0.18	26.64	1.00	92.00	0.00	
4.00	0.75 ^d	0.56	0.54	0.66	0.19	39.93	1.00	91.00	0.00	

a. Predictors: (Constant), Married/Defacto or Single, Working or Not Working

b. Predictors: (Constant), Married/Defacto or Single, Working or Not Working, DAQ-R 2 Work, Health, Spirituality & Caring

c. Predictors: (Constant), Married/Defacto or Single, Working or Not Working, DAQ-R 2 Work, Health, Spirituality & Caring, DAQ-R 4 Home Maintenance

d. Predictors: (Constant), Married/Defacto or Single, Working or Not Working, DAQ-R 2 Work, Health, Spirituality & Caring, DAQ-R 4 Home Maintenance, Psychological Distress Factor

e. **Dependent Variable: Pain & Disability Factor**

ANOVA^e

Model		Sum of Squares	df	Mean Square	F	Sig.
1.00	Regression	17.00	2.00	8.50	10.85	0.00 ^a
	Residual	73.63	94.00	0.78		
	Total	90.64	96.00			
2.00	Regression	17.06	3.00	5.69	7.19	0.00 ^b
	Residual	73.58	93.00	0.79		
	Total	90.64	96.00			
3.00	Regression	33.58	4.00	8.40	13.54	0.00 ^c
	Residual	57.05	92.00	0.62		
	Total	90.64	96.00			
4.00	Regression	50.98	5.00	10.20	23.40	0.00 ^d
	Residual	39.66	91.00	0.44		
	Total	90.64	96.00			

a. Predictors: (Constant), Married/Defacto or Single, Working or Not Working

b. Predictors: (Constant), Married/Defacto or Single, Working or Not Working, DAQ-R 2 Work, Health, Spirituality & Caring

c. Predictors: (Constant), Married/Defacto or Single, Working or Not Working, DAQ-R 2 Work, Health, Spirituality & Caring, DAQ-R 4 Home Maintenance

d. Predictors: (Constant), Married/Defacto or Single, Working or Not Working, DAQ-R 2 Work, Health, Spirituality & Caring, DAQ-R 4 Home Maintenance, Psychological Distress Factor

e. **Dependent Variable: Pain & Disability Factor**

Coefficients ^a												
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Correlations			Collinearity Statistics	
	B	Std. Error	Beta			Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance	VIF
1.00	(Constant)	-1.62	0.36	-4.45	0.00	-2.35	-0.90					
	Working or Not Working	0.70	0.18	3.89	0.00	0.34	1.06	0.39	0.37	0.36	0.99	1.01
	Married/Defacto or Single	0.42	0.20	2.13	0.04	0.03	0.81	0.24	0.21	0.20	0.99	1.01
2.00	(Constant)	-1.71	0.50	-3.44	0.00	-2.70	-0.72					
	Working or Not Working	0.72	0.19	3.81	0.00	0.34	1.09	0.39	0.37	0.36	0.92	1.09
	Married/Defacto or Single	0.42	0.20	2.10	0.04	0.02	0.81	0.24	0.21	0.20	0.98	1.02
	DAQ-R 2 Work, Health, Spirituality & Caring	0.00	0.01	0.26	0.79	-0.02	0.02	-0.06	0.03	0.02	0.93	1.08
3.00	(Constant)	-1.21	0.45	-2.67	0.01	-2.10	-0.31					
	Working or Not Working	0.70	0.17	4.18	0.00	0.37	1.03	0.39	0.40	0.35	0.92	1.09
	Married/Defacto or Single	0.39	0.18	2.20	0.03	0.04	0.74	0.24	0.22	0.18	0.98	1.02
	DAQ-R 2 Work, Health, Spirituality & Caring	0.01	0.01	0.82	0.41	-0.01	0.03	-0.06	0.09	0.07	0.92	1.09
	DAQ-R 4 Home Maintenance	-0.07	0.01	-5.16	0.00	-0.10	-0.04	-0.45	-0.47	-0.43	0.99	1.01
4.00	(Constant)	-1.42	0.38	-3.73	0.00	-2.17	-0.66					
	Working or Not Working	0.47	0.14	3.25	0.00	0.18	0.76	0.39	0.32	0.23	0.86	1.16
	Married/Defacto or Single	0.35	0.15	2.38	0.02	0.06	0.64	0.24	0.24	0.16	0.98	1.02
	DAQ-R 2 Work, Health, Spirituality & Caring	0.02	0.01	2.80	0.01	0.01	0.04	-0.06	0.28	0.19	0.84	1.19
	DAQ-R 4 Home Maintenance	-0.05	0.01	-3.62	0.00	-0.07	-0.02	-0.45	-0.35	-0.25	0.87	1.15
	Psychological Distress Factor	0.50	0.08	6.32	0.00	0.34	0.65	0.62	0.55	0.44	0.72	1.40

a. Dependent Variable: Pain & Disability Factor

D 4 Analysis Three Hierarchical Regression Analysis Dependent Variable: Pain & Disability Factor (also Hopelessness, Depression and Anxiety)

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
dimension0 1.00	0.53 ^a	0.28	0.26	0.83	0.28	12.04	3.00	91.00	0.00
2.00	0.56 ^b	0.32	0.29	0.82	0.03	4.50	1.00	90.00	0.04
3.00	0.58 ^c	0.34	0.30	0.81	0.02	2.91	1.00	89.00	0.09
4.00	0.69 ^d	0.48	0.43	0.73	0.14	11.22	2.00	87.00	0.00
5.00	0.70 ^e	0.49	0.45	0.72	0.02	3.26	1.00	86.00	0.07
6.00	0.75 ^f	0.57	0.52	0.67	0.07	14.41	1.00	85.00	0.00
7.00	0.78 ^g	0.60	0.56	0.65	0.04	7.77	1.00	84.00	0.01

a. Predictors: (Constant), Litigating/Not Litigating, Married/Defacto or Single, Working or Not Working

b. Predictors: (Constant), Litigating/Not Litigating, Married/Defacto or Single, Working or Not Working, IPQRF1 Psychological Attributions

c. Predictors: (Constant), Litigating/Not Litigating, Married/Defacto or Single, Working or Not Working, IPQRF1 Psychological Attributions, LOT Positive Life Orientation

d. Predictors: (Constant), Litigating/Not Litigating, Married/Defacto or Single, Working or Not Working, IPQRF1 Psychological Attributions, LOT Positive Life Orientation, DAQ-R 4 Home Maintenance, DAQ-R 2 Work, Health, Spirituality & Caring

e. Predictors: (Constant), Litigating/Not Litigating, Married/Defacto or Single, Working or Not Working, IPQRF1 Psychological Attributions, LOT Positive Life Orientation, DAQ-R 4 Home Maintenance, DAQ-R 2 Work, Health, Spirituality & Caring, Beck Hopelessness Scale

f. Predictors: (Constant), Litigating/Not Litigating, Married/Defacto or Single, Working or Not Working, IPQRF1 Psychological Attributions, LOT Positive Life Orientation, DAQ-R 4 Home Maintenance, DAQ-R 2 Work, Health, Spirituality & Caring, Beck Hopelessness Scale, HADS Depression

g. Predictors: (Constant), Litigating/Not Litigating, Married/Defacto or Single, Working or Not Working, IPQRF1 Psychological Attributions, LOT Positive Life Orientation, DAQ-R 4 Home Maintenance, DAQ-R 2 Work, Health, Spirituality & Caring, Beck Hopelessness Scale, HADS Depression, HADS Anxiety

ANOVA^h

Model		Sum of Squares	df	Mean Square	F	Sig.
1.00	Regression	25.10	3.00	8.37	12.04	0.00 ^a
	Residual	63.26	91.00	0.70		
	Total	88.36	94.00			
2.00	Regression	28.11	4.00	7.03	10.50	0.00 ^b
	Residual	60.25	90.00	0.67		
	Total	88.36	94.00			
3.00	Regression	30.02	5.00	6.00	9.16	0.00 ^c
	Residual	58.34	89.00	0.66		
	Total	88.36	94.00			
4.00	Regression	41.98	7.00	6.00	11.25	0.00 ^d
	Residual	46.38	87.00	0.53		
	Total	88.36	94.00			
5.00	Regression	43.68	8.00	5.46	10.51	0.00 ^e
	Residual	44.68	86.00	0.52		
	Total	88.36	94.00			
6.00	Regression	50.15	9.00	5.57	12.40	0.00 ^f
	Residual	38.21	85.00	0.45		
	Total	88.36	94.00			
7.00	Regression	53.39	10.00	5.34	12.82	0.00 ^g
	Residual	34.97	84.00	0.42		
	Total	88.36	94.00			

a. Predictors: (Constant), Litigating/Not Litigating, Married/Defacto or Single, Working or Not Working

b. Predictors: (Constant), Litigating/Not Litigating, Married/Defacto or Single, Working or Not Working, IPQRF1 Psychological Attributions

c. Predictors: (Constant), Litigating/Not Litigating, Married/Defacto or Single, Working or Not Working, IPQRF1 Psychological Attributions, LOT Positive Life Orientation

d. Predictors: (Constant), Litigating/Not Litigating, Married/Defacto or Single, Working or Not Working, IPQRF1 Psychological Attributions, LOT Positive Life Orientation, DAQ-R 4 Home Maintenance, DAQ-R 2 Work, Health, Spirituality & Caring

e. Predictors: (Constant), Litigating/Not Litigating, Married/Defacto or Single, Working or Not Working, IPQRF1 Psychological Attributions, LOT Positive Life Orientation, DAQ-R 4 Home Maintenance, DAQ-R 2 Work, Health, Spirituality & Caring, Beck Hopelessness Scale

f. Predictors: (Constant), Litigating/Not Litigating, Married/Defacto or Single, Working or Not Working, IPQRF1 Psychological Attributions, LOT Positive Life Orientation, DAQ-R 4 Home Maintenance, DAQ-R 2 Work, Health, Spirituality & Caring, Beck Hopelessness Scale, HADS Depression

g. Predictors: (Constant), Litigating/Not Litigating, Married/Defacto or Single, Working or Not Working, IPQRF1 Psychological Attributions, LOT Positive Life Orientation, DAQ-R 4 Home Maintenance, DAQ-R 2 Work, Health, Spirituality & Caring, Beck Hopelessness Scale, HADS Depression, HADS Anxiety

h. **Dependent Variable: Pain & Disability Factor**

Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Collinearity Statistics	
	B	Std. Error	Beta			Lower Bound	Upper Bound	Tolerance	VIF
1.00 (Constant)	0.10	0.57		0.18	0.85	-1.03	1.23		
Working or Not Working	0.57	0.17	0.30	3.27	0.00	0.22	0.92	0.96	1.04
Married/Defacto or Single	0.48	0.19	0.22	2.49	0.01	0.10	0.86	0.98	1.02
Litigating/Not Litigating	-0.88	0.23	-0.34	-3.76	0.00	-1.34	-0.41	0.96	1.04
2.00 (Constant)	-0.15	0.57		-0.26	0.80	-1.28	0.99		
Working or Not Working	0.51	0.17	0.26	2.91	0.00	0.16	0.85	0.93	1.07
Married/Defacto or Single	0.45	0.19	0.21	2.37	0.02	0.07	0.82	0.98	1.02
Litigating/Not Litigating	-0.94	0.23	-0.37	-4.08	0.00	-1.40	-0.48	0.94	1.06
IPQR1 Psychological Attributions	0.03	0.02	0.19	2.12	0.04	0.00	0.06	0.95	1.05
3.00 (Constant)	0.24	0.61		0.40	0.69	-0.97	1.45		
Working or Not Working	0.46	0.17	0.24	2.67	0.01	0.12	0.81	0.91	1.10
Married/Defacto or Single	0.46	0.19	0.22	2.48	0.02	0.09	0.83	0.97	1.03
Litigating/Not Litigating	-0.79	0.24	-0.31	-3.24	0.00	-1.28	-0.31	0.82	1.22
IPQR1 Psychological Attributions	0.02	0.02	0.14	1.46	0.15	-0.01	0.05	0.84	1.18
LOT	-0.02	0.01	-0.17	-1.70	0.09	-0.05	0.00	0.76	1.31
4.00 (Constant)	-0.20	0.57		-0.34	0.73	-1.34	0.95		
Working or Not Working	0.53	0.16	0.27	3.33	0.00	0.21	0.85	0.88	1.13
Married/Defacto or Single	0.39	0.17	0.18	2.30	0.02	0.05	0.72	0.96	1.04
Litigating/Not Litigating	-0.49	0.24	-0.19	-2.07	0.04	-0.96	-0.02	0.71	1.40
IPQR1 Psychological Attributions	0.02	0.01	0.14	1.64	0.10	0.00	0.05	0.84	1.18
LOT	-0.03	0.01	-0.22	-2.38	0.02	-0.06	-0.01	0.73	1.37
DAQ-R 2 Work, Health, Spirituality & Caring	0.02	0.01	0.17	2.03	0.05	0.00	0.04	0.85	1.17
DAQ-R 4 Home Maintenance	-0.06	0.01	-0.37	-4.37	0.00	-0.09	-0.03	0.86	1.16
5.00 (Constant)	-0.81	0.66		-1.22	0.23	-2.12	0.51		
Working or Not Working	0.49	0.16	0.25	3.06	0.00	0.17	0.80	0.86	1.16
Married/Defacto or Single	0.34	0.17	0.16	1.99	0.05	0.00	0.67	0.94	1.07
Litigating/Not Litigating	-0.47	0.23	-0.18	-1.99	0.05	-0.93	0.00	0.71	1.40
IPQR1 Psychological Attributions	0.03	0.01	0.17	1.97	0.05	0.00	0.06	0.82	1.23
LOT	-0.01	0.02	-0.10	-0.89	0.38	-0.05	0.02	0.48	2.10

	DAQ-R 2 Work, Health, Spirituality & Caring	0.02	0.01	0.19	2.24	0.03	0.00	0.04	0.84	1.19
	DAQ-R 4 Home Maintenance	-0.06	0.01	-0.34	-4.05	0.00	-0.09	-0.03	0.84	1.20
	Hopelessness	0.04	0.02	0.19	1.81	0.07	0.00	0.08	0.51	1.98
6.00	(Constant)	-2.14	0.71		-3.02	0.00	-3.54	-0.73		
	Working or Not Working	0.44	0.15	0.23	2.97	0.00	0.15	0.74	0.86	1.17
	Married/Defacto or Single	0.36	0.16	0.17	2.30	0.02	0.05	0.68	0.94	1.07
	Litigating/Not Litigating	-0.18	0.23	-0.07	-0.80	0.43	-0.64	0.27	0.64	1.57
	IPQRF1 Psychological Attributions	0.03	0.01	0.15	1.95	0.05	0.00	0.05	0.81	1.23
	LOT	0.00	0.02	-0.03	-0.31	0.76	-0.03	0.03	0.46	2.16
	DAQ-R 2 Work, Health, Spirituality & Caring	0.02	0.01	0.23	2.88	0.01	0.01	0.04	0.83	1.20
	DAQ-R 4 Home Maintenance	-0.04	0.01	-0.23	-2.82	0.01	-0.07	-0.01	0.74	1.35
	Hopelessness	-0.01	0.02	-0.03	-0.26	0.79	-0.05	0.04	0.37	2.67
	HADS Depression	0.10	0.03	0.48	3.80	0.00	0.05	0.15	0.32	3.15
7.00	(Constant)	-2.31	0.68		-3.38	0.00	-3.67	-0.95		
	Working or Not Working	0.45	0.14	0.23	3.11	0.00	0.16	0.73	0.86	1.17
	Married/Defacto or Single	0.39	0.15	0.18	2.54	0.01	0.08	0.69	0.93	1.07
	Litigating/Not Litigating	-0.15	0.22	-0.06	-0.68	0.50	-0.59	0.29	0.64	1.57
	IPQRF1 Psychological Attributions	0.01	0.01	0.03	0.38	0.70	-0.02	0.03	0.61	1.63
	LOT	0.00	0.01	-0.02	-0.23	0.82	-0.03	0.03	0.46	2.16
	DAQ-R 2 Work, Health, Spirituality & Caring	0.02	0.01	0.22	2.98	0.00	0.01	0.04	0.83	1.20
	DAQ-R 4 Home Maintenance	-0.04	0.01	-0.23	-2.84	0.01	-0.07	-0.01	0.74	1.35
	Hopelessness	-0.02	0.02	-0.11	-0.96	0.34	-0.07	0.02	0.35	2.85
	HADS Depression	0.06	0.03	0.31	2.26	0.03	0.01	0.12	0.25	3.96
	HADS Anxiety	0.08	0.03	0.34	2.79	0.01	0.02	0.13	0.31	3.23

a. Dependent Variable: Pain & Disability Factor

D 5 Analysis Four Hierarchical Regression Analysis Dependent Variable: Pain and Disability Factor (also Hopelessness, Depression and Anxiety)

Model Summary^a

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
dimension0 1.00	0.43 ^a	0.19	0.17	0.89	0.19	10.85	2.00	94.00	0.00	2.24
2.00	0.43 ^b	0.19	0.16	0.89	0.00	0.07	1.00	93.00	0.79	
3.00	0.61 ^c	0.37	0.34	0.79	0.18	26.64	1.00	92.00	0.00	
4.00	0.66 ^d	0.44	0.41	0.75	0.07	11.07	1.00	91.00	0.00	
5.00	0.74 ^e	0.55	0.52	0.68	0.11	21.55	1.00	90.00	0.00	
6.00	0.78 ^f	0.61	0.58	0.63	0.06	13.98	1.00	89.00	0.00	

a. Predictors: (Constant), Married/Defacto or Single, Working or Not Working

b. Predictors: (Constant), Married/Defacto or Single, Working or Not Working, DAQ-R 2 Work, Health, Spirituality & Caring

c. Predictors: (Constant), Married/Defacto or Single, Working or Not Working, DAQ-R 2 Work, Health, Spirituality & Caring, DAQ-R 4 Home Maintenance

d. Predictors: (Constant), Married/Defacto or Single, Working or Not Working, DAQ-R 2 Work, Health, Spirituality & Caring, DAQ-R 4 Home Maintenance, Beck Hopelessness Scale

e. Predictors: (Constant), Married/Defacto or Single, Working or Not Working, DAQ-R 2 Work, Health, Spirituality & Caring, DAQ-R 4 Home Maintenance, Beck Hopelessness Scale, HADS Depression

f. Predictors: (Constant), Married/Defacto or Single, Working or Not Working, DAQ-R 2 Work, Health, Spirituality & Caring, DAQ-R 4 Home Maintenance, Beck Hopelessness Scale, HADS Depression, HADS Anxiety

g. **Dependent Variable: Pain & Disability Factor**

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1.00	Regression	17.00	2.00	8.50	10.85	0.00 ^a
	Residual	73.63	94.00	0.78		
	Total	90.64	96.00			
2.00	Regression	17.06	3.00	5.69	7.19	0.00 ^b
	Residual	73.58	93.00	0.79		
	Total	90.64	96.00			
3.00	Regression	33.58	4.00	8.40	13.54	0.00 ^c
	Residual	57.05	92.00	0.62		
	Total	90.64	96.00			
4.00	Regression	39.77	5.00	7.95	14.23	0.00 ^d
	Residual	50.87	91.00	0.56		
	Total	90.64	96.00			
5.00	Regression	49.59	6.00	8.27	18.13	0.00 ^e
	Residual	41.04	90.00	0.46		
	Total	90.64	96.00			
6.00	Regression	55.17	7.00	7.88	19.77	0.00 ^f
	Residual	35.47	89.00	0.40		
	Total	90.64	96.00			

a. Predictors: (Constant), Married/Defacto or Single, Working or Not Working

b. Predictors: (Constant), Married/Defacto or Single, Working or Not Working, DAQ-R 2 Work, Health, Spirituality & Caring

c. Predictors: (Constant), Married/Defacto or Single, Working or Not Working, DAQ-R 2 Work, Health, Spirituality & Caring, DAQ-R 4 Home Maintenance

d. Predictors: (Constant), Married/Defacto or Single, Working or Not Working, DAQ-R 2 Work, Health, Spirituality & Caring, DAQ-R 4 Home Maintenance, Beck Hopelessness Scale

e. Predictors: (Constant), Married/Defacto or Single, Working or Not Working, DAQ-R 2 Work, Health, Spirituality & Caring, DAQ-R 4 Home Maintenance, Beck Hopelessness Scale, HADS Depression

f. Predictors: (Constant), Married/Defacto or Single, Working or Not Working, DAQ-R 2 Work, Health, Spirituality & Caring, DAQ-R 4 Home Maintenance, Beck Hopelessness Scale, HADS Depression, HADS Anxiety

g. **Dependent Variable: Pain & Disability Factor**

Coefficients ^a												
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Correlations			Collinearity Statistics	
	B	Std. Error	Beta			Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance	VIF
1.00 (Constant)	-1.62	0.36		-4.45	0.00	-2.35	-0.90					
Working or Not Working	0.70	0.18	0.36	3.89	0.00	0.34	1.06	0.39	0.37	0.36	0.99	1.01
Married/ Single	0.42	0.20	0.20	2.13	0.04	0.03	0.81	0.24	0.21	0.20	0.99	1.01
2.00 (Constant)	-1.71	0.50		-3.44	0.00	-2.70	-0.72					
Working or Not Working	0.72	0.19	0.37	3.81	0.00	0.34	1.09	0.39	0.37	0.36	0.92	1.09
Married/Single	0.42	0.20	0.20	2.10	0.04	0.02	0.81	0.24	0.21	0.20	0.98	1.02
DAQ-R 2	0.00	0.01	0.03	0.26	0.79	-0.02	0.02	-0.06	0.03	0.02	0.93	1.08
3.00 (Constant)	-1.21	0.45		-2.67	0.01	-2.10	-0.31					
Working or Not Working	0.70	0.17	0.36	4.18	0.00	0.37	1.03	0.39	0.40	0.35	0.92	1.09
Married/ Single	0.39	0.18	0.18	2.20	0.03	0.04	0.74	0.24	0.22	0.18	0.98	1.02
DAQ-R 2	0.01	0.01	0.07	0.82	0.41	-0.01	0.03	-0.06	0.09	0.07	0.92	1.09
DAQ-R	-0.07	0.01	-0.43	-5.16	0.00	-0.10	-0.04	-0.45	-0.47	-0.43	0.99	1.01
4.00 (Constant)	-1.56	0.44		-3.53	0.00	-2.44	-0.68					
Working or Not Working	0.59	0.16	0.30	3.64	0.00	0.27	0.91	0.39	0.36	0.29	0.88	1.14
Married/ Single	0.35	0.17	0.16	2.07	0.04	0.01	0.68	0.24	0.21	0.16	0.98	1.02
DAQ-R 2	0.01	0.01	0.14	1.63	0.11	0.00	0.03	-0.06	0.17	0.13	0.87	1.15
DAQ-R 4	-0.06	0.01	-0.37	-4.62	0.00	-0.09	-0.04	-0.45	-0.44	-0.36	0.94	1.06
Beck Hopelessness Scale	0.06	0.02	0.29	3.33	0.00	0.02	0.09	0.43	0.33	0.26	0.82	1.21
5.00 (Constant)	-2.33	0.43		-5.40	0.00	-3.19	-1.47					
Working or Not Working	0.50	0.15	0.26	3.42	0.00	0.21	0.80	0.39	0.34	0.24	0.87	1.15
Married/ Single	0.41	0.15	0.19	2.70	0.01	0.11	0.71	0.24	0.27	0.19	0.97	1.03
DAQ-R 2	0.02	0.01	0.20	2.64	0.01	0.01	0.04	-0.06	0.27	0.19	0.84	1.20
DAQ-R 4	-0.04	0.01	-0.23	-2.84	0.01	-0.07	-0.01	-0.45	-0.29	-0.20	0.79	1.26
Beck Hopelessness Scale	-0.01	0.02	-0.04	-0.34	0.74	-0.05	0.03	0.43	-0.04	-0.02	0.46	2.17
HADS Depression	0.11	0.02	0.54	4.64	0.00	0.06	0.16	0.61	0.44	0.33	0.38	2.65
6.00 (Constant)	-2.63	0.41		-6.38	0.00	-3.45	-1.81					
Working or Not Working	0.46	0.14	0.24	3.33	0.00	0.18	0.73	0.39	0.33	0.22	0.86	1.16
Married/Defacto or Single	0.38	0.14	0.18	2.68	0.01	0.10	0.66	0.24	0.27	0.18	0.97	1.03
DAQ-R 2	0.02	0.01	0.22	3.00	0.00	0.01	0.04	-0.06	0.30	0.20	0.83	1.20
DAQ-R 4	-0.04	0.01	-0.23	-3.15	0.00	-0.07	-0.01	-0.45	-0.32	-0.21	0.79	1.26
Beck Hopelessness Scale	-0.02	0.02	-0.11	-1.08	0.28	-0.06	0.02	0.43	-0.11	-0.07	0.44	2.26
HADS Depression	0.07	0.02	0.33	2.67	0.01	0.02	0.12	0.61	0.27	0.18	0.30	3.37
HADS Anxiety	0.08	0.02	0.37	3.74	0.00	0.04	0.12	0.62	0.37	0.25	0.44	2.26

a. Dependent Variable: Pain & Disability Factor

D 6 Analysis Four Hierarchical Regression Analysis Dependent Variable: Present Pain Intensity (PPI) (also Hopelessness, Depression and Anxiety)

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1.00	0.33 ^a	0.11	0.08	0.91	0.11	3.77	3.00	91.00	0.01
2.00	0.34 ^b	0.12	0.08	0.91	0.01	0.64	1.00	90.00	0.43
3.00	0.35 ^c	0.12	0.07	0.91	0.01	0.75	1.00	89.00	0.39
4.00	0.43 ^d	0.19	0.12	0.89	0.06	3.33	2.00	87.00	0.04
5.00	0.47 ^e	0.22	0.15	0.87	0.04	4.00	1.00	86.00	0.05
6.00	0.49 ^f	0.24	0.16	0.87	0.02	2.21	1.00	85.00	0.14
7.00	0.50 ^g	0.25	0.16	0.87	0.00	0.53	1.00	84.00	0.47

a. Predictors: (Constant), Working or Not Working, Married/Defacto or Single, Litigating/Not Litigating

b. Predictors: (Constant), Working or Not Working, Married/Defacto or Single, Litigating/Not Litigating, IPQRF1 Psychological Attributions

c. Predictors: (Constant), Working or Not Working, Married/Defacto or Single, Litigating/Not Litigating, IPQRF1 Psychological Attributions, LOT Positive Life Orientation

d. Predictors: (Constant), Working or Not Working, Married/Defacto or Single, Litigating/Not Litigating, IPQRF1 Psychological Attributions, LOT Positive Life Orientation, DAQ-R 4 Home Maintenance, DAQ-R 2 Work, Health, Spirituality & Caring

e. Predictors: (Constant), Working or Not Working, Married/Defacto or Single, Litigating/Not Litigating, IPQRF1 Psychological Attributions, LOT Positive Life Orientation, DAQ-R 4 Home Maintenance, DAQ-R 2 Work, Health, Spirituality & Caring, Beck Hopelessness Scale

f. Predictors: (Constant), Working or Not Working, Married/Defacto or Single, Litigating/Not Litigating, IPQRF1 Psychological Attributions, LOT Positive Life Orientation, DAQ-R 4 Home Maintenance, DAQ-R 2 Work, Health, Spirituality & Caring, Beck Hopelessness Scale, HADS Depression

g. Predictors: (Constant), Working or Not Working, Married/Defacto or Single, Litigating/Not Litigating, IPQRF1 Psychological Attributions, LOT Positive Life Orientation, DAQ-R 4 Home Maintenance, DAQ-R 2 Work, Health, Spirituality & Caring, Beck Hopelessness Scale, HADS Depression, HADS Anxiety

ANOVA^h

Model		Sum of Squares	df	Mean Square	F	Sig.
1.00	Regression	9.28	3.00	3.09	3.77	0.01 ^a
	Residual	74.66	91.00	0.82		
	Total	83.94	94.00			
2.00	Regression	9.80	4.00	2.45	2.97	0.02 ^b
	Residual	74.14	90.00	0.82		
	Total	83.94	94.00			
3.00	Regression	10.42	5.00	2.08	2.52	0.03 ^c
	Residual	73.52	89.00	0.83		
	Total	83.94	94.00			
4.00	Regression	15.65	7.00	2.24	2.85	0.01 ^d
	Residual	68.29	87.00	0.78		
	Total	83.94	94.00			
5.00	Regression	18.68	8.00	2.33	3.08	0.00 ^e
	Residual	65.26	86.00	0.76		
	Total	83.94	94.00			
6.00	Regression	20.33	9.00	2.26	3.02	0.00 ^f
	Residual	63.61	85.00	0.75		
	Total	83.94	94.00			
7.00	Regression	20.73	10.00	2.07	2.76	0.01 ^g
	Residual	63.20	84.00	0.75		
	Total	83.94	94.00			

a. Predictors: (Constant), Working or Not Working, Married/Defacto or Single, Litigating/Not Litigating

b. Predictors: (Constant), Working or Not Working, Married/Defacto or Single, Litigating/Not Litigating, IPQRF1 Psychological Attributions

c. Predictors: (Constant), Working or Not Working, Married/Defacto or Single, Litigating/Not Litigating, IPQRF1 Psychological Attributions, LOT Positive Life Orientation

d. Predictors: (Constant), Working or Not Working, Married/Defacto or Single, Litigating/Not Litigating, IPQRF1 Psychological Attributions, LOT Positive Life Orientation, DAQ-R 4 Home Maintenance, DAQ-R 2 Work, Health, Spirituality & Caring

e. Predictors: (Constant), Working or Not Working, Married/Defacto or Single, Litigating/Not Litigating, IPQRF1 Psychological Attributions, LOT Positive Life Orientation, DAQ-R 4 Home Maintenance, DAQ-R 2 Work, Health, Spirituality & Caring, Beck Hopelessness Scale

f. Predictors: (Constant), Working or Not Working, Married/Defacto or Single, Litigating/Not Litigating, IPQRF1 Psychological Attributions, LOT Positive Life Orientation, DAQ-R 4 Home Maintenance, DAQ-R 2 Work, Health, Spirituality & Caring, Beck Hopelessness Scale, HADS Depression

g. Predictors: (Constant), Working or Not Working, Married/Defacto or Single, Litigating/Not Litigating, IPQRF1 Psychological Attributions, LOT Positive Life Orientation, DAQ-R 4 Home Maintenance, DAQ-R 2 Work, Health, Spirituality & Caring, Beck Hopelessness Scale, HADS Depression, HADS Anxiety

h. Dependent Variable: MPQ PPI

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Correlations			Collinearity Statistics	
		B	Std. Error	Beta			Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance	VIF
1.00	(Constant)	3.22	0.62		5.21	0.00	1.99	4.45					
	Litigating/Not Litigating	-0.78	0.25	-0.31	-3.06	0.00	-1.28	-0.27	-0.32	-0.31	-0.30	0.96	1.04
	Married/Defacto or Single	0.10	0.21	0.05	0.49	0.62	-0.31	0.52	0.03	0.05	0.05	0.98	1.02
	Working or Not Working	0.15	0.19	0.08	0.78	0.44	-0.23	0.52	0.14	0.08	0.08	0.96	1.04
2.00	(Constant)	3.32	0.63		5.25	0.00	2.07	4.58					
	Litigating/Not Litigating	-0.75	0.26	-0.30	-2.93	0.00	-1.26	-0.24	-0.32	-0.29	-0.29	0.94	1.06
	Married/Defacto or Single	0.12	0.21	0.06	0.55	0.58	-0.30	0.53	0.03	0.06	0.05	0.98	1.02
	Working or Not Working	0.17	0.19	0.09	0.91	0.37	-0.21	0.56	0.14	0.10	0.09	0.93	1.07
	IPQRF1	-0.01	0.02	-0.08	-0.80	0.43	-0.05	0.02	-0.09	-0.08	-0.08	0.95	1.05
3.00	(Constant)	3.54	0.68		5.19	0.00	2.19	4.90					
	Litigating/Not Litigating	-0.67	0.27	-0.27	-2.42	0.02	-1.21	-0.12	-0.32	-0.25	-0.24	0.82	1.22
	Married/Defacto or Single	0.12	0.21	0.06	0.60	0.55	-0.29	0.54	0.03	0.06	0.06	0.97	1.03
	Working or Not Working	0.15	0.20	0.08	0.78	0.44	-0.24	0.54	0.14	0.08	0.08	0.91	1.10
	IPQRF1	-0.02	0.02	-0.11	-1.04	0.30	-0.05	0.02	-0.09	-0.11	-0.10	0.84	1.18
	LOT	-0.01	0.02	-0.10	-0.87	0.39	-0.05	0.02	-0.17	-0.09	-0.09	0.76	1.31
4.00	(Constant)	3.03	0.70		4.35	0.00	1.65	4.42					
	Litigating/Not Litigating	-0.62	0.29	-0.25	-2.17	0.03	-1.20	-0.05	-0.32	-0.23	-0.21	0.71	1.40
	Married/Defacto or Single	0.08	0.21	0.04	0.38	0.71	-0.33	0.49	0.03	0.04	0.04	0.96	1.04
	Working or Not Working	0.24	0.19	0.13	1.22	0.23	-0.15	0.62	0.14	0.13	0.12	0.88	1.13
	IPQRF1	-0.02	0.02	-0.11	-1.06	0.29	-0.05	0.02	-0.09	-0.11	-0.10	0.84	1.18
	LOT	-0.02	0.02	-0.16	-1.37	0.17	-0.05	0.01	-0.17	-0.15	-0.13	0.73	1.37
	DAQ-R 2 Work, Health, Spirituality & Caring	0.02	0.01	0.24	2.34	0.02	0.00	0.05	0.10	0.24	0.23	0.85	1.17
	DAQ-R 4 Home Maintenance	-0.02	0.02	-0.13	-1.20	0.23	-0.05	0.01	-0.22	-0.13	-0.12	0.86	1.16
5.00	(Constant)	2.22	0.80		2.77	0.01	0.63	3.80					
	Litigating/Not Litigating	-0.59	0.28	-0.24	-2.09	0.04	-1.15	-0.03	-0.32	-0.22	-0.20	0.71	1.40
	Married/Defacto or Single	0.01	0.20	0.00	0.05	0.96	-0.40	0.42	0.03	0.01	0.00	0.94	1.07
	Working or Not Working	0.18	0.19	0.10	0.93	0.36	-0.20	0.56	0.14	0.10	0.09	0.86	1.16
	IPQRF1	-0.01	0.02	-0.07	-0.69	0.49	-0.05	0.02	-0.09	-0.07	-0.07	0.82	1.23
	LOT	0.00	0.02	0.01	0.05	0.96	-0.04	0.04	-0.17	0.01	0.00	0.48	2.10
	DAQ-R 2 Work, Health, Spirituality & Caring	0.03	0.01	0.27	2.58	0.01	0.01	0.05	0.10	0.27	0.25	0.84	1.19
	DAQ-R 4 Home Maintenance	-0.01	0.02	-0.09	-0.87	0.39	-0.05	0.02	-0.22	-0.09	-0.08	0.84	1.20
	BHS	0.05	0.03	0.27	2.00	0.05	0.00	0.10	0.31	0.21	0.19	0.51	1.98
6.00	(Constant)	1.54	0.91		1.69	0.09	-0.27	3.36					

	Litigating/Not Litigating	-0.45	0.30	-0.18	-1.51	0.13	-1.04	0.14	-0.32	-0.16	-0.14	0.64	1.57
	Married/Defacto or Single	0.02	0.20	0.01	0.11	0.91	-0.38	0.43	0.03	0.01	0.01	0.94	1.07
	Working or Not Working	0.16	0.19	0.08	0.81	0.42	-0.23	0.54	0.14	0.09	0.08	0.86	1.17
	IPQRF1	-0.01	0.02	-0.08	-0.76	0.45	-0.05	0.02	-0.09	-0.08	-0.07	0.81	1.23
	LOT	0.01	0.02	0.04	0.29	0.77	-0.03	0.04	-0.17	0.03	0.03	0.46	2.16
	DAQ-R 2 Work, Health, Spirituality & Caring	0.03	0.01	0.29	2.77	0.01	0.01	0.05	0.10	0.29	0.26	0.83	1.20
	DAQ-R 4 Home Maintenance	-0.01	0.02	-0.04	-0.32	0.75	-0.04	0.03	-0.22	-0.03	-0.03	0.74	1.35
	BHS	0.03	0.03	0.15	0.98	0.33	-0.03	0.09	0.31	0.11	0.09	0.37	2.67
	HADS Depression	0.05	0.03	0.25	1.49	0.14	-0.02	0.11	0.36	0.16	0.14	0.32	3.15
7	(Constant)	1.48	0.92		1.61	0.11	-0.34	3.31					
	Litigating/Not Litigating	-0.44	0.30	-0.17	-1.47	0.15	-1.03	0.16	-0.32	-0.16	-0.14	0.64	1.57
	Married/Defacto or Single	0.03	0.20	0.01	0.15	0.88	-0.38	0.44	0.03	0.02	0.01	0.93	1.07
	Working or Not Working	0.16	0.19	0.08	0.82	0.42	-0.23	0.54	0.14	0.09	0.08	0.86	1.17
	IPQRF1	-0.02	0.02	-0.12	-1.02	0.31	-0.06	0.02	-0.09	-0.11	-0.10	0.61	1.63
	LOT	0.01	0.02	0.04	0.32	0.75	-0.03	0.04	-0.17	0.03	0.03	0.46	2.16
	DAQ-R 2 Work, Health, Spirituality & Caring	0.03	0.01	0.29	2.76	0.01	0.01	0.05	0.10	0.29	0.26	0.83	1.20
	DAQ-R 4 Home Maintenance	-0.01	0.02	-0.03	-0.30	0.77	-0.04	0.03	-0.22	-0.03	-0.03	0.74	1.35
	BHS	0.02	0.03	0.12	0.76	0.45	-0.04	0.08	0.31	0.08	0.07	0.35	2.85
	HADS Depression	0.04	0.04	0.19	0.99	0.32	-0.04	0.11	0.36	0.11	0.09	0.25	3.96
	HADS Anxiety	0.03	0.04	0.12	0.73	0.47	-0.05	0.10	0.28	0.08	0.07	0.31	3.23

a. Dependent Variable: MPQ PPI

D 7 Analysis Five Hierarchical; Regression Analysis Dependent Variable: Pain Rating Index (PRI) (also Hopelessness, Depression and Anxiety)

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
dimension0 1.00	0.37 ^a	0.14	0.11	12.97	0.14	4.84	3.00	91.00	0.00
2.00	0.43 ^b	0.19	0.15	12.66	0.05	5.46	1.00	90.00	0.02
3.00	0.43 ^c	0.19	0.14	12.73	0.00	0.00	1.00	89.00	0.99
4.00	0.51 ^d	0.26	0.20	12.30	0.07	4.23	2.00	87.00	0.02
5.00	0.51 ^e	0.26	0.19	12.37	0.00	0.00	1.00	86.00	0.97
6.00	0.56 ^f	0.31	0.24	12.02	0.05	6.09	1.00	85.00	0.02
7.00	0.57 ^g	0.33	0.24	11.94	0.02	2.04	1.00	84.00	0.16

a. Predictors: (Constant), Litigating/Not Litigating, Married/Defacto or Single, Working or Not Working

b. Predictors: (Constant), Litigating/Not Litigating, Married/Defacto or Single, Working or Not Working, IPQRF1 Psychological Attributions

c. Predictors: (Constant), Litigating/Not Litigating, Married/Defacto or Single, Working or Not Working, IPQRF1 Psychological Attributions, LOT Positive Life Orientation

d. Predictors: (Constant), Litigating/Not Litigating, Married/Defacto or Single, Working or Not Working, IPQRF1 Psychological Attributions, LOT Positive Life Orientation, DAQ-R 4 Home Maintenance, DAQ-R 2 Work, Health, Spirituality & Caring

e. Predictors: (Constant), Litigating/Not Litigating, Married/Defacto or Single, Working or Not Working, IPQRF1 Psychological Attributions, LOT Positive Life Orientation, DAQ-R 4 Home Maintenance, DAQ-R 2 Work, Health, Spirituality & Caring, Beck Hopelessness Scale

f. Predictors: (Constant), Litigating/Not Litigating, Married/Defacto or Single, Working or Not Working, IPQRF1 Psychological Attributions, LOT Positive Life Orientation, DAQ-R 4 Home Maintenance, DAQ-R 2 Work, Health, Spirituality & Caring, Beck Hopelessness Scale, HADS Depression

g. Predictors: (Constant), Litigating/Not Litigating, Married/Defacto or Single, Working or Not Working, IPQRF1 Psychological Attributions, LOT Positive Life Orientation, DAQ-R 4 Home Maintenance, DAQ-R 2 Work, Health, Spirituality & Caring, Beck Hopelessness Scale, HADS Depression, HADS Anxiety

ANOVA^h

Model	Sum of Squares	df	Mean Square	F	Sig.
1.00 Regression	2444.94	3.00	814.98	4.84	0.00 ^a
Residual	15309.95	91.00	168.24		
Total	17754.88	94.00			
2.00 Regression	3320.97	4.00	830.24	5.18	0.00 ^b
Residual	14433.92	90.00	160.38		
Total	17754.88	94.00			
3.00 Regression	3321.00	5.00	664.20	4.10	0.00 ^c
Residual	14433.88	89.00	162.18		
Total	17754.88	94.00			
4.00 Regression	4601.02	7.00	657.29	4.35	0.00 ^d
Residual	13153.86	87.00	151.19		
Total	17754.88	94.00			
5.00 Regression	4601.19	8.00	575.15	3.76	0.00 ^e
Residual	13153.69	86.00	152.95		
Total	17754.88	94.00			
6.00 Regression	5480.84	9.00	608.98	4.22	0.00 ^f
Residual	12274.04	85.00	144.40		
Total	17754.88	94.00			
7.00 Regression	5771.19	10.00	577.12	4.05	0.00 ^g
Residual	11983.69	84.00	142.66		
Total	17754.88	94.00			

a. Predictors: (Constant), Litigating/Not Litigating, Married/Defacto or Single, Working or Not Working

b. Predictors: (Constant), Litigating/Not Litigating, Married/Defacto or Single, Working or Not Working, IPQRF1 Psychological Attributions

c. Predictors: (Constant), Litigating/Not Litigating, Married/Defacto or Single, Working or Not Working, IPQRF1 Psychological Attributions, LOT Positive Life Orientation

d. Predictors: (Constant), Litigating/Not Litigating, Married/Defacto or Single, Working or Not Working, IPQRF1 Psychological Attributions, LOT Positive Life Orientation, DAQ-R 4 Home Maintenance, DAQ-R 2 Work, Health, Spirituality & Caring

e. Predictors: (Constant), Litigating/Not Litigating, Married/Defacto or Single, Working or Not Working, IPQRF1 Psychological Attributions, LOT Positive Life Orientation, DAQ-R 4 Home Maintenance, DAQ-R 2 Work, Health, Spirituality & Caring, Beck Hopelessness Scale

f. Predictors: (Constant), Litigating/Not Litigating, Married/Defacto or Single, Working or Not Working, IPQRF1 Psychological Attributions, LOT Positive Life Orientation, DAQ-R 4 Home Maintenance, DAQ-R 2 Work, Health, Spirituality & Caring, Beck Hopelessness Scale, HADS Depression

g. Predictors: (Constant), Litigating/Not Litigating, Married/Defacto or Single, Working or Not Working, IPQRF1 Psychological Attributions, LOT Positive Life Orientation, DAQ-R 4 Home Maintenance, DAQ-R 2 Work, Health, Spirituality & Caring, Beck Hopelessness Scale, HADS Depression, HADS Anxiety

h. **Dependent Variable: MPQ Sum**

Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Collinearity Statistics	
	B	Std. Error	Beta			Lower Bound	Upper Bound	Tolerance	VIF
1.00	(Constant)	19.04	8.85	2.15	0.03	1.45	36.62		
	Working or Not Working	6.63	2.72	0.24	2.44	0.02	12.02	0.96	1.04
	Married/Defacto or Single	4.84	2.98	0.16	1.63	0.11	10.76	0.98	1.02
	Litigating/Not Litigating	-7.04	3.63	-0.19	-1.94	0.06	-14.26	0.96	1.04
2.00	(Constant)	14.77	8.83	1.67	0.10	-2.78	32.32		
	Working or Not Working	5.52	2.69	0.20	2.05	0.04	10.87	0.93	1.07
	Married/Defacto or Single	4.32	2.92	0.14	1.48	0.14	10.11	0.98	1.02
	Litigating/Not Litigating	-8.14	3.58	-0.22	-2.27	0.03	-15.24	0.94	1.06
	IPQRF1 Psychological Attributions	0.54	0.23	0.23	2.34	0.02	0.08	0.95	1.05
3.00	(Constant)	14.82	9.57	1.55	0.13	-4.20	33.84		
	Working or Not Working	5.51	2.73	0.20	2.02	0.05	10.95	0.91	1.10
	Married/Defacto or Single	4.32	2.94	0.14	1.47	0.14	10.16	0.97	1.03
	Litigating/Not Litigating	-8.12	3.85	-0.22	-2.11	0.04	-15.77	0.82	1.22
	IPQRF1 Psychological Attributions	0.54	0.25	0.23	2.19	0.03	0.05	0.84	1.18
	LOT Positive Life Orientation	0.00	0.22	0.00	-0.01	0.99	-0.45	0.76	1.31
4.00	(Constant)	9.64	9.68	1.00	0.32	-9.60	28.89		
	Working or Not Working	6.31	2.69	0.23	2.35	0.02	11.65	0.88	1.13
	Married/Defacto or Single	3.54	2.85	0.12	1.24	0.22	9.20	0.96	1.04
	Litigating/Not Litigating	-5.27	3.99	-0.14	-1.32	0.19	2.66	0.71	1.40
	IPQRF1 Psychological Attributions	0.55	0.24	0.23	2.28	0.02	1.02	0.84	1.18
	LOT Positive Life Orientation	-0.09	0.22	-0.04	-0.39	0.70	-0.52	0.73	1.37
	DAQ-R 2 Work, Health, Spirituality & Caring	0.22	0.15	0.15	1.50	0.14	0.52	0.85	1.17
	DAQ-R 4 Home Maintenance	-0.61	0.24	-0.25	-2.56	0.01	-1.08	0.86	1.16
5.00	(Constant)	9.45	11.34	0.83	0.41	-13.10	32.00		
	Working or Not Working	6.29	2.73	0.23	2.30	0.02	11.72	0.86	1.16
	Married/Defacto or Single	3.52	2.91	0.12	1.21	0.23	9.30	0.94	1.07
	Litigating/Not Litigating	-5.26	4.02	-0.14	-1.31	0.19	2.72	0.71	1.40
	IPQRF1 Psychological Attributions	0.55	0.25	0.23	2.24	0.03	1.04	0.82	1.23
	LOT Positive Life Orientation	-0.08	0.27	-0.04	-0.29	0.77	-0.62	0.48	2.10
	DAQ-R 2 Work, Health, Spirituality & Caring	0.22	0.15	0.15	1.48	0.14	0.52	0.84	1.19

	DAQ-R 4 Home Maintenance	-0.61	0.24	-0.25	-2.50	0.01	-1.09	-0.12	0.84	1.20
	Beck Hopelessness Scale	0.01	0.36	0.00	0.03	0.97	-0.69	0.72	0.51	1.98
6.00	(Constant)	-6.03	12.68		-0.48	0.64	-31.24	19.18		
	Working or Not Working	5.76	2.66	0.21	2.16	0.03	0.47	11.06	0.86	1.17
	Married/Defacto or Single	3.81	2.83	0.13	1.35	0.18	-1.81	9.42	0.94	1.07
	Litigating/Not Litigating	-1.96	4.13	-0.05	-0.48	0.64	-10.16	6.24	0.64	1.57
	IPQRF1 Psychological Attributions	0.52	0.24	0.22	2.19	0.03	0.05	1.00	0.81	1.23
	LOT Positive Life Orientation	0.03	0.27	0.01	0.11	0.91	-0.51	0.57	0.46	2.16
	DAQ-R 2 Work, Health, Spirituality & Caring	0.27	0.15	0.18	1.83	0.07	-0.02	0.56	0.83	1.20
	DAQ-R 4 Home Maintenance	-0.40	0.25	-0.17	-1.59	0.12	-0.90	0.10	0.74	1.35
	Beck Hopelessness Scale	-0.49	0.40	-0.18	-1.23	0.22	-1.29	0.30	0.37	2.67
	HADS Depression	1.13	0.46	0.40	2.47	0.02	0.22	2.05	0.32	3.15
7.00	(Constant)	-7.67	12.66		-0.61	0.55	-32.83	17.50		
	Working or Not Working	5.79	2.65	0.21	2.19	0.03	0.53	11.06	0.86	1.17
	Married/Defacto or Single	4.04	2.81	0.13	1.44	0.15	-1.56	9.63	0.93	1.07
	Litigating/Not Litigating	-1.65	4.11	-0.05	-0.40	0.69	-9.82	6.51	0.64	1.57
	IPQRF1 Psychological Attributions	0.33	0.27	0.14	1.21	0.23	-0.21	0.87	0.61	1.63
	LOT Positive Life Orientation	0.04	0.27	0.02	0.16	0.87	-0.49	0.58	0.46	2.16
	DAQ-R 2 Work, Health, Spirituality & Caring	0.27	0.15	0.18	1.83	0.07	-0.02	0.56	0.83	1.20
	DAQ-R 4 Home Maintenance	-0.39	0.25	-0.16	-1.56	0.12	-0.88	0.11	0.74	1.35
	Beck Hopelessness Scale	-0.64	0.41	-0.23	-1.55	0.12	-1.46	0.18	0.35	2.85
	HADS Depression	0.80	0.51	0.28	1.57	0.12	-0.21	1.82	0.25	3.96
	HADS Anxiety	0.72	0.50	0.23	1.43	0.16	-0.28	1.72	0.31	3.23

a. Dependent Variable: MPQ Sum

D 8 Analysis Six Hierarchical Regression Analysis Dependent Variable: Pain Disability Index (PDI) (also Hopelessness, Depression and Anxiety)

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1.00	0.52 ^a	0.27	0.25	13.85	0.27	11.42	3.00	91.00	0.00
2.00	0.53 ^b	0.28	0.25	13.85	0.01	0.93	1.00	90.00	0.34
3.00	0.58 ^c	0.34	0.30	13.35	0.06	7.90	1.00	89.00	0.01
4.00	0.68 ^d	0.46	0.42	12.21	0.12	9.67	2.00	87.00	0.00
5.00	0.71 ^e	0.51	0.47	11.69	0.05	9.02	1.00	86.00	0.00
6.00	0.75 ^f	0.56	0.52	11.11	0.05	10.18	1.00	85.00	0.00
7.00	0.77 ^g	0.60	0.55	10.70	0.04	7.63	1.00	84.00	0.01

a. Predictors: (Constant), Litigating/Not Litigating, Married/Defacto or Single, Working or Not Working

b. Predictors: (Constant), Litigating/Not Litigating, Married/Defacto or Single, Working or Not Working, IPQRF1 Psychological Attributions

c. Predictors: (Constant), Litigating/Not Litigating, Married/Defacto or Single, Working or Not Working, IPQRF1 Psychological Attributions, LOT Positive Life Orientation

d. Predictors: (Constant), Litigating/Not Litigating, Married/Defacto or Single, Working or Not Working, IPQRF1 Psychological Attributions, LOT Positive Life Orientation, DAQ-R 4 Home Maintenance, DAQ-R 2 Work, Health, Spirituality & Caring

e. Predictors: (Constant), Litigating/Not Litigating, Married/Defacto or Single, Working or Not Working, IPQRF1 Psychological Attributions, LOT Positive Life Orientation, DAQ-R 4 Home Maintenance, DAQ-R 2 Work, Health, Spirituality & Caring, Beck Hopelessness Scale

f. Predictors: (Constant), Litigating/Not Litigating, Married/Defacto or Single, Working or Not Working, IPQRF1 Psychological Attributions, LOT Positive Life Orientation, DAQ-R 4 Home Maintenance, DAQ-R 2 Work, Health, Spirituality & Caring, Beck Hopelessness Scale, HADS Depression

g. Predictors: (Constant), Litigating/Not Litigating, Married/Defacto or Single, Working or Not Working, IPQRF1 Psychological Attributions, LOT Positive Life Orientation, DAQ-R 4 Home Maintenance, DAQ-R 2 Work, Health, Spirituality & Caring, Beck Hopelessness Scale, HADS Depression, HADS Anxiety

ANOVA^h

Model		Sum of Squares	df	Mean Square	F	Sig.
1.00	Regression	6569.50	3.00	2189.83	11.42	0.00 ^a
	Residual	17449.44	91.00	191.75		
	Total	24018.95	94.00			
2.00	Regression	6748.07	4.00	1687.02	8.79	0.00 ^b
	Residual	17270.88	90.00	191.90		
	Total	24018.95	94.00			
3.00	Regression	8156.07	5.00	1631.21	9.15	0.00 ^c
	Residual	15862.87	89.00	178.23		
	Total	24018.95	94.00			
4.00	Regression	11041.84	7.00	1577.41	10.58	0.00 ^d
	Residual	12977.11	87.00	149.16		
	Total	24018.95	94.00			
5.00	Regression	12273.85	8.00	1534.23	11.23	0.00 ^e
	Residual	11745.10	86.00	136.57		
	Total	24018.95	94.00			
6.00	Regression	13529.78	9.00	1503.31	12.18	0.00 ^f
	Residual	10489.17	85.00	123.40		
	Total	24018.95	94.00			
7.00	Regression	14403.66	10.00	1440.37	12.58	0.00 ^g
	Residual	9615.29	84.00	114.47		
	Total	24018.95	94.00			

a. Predictors: (Constant), Litigating/Not Litigating, Married/Defacto or Single, Working or Not Working

b. Predictors: (Constant), Litigating/Not Litigating, Married/Defacto or Single, Working or Not Working, IPQRF1 Psychological Attributions

c. Predictors: (Constant), Litigating/Not Litigating, Married/Defacto or Single, Working or Not Working, IPQRF1 Psychological Attributions, LOT Positive Life Orientation

d. Predictors: (Constant), Litigating/Not Litigating, Married/Defacto or Single, Working or Not Working, IPQRF1 Psychological Attributions, LOT Positive Life Orientation, DAQ-R 4 Home Maintenance, DAQ-R 2 Work, Health, Spirituality & Caring

e. Predictors: (Constant), Litigating/Not Litigating, Married/Defacto or Single, Working or Not Working, IPQRF1 Psychological Attributions, LOT Positive Life Orientation, DAQ-R 4 Home Maintenance, DAQ-R 2 Work, Health, Spirituality & Caring, Beck Hopelessness Scale

f. Predictors: (Constant), Litigating/Not Litigating, Married/Defacto or Single, Working or Not Working, IPQRF1 Psychological Attributions, LOT Positive Life Orientation, DAQ-R 4 Home Maintenance, DAQ-R 2 Work, Health, Spirituality & Caring, Beck Hopelessness Scale, HADS Depression

g. Predictors: (Constant), Litigating/Not Litigating, Married/Defacto or Single, Working or Not Working, IPQRF1 Psychological Attributions, LOT Positive Life Orientation, DAQ-R 4 Home Maintenance, DAQ-R 2 Work, Health, Spirituality & Caring, Beck Hopelessness Scale, HADS Depression, HADS Anxiety

h. **Dependent Variable: Pain Disability Index**

Coefficients ^a									
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Collinearity Statistics	
	B	Std. Error				Lower Bound	Upper Bound	Tolerance	VIF
1.00	(Constant)	41.50	9.45	4.39	0.00	22.73	60.27		
	Working or Not Working	7.99	2.90	2.75	0.01	2.23	13.74	0.96	1.04
	Married/Defacto or Single	7.47	3.18	2.35	0.02	1.15	13.78	0.98	1.02
	Litigating/Not Litigating	-15.90	3.88	-4.10	0.00	-23.61	-8.20	0.96	1.04
2.00	(Constant)	39.57	9.66	4.10	0.00	20.38	58.77		
	Working or Not Working	7.48	2.95	2.54	0.01	1.63	13.34	0.93	1.07
	Married/Defacto or Single	7.23	3.19	2.27	0.03	0.89	13.57	0.98	1.02
	Litigating/Not Litigating	-16.40	3.91	-4.19	0.00	-24.18	-8.62	0.94	1.06
	IPQRF1 Psychological Attributions	0.25	0.25	0.96	0.34	-0.26	0.75	0.95	1.05
3.00	(Constant)	50.09	10.03	4.99	0.00	30.15	70.02		
	Working or Not Working	6.36	2.87	2.22	0.03	0.67	12.06	0.91	1.10
	Married/Defacto or Single	7.68	3.08	2.49	0.01	1.56	13.79	0.97	1.03
	Litigating/Not Litigating	-12.35	4.04	-3.06	0.00	-20.38	-4.33	0.82	1.22
	IPQRF1 Psychological Attributions	0.00	0.26	0.01	0.99	-0.51	0.52	0.84	1.18
	LOT Positive Life Orientation	-0.66	0.23	-2.81	0.01	-1.12	-0.19	0.76	1.31
4.00	(Constant)	44.11	9.62	4.59	0.00	25.00	63.23		
	Working or Not Working	7.24	2.67	2.71	0.01	1.93	12.54	0.88	1.13
	Married/Defacto or Single	6.55	2.83	2.32	0.02	0.93	12.18	0.96	1.04
	Litigating/Not Litigating	-7.36	3.96	-1.86	0.07	-15.23	0.52	0.71	1.40
	IPQRF1 Psychological Attributions	0.01	0.24	0.04	0.97	-0.46	0.48	0.84	1.18
	LOT Positive Life Orientation	-0.75	0.22	-3.44	0.00	-1.19	-0.32	0.73	1.37
	DAQ-R 2 Work, Health, Spirituality & Caring	0.23	0.15	1.59	0.12	-0.06	0.53	0.85	1.17
	DAQ-R 4 Home Maintenance	-0.99	0.24	-4.17	0.00	-1.45	-0.52	0.86	1.16
5.00	(Constant)	27.61	10.72	2.58	0.01	6.30	48.91		
	Working or Not Working	6.09	2.58	2.36	0.02	0.95	11.22	0.86	1.16
	Married/Defacto or Single	5.18	2.75	1.89	0.06	-0.28	10.64	0.94	1.07
	Litigating/Not Litigating	-6.71	3.80	-1.77	0.08	-14.25	0.84	0.71	1.40
	IPQRF1 Psychological Attributions	0.14	0.23	0.60	0.55	-0.32	0.60	0.82	1.23
	LOT Positive Life Orientation	-0.29	0.26	-1.14	0.26	-0.81	0.22	0.48	2.10
	DAQ-R 2 Work, Health, Spirituality & Caring	0.28	0.14	1.98	0.05	0.00	0.56	0.84	1.19
	DAQ-R 4 Home Maintenance	-0.87	0.23	-3.79	0.00	-1.32	-0.41	0.84	1.20
	Beck Hopelessness Scale	1.01	0.34	3.00	0.00	0.34	1.67	0.51	1.98

6.00	(Constant)	9.11	11.72		0.78	0.44	-14.19	32.42		
	Working or Not Working	5.45	2.46	0.17	2.21	0.03	0.55	10.34	0.86	1.17
	Married/Defacto or Single	5.52	2.61	0.16	2.11	0.04	0.33	10.71	0.94	1.07
	Litigating/Not Litigating	-2.77	3.81	-0.07	-0.73	0.47	-10.35	4.82	0.64	1.57
	IPQRF1 Psychological Attributions	0.11	0.22	0.04	0.49	0.62	-0.33	0.55	0.81	1.23
	LOT Positive Life Orientation	-0.16	0.25	-0.07	-0.66	0.51	-0.66	0.33	0.46	2.16
	DAQ-R 2 Work, Health, Spirituality & Caring	0.34	0.14	0.19	2.47	0.02	0.07	0.61	0.83	1.20
	DAQ-R 4 Home Maintenance	-0.62	0.23	-0.22	-2.67	0.01	-1.08	-0.16	0.74	1.35
	Beck Hopelessness Scale	0.41	0.37	0.13	1.09	0.28	-0.33	1.14	0.37	2.67
	HADS Depression	1.36	0.42	0.41	3.19	0.00	0.51	2.20	0.32	3.15
7.00	(Constant)	6.27	11.34		0.55	0.58	-16.27	28.82		
	Working or Not Working	5.51	2.37	0.17	2.32	0.02	0.79	10.22	0.86	1.17
	Married/Defacto or Single	5.92	2.52	0.17	2.35	0.02	0.91	10.94	0.93	1.07
	Litigating/Not Litigating	-2.23	3.68	-0.05	-0.61	0.55	-9.55	5.08	0.64	1.57
	IPQRF1 Psychological Attributions	-0.23	0.24	-0.08	-0.92	0.36	-0.71	0.26	0.61	1.63
	LOT Positive Life Orientation	-0.14	0.24	-0.06	-0.59	0.56	-0.62	0.34	0.46	2.16
	DAQ-R 2 Work, Health, Spirituality & Caring	0.33	0.13	0.19	2.56	0.01	0.07	0.59	0.83	1.20
	DAQ-R 4 Home Maintenance	-0.60	0.22	-0.22	-2.69	0.01	-1.04	-0.16	0.74	1.35
	Beck Hopelessness Scale	0.15	0.37	0.05	0.41	0.68	-0.58	0.88	0.35	2.85
	HADS Depression	0.78	0.46	0.23	1.71	0.09	-0.13	1.69	0.25	3.96
	HADS Anxiety	1.25	0.45	0.34	2.76	0.01	0.35	2.14	0.31	3.23

a. Dependent Variable: Pain Disability Index

D 9 Research Model Psychological Distress

Analysis One Hierarchical Regression Analysis Dependent Variable: Psychological
Distress Factor

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1.00	0.64 ^a	0.41	0.37	0.82	0.41	10.42	5.00	76.00	0.00
2.00	0.70 ^b	0.49	0.43	0.78	0.08	3.01	4.00	72.00	0.02
3.00	0.78 ^c	0.62	0.56	0.68	0.12	22.88	1.00	71.00	0.00
4.00	0.85 ^d	0.72	0.66	0.60	0.10	5.97	4.00	67.00	0.00
5.00	0.85 ^e	0.72	0.64	0.61	0.01	0.30	4.00	63.00	0.88

a. Predictors: (Constant), Litigating/Not Litigating, Education Above/Below Year 12, Working or Not Working, Sustained Work Injury, Gender

b. Predictors: (Constant), Litigating/Not Litigating, Education Above/Below Year 12, Working or Not Working, Sustained Work Injury, Gender, IPQRF1 Psychological Attributions, IPQRF4 Accident or Chance, IPQRF3 Immunity, IPQRF2 Risk Factors

c. Predictors: (Constant), Litigating/Not Litigating, Education Above/Below Year 12, Working or Not Working, Sustained Work Injury, Gender, IPQRF1 Psychological Attributions, IPQRF4 Accident or Chance, IPQRF3 Immunity, IPQRF2 Risk Factors, LOT Positive Life Orientation

d. Predictors: (Constant), Litigating/Not Litigating, Education Above/Below Year 12, Working or Not Working, Sustained Work Injury, Gender, IPQRF1 Psychological Attributions, IPQRF4 Accident or Chance, IPQRF3 Immunity, IPQRF2 Risk Factors, LOT Positive Life Orientation, DAQ-R 4 Home Maintenance, DAQ-R 2 Work, Health, Spirituality & Caring, DAQ-R 1 Domestic Chores, DAQ-R 3 Interpersonal Contact & Social Support

e. Predictors: (Constant), Litigating/Not Litigating, Education Above/Below Year 12, Working or Not Working, Sustained Work Injury, Gender, IPQRF1 Psychological Attributions, IPQRF4 Accident or Chance, IPQRF3 Immunity, IPQRF2 Risk Factors, LOT Positive Life Orientation, DAQ-R 4 Home Maintenance, DAQ-R 2 Work, Health, Spirituality & Caring, DAQ-R 1 Domestic Chores, DAQ-R 3 Interpersonal Contact & Social Support, MDAQ-R 2 Structured Tasks, MDAQ-R 1 Support, Caring & Interpersonal Relationships, MDAQ-R 4 Home Maintenance & Health Maintenance, MDAQ-R 3 Sensory & Leisure Activities

ANOVA^f

Model		Sum of Squares	df	Mean Square	F	Sig.
1.00	Regression	34.63	5.00	6.93	10.42	0.00 ^a
	Residual	50.51	76.00	0.66		
	Total	85.13	81.00			
2.00	Regression	41.85	9.00	4.65	7.74	0.00 ^b
	Residual	43.28	72.00	0.60		
	Total	85.13	81.00			
3.00	Regression	52.40	10.00	5.24	11.37	0.00 ^c
	Residual	32.73	71.00	0.46		
	Total	85.13	81.00			
4.00	Regression	61.01	14.00	4.36	12.10	0.00 ^d
	Residual	24.13	67.00	0.36		
	Total	85.13	81.00			
5.00	Regression	61.46	18.00	3.41	9.08	0.00 ^e
	Residual	23.68	63.00	0.38		
	Total	85.13	81.00			

a. Predictors: (Constant), Litigating/Not Litigating, Education , Working or Not Working, Sustained Work Injury, Gender

b. Predictors: (Constant), Litigating/Not Litigating, Education, Working or Not Working, Sustained Work Injury, Gender, IPQRF1 Psychological Attributions, IPQRF4 Accident or Chance, IPQRF3 Immunity, IPQRF2 Risk Factors

c. Predictors: (Constant), Litigating/Not Litigating, Education, Working or Not Working, Sustained Work Injury, Gender, IPQRF1 Psychological, IPQRF4 Accident or Chance, IPQRF3 Immunity, IPQRF2 Risk Factors, LOT Positive Life Orientation

d. Predictors: (Constant), Litigating/Not Litigating, Education , Working or Not Working, Sustained Work Injury, Gender, IPQRF1 Psychological , IPQRF4 Accident or Chance, IPQRF3 Immunity, IPQRF2 Risk Factors, LOT, DAQ-R 4 Home Maintenance, DAQ-R 2 Work, Health, Spirituality & Caring, DAQ-R 1 Domestic Chores, DAQ-R 3 Interpersonal Contact & Social Support

e. Predictors: (Constant), Litigating/Not Litigating, Education , Working or Not Working, Sustained Work Injury, Gender, IPQRF1 Psychological IPQRF4 Accident or Chance, IPQRF3 Immunity, IPQRF2 Risk Factors, LOT, DAQ-R 4 Home Maintenance, DAQ-R 2 Work, Health, Spirituality & Caring, DAQ-R 1 Domestic Chores, DAQ-R 3 Interpersonal Contact & Social Support, MDAQ-R 2 Structured Tasks, MDAQ-R 1 Support, Caring & Interpersonal Relationships, MDAQ-R 4 Home Maintenance & Health Maintenance, MDAQ-R 3 Sensory & Leisure Activities

f. Dependent Variable: Psychological Distress Factor

Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Correlations		
	B	Std. Error	Beta			Lower Bound	Upper Bound	Zero-order	Partial	Part
1.00	(Constant)	3.06	0.67	4.58	0.00	1.73	4.39			
	Education	-0.56	0.19	-2.92	0.00	-0.93	-0.18	-0.34	-0.32	-0.26
	Working or Not Working	0.29	0.19	1.53	0.13	-0.09	0.68	0.27	0.17	0.14
	Sustained Work Injury	-0.28	0.20	-1.39	0.17	-0.67	0.12	-0.29	-0.16	-0.12
	Gender	-0.65	0.24	-2.73	0.01	-1.12	-0.17	-0.44	-0.30	-0.24
	Litigating/Not Litigating	-0.62	0.27	-2.29	0.03	-1.15	-0.08	-0.48	-0.25	-0.20
2.00	(Constant)	2.01	0.82	2.46	0.02	0.38	3.64			
	Education	-0.54	0.19	-2.87	0.01	-0.92	-0.17	-0.34	-0.32	-0.24
	Working or Not Working	0.21	0.19	1.09	0.28	-0.17	0.58	0.27	0.13	0.09
	Sustained Work Injury	-0.34	0.20	-1.69	0.10	-0.75	0.06	-0.29	-0.20	-0.14
	Gender	-0.54	0.23	-2.33	0.02	-1.01	-0.08	-0.44	-0.26	-0.20
	Litigating/Not Litigating	-0.54	0.30	-1.77	0.08	-1.15	0.07	-0.48	-0.20	-0.15
	IPQRF1 Psychological	0.05	0.02	2.47	0.02	0.01	0.09	0.22	0.28	0.21
	IPQRF2 Risk Factors	-0.04	0.03	-1.38	0.17	-0.09	0.02	-0.01	-0.16	-0.12
	IPQRF3 Immunity	0.04	0.04	0.98	0.33	-0.04	0.12	0.06	0.11	0.08
	IPQRF4 Accident Chance	0.07	0.05	1.50	0.14	-0.02	0.16	0.37	0.17	0.13
3.00	(Constant)	2.40	0.72	3.33	0.00	0.96	3.84			
	Education	-0.29	0.17	-1.67	0.10	-0.63	0.06	-0.34	-0.19	-0.12
	Working or Not Working	0.16	0.17	0.98	0.33	-0.17	0.49	0.27	0.12	0.07
	Sustained Work Injury	-0.15	0.18	-0.83	0.41	-0.52	0.21	-0.29	-0.10	-0.06
	Gender	-0.32	0.21	-1.55	0.13	-0.74	0.09	-0.44	-0.18	-0.11
	Litigating/Not Litigating	-0.36	0.27	-1.35	0.18	-0.90	0.17	-0.48	-0.16	-0.10
	IPQRF1 Psychological	0.02	0.02	1.10	0.27	-0.02	0.06	0.22	0.13	0.08
	IPQRF2 Risk Factors	-0.03	0.02	-1.52	0.13	-0.08	0.01	-0.01	-0.18	-0.11
	IPQRF3 Immunity	0.05	0.04	1.56	0.12	-0.02	0.12	0.06	0.18	0.12
	IPQRF4 Accident Chance	0.07	0.04	1.66	0.10	-0.01	0.15	0.37	0.19	0.12
	LOT Positive Life Orientation	-0.07	0.01	-4.78	0.00	-0.10	-0.04	-0.68	-0.49	-0.35
4.00	(Constant)	2.43	0.66	3.68	0.00	1.11	3.76			
	Education	-0.20	0.16	-1.31	0.19	-0.51	0.11	-0.34	-0.16	-0.09
	Working or Not Working	0.10	0.15	0.66	0.51	-0.21	0.41	0.27	0.08	0.04
	Sustained Work Injury	-0.18	0.17	-1.08	0.28	-0.51	0.15	-0.29	-0.13	-0.07
	Gender	-0.30	0.22	-1.39	0.17	-0.74	0.13	-0.44	-0.17	-0.09
	Litigating/Not Litigating	0.02	0.26	0.07	0.94	-0.50	0.54	-0.48	0.01	0.00

	IPQRF1 Psychological	0.02	0.02	0.09	0.92	0.36	-0.02	0.05	0.22	0.11	0.06
	IPQRF2 Risk Factors	-0.01	0.02	-0.03	-0.33	0.75	-0.05	0.03	-0.01	-0.04	-0.02
	IPQRF3 Immunity	0.02	0.03	0.06	0.74	0.46	-0.04	0.09	0.06	0.09	0.05
	IPQRF4 Accident Chance	0.07	0.04	0.13	1.78	0.08	-0.01	0.14	0.37	0.21	0.12
	LOT	-0.05	0.01	-0.35	-3.85	0.00	-0.08	-0.03	-0.68	-0.43	-0.25
	DAQ-R 1 Domestic Chores	-0.02	0.01	-0.11	-1.30	0.20	-0.04	0.01	-0.43	-0.16	-0.08
	DAQ-R 2 Work, Health, Spirituality & Caring	0.00	0.01	-0.01	-0.17	0.86	-0.02	0.02	-0.38	-0.02	-0.01
	DAQ-R 3 Interpersonal Contact & Social Support	-0.03	0.01	-0.25	-2.70	0.01	-0.05	-0.01	-0.67	-0.31	-0.18
	DAQ-R 4 Home Maintenance	-0.03	0.02	-0.17	-2.03	0.05	-0.06	0.00	-0.34	-0.24	-0.13
5.00	(Constant)	2.33	0.71		3.27	0.00	0.91	3.75			
	Education	-0.19	0.16	-0.09	-1.15	0.25	-0.51	0.14	-0.34	-0.14	-0.08
	Working or Not Working	0.07	0.16	0.04	0.46	0.65	-0.25	0.40	0.27	0.06	0.03
	Sustained Work Injury	-0.15	0.18	-0.07	-0.86	0.39	-0.50	0.20	-0.29	-0.11	-0.06
	Gender	-0.30	0.23	-0.13	-1.31	0.20	-0.76	0.16	-0.44	-0.16	-0.09
	Litigating/Not Litigating	0.02	0.27	0.01	0.09	0.93	-0.52	0.57	-0.48	0.01	0.01
	IPQRF1 Psychological	0.02	0.02	0.11	1.11	0.27	-0.02	0.05	0.22	0.14	0.07
	IPQRF2 Risk Factors	-0.01	0.02	-0.06	-0.51	0.61	-0.05	0.03	-0.01	-0.06	-0.03
	IPQRF3 Immunity	0.02	0.03	0.06	0.66	0.51	-0.05	0.09	0.06	0.08	0.04
	IPQRF4 Accident Chance	0.07	0.04	0.14	1.77	0.08	-0.01	0.15	0.37	0.22	0.12
	LOT	-0.05	0.01	-0.33	-3.47	0.00	-0.08	-0.02	-0.68	-0.40	-0.23
	DAQ-R 1 Domestic Chores	-0.01	0.01	-0.10	-0.99	0.33	-0.04	0.01	-0.43	-0.12	-0.07
	DAQ-R 2 Work, Health, Spirituality & Caring	0.00	0.01	-0.02	-0.23	0.82	-0.02	0.02	-0.38	-0.03	-0.02
	DAQ-R 3 Interpersonal Contact & Social Support	-0.02	0.01	-0.21	-1.95	0.06	-0.05	0.00	-0.67	-0.24	-0.13
	DAQ-R 4 Home Maintenance	-0.03	0.02	-0.16	-1.84	0.07	-0.06	0.00	-0.34	-0.23	-0.12
	MDAQ-R 1 Support, Caring & Interpersonal Relationships	0.00	0.01	0.00	0.01	1.00	-0.02	0.02	-0.46	0.00	0.00
	MDAQ-R 2 Structured Tasks	0.00	0.01	0.01	0.09	0.93	-0.02	0.02	-0.19	0.01	0.01
	MDAQ-R 3 Sensory & Leisure Activities	-0.01	0.01	-0.11	-0.90	0.37	-0.03	0.01	-0.47	-0.11	-0.06
	MDAQ-R 4 Home& Health Maintenance	0.01	0.01	0.06	0.64	0.53	-0.02	0.04	0.16	0.08	0.04

a. Dependent Variable: Psychological Distress Factor

**D 10 Research Model Psychological Distress Analysis Two Hierarchical Regression
Analysis Dependent Variable: Psychological Distress Factor (including Pain and
Disability Factor)**

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
dimension0 1.00	0.64 ^a	0.41	0.37	0.82	0.41	10.42	5.00	76.00	0.00
2.00	0.70 ^b	0.49	0.43	0.78	0.08	3.01	4.00	72.00	0.02
3.00	0.78 ^c	0.62	0.56	0.68	0.12	22.88	1.00	71.00	0.00
4.00	0.85 ^d	0.72	0.66	0.60	0.10	5.97	4.00	67.00	0.00
5.00	0.85 ^e	0.72	0.64	0.61	0.01	0.30	4.00	63.00	0.88
6.00	0.87 ^f	0.76	0.68	0.58	0.04	9.33	1.00	62.00	0.00

a. Predictors: (Constant), Litigating/Not Litigating, Education Above/Below Year 12, Working or Not Working, Sustained Work Injury, Gender

b. Predictors: (Constant), Litigating/Not Litigating, Education Above/Below Year 12, Working or Not Working, Sustained Work Injury, Gender, IPQRF1 Psychological Attributions, IPQRF4 Accident or Chance, IPQRF3 Immunity, IPQRF2 Risk Factors

c. Predictors: (Constant), Litigating/Not Litigating, Education Above/Below Year 12, Working or Not Working, Sustained Work Injury, Gender, IPQRF1 Psychological Attributions, IPQRF4 Accident or Chance, IPQRF3 Immunity, IPQRF2 Risk Factors, LOT Positive Life Orientation

d. Predictors: (Constant), Litigating/Not Litigating, Education Above/Below Year 12, Working or Not Working, Sustained Work Injury, Gender, IPQRF1 Psychological Attributions, IPQRF4 Accident or Chance, IPQRF3 Immunity, IPQRF2 Risk Factors, LOT Positive Life Orientation, DAQ-R 4 Home Maintenance, DAQ-R 2 Work, Health, Spirituality & Caring, DAQ-R 1 Domestic Chores, DAQ-R 3 Interpersonal Contact & Social Support

e. Predictors: (Constant), Litigating/Not Litigating, Education Above/Below Year 12, Working or Not Working, Sustained Work Injury, Gender, IPQRF1 Psychological Attributions, IPQRF4 Accident or Chance, IPQRF3 Immunity, IPQRF2 Risk Factors, LOT Positive Life Orientation, DAQ-R 4 Home Maintenance, DAQ-R 2 Work, Health, Spirituality & Caring, DAQ-R 1 Domestic Chores, DAQ-R 3 Interpersonal Contact & Social Support, MDAQ-R 2 Structured Tasks, MDAQ-R 1 Support, Caring & Interpersonal Relationships, MDAQ-R 4 Home Maintenance & Health Maintenance, MDAQ-R 3 Sensory & Leisure Activities

f. Predictors: (Constant), Litigating/Not Litigating, Education Above/Below Year 12, Working or Not Working, Sustained Work Injury, Gender, IPQRF1 Psychological Attributions, IPQRF4 Accident or Chance, IPQRF3 Immunity, IPQRF2 Risk Factors, LOT Positive Life Orientation, DAQ-R 4 Home Maintenance, DAQ-R 2 Work, Health, Spirituality & Caring, DAQ-R 1 Domestic Chores, DAQ-R 3 Interpersonal Contact & Social Support, MDAQ-R 2 Structured Tasks, MDAQ-R 1 Support, Caring & Interpersonal Relationships, MDAQ-R 4 Home Maintenance & Health Maintenance, MDAQ-R 3 Sensory & Leisure Activities, Pain & Disability Factor

ANOVA^g

Model	Sum of Squares	df	Mean Square	F	Sig.
1.00 Regression	34.63	5.00	6.93	10.42	0.00^a
Residual	50.51	76.00	0.66		
Total	85.13	81.00			
2.00 Regression	41.85	9.00	4.65	7.74	0.00^b
Residual	43.28	72.00	0.60		
Total	85.13	81.00			
3.00 Regression	52.40	10.00	5.24	11.37	0.00^c
Residual	32.73	71.00	0.46		
Total	85.13	81.00			
4.00 Regression	61.01	14.00	4.36	12.10	0.00^d
Residual	24.13	67.00	0.36		
Total	85.13	81.00			
5.00 Regression	61.46	18.00	3.41	9.08	0.00^e
Residual	23.68	63.00	0.38		
Total	85.13	81.00			
6.00 Regression	64.55	19.00	3.40	10.23	0.00^f
Residual	20.58	62.00	0.33		
Total	85.13	81.00			

a. Predictors: (Constant), Litigating/Not Litigating, Education, Working or Not Working, Sustained Work Injury, Gender

b. Predictors: (Constant), Litigating/Not Litigating, Education, Working or Not Working, Sustained Work Injury, Gender, IPQR1 IPQR4, IPQR3, IPQR2

c. Predictors: (Constant), Litigating/Not Litigating, Education, Working or Not Working, Sustained Work Injury, Gender, IPQR1, IPQR4, IPQR3, IPQR2, LOT

d. Predictors: (Constant), Litigating/Not Litigating, Education, Working or Not Working, Sustained Work Injury, Gender, IPQRF1, IPQRF4, IPQRF3, IPQRF2, LOT, DAQ-R 4 Home Maintenance, DAQ-R 2 Work, Health, Spirituality & Caring, DAQ-R 1 Domestic Chores, DAQ-R 3 Interpersonal Contact & Social Support

e. Predictors: (Constant), Litigating/Not Litigating, Education, Working or Not Working, Sustained Work Injury, Gender, IPQRF1 IPQRF4, IPQRF3 IPQRF2, LOT, DAQ-R 4, DAQ-R 2, DAQ-R 1, DAQ-R 3, MDAQ-R 2 Structured Tasks, MDAQ-R 1 Support, Caring & Interpersonal Relationships, MDAQ-R 4 Home Maintenance & Health Maintenance, MDAQ-R 3 Sensory & Leisure Activities

f. Predictors: (Constant), Litigating/Not Litigating, Education, Working or Not Working, Sustained Work Injury, Gender, IPQRF1, IPQRF4, IPQRF3, IPQRF2, LOT, DAQ-R 4 DAQ-R 2, DAQ-R 1, DAQ-R 3, MDAQ-R 2 Structured Tasks, MDAQ-R 1 Support, Caring & Interpersonal Relationships, MDAQ-R 4 Home Maintenance & Health Maintenance, MDAQ-R 3 Sensory & Leisure Activities, Pain & Disability Factor

g. Dependent Variable: Psychological Distress Factor

Coefficients ^a										
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Correlations		
	B	Std. Error	Beta			Lower Bound	Upper Bound	Zero-order	Partial	Part
1.00	(Constant)	3.06	0.67	4.58	0.00	1.73	4.39			
	Education	-0.56	0.19	-2.92	0.00	-0.93	-0.18	-0.34	-0.32	-0.26
	Working or Not Working	0.29	0.19	1.53	0.13	-0.09	0.68	0.27	0.17	0.14
	Sustained Work Injury	-0.28	0.20	-1.39	0.17	-0.67	0.12	-0.29	-0.16	-0.12
	Gender	-0.65	0.24	-2.73	0.01	-1.12	-0.17	-0.44	-0.30	-0.24
	Litigating/Not Litigating	-0.62	0.27	-2.29	0.03	-1.15	-0.08	-0.48	-0.25	-0.20
2.00	(Constant)	2.01	0.82	2.46	0.02	0.38	3.64			
	Education	-0.54	0.19	-2.87	0.01	-0.92	-0.17	-0.34	-0.32	-0.24
	Working or Not Working	0.21	0.19	1.09	0.28	-0.17	0.58	0.27	0.13	0.09
	Sustained Work Injury	-0.34	0.20	-1.69	0.10	-0.75	0.06	-0.29	-0.20	-0.14
	Gender	-0.54	0.23	-2.33	0.02	-1.01	-0.08	-0.44	-0.26	-0.20
	Litigating/Not Litigating	-0.54	0.30	-1.77	0.08	-1.15	0.07	-0.48	-0.20	-0.15
	IPQRF1 Psychological	0.05	0.02	2.47	0.02	0.01	0.09	0.22	0.28	0.21
	IPQRF2 Risk Factors	-0.04	0.03	-1.38	0.17	-0.09	0.02	-0.01	-0.16	-0.12
	IPQRF3 Immunity	0.04	0.04	0.98	0.33	-0.04	0.12	0.06	0.11	0.08
	IPQRF4 Accident Chance	0.07	0.05	1.50	0.14	-0.02	0.16	0.37	0.17	0.13
3.00	(Constant)	2.40	0.72	3.33	0.00	0.96	3.84			
	Education	-0.29	0.17	-1.67	0.10	-0.63	0.06	-0.34	-0.19	-0.12
	Working or Not Working	0.16	0.17	0.98	0.33	-0.17	0.49	0.27	0.12	0.07
	Sustained Work Injury	-0.15	0.18	-0.83	0.41	-0.52	0.21	-0.29	-0.10	-0.06
	Gender	-0.32	0.21	-1.55	0.13	-0.74	0.09	-0.44	-0.18	-0.11
	Litigating/Not Litigating	-0.36	0.27	-1.35	0.18	-0.90	0.17	-0.48	-0.16	-0.10
	IPQRF1 Psychological	0.02	0.02	1.10	0.27	-0.02	0.06	0.22	0.13	0.08
	IPQRF2 Risk Factors	-0.03	0.02	-1.52	0.13	-0.08	0.01	-0.01	-0.18	-0.11
	IPQRF3 Immunity	0.05	0.04	1.56	0.12	-0.02	0.12	0.06	0.18	0.12
	IPQRF4 Accident Chance	0.07	0.04	1.66	0.10	-0.01	0.15	0.37	0.19	0.12
	LOT	-0.07	0.01	-4.78	0.00	-0.10	-0.04	-0.68	-0.49	-0.35
4.00	(Constant)	2.43	0.66	3.68	0.00	1.11	3.76			
	Education	-0.20	0.16	-1.31	0.19	-0.51	0.11	-0.34	-0.16	-0.09
	Working or Not Working	0.10	0.15	0.66	0.51	-0.21	0.41	0.27	0.08	0.04
	Sustained Work Injury	-0.18	0.17	-1.08	0.28	-0.51	0.15	-0.29	-0.13	-0.07
	Gender	-0.30	0.22	-1.39	0.17	-0.74	0.13	-0.44	-0.17	-0.09
	Litigating/Not Litigating	0.02	0.26	0.07	0.94	-0.50	0.54	-0.48	0.01	0.00
	IPQRF1 Psychological	0.02	0.02	0.92	0.36	-0.02	0.05	0.22	0.11	0.06
	IPQRF2 Risk Factors	-0.01	0.02	-0.33	0.75	-0.05	0.03	-0.01	-0.04	-0.02

	IPQRF3 Immunity	0.02	0.03	0.06	0.74	0.46	-0.04	0.09	0.06	0.09	0.05
	IPQRF4 Accident Chance	0.07	0.04	0.13	1.78	0.08	-0.01	0.14	0.37	0.21	0.12
	LOT	-0.05	0.01	-0.35	-3.85	0.00	-0.08	-0.03	-0.68	-0.43	-0.25
	DAQ-R 1 Domestic Chores	-0.02	0.01	-0.11	-1.30	0.20	-0.04	0.01	-0.43	-0.16	-0.08
	DAQ-R 2 Work, Health, Spirituality & Caring	0.00	0.01	-0.01	-0.17	0.86	-0.02	0.02	-0.38	-0.02	-0.01
	DAQ-R 3 Interpersonal Contact & Social Support	-0.03	0.01	-0.25	-2.70	0.01	-0.05	-0.01	-0.67	-0.31	-0.18
	DAQ-R 4 Home Maintenance	-0.03	0.02	-0.17	-2.03	0.05	-0.06	0.00	-0.34	-0.24	-0.13
5.00	(Constant)	2.33	0.71		3.27	0.00	0.91	3.75			
	Education	-0.19	0.16	-0.09	-1.15	0.25	-0.51	0.14	-0.34	-0.14	-0.08
	Working or Not Working	0.07	0.16	0.04	0.46	0.65	-0.25	0.40	0.27	0.06	0.03
	Sustained Work Injury	-0.15	0.18	-0.07	-0.86	0.39	-0.50	0.20	-0.29	-0.11	-0.06
	Gender	-0.30	0.23	-0.13	-1.31	0.20	-0.76	0.16	-0.44	-0.16	-0.09
	Litigating/Not Litigating	0.02	0.27	0.01	0.09	0.93	-0.52	0.57	-0.48	0.01	0.01
	IPQRF1 Psychological	0.02	0.02	0.11	1.11	0.27	-0.02	0.05	0.22	0.14	0.07
	IPQRF2 Risk Factors	-0.01	0.02	-0.06	-0.51	0.61	-0.05	0.03	-0.01	-0.06	-0.03
	IPQRF3 Immunity	0.02	0.03	0.06	0.66	0.51	-0.05	0.09	0.06	0.08	0.04
	IPQRF4 Accident Chance	0.07	0.04	0.14	1.77	0.08	-0.01	0.15	0.37	0.22	0.12
	LOT	-0.05	0.01	-0.33	-3.47	0.00	-0.08	-0.02	-0.68	-0.40	-0.23
	DAQ-R 1 Domestic Chores	-0.01	0.01	-0.10	-0.99	0.33	-0.04	0.01	-0.43	-0.12	-0.07
	DAQ-R 2 Work, Health, Spirituality & Caring	0.00	0.01	-0.02	-0.23	0.82	-0.02	0.02	-0.38	-0.03	-0.02
	DAQ-R 3 Interpersonal Contact & Social Support	-0.02	0.01	-0.21	-1.95	0.06	-0.05	0.00	-0.67	-0.24	-0.13
	DAQ-R 4 Home Maintenance	-0.03	0.02	-0.16	-1.84	0.07	-0.06	0.00	-0.34	-0.23	-0.12
	MDAQ-R 1 Support, Caring & Interpersonal Relationships	0.00	0.01	0.00	0.01	1.00	-0.02	0.02	-0.46	0.00	0.00
	MDAQ-R 2 Structured Tasks	0.00	0.01	0.01	0.09	0.93	-0.02	0.02	-0.19	0.01	0.01
	MDAQ-R 3 Sensory & Leisure Activities	-0.01	0.01	-0.11	-0.90	0.37	-0.03	0.01	-0.47	-0.11	-0.06
	MDAQ-R 4 Home Maintenance & Health Maintenance	0.01	0.01	0.06	0.64	0.53	-0.02	0.04	0.16	0.08	0.04
6.00	(Constant)	2.21	0.67		3.30	0.00	0.87	3.55			
	Education	-0.15	0.15	-0.07	-1.00	0.32	-0.46	0.15	-0.34	-0.13	-0.06
	Working or Not Working	-0.06	0.16	-0.03	-0.35	0.72	-0.37	0.26	0.27	-0.04	-0.02
	Sustained Work Injury	-0.15	0.16	-0.07	-0.89	0.38	-0.48	0.18	-0.29	-0.11	-0.06
	Gender	-0.24	0.22	-0.11	-1.12	0.27	-0.68	0.19	-0.44	-0.14	-0.07
	Litigating/Not Litigating	0.08	0.26	0.03	0.32	0.75	-0.43	0.60	-0.48	0.04	0.02
	IPQRF1 Psychological	0.01	0.02	0.04	0.43	0.67	-0.03	0.04	0.22	0.05	0.03

IPQRF2 Risk Factors	0.00	0.02	-0.01	-0.09	0.92	-0.04	0.04	-0.01	-0.01	-0.01
IPQRF3 Immunity	0.02	0.03	0.05	0.53	0.59	-0.05	0.08	0.06	0.07	0.03
IPQRF4 Accident Chance	0.08	0.04	0.16	2.09	0.04	0.00	0.15	0.37	0.26	0.13
LOT	-0.04	0.01	-0.30	-3.27	0.00	-0.07	-0.02	-0.68	-0.38	-0.20
DAQ-R 1 Domestic Chores	-0.01	0.01	-0.09	-1.02	0.31	-0.04	0.01	-0.43	-0.13	-0.06
DAQ-R 2 Work, Health, Spirituality & Caring	-0.01	0.01	-0.10	-1.16	0.25	-0.03	0.01	-0.38	-0.15	-0.07
DAQ-R 3 Interpersonal Contact & Social Support	-0.02	0.01	-0.18	-1.75	0.08	-0.04	0.00	-0.67	-0.22	-0.11
DAQ-R 4 Home Maintenance	-0.01	0.02	-0.07	-0.82	0.42	-0.05	0.02	-0.34	-0.10	-0.05
MDAQ-R 1 Support, Caring & Interpersonal Relationships	0.01	0.01	0.05	0.48	0.63	-0.02	0.03	-0.46	0.06	0.03
MDAQ-R 2 Structured Tasks	0.00	0.01	0.02	0.27	0.78	-0.02	0.02	-0.19	0.03	0.02
MDAQ-R 3 Sensory & Leisure Activities	-0.01	0.01	-0.14	-1.22	0.23	-0.03	0.01	-0.47	-0.15	-0.08
MDAQ-R 4 Home Maintenance & Health Maintenance	0.00	0.01	0.03	0.35	0.73	-0.02	0.03	0.16	0.04	0.02
Pain & Disability Factor	0.28	0.09	0.26	3.05	0.00	0.10	0.46	0.59	0.36	0.19

a. Dependent Variable: Psychological Distress Factor

D 11 Research Model Psychological Distress

Analysis Three Hierarchical Regression Analysis Dependent Variable: Psychological
Distress Factor (MPQ PPI& PRI & PDI)

Model Summaryⁱ

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
dimension0 1.00	0.63 ^a	0.39	0.36	0.82	0.39	12.39	4.00	77.00	0.00	
2.00	0.69 ^b	0.47	0.41	0.79	0.08	2.76	4.00	73.00	0.03	
3.00	0.78 ^c	0.61	0.56	0.68	0.14	26.01	1.00	72.00	0.00	
4.00	0.84 ^d	0.71	0.66	0.60	0.10	5.89	4.00	68.00	0.00	
5.00	0.85 ^e	0.72	0.64	0.61	0.01	0.39	4.00	64.00	0.81	
6.00	0.86 ^f	0.74	0.66	0.60	0.02	4.48	1.00	63.00	0.04	
7.00	0.86 ^g	0.75	0.67	0.59	0.01	1.97	1.00	62.00	0.17	
8.00	0.87 ^h	0.76	0.68	0.58	0.02	4.15	1.00	61.00	0.05	2.24

a. Predictors: (Constant), Litigating/Not Litigating, Education Above/Below Year 12, Working or Not Working, Gender

b. Predictors: (Constant), Litigating/Not Litigating, Education Above/Below Year 12, Working or Not Working, Gender, IPQRF1 Psychological Attributions, IPQRF4 Accident or Chance, IPQRF3 Immunity, IPQRF2 Risk Factors

c. Predictors: (Constant), Litigating/Not Litigating, Education Above/Below Year 12, Working or Not Working, Gender, IPQRF1 Psychological Attributions, IPQRF4 Accident or Chance, IPQRF3 Immunity, IPQRF2 Risk Factors, LOT Positive Life Orientation

d. Predictors: (Constant), Litigating/Not Litigating, Education Above/Below Year 12, Working or Not Working, Gender, IPQRF1 Psychological Attributions, IPQRF4 Accident or Chance, IPQRF3 Immunity, IPQRF2 Risk Factors, LOT Positive Life Orientation, DAQ-R 2 Work, Health, Spirituality & Caring, DAQ-R 4 Home Maintenance, DAQ-R 1 Domestic Chores, DAQ-R 3 Interpersonal Contact & Social Support

e. Predictors: (Constant), Litigating/Not Litigating, Education Above/Below Year 12, Working or Not Working, Gender, IPQRF1 Psychological Attributions, IPQRF4 Accident or Chance, IPQRF3 Immunity, IPQRF2 Risk Factors, LOT Positive Life Orientation, DAQ-R 2 Work, Health, Spirituality & Caring, DAQ-R 4 Home Maintenance, DAQ-R 1 Domestic Chores, DAQ-R 3 Interpersonal Contact & Social Support, MDAQ-R 2 Structured Tasks, MDAQ-R 4 Home Maintenance & Health Maintenance, MDAQ-R 1 Support, Caring & Interpersonal Relationships, MDAQ-R 3 Sensory & Leisure Activities

f. Predictors: (Constant), Litigating/Not Litigating, Education Above/Below Year 12, Working or Not Working, Gender, IPQRF1 Psychological Attributions, IPQRF4 Accident or Chance, IPQRF3 Immunity, IPQRF2 Risk Factors, LOT Positive Life Orientation, DAQ-R 2 Work, Health, Spirituality & Caring, DAQ-R 4 Home Maintenance, DAQ-R 1 Domestic Chores, DAQ-R 3 Interpersonal Contact & Social Support, MDAQ-R 2 Structured Tasks, MDAQ-R 4 Home Maintenance & Health Maintenance, MDAQ-R 1 Support, Caring & Interpersonal Relationships, MDAQ-R 3 Sensory & Leisure Activities, MPQ PPI

g. Predictors: (Constant), Litigating/Not Litigating, Education Above/Below Year 12, Working or Not Working, Gender, IPQRF1 Psychological Attributions, IPQRF4 Accident or Chance, IPQRF3 Immunity, IPQRF2 Risk Factors, LOT Positive Life Orientation, DAQ-R 2 Work, Health, Spirituality & Caring, DAQ-R 4 Home Maintenance, DAQ-R 1 Domestic Chores, DAQ-R 3 Interpersonal Contact & Social Support, MDAQ-R 2 Structured Tasks, MDAQ-R 4 Home Maintenance & Health Maintenance, MDAQ-R 1 Support, Caring & Interpersonal Relationships, MDAQ-R 3 Sensory & Leisure Activities, MPQ PPI, MPQ Sum

h. Predictors: (Constant), Litigating/Not Litigating, Education Above/Below Year 12, Working or Not Working, Gender, IPQRF1 Psychological Attributions, IPQRF4 Accident or Chance, IPQRF3 Immunity, IPQRF2 Risk Factors, LOT Positive Life Orientation, DAQ-R 2 Work, Health, Spirituality & Caring, DAQ-R 4 Home Maintenance, DAQ-R 1 Domestic Chores, DAQ-R 3 Interpersonal Contact & Social Support, MDAQ-R 2 Structured Tasks, MDAQ-R 4 Home Maintenance & Health Maintenance, MDAQ-R 1 Support, Caring & Interpersonal Relationships, MDAQ-R 3 Sensory & Leisure Activities, MPQ PPI, MPQ Sum, Pain Disability Index

i. Dependent Variable: Psychological Distress Factor

ANOVAⁱ

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	33.341	4	8.335	12.391	.000 ^a
	Residual	51.794	77	.673		
	Total	85.135	81			
2	Regression	40.143	8	5.018	8.142	.000 ^b
	Residual	44.992	73	.616		
	Total	85.135	81			
3	Regression	52.083	9	5.787	12.606	.000 ^c
	Residual	33.052	72	.459		
	Total	85.135	81			
4	Regression	60.587	13	4.661	12.910	.000 ^d
	Residual	24.547	68	.361		
	Total	85.135	81			
5	Regression	61.176	17	3.599	9.613	.000 ^e
	Residual	23.959	64	.374		
	Total	85.135	81			
6	Regression	62.766	18	3.487	9.821	.000 ^f
	Residual	22.368	63	.355		
	Total	85.135	81			
7	Regression	63.455	19	3.340	9.551	.000 ^g
	Residual	21.680	62	.350		
	Total	85.135	81			
8	Regression	64.837	20	3.242	9.742	.000 ^h
	Residual	20.298	61	.333		
	Total	85.135	81			

a. Predictors: (Constant), Litigating/Not Litigating, Education Above/Below Year 12, Working or Not Working, Gender

b. Predictors: (Constant), Litigating/Not Litigating, Education , Working Not Working, Gender, IPQRF1 Psychological Attributions, IPQRF4 Accident or Chance, IPQRF3 Immunity, IPQRF2 Risk Factors

c. Predictors: (Constant), Litigating/Not Litigating, Education Above/Below Year 12, Working or Not Working, Gender, IPQRF1 Psychological Attributions, IPQRF4 Accident or Chance, IPQRF3 Immunity, IPQRF2 Risk Factors, LOT Positive Life Orientation

d. Predictors: (Constant), Litigating/Not Litigating, Education , Working Not Working, Gender, IPQRF1 Psychological Attributions, IPQRF4 Accident or Chance, IPQRF3 Immunity, IPQRF2 Risk Factors, LOT Positive Life Orientation, DAQ-R 2 Work, Health, Spirituality & Caring, DAQ-R 4 Home Maintenance, DAQ-R 1 Domestic Chores, DAQ-R 3 Interpersonal Contact & Social Support

e. Predictors: (Constant), Litigating/Not Litigating, Education , Working or Not Working, Gender, IPQRF1 Psychological Attributions, IPQRF4 Accident or Chance, IPQRF3 Immunity, IPQRF2 Risk Factors, LOT Positive Life Orientation, DAQ-R 2 Work, Health, Spirituality & Caring, DAQ-R 4 Home Maintenance, DAQ-R 1 Domestic Chores, DAQ-R 3 Interpersonal Contact & Social Support, MDAQ-R 2 Structured Tasks, MDAQ-R 4 Home Maintenance & Health Maintenance, MDAQ-R 1 Support, Caring & Interpersonal Relationships, MDAQ-R 3 Sensory & Leisure Activities

f. Predictors: (Constant), Litigating/Not Litigating, Education , Working Not Working, Gender, IPQRF1 Psychological Attributions, IPQRF4 Accident or Chance, IPQRF3 Immunity, IPQRF2 Risk Factors, LOT Positive Life Orientation, DAQ-R 2 Work, Health, Spirituality & Caring, DAQ-R 4 Home Maintenance, DAQ-R 1 Domestic Chores, DAQ-R 3 Interpersonal Contact & Social Support, MDAQ-R 2 Structured Tasks, MDAQ-R 4 Home Maintenance & Health Maintenance, MDAQ-R 1 Support, Caring & Interpersonal Relationships, MDAQ-R 3 Sensory & Leisure Activities, MPQ PPI

g. Predictors: (Constant), Litigating/Not Litigating, Education , Working Not Working, Gender, IPQRF1 Psychological Attributions, IPQRF4 Accident or Chance, IPQRF3 Immunity, IPQRF2 Risk Factors, LOT Positive Life Orientation, DAQ-R 2 Work, Health, Spirituality & Caring, DAQ-R 4 Home Maintenance, DAQ-R 1 Domestic Chores, DAQ-R 3 Interpersonal Contact & Social Support, MDAQ-R 2 Structured Tasks, MDAQ-R 4 Home Maintenance & Health Maintenance, MDAQ-R 1 Support, Caring & Interpersonal Relationships, MDAQ-R 3 Sensory & Leisure Activities, MPQ PPI, MPQ Sum

h. Predictors: (Constant), Litigating/Not Litigating, Education , Working Not Working, Gender, IPQRF1 Psychological Attributions, IPQRF4 Accident or Chance, IPQRF3 Immunity, IPQRF2 Risk Factors, LOT, DAQ-R 2 Work, Health, Spirituality & Caring, DAQ-R 4 Home Maintenance, DAQ-R 1 Domestic Chores, DAQ-R 3 Interpersonal Contact & Social Support, MDAQ-R 2 Structured Tasks, MDAQ-R 4 Home Maintenance & Health Maintenance, MDAQ-R 1 Support, Caring & Interpersonal Relationships, MDAQ-R 3 Sensory & Leisure Activities, MPQ PPI, MPQ Sum, Pain Disability Index

i. Dependent Variable: Psychological Distress Factor

Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations			Collinearity Statistics	
	B	Std. Error	Beta			Zero-order	Partial	Part	Tolerance	VIF
1.00	(Constant)	2.97	0.67	4.44	0.00					
	Education	-0.56	0.19	-2.94	0.00	-0.34	-0.32	-0.26	0.90	1.11
	Working Not Working	0.25	0.19	1.31	0.19	0.27	0.15	0.12	0.91	1.10
	Gender	-0.71	0.23	-3.05	0.00	-0.44	-0.33	-0.27	0.77	1.30
	Litigating/Not Litigating	-0.70	0.26	-2.65	0.01	-0.48	-0.29	-0.24	0.75	1.34
2.00	(Constant)	1.75	0.81	2.16	0.03					
	Education	-0.56	0.19	-2.97	0.00	-0.34	-0.33	-0.25	0.84	1.20
	Working Not Working	0.18	0.19	0.96	0.34	0.27	0.11	0.08	0.83	1.20
	Gender	-0.63	0.23	-2.72	0.01	-0.44	-0.30	-0.23	0.72	1.39
	Litigating/Not Litigating	-0.57	0.31	-1.83	0.07	-0.48	-0.21	-0.16	0.50	1.99
	IPQRF1 Psychological Attributions	0.04	0.02	2.22	0.03	0.22	0.25	0.19	0.55	1.83
	IPQRF2 Risk Factors	-0.04	0.03	-1.37	0.17	-0.01	-0.16	-0.12	0.41	2.45
	IPQRF3 Immunity	0.03	0.04	0.69	0.49	0.06	0.08	0.06	0.62	1.62
	IPQRF4 Accident or Chance	0.09	0.05	1.97	0.05	0.37	0.23	0.17	0.84	1.20
3.00	(Constant)	2.31	0.71	3.25	0.00					
	Education	-0.29	0.17	-1.67	0.10	-0.34	-0.19	-0.12	0.75	1.33
	Working Not Working	0.15	0.16	0.91	0.37	0.27	0.11	0.07	0.83	1.21
	Gender	-0.35	0.21	-1.70	0.09	-0.44	-0.20	-0.12	0.67	1.49
	Litigating/Not Litigating	-0.37	0.27	-1.36	0.18	-0.48	-0.16	-0.10	0.49	2.03
	IPQRF1 Psychological Attributions	0.02	0.02	0.95	0.35	0.22	0.11	0.07	0.50	2.00
	IPQRF2 Risk Factors	-0.03	0.02	-1.52	0.13	-0.01	-0.18	-0.11	0.41	2.45
	IPQRF3 Immunity	0.05	0.03	1.46	0.15	0.06	0.17	0.11	0.61	1.64
	IPQRF4 Accident or Chance	0.08	0.04	1.93	0.06	0.37	0.22	0.14	0.83	1.20
	LOT	-0.07	0.01	-5.10	0.00	-0.68	-0.52	-0.37	0.64	1.57
4.00	(Constant)	2.30	0.65	3.53	0.00					
	Education	-0.20	0.16	-1.29	0.20	-0.34	-0.15	-0.08	0.73	1.37
	Working Not Working	0.09	0.15	0.61	0.54	0.27	0.07	0.04	0.74	1.34
	Gender	-0.34	0.21	-1.60	0.11	-0.44	-0.19	-0.10	0.49	2.05
	Litigating/Not Litigating	0.01	0.26	0.05	0.96	-0.48	0.01	0.00	0.41	2.44
	IPQRF1 Psychological Attributions	0.01	0.02	0.70	0.49	0.22	0.08	0.05	0.50	2.01
	IPQRF2 Risk Factors	-0.01	0.02	-0.35	0.72	-0.01	-0.04	-0.02	0.38	2.66

	IPQRF3 Immunity	0.02	0.03	0.05	0.61	0.54	0.06	0.07	0.04	0.56	1.78
	IPQRF4 Accident or Chance	0.08	0.04	0.15	2.06	0.04	0.37	0.24	0.13	0.78	1.28
	LOT	-0.06	0.01	-0.37	-4.23	0.00	-0.68	-0.46	-0.28	0.55	1.82
	DAQ-R 1 Domestic Chores	-0.02	0.01	-0.12	-1.34	0.18	-0.43	-0.16	-0.09	0.56	1.78
	DAQ-R 2 Work, Health, Spirituality & Caring	0.00	0.01	0.01	0.09	0.93	-0.38	0.01	0.01	0.68	1.48
	DAQ-R 3 Interpersonal Contact & Social Support	-0.03	0.01	-0.26	-2.75	0.01	-0.67	-0.32	-0.18	0.48	2.08
	DAQ-R 4 Home Maintenance	-0.03	0.02	-0.16	-2.01	0.05	-0.34	-0.24	-0.13	0.64	1.56
5.00	(Constant)	2.18	0.69		3.16	0.00					
	Education	-0.19	0.16	-0.09	-1.16	0.25	-0.34	-0.14	-0.08	0.70	1.43
	Working Not Working	0.06	0.16	0.03	0.40	0.69	0.27	0.05	0.03	0.70	1.42
	Gender	-0.33	0.23	-0.14	-1.43	0.16	-0.44	-0.18	-0.10	0.44	2.25
	Litigating/Not Litigating	0.02	0.27	0.01	0.08	0.93	-0.48	0.01	0.01	0.39	2.58
	IPQRF1 Psychological Attributions	0.02	0.02	0.09	0.97	0.34	0.22	0.12	0.06	0.46	2.16
	IPQRF2 Risk Factors	-0.01	0.02	-0.06	-0.55	0.59	-0.01	-0.07	-0.04	0.36	2.78
	IPQRF3 Immunity	0.02	0.03	0.05	0.54	0.59	0.06	0.07	0.04	0.54	1.86
	IPQRF4 Accident or Chance	0.08	0.04	0.16	2.00	0.05	0.37	0.24	0.13	0.73	1.37
	LOT	-0.05	0.01	-0.35	-3.70	0.00	-0.68	-0.42	-0.25	0.50	1.99
	DAQ-R 1 Domestic Chores	-0.01	0.01	-0.10	-1.02	0.31	-0.43	-0.13	-0.07	0.46	2.18
	DAQ-R 2 Work, Health, Spirituality & Caring	0.00	0.01	-0.01	-0.07	0.95	-0.38	-0.01	0.00	0.58	1.74
	DAQ-R 3 Interpersonal Contact & Social Support	-0.02	0.01	-0.21	-1.95	0.06	-0.67	-0.24	-0.13	0.39	2.55
	DAQ-R 4 Home Maintenance	-0.03	0.02	-0.16	-1.86	0.07	-0.34	-0.23	-0.12	0.59	1.69
	MDAQ-R 1 Support, Caring & Interpersonal Relationships	0.00	0.01	-0.01	-0.05	0.96	-0.46	-0.01	0.00	0.35	2.82
	MDAQ-R 2 Structured Tasks	0.00	0.01	0.01	0.13	0.90	-0.19	0.02	0.01	0.49	2.03
	MDAQ-R 3 Sensory & Leisure Activities	-0.01	0.01	-0.11	-0.94	0.35	-0.47	-0.12	-0.06	0.31	3.18
	MDAQ-R 4 Home Maintenance & Health Maintenance	0.01	0.01	0.08	0.82	0.42	0.16	0.10	0.05	0.44	2.25
6.00	(Constant)	1.74	0.70		2.47	0.02					
	Education	-0.16	0.16	-0.08	-0.98	0.33	-0.34	-0.12	-0.06	0.69	1.45
	Working Not Working	0.02	0.16	0.01	0.14	0.89	0.27	0.02	0.01	0.69	1.45
	Gender	-0.35	0.22	-0.15	-1.59	0.12	-0.44	-0.20	-0.10	0.44	2.26
	Litigating/Not Litigating	0.08	0.27	0.03	0.29	0.77	-0.48	0.04	0.02	0.38	2.60
	IPQRF1 Psychological Attributions	0.02	0.02	0.11	1.15	0.26	0.22	0.14	0.07	0.46	2.17
	IPQRF2 Risk Factors	-0.01	0.02	-0.06	-0.56	0.58	-0.01	-0.07	-0.04	0.36	2.78
	IPQRF3 Immunity	0.02	0.03	0.06	0.67	0.50	0.06	0.08	0.04	0.54	1.86
	IPQRF4 Accident or Chance	0.07	0.04	0.14	1.82	0.07	0.37	0.22	0.12	0.72	1.39

	LOT	-0.05	0.01	-0.33	-3.67	0.00	-0.68	-0.42	-0.24	0.50	2.00
	DAQ-R 1 Domestic Chores	-0.01	0.01	-0.06	-0.63	0.53	-0.43	-0.08	-0.04	0.44	2.26
	DAQ-R 2 Work, Health, Spirituality & Caring	-0.01	0.01	-0.06	-0.67	0.51	-0.38	-0.08	-0.04	0.53	1.89
	DAQ-R 3 Interpersonal Contact & Social Support	-0.02	0.01	-0.22	-2.14	0.04	-0.67	-0.26	-0.14	0.39	2.56
	DAQ-R 4 Home Maintenance	-0.02	0.02	-0.13	-1.51	0.14	-0.34	-0.19	-0.10	0.57	1.75
	MDAQ-R 1 Support, Caring & Interpersonal Relationships	0.00	0.01	0.03	0.29	0.78	-0.46	0.04	0.02	0.35	2.89
	MDAQ-R 2 Structured Tasks	0.00	0.01	0.02	0.22	0.82	-0.19	0.03	0.01	0.49	2.03
	MDAQ-R 3 Sensory & Leisure Activities	-0.01	0.01	-0.13	-1.10	0.28	-0.47	-0.14	-0.07	0.31	3.19
	MDAQ-R 4 Home Maintenance & Health Maintenance	0.01	0.01	0.06	0.60	0.55	0.16	0.08	0.04	0.44	2.28
	MPQ PPI	0.18	0.08	0.16	2.12	0.04	0.35	0.26	0.14	0.70	1.42
7.00	(Constant)	1.70	0.70		2.43	0.02					
	Education	-0.14	0.16	-0.07	-0.88	0.38	-0.34	-0.11	-0.06	0.69	1.45
	Working Not Working	-0.03	0.16	-0.01	-0.16	0.88	0.27	-0.02	-0.01	0.66	1.51
	Gender	-0.37	0.22	-0.16	-1.67	0.10	-0.44	-0.21	-0.11	0.44	2.27
	Litigating/Not Litigating	0.10	0.27	0.04	0.37	0.71	-0.48	0.05	0.02	0.38	2.61
	IPQRF1 Psychological Attributions	0.01	0.02	0.07	0.69	0.49	0.22	0.09	0.04	0.42	2.38
	IPQRF2 Risk Factors	-0.01	0.02	-0.04	-0.39	0.70	-0.01	-0.05	-0.03	0.35	2.82
	IPQRF3 Immunity	0.02	0.03	0.06	0.70	0.49	0.06	0.09	0.04	0.54	1.86
	IPQRF4 Accident or Chance	0.08	0.04	0.15	2.01	0.05	0.37	0.25	0.13	0.71	1.41
	LOT	-0.05	0.01	-0.33	-3.64	0.00	-0.68	-0.42	-0.23	0.50	2.00
	DAQ-R 1 Domestic Chores	-0.01	0.01	-0.07	-0.68	0.50	-0.43	-0.09	-0.04	0.44	2.26
	DAQ-R 2 Work, Health, Spirituality & Caring	-0.01	0.01	-0.08	-0.85	0.40	-0.38	-0.11	-0.05	0.52	1.92
	DAQ-R 3 Interpersonal Contact & Social Support	-0.02	0.01	-0.22	-2.15	0.04	-0.67	-0.26	-0.14	0.39	2.56
	DAQ-R 4 Home Maintenance	-0.02	0.02	-0.11	-1.29	0.20	-0.34	-0.16	-0.08	0.56	1.79
	MDAQ-R 1 Support, Caring & Interpersonal Relationships	0.01	0.01	0.05	0.46	0.65	-0.46	0.06	0.03	0.34	2.93
	MDAQ-R 2 Structured Tasks	0.00	0.01	0.03	0.32	0.75	-0.19	0.04	0.02	0.49	2.04
	MDAQ-R 3 Sensory & Leisure Activities	-0.01	0.01	-0.15	-1.29	0.20	-0.47	-0.16	-0.08	0.31	3.26
	MDAQ-R 4 Home Maintenance & Health Maintenance	0.01	0.01	0.05	0.57	0.57	0.16	0.07	0.04	0.44	2.28
	MPQ PPI	0.14	0.09	0.13	1.61	0.11	0.35	0.20	0.10	0.64	1.56
	MPQ Sum	0.01	0.01	0.11	1.40	0.17	0.32	0.18	0.09	0.65	1.53
8.00	(Constant)	1.17	0.73		1.61	0.11					
	Education	-0.15	0.15	-0.07	-0.99	0.32	-0.34	-0.13	-0.06	0.69	1.46

Working Not Working	-0.06	0.16	-0.03	-0.40	0.69	0.27	-0.05	-0.03	0.65	1.54
Gender	-0.24	0.23	-0.10	-1.06	0.29	-0.44	-0.13	-0.07	0.41	2.47
Litigating/Not Litigating	0.09	0.26	0.03	0.33	0.74	-0.48	0.04	0.02	0.38	2.61
IPQRF1 Psychological Attributions	0.01	0.02	0.05	0.53	0.60	0.22	0.07	0.03	0.42	2.40
IPQRF2 Risk Factors	0.00	0.02	-0.02	-0.18	0.86	-0.01	-0.02	-0.01	0.35	2.85
IPQRF3 Immunity	0.01	0.03	0.03	0.35	0.72	0.06	0.05	0.02	0.52	1.92
IPQRF4 Accident or Chance	0.08	0.04	0.16	2.10	0.04	0.37	0.26	0.13	0.71	1.42
LOT	-0.05	0.01	-0.30	-3.37	0.00	-0.68	-0.40	-0.21	0.49	2.05
DAQ-R 1 Domestic Chores	-0.01	0.01	-0.08	-0.88	0.38	-0.43	-0.11	-0.06	0.44	2.28
DAQ-R 2 Work, Health, Spirituality & Caring	-0.01	0.01	-0.11	-1.22	0.23	-0.38	-0.15	-0.08	0.50	1.99
DAQ-R 3 Interpersonal Contact & Social Support	-0.02	0.01	-0.17	-1.64	0.11	-0.67	-0.20	-0.10	0.37	2.73
DAQ-R 4 Home Maintenance	-0.01	0.02	-0.06	-0.65	0.52	-0.34	-0.08	-0.04	0.51	1.97
MDAQ-R 1 Support, Caring & Interpersonal Relationships	0.00	0.01	0.05	0.45	0.65	-0.46	0.06	0.03	0.34	2.93
MDAQ-R 2 Structured Tasks	0.00	0.01	0.03	0.29	0.77	-0.19	0.04	0.02	0.49	2.04
MDAQ-R 3 Sensory & Leisure Activities	-0.01	0.01	-0.13	-1.14	0.26	-0.47	-0.14	-0.07	0.30	3.28
MDAQ-R 4 Home Maintenance & Health Maintenance	0.01	0.01	0.04	0.42	0.68	0.16	0.05	0.03	0.44	2.30
MPQ PPI	0.08	0.09	0.07	0.82	0.41	0.35	0.10	0.05	0.56	1.79
MPQ Sum	0.01	0.01	0.09	1.18	0.24	0.32	0.15	0.07	0.64	1.55
Pain Disability Index	0.01	0.01	0.20	2.04	0.05	0.67	0.25	0.13	0.39	2.58

a. Dependent Variable: Psychological Distress Factor

D 12 Research Model Psychological Distress

Analysis Four Hierarchical Regression Analysis Dependent Variable: Hopelessness (MPQ PPI& PRI & PDI)

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
dimension0 1.00	0.50 ^a	0.25	0.22	4.43	0.25	10.04	3.00	92.00	0.00
2.00	0.54 ^b	0.29	0.25	4.34	0.05	3.02	2.00	90.00	0.05
3.00	0.71 ^c	0.50	0.47	3.67	0.21	36.78	1.00	89.00	0.00
4.00	0.77 ^d	0.59	0.56	3.35	0.09	9.97	2.00	87.00	0.00
5.00	0.78 ^e	0.61	0.57	3.31	0.01	3.19	1.00	86.00	0.08
6.00	0.78 ^f	0.61	0.56	3.33	0.00	0.02	1.00	85.00	0.89
7.00	0.79 ^g	0.62	0.57	3.31	0.01	1.77	1.00	84.00	0.19

a. Predictors: (Constant), Litigating/Not Litigating, Education Above/Below Year 12, Gender

b. Predictors: (Constant), Litigating/Not Litigating, Education Above/Below Year 12, Gender, IPQRF1 Psychological Attributions, IPQRF4 Accident or Chance

c. Predictors: (Constant), Litigating/Not Litigating, Education Above/Below Year 12, Gender, IPQRF1 Psychological Attributions, IPQRF4 Accident or Chance, LOT Positive Life Orientation

d. Predictors: (Constant), Litigating/Not Litigating, Education Above/Below Year 12, Gender, IPQRF1 Psychological Attributions, IPQRF4 Accident or Chance, LOT Positive Life Orientation, DAQ-R 4 Home Maintenance, DAQ-R 3 Interpersonal Contact & Social Support

e. Predictors: (Constant), Litigating/Not Litigating, Education Above/Below Year 12, Gender, IPQRF1 Psychological Attributions, IPQRF4 Accident or Chance, LOT Positive Life Orientation, DAQ-R 4 Home Maintenance, DAQ-R 3 Interpersonal Contact & Social Support, MPQ PPI

f. Predictors: (Constant), Litigating/Not Litigating, Education Above/Below Year 12, Gender, IPQRF1 Psychological Attributions, IPQRF4 Accident or Chance, LOT Positive Life Orientation, DAQ-R 4 Home Maintenance, DAQ-R 3 Interpersonal Contact & Social Support, MPQ PPI, MPQ Sum

g. Predictors: (Constant), Litigating/Not Litigating, Education Above/Below Year 12, Gender, IPQRF1 Psychological Attributions, IPQRF4 Accident or Chance, LOT Positive Life Orientation, DAQ-R 4 Home Maintenance, DAQ-R 3 Interpersonal Contact & Social Support, MPQ PPI, MPQ Sum, Pain Disability Index

ANOVA^h

Model		Sum of Squares	df	Mean Square	F	Sig.
1.00	Regression	592.05	3.00	197.35	10.04	0.00 ^a
	Residual	1807.94	92.00	19.65		
	Total	2399.99	95.00			
2.00	Regression	705.89	5.00	141.18	7.50	0.00 ^b
	Residual	1694.10	90.00	18.82		
	Total	2399.99	95.00			
3.00	Regression	1201.26	6.00	200.21	14.86	0.00 ^c
	Residual	1198.73	89.00	13.47		
	Total	2399.99	95.00			
4.00	Regression	1424.75	8.00	178.09	15.89	0.00 ^d
	Residual	975.24	87.00	11.21		
	Total	2399.99	95.00			
5.00	Regression	1459.65	9.00	162.18	14.83	0.00 ^e
	Residual	940.34	86.00	10.93		
	Total	2399.99	95.00			
6.00	Regression	1459.85	10.00	145.98	13.20	0.00 ^f
	Residual	940.14	85.00	11.06		
	Total	2399.99	95.00			
7.00	Regression	1479.29	11.00	134.48	12.27	0.00 ^g
	Residual	920.70	84.00	10.96		
	Total	2399.99	95.00			

a. Predictors: (Constant), Litigating/Not Litigating, Education Above/Below Year 12, Gender

b. Predictors: (Constant), Litigating/Not Litigating, Education Above/Below Year 12, Gender, IPQRF1 Psychological Attributions, IPQRF4 Accident or Chance

c. Predictors: (Constant), Litigating/Not Litigating, Education Above/Below Year 12, Gender, IPQRF1 Psychological Attributions, IPQRF4 Accident or Chance, LOT Positive Life Orientation

d. Predictors: (Constant), Litigating/Not Litigating, Education Above/Below Year 12, Gender, IPQRF1 Psychological Attributions, IPQRF4 Accident or Chance, LOT Positive Life Orientation, DAQ-R 4 Home Maintenance, DAQ-R 3 Interpersonal Contact & Social Support

e. Predictors: (Constant), Litigating/Not Litigating, Education Above/Below Year 12, Gender, IPQRF1 Psychological Attributions, IPQRF4 Accident or Chance, LOT Positive Life Orientation, DAQ-R 4 Home Maintenance, DAQ-R 3 Interpersonal Contact & Social Support, MPQ PPI

f. Predictors: (Constant), Litigating/Not Litigating, Education Above/Below Year 12, Gender, IPQRF1 Psychological Attributions, IPQRF4 Accident or Chance, LOT Positive Life Orientation, DAQ-R 4 Home Maintenance, DAQ-R 3 Interpersonal Contact & Social Support, MPQ PPI, MPQ Sum

g. Predictors: (Constant), Litigating/Not Litigating, Education Above/Below Year 12, Gender, IPQRF1 Psychological Attributions, IPQRF4 Accident or Chance, LOT Positive Life Orientation, DAQ-R 4 Home Maintenance, DAQ-R 3 Interpersonal Contact & Social Support, MPQ PPI, MPQ Sum, Pain Disability Index

h. **Dependent Variable: Beck Hopelessness Scale**

Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Correlations			Collinearity Statistics	
	B	Std. Error	Beta			Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance	VIF
1.00	(Constant)	19.48	2.68	7.27	0.00	14.16	24.80					
	Education Above/Below Year 12	-3.18	0.92	-3.45	0.00	-5.01	-1.35	-0.35	-0.34	-0.31	0.97	1.03
	Gender	-2.56	1.13	-2.28	0.03	-4.80	-0.33	-0.31	-0.23	-0.21	0.82	1.22
	Litigating/Not Litigating	-2.63	1.36	-1.93	0.06	-5.33	0.07	-0.34	-0.20	-0.18	0.80	1.25
2.00	(Constant)	13.53	3.63	3.73	0.00	6.32	20.75					
	Education Above/Below Year 12	-3.10	0.90	-3.43	0.00	-4.89	-1.30	-0.35	-0.34	-0.30	0.96	1.04
	Gender	-2.08	1.12	-1.85	0.07	-4.31	0.15	-0.31	-0.19	-0.16	0.79	1.27
	Litigating/Not Litigating	-2.05	1.38	-1.49	0.14	-4.78	0.69	-0.34	-0.15	-0.13	0.75	1.34
	IPQRF1 Psychological Attributions	0.02	0.08	0.22	0.83	-0.14	0.17	0.06	0.02	0.02	0.96	1.05
	IPQRF4 Accident or Chance	0.55	0.23	2.40	0.02	0.09	1.00	0.34	0.25	0.21	0.88	1.14
3.00	(Constant)	17.22	3.13	5.50	0.00	11.00	23.45					
	Education Above/Below Year 12	-1.84	0.79	-2.33	0.02	-3.42	-0.27	-0.35	-0.24	-0.17	0.90	1.12
	Gender	-0.65	0.98	-0.67	0.51	-2.60	1.29	-0.31	-0.07	-0.05	0.74	1.35
	Litigating/Not Litigating	-0.54	1.19	-0.46	0.65	-2.91	1.82	-0.34	-0.05	-0.03	0.71	1.40
	IPQRF1 Psychological Attributions	-0.11	0.07	-1.62	0.11	-0.25	0.03	0.06	-0.17	-0.12	0.87	1.16
	IPQRF4 Accident or Chance	0.45	0.19	2.31	0.02	0.06	0.83	0.34	0.24	0.17	0.87	1.15
	LOT Positive Life Orientation	-0.41	0.07	-6.06	0.00	-0.54	-0.27	-0.64	-0.54	-0.45	0.69	1.45
4.00	(Constant)	17.59	2.86	6.15	0.00	11.90	23.28					
	Education Above/Below Year 12	-1.35	0.73	-1.85	0.07	-2.81	0.10	-0.35	-0.19	-0.13	0.87	1.15
	Gender	-0.90	0.96	-0.94	0.35	-2.80	1.00	-0.31	-0.10	-0.06	0.65	1.54
	Litigating/Not Litigating	1.20	1.22	0.99	0.33	-1.22	3.63	-0.34	0.11	0.07	0.57	1.77
	IPQRF1 Psychological Attributions	-0.12	0.06	-1.88	0.06	-0.25	0.01	0.06	-0.20	-0.13	0.86	1.16
	IPQRF4 Accident or Chance	0.37	0.18	2.04	0.04	0.01	0.73	0.34	0.21	0.14	0.84	1.19
	LOT Positive Life Orientation	-0.34	0.06	-5.24	0.00	-0.46	-0.21	-0.64	-0.49	-0.36	0.64	1.57

	DAQ-R 3 Interpersonal Contact & Social Support	-0.18	0.05	-0.33	-3.71	0.00	-0.28	-0.08	-0.62	-0.37	-0.25	0.59	1.70
	DAQ-R 4 Home Maintenance	-0.07	0.07	-0.08	-0.96	0.34	-0.22	0.08	-0.23	-0.10	-0.07	0.65	1.53
5.00	(Constant)	15.12	3.15		4.80	0.00	8.86	21.37					
	Education Above/Below Year 12	-1.15	0.73	-0.12	-1.58	0.12	-2.61	0.30	-0.35	-0.17	-0.11	0.85	1.18
	Gender	-0.93	0.94	-0.08	-0.98	0.33	-2.80	0.95	-0.31	-0.11	-0.07	0.65	1.54
	Litigating/Not Litigating	1.59	1.22	0.12	1.30	0.20	-0.84	4.02	-0.34	0.14	0.09	0.55	1.82
	IPQRF1 Psychological Attributions	-0.11	0.06	-0.13	-1.75	0.08	-0.24	0.02	0.06	-0.19	-0.12	0.86	1.16
	IPQRF4 Accident or Chance	0.33	0.18	0.14	1.83	0.07	-0.03	0.68	0.34	0.19	0.12	0.83	1.21
	LOT Positive Life Orientation	-0.33	0.06	-0.44	-5.19	0.00	-0.45	-0.20	-0.64	-0.49	-0.35	0.63	1.58
	DAQ-R 3 Interpersonal Contact & Social Support	-0.19	0.05	-0.34	-3.85	0.00	-0.28	-0.09	-0.62	-0.38	-0.26	0.59	1.71
	DAQ-R 4 Home Maintenance	-0.06	0.07	-0.06	-0.75	0.46	-0.20	0.09	-0.23	-0.08	-0.05	0.65	1.55
	MPQ PPI	0.70	0.39	0.13	1.79	0.08	-0.08	1.47	0.30	0.19	0.12	0.84	1.19
6.00	(Constant)	15.18	3.20		4.74	0.00	8.81	21.56					
	Education Above/Below Year 12	-1.16	0.74	-0.12	-1.57	0.12	-2.63	0.31	-0.35	-0.17	-0.11	0.84	1.19
	Gender	-0.92	0.95	-0.08	-0.97	0.33	-2.81	0.97	-0.31	-0.10	-0.07	0.65	1.54
	Litigating/Not Litigating	1.57	1.24	0.12	1.27	0.21	-0.89	4.03	-0.34	0.14	0.09	0.54	1.84
	IPQRF1 Psychological Attributions	-0.11	0.07	-0.12	-1.60	0.11	-0.24	0.03	0.06	-0.17	-0.11	0.76	1.31
	IPQRF4 Accident or Chance	0.33	0.18	0.14	1.80	0.08	-0.03	0.69	0.34	0.19	0.12	0.82	1.22
	LOT Positive Life Orientation	-0.33	0.06	-0.44	-5.16	0.00	-0.46	-0.20	-0.64	-0.49	-0.35	0.63	1.58
	DAQ-R 3 Interpersonal Contact & Social Support	-0.19	0.05	-0.34	-3.83	0.00	-0.28	-0.09	-0.62	-0.38	-0.26	0.59	1.71
	DAQ-R 4 Home Maintenance	-0.06	0.08	-0.06	-0.75	0.45	-0.21	0.09	-0.23	-0.08	-0.05	0.63	1.60
	MPQ PPI	0.72	0.42	0.13	1.72	0.09	-0.11	1.54	0.30	0.18	0.12	0.75	1.34
	MPQ Sum	0.00	0.03	-0.01	-0.13	0.89	-0.06	0.05	0.18	-0.01	-0.01	0.70	1.42
7.00	(Constant)	13.30	3.49		3.81	0.00	6.36	20.24					
	Education Above/Below Year 12	-1.04	0.74	-0.10	-1.41	0.16	-2.52	0.43	-0.35	-0.15	-0.10	0.83	1.20
	Gender	-0.67	0.96	-0.06	-0.69	0.49	-2.59	1.25	-0.31	-0.08	-0.05	0.62	1.61

Litigating/Not Litigating	1.47	1.23	0.11	1.19	0.24	-0.98	3.92	-0.34	0.13	0.08	0.54	1.85
IPQRF1 Psychological Attributions	-0.11	0.07	-0.13	-1.68	0.10	-0.25	0.02	0.06	-0.18	-0.11	0.76	1.31
IPQRF4 Accident or Chance	0.30	0.18	0.13	1.68	0.10	-0.06	0.66	0.34	0.18	0.11	0.81	1.23
LOT Positive Life Orientation	-0.32	0.06	-0.43	-4.99	0.00	-0.45	-0.19	-0.64	-0.48	-0.34	0.62	1.60
DAQ-R 3 Interpersonal Contact & Social Support	-0.17	0.05	-0.31	-3.36	0.00	-0.27	-0.07	-0.62	-0.34	-0.23	0.54	1.84
DAQ-R 4 Home Maintenance	-0.02	0.08	-0.03	-0.31	0.76	-0.18	0.13	-0.23	-0.03	-0.02	0.57	1.77
MPQ PPI	0.52	0.44	0.10	1.17	0.24	-0.36	1.39	0.30	0.13	0.08	0.66	1.51
MPQ Sum	-0.01	0.03	-0.03	-0.34	0.73	-0.07	0.05	0.18	-0.04	-0.02	0.68	1.46
Pain Disability Index	0.04	0.03	0.13	1.33	0.19	-0.02	0.10	0.53	0.14	0.09	0.46	2.20

a. Dependent Variable: Beck Hopelessness Scale

D 13 Research Model Psychological Distress

Analysis Five Hierarchical Regression Analysis Dependent Variable: Depression (MPQ PPI& PRI & PDI)

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
dimension0 1.00	0.62 ^a	0.38	0.36	3.84	0.38	18.90	3.00	92.00	0.00
2.00	0.64 ^b	0.40	0.37	3.81	0.02	1.77	2.00	90.00	0.18
3.00	0.71 ^c	0.50	0.47	3.51	0.10	16.95	1.00	89.00	0.00
4.00	0.81 ^d	0.65	0.62	2.96	0.15	19.07	2.00	87.00	0.00
5.00	0.82 ^e	0.67	0.64	2.88	0.02	5.77	1.00	86.00	0.02
6.00	0.83 ^f	0.69	0.65	2.85	0.01	2.95	1.00	85.00	0.09
7.00	0.84 ^g	0.70	0.66	2.81	0.01	3.63	1.00	84.00	0.06

a. Predictors: (Constant), Litigating/Not Litigating, Education Above/Below Year 12, Gender

b. Predictors: (Constant), Litigating/Not Litigating, Education Above/Below Year 12, Gender, IPQRF1 Psychological Attributions, IPQRF4 Accident or Chance

c. Predictors: (Constant), Litigating/Not Litigating, Education Above/Below Year 12, Gender, IPQRF1 Psychological Attributions, IPQRF4 Accident or Chance, LOT Positive Life Orientation

d. Predictors: (Constant), Litigating/Not Litigating, Education Above/Below Year 12, Gender, IPQRF1 Psychological Attributions, IPQRF4 Accident or Chance, LOT Positive Life Orientation, DAQ-R 4 Home Maintenance, DAQ-R 3 Interpersonal Contact & Social Support

e. Predictors: (Constant), Litigating/Not Litigating, Education Above/Below Year 12, Gender, IPQRF1 Psychological Attributions, IPQRF4 Accident or Chance, LOT Positive Life Orientation, DAQ-R 4 Home Maintenance, DAQ-R 3 Interpersonal Contact & Social Support, MPQ PPI

f. Predictors: (Constant), Litigating/Not Litigating, Education Above/Below Year 12, Gender, IPQRF1 Psychological Attributions, IPQRF4 Accident or Chance, LOT Positive Life Orientation, DAQ-R 4 Home Maintenance, DAQ-R 3 Interpersonal Contact & Social Support, MPQ PPI, MPQ Sum

g. Predictors: (Constant), Litigating/Not Litigating, Education Above/Below Year 12, Gender, IPQRF1 Psychological Attributions, IPQRF4 Accident or Chance, LOT Positive Life Orientation, DAQ-R 4 Home Maintenance, DAQ-R 3 Interpersonal Contact & Social Support, MPQ PPI, MPQ Sum, Pain Disability Index

ANOVA^h

Model	Sum of Squares	df	Mean Square	F	Sig.
1.00 Regression	835.35	3.00	278.45	18.90	0.00 ^a
Residual	1355.14	92.00	14.73		
Total	2190.49	95.00			
2.00 Regression	886.63	5.00	177.33	12.24	0.00 ^b
Residual	1303.86	90.00	14.49		
Total	2190.49	95.00			
3.00 Regression	1095.25	6.00	182.54	14.83	0.00 ^c
Residual	1095.24	89.00	12.31		
Total	2190.49	95.00			
4.00 Regression	1429.11	8.00	178.64	20.41	0.00 ^d
Residual	761.38	87.00	8.75		
Total	2190.49	95.00			
5.00 Regression	1476.98	9.00	164.11	19.78	0.00 ^e
Residual	713.51	86.00	8.30		
Total	2190.49	95.00			
6.00 Regression	1500.94	10.00	150.09	18.50	0.00 ^f
Residual	689.55	85.00	8.11		
Total	2190.49	95.00			
7.00 Regression	1529.50	11.00	139.05	17.67	0.00 ^g
Residual	660.99	84.00	7.87		
Total	2190.49	95.00			

a. Predictors: (Constant), Litigating/Not Litigating, Education Above/Below Year 12, Gender

b. Predictors: (Constant), Litigating/Not Litigating, Education Above/Below Year 12, Gender, IPQRF1 Psychological Attributions, IPQRF4 Accident or Chance

c. Predictors: (Constant), Litigating/Not Litigating, Education Above/Below Year 12, Gender, IPQRF1 Psychological Attributions, IPQRF4 Accident or Chance, LOT Positive Life Orientation

d. Predictors: (Constant), Litigating/Not Litigating, Education Above/Below Year 12, Gender, IPQRF1 Psychological Attributions, IPQRF4 Accident or Chance, LOT Positive Life Orientation, DAQ-R 4 Home Maintenance, DAQ-R 3 Interpersonal Contact & Social Support

e. Predictors: (Constant), Litigating/Not Litigating, Education Above/Below Year 12, Gender, IPQRF1 Psychological Attributions, IPQRF4 Accident or Chance, LOT Positive Life Orientation, DAQ-R 4 Home Maintenance, DAQ-R 3 Interpersonal Contact & Social Support, MPQ PPI

f. Predictors: (Constant), Litigating/Not Litigating, Education Above/Below Year 12, Gender, IPQRF1 Psychological Attributions, IPQRF4 Accident or Chance, LOT Positive Life Orientation, DAQ-R 4 Home Maintenance, DAQ-R 3 Interpersonal Contact & Social Support, MPQ PPI, MPQ Sum

g. Predictors: (Constant), Litigating/Not Litigating, Education Above/Below Year 12, Gender, IPQRF1 Psychological Attributions, IPQRF4 Accident or Chance, LOT Positive Life Orientation, DAQ-R 4 Home Maintenance, DAQ-R 3 Interpersonal Contact & Social Support, MPQ PPI, MPQ Sum, Pain Disability Index

h. Dependent Variable: HADS Depression

Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Correlations			Collinearity Statistics	
	B	Std. Error	Beta			Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance	VIF
1.00	(Constant)	24.28	2.32	10.47	0.00	19.67	28.89					
	Education Above/Below Year 12	-2.41	0.80	-3.03	0.00	-3.99	-0.83	-0.31	-0.30	-0.25	0.97	1.03
	Gender	-2.54	0.97	-2.61	0.01	-4.48	-0.61	-0.40	-0.26	-0.21	0.82	1.22
	Litigating/Not Litigating	-5.03	1.18	-4.27	0.00	-7.37	-2.69	-0.53	-0.41	-0.35	0.80	1.25
2.00	(Constant)	20.33	3.17	6.42	0.00	14.04	26.63					
	Education Above/Below Year 12	-2.34	0.79	-2.95	0.00	-3.91	-0.77	-0.31	-0.30	-0.24	0.96	1.04
	Gender	-2.21	0.98	-2.25	0.03	-4.17	-0.26	-0.40	-0.23	-0.18	0.79	1.26
	Litigating/Not Litigating	-4.91	1.21	-4.07	0.00	-7.31	-2.51	-0.53	-0.39	-0.33	0.75	1.34
	IPQRF1 Psychological Attributions	0.08	0.07	1.10	0.28	-0.06	0.21	0.08	0.11	0.09	0.96	1.04
	IPQRF4 Accident or Chance	0.28	0.20	1.37	0.17	-0.12	0.67	0.30	0.14	0.11	0.88	1.13
3.00	(Constant)	22.87	2.98	7.66	0.00	16.94	28.80					
	Education Above/Below Year 12	-1.49	0.76	-1.97	0.05	-3.00	0.01	-0.31	-0.20	-0.15	0.89	1.12
	Gender	-1.28	0.93	-1.36	0.18	-3.13	0.58	-0.40	-0.14	-0.10	0.74	1.34
	Litigating/Not Litigating	-3.92	1.14	-3.44	0.00	-6.18	-1.65	-0.53	-0.34	-0.26	0.71	1.40
	IPQRF1 Psychological Attributions	-0.02	0.07	-0.23	0.82	-0.15	0.12	0.08	-0.02	-0.02	0.85	1.17
	IPQRF4 Accident or Chance	0.20	0.19	1.09	0.28	-0.17	0.57	0.30	0.11	0.08	0.87	1.15
	LOT Positive Life Orientation	-0.27	0.07	-4.12	0.00	-0.40	-0.14	-0.58	-0.40	-0.31	0.68	1.48
4.00	(Constant)	22.92	2.52	9.09	0.00	17.91	27.94					
	Education Above/Below Year 12	-1.05	0.65	-1.62	0.11	-2.34	0.24	-0.31	-0.17	-0.10	0.87	1.15
	Gender	-2.25	0.84	-2.67	0.01	-3.93	-0.57	-0.40	-0.27	-0.17	0.65	1.54
	Litigating/Not Litigating	-1.14	1.08	-1.06	0.29	-3.28	1.00	-0.53	-0.11	-0.07	0.57	1.77
	IPQRF1 Psychological Attributions	-0.02	0.06	-0.39	0.70	-0.14	0.09	0.08	-0.04	-0.02	0.85	1.17
	IPQRF4 Accident or Chance	0.17	0.16	1.09	0.28	-0.14	0.49	0.30	0.12	0.07	0.84	1.19
	LOT Positive Life Orientation	-0.20	0.06	-3.48	0.00	-0.31	-0.09	-0.58	-0.35	-0.22	0.62	1.61

	DAQ-R 3 Interpersonal Contact & Social Support	-0.15	0.04	-0.29	-3.47	0.00	-0.24	-0.06	-0.66	-0.35	-0.22	0.59	1.70
	DAQ-R 4 Home Maintenance	-0.23	0.07	-0.27	-3.48	0.00	-0.36	-0.10	-0.43	-0.35	-0.22	0.65	1.53
5.00	(Constant)	20.07	2.73		7.35	0.00	14.64	25.49					
	Education Above/Below Year 12	-0.86	0.64	-0.09	-1.36	0.18	-2.13	0.40	-0.31	-0.14	-0.08	0.86	1.17
	Gender	-2.32	0.82	-0.22	-2.83	0.01	-3.96	-0.69	-0.40	-0.29	-0.17	0.65	1.55
	Litigating/Not Litigating	-0.70	1.06	-0.05	-0.65	0.51	-2.81	1.42	-0.53	-0.07	-0.04	0.55	1.82
	IPQRF1 Psychological Attributions	-0.01	0.06	-0.01	-0.18	0.86	-0.12	0.10	0.08	-0.02	-0.01	0.85	1.18
	IPQRF4 Accident or Chance	0.13	0.16	0.06	0.83	0.41	-0.18	0.44	0.30	0.09	0.05	0.83	1.21
	LOT Positive Life Orientation	-0.19	0.06	-0.26	-3.36	0.00	-0.30	-0.08	-0.58	-0.34	-0.21	0.62	1.62
	DAQ-R 3 Interpersonal Contact & Social Support	-0.16	0.04	-0.30	-3.69	0.00	-0.24	-0.07	-0.66	-0.37	-0.23	0.59	1.71
	DAQ-R 4 Home Maintenance	-0.21	0.06	-0.25	-3.29	0.00	-0.34	-0.08	-0.43	-0.33	-0.20	0.65	1.55
	MPQ PPI	0.81	0.34	0.16	2.40	0.02	0.14	1.49	0.37	0.25	0.15	0.85	1.17
6.00	(Constant)	19.26	2.74		7.03	0.00	13.81	24.70					
	Education Above/Below Year 12	-0.75	0.63	-0.08	-1.19	0.24	-2.01	0.50	-0.31	-0.13	-0.07	0.85	1.18
	Gender	-2.36	0.81	-0.22	-2.90	0.00	-3.98	-0.74	-0.40	-0.30	-0.18	0.65	1.55
	Litigating/Not Litigating	-0.52	1.06	-0.04	-0.49	0.62	-2.62	1.58	-0.53	-0.05	-0.03	0.54	1.84
	IPQRF1 Psychological Attributions	-0.04	0.06	-0.05	-0.71	0.48	-0.16	0.07	0.08	-0.08	-0.04	0.76	1.31
	IPQRF4 Accident or Chance	0.16	0.16	0.07	1.02	0.31	-0.15	0.47	0.30	0.11	0.06	0.82	1.22
	LOT Positive Life Orientation	-0.19	0.06	-0.27	-3.43	0.00	-0.30	-0.08	-0.58	-0.35	-0.21	0.62	1.62
	DAQ-R 3 Interpersonal Contact & Social Support	-0.15	0.04	-0.29	-3.70	0.00	-0.24	-0.07	-0.66	-0.37	-0.23	0.59	1.71
	DAQ-R 4 Home Maintenance	-0.19	0.06	-0.23	-2.98	0.00	-0.32	-0.06	-0.43	-0.31	-0.18	0.63	1.60
	MPQ PPI	0.62	0.35	0.12	1.75	0.08	-0.08	1.32	0.37	0.19	0.11	0.76	1.31
7.00	MPQ Sum	0.04	0.03	0.12	1.72	0.09	-0.01	0.09	0.36	0.18	0.10	0.72	1.40
	(Constant)	16.93	2.96		5.72	0.00	11.04	22.82					
	Education Above/Below Year 12	-0.64	0.62	-0.07	-1.03	0.31	-1.89	0.60	-0.31	-0.11	-0.06	0.84	1.19
	Gender	-2.08	0.81	-0.19	-2.56	0.01	-3.70	-0.46	-0.40	-0.27	-0.15	0.63	1.60

Litigating/Not Litigating	-0.64	1.04	-0.05	-0.61	0.54	-2.72	1.44	-0.53	-0.07	-0.04	0.54	1.85
IPQRF1 Psychological Attributions	-0.05	0.06	-0.06	-0.82	0.41	-0.16	0.07	0.08	-0.09	-0.05	0.76	1.32
IPQRF4 Accident or Chance	0.14	0.15	0.06	0.88	0.38	-0.17	0.44	0.30	0.10	0.05	0.81	1.23
LOT Positive Life Orientation	-0.17	0.06	-0.24	-3.16	0.00	-0.28	-0.06	-0.58	-0.33	-0.19	0.61	1.65
DAQ-R 3 Interpersonal Contact & Social Support	-0.13	0.04	-0.25	-3.11	0.00	-0.22	-0.05	-0.66	-0.32	-0.19	0.54	1.84
DAQ-R 4 Home Maintenance	-0.15	0.07	-0.18	-2.29	0.02	-0.29	-0.02	-0.43	-0.24	-0.14	0.57	1.76
MPQ PPI	0.38	0.37	0.07	1.02	0.31	-0.36	1.12	0.37	0.11	0.06	0.68	1.48
MPQ Sum	0.04	0.03	0.10	1.46	0.15	-0.01	0.09	0.36	0.16	0.09	0.70	1.42
Pain Disability Index	0.05	0.03	0.17	1.91	0.06	0.00	0.10	0.65	0.20	0.11	0.46	2.16

a. Dependent Variable: HADS Depression

D 14 Research Model Psychological Distress

Analysis Six Hierarchical Regression Analysis Dependent Variable: Anxiety (MPQ PPI & PRI & PDI)

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
dimension0 1.00	0.49 ^a	0.24	0.22	3.87	0.24	9.94	3.00	92.00	0.00
2.00	0.66 ^b	0.43	0.40	3.38	0.19	15.14	2.00	90.00	0.00
3.00	0.71 ^c	0.50	0.47	3.19	0.07	12.17	1.00	89.00	0.00
4.00	0.76 ^d	0.57	0.53	2.99	0.07	7.10	2.00	87.00	0.00
5.00	0.77 ^e	0.59	0.55	2.95	0.02	3.67	1.00	86.00	0.06
6.00	0.78 ^f	0.61	0.56	2.90	0.02	3.83	1.00	85.00	0.05
7.00	0.80 ^g	0.65	0.60	2.77	0.04	9.25	1.00	84.00	0.00

a. Predictors: (Constant), Litigating/Not Litigating, Education Above/Below Year 12, Gender

b. Predictors: (Constant), Litigating/Not Litigating, Education Above/Below Year 12, Gender, IPQRF1 Psychological Attributions, IPQRF4 Accident or Chance

c. Predictors: (Constant), Litigating/Not Litigating, Education Above/Below Year 12, Gender, IPQRF1 Psychological Attributions, IPQRF4 Accident or Chance, LOT Positive Life Orientation

d. Predictors: (Constant), Litigating/Not Litigating, Education Above/Below Year 12, Gender, IPQRF1 Psychological Attributions, IPQRF4 Accident or Chance, LOT Positive Life Orientation, DAQ-R 4 Home Maintenance, DAQ-R 3 Interpersonal Contact & Social Support

e. Predictors: (Constant), Litigating/Not Litigating, Education Above/Below Year 12, Gender, IPQRF1 Psychological Attributions, IPQRF4 Accident or Chance, LOT Positive Life Orientation, DAQ-R 4 Home Maintenance, DAQ-R 3 Interpersonal Contact & Social Support, MPQ PPI

f. Predictors: (Constant), Litigating/Not Litigating, Education Above/Below Year 12, Gender, IPQRF1 Psychological Attributions, IPQRF4 Accident or Chance, LOT Positive Life Orientation, DAQ-R 4 Home Maintenance, DAQ-R 3 Interpersonal Contact & Social Support, MPQ PPI, MPQ Sum

g. Predictors: (Constant), Litigating/Not Litigating, Education Above/Below Year 12, Gender, IPQRF1 Psychological Attributions, IPQRF4 Accident or Chance, LOT Positive Life Orientation, DAQ-R 4 Home Maintenance, DAQ-R 3 Interpersonal Contact & Social Support, MPQ PPI, MPQ Sum, Pain Disability Index

ANOVA^h

Model	Sum of Squares	df	Mean Square	F	Sig.
1.00 Regression	446.69	3.00	148.90	9.94	0.00 ^a
Residual	1377.94	92.00	14.98		
Total	1824.63	95.00			
2.00 Regression	793.51	5.00	158.70	13.85	0.00 ^b
Residual	1031.11	90.00	11.46		
Total	1824.63	95.00			
3.00 Regression	917.54	6.00	152.92	15.00	0.00 ^c
Residual	907.09	89.00	10.19		
Total	1824.63	95.00			
4.00 Regression	1044.74	8.00	130.59	14.57	0.00 ^d
Residual	779.88	87.00	8.96		
Total	1824.63	95.00			
5.00 Regression	1076.68	9.00	119.63	13.76	0.00 ^e
Residual	747.95	86.00	8.70		
Total	1824.63	95.00			
6.00 Regression	1108.95	10.00	110.90	13.17	0.00 ^f
Residual	715.67	85.00	8.42		
Total	1824.63	95.00			
7.00 Regression	1179.92	11.00	107.27	13.98	0.00 ^g
Residual	644.70	84.00	7.68		
Total	1824.63	95.00			

a. Predictors: (Constant), Litigating/Not Litigating, Education Above/Below Year 12, Gender

b. Predictors: (Constant), Litigating/Not Litigating, Education Above/Below Year 12, Gender, IPQRF1 Psychological Attributions, IPQRF4 Accident or Chance

c. Predictors: (Constant), Litigating/Not Litigating, Education Above/Below Year 12, Gender, IPQRF1 Psychological Attributions, IPQRF4 Accident or Chance, LOT Positive Life Orientation

d. Predictors: (Constant), Litigating/Not Litigating, Education Above/Below Year 12, Gender, IPQRF1 Psychological Attributions, IPQRF4 Accident or Chance, LOT Positive Life Orientation, DAQ-R 4 Home Maintenance, DAQ-R 3 Interpersonal Contact & Social Support

e. Predictors: (Constant), Litigating/Not Litigating, Education Above/Below Year 12, Gender, IPQRF1 Psychological Attributions, IPQRF4 Accident or Chance, LOT Positive Life Orientation, DAQ-R 4 Home Maintenance, DAQ-R 3 Interpersonal Contact & Social Support, MPQ PPI

f. Predictors: (Constant), Litigating/Not Litigating, Education Above/Below Year 12, Gender, IPQRF1 Psychological Attributions, IPQRF4 Accident or Chance, LOT Positive Life Orientation, DAQ-R 4 Home Maintenance, DAQ-R 3 Interpersonal Contact & Social Support, MPQ PPI, MPQ Sum

g. Predictors: (Constant), Litigating/Not Litigating, Education Above/Below Year 12, Gender, IPQRF1 Psychological Attributions, IPQRF4 Accident or Chance, LOT Positive Life Orientation, DAQ-R 4 Home Maintenance, DAQ-R 3 Interpersonal Contact & Social Support, MPQ PPI, MPQ Sum, Pain Disability Index

h. Dependent Variable: HADS Anxiety

Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Correlations			Collinearity Statistics	
	B	Std. Error	Beta			Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance	VIF
1.00	(Constant)	21.52	2.34	9.20	0.00	16.87	26.16					
	Education Above/Below Year 12	-1.87	0.80	-2.33	0.02	-3.47	-0.28	-0.24	-0.24	-0.21	0.97	1.03
	Gender	-2.99	0.98	-3.05	0.00	-4.95	-1.04	-0.39	-0.30	-0.28	0.82	1.22
	Litigating/Not Litigating	-2.38	1.19	-2.01	0.05	-4.74	-0.02	-0.37	-0.20	-0.18	0.80	1.25
2.00	(Constant)	13.53	2.82	4.80	0.00	7.93	19.13					
	Education Above/Below Year 12	-1.64	0.70	-2.32	0.02	-3.03	-0.24	-0.24	-0.24	-0.18	0.96	1.04
	Gender	-2.29	0.87	-2.62	0.01	-4.02	-0.55	-0.39	-0.27	-0.21	0.79	1.26
	Litigating/Not Litigating	-2.75	1.07	-2.56	0.01	-4.88	-0.61	-0.37	-0.26	-0.20	0.75	1.34
	IPQRF1 Psychological Attributions	0.30	0.06	4.84	0.00	0.18	0.42	0.40	0.45	0.38	0.96	1.04
	IPQRF4 Accident or Chance	0.35	0.18	1.96	0.05	0.00	0.70	0.34	0.20	0.16	0.88	1.13
3.00	(Constant)	15.49	2.72	5.70	0.00	10.09	20.88					
	Education Above/Below Year 12	-0.98	0.69	-1.43	0.16	-2.35	0.39	-0.24	-0.15	-0.11	0.89	1.12
	Gender	-1.56	0.85	-1.84	0.07	-3.25	0.13	-0.39	-0.19	-0.14	0.74	1.34
	Litigating/Not Litigating	-1.98	1.04	-1.91	0.06	-4.04	0.08	-0.37	-0.20	-0.14	0.71	1.40
	IPQRF1 Psychological Attributions	0.23	0.06	3.70	0.00	0.11	0.35	0.40	0.37	0.28	0.85	1.17
	IPQRF4 Accident or Chance	0.29	0.17	1.73	0.09	-0.04	0.63	0.34	0.18	0.13	0.87	1.15
	LOT Positive Life Orientation	-0.21	0.06	-3.49	0.00	-0.32	-0.09	-0.58	-0.35	-0.26	0.68	1.48
4.00	(Constant)	15.31	2.55	6.00	0.00	10.24	20.39					
	Education Above/Below Year 12	-0.82	0.66	-1.25	0.21	-2.12	0.48	-0.24	-0.13	-0.09	0.87	1.15
	Gender	-2.45	0.85	-2.87	0.01	-4.15	-0.76	-0.39	-0.29	-0.20	0.65	1.54
	Litigating/Not Litigating	-0.12	1.09	-0.11	0.91	-2.29	2.04	-0.37	-0.01	-0.01	0.57	1.77
	IPQRF1 Psychological Attributions	0.23	0.06	3.89	0.00	0.11	0.34	0.40	0.38	0.27	0.85	1.17
	IPQRF4 Accident or Chance	0.31	0.16	1.95	0.05	-0.01	0.64	0.34	0.20	0.14	0.84	1.19
	LOT Positive Life Orientation	-0.18	0.06	-3.13	0.00	-0.30	-0.07	-0.58	-0.32	-0.22	0.62	1.61

	DAQ-R 3 Interpersonal Contact & Social Support	-0.04	0.04	-0.09	-0.97	0.33	-0.13	0.04	-0.48	-0.10	-0.07	0.59	1.70
	DAQ-R 4 Home Maintenance	-0.20	0.07	-0.26	-3.03	0.00	-0.33	-0.07	-0.29	-0.31	-0.21	0.65	1.53
5.00	(Constant)	12.98	2.79		4.65	0.00	7.43	18.53					
	Education Above/Below Year 12	-0.67	0.65	-0.08	-1.03	0.31	-1.96	0.63	-0.24	-0.11	-0.07	0.86	1.17
	Gender	-2.51	0.84	-0.26	-2.99	0.00	-4.19	-0.84	-0.39	-0.31	-0.21	0.65	1.55
	Litigating/Not Litigating	0.24	1.09	0.02	0.22	0.83	-1.93	2.40	-0.37	0.02	0.02	0.55	1.82
	IPQRF1 Psychological Attributions	0.24	0.06	0.31	4.11	0.00	0.12	0.35	0.40	0.41	0.28	0.85	1.18
	IPQRF4 Accident or Chance	0.28	0.16	0.13	1.74	0.09	-0.04	0.60	0.34	0.18	0.12	0.83	1.21
	LOT Positive Life Orientation	-0.17	0.06	-0.26	-3.00	0.00	-0.29	-0.06	-0.58	-0.31	-0.21	0.62	1.62
	DAQ-R 3 Interpersonal Contact & Social Support	-0.05	0.04	-0.10	-1.10	0.28	-0.13	0.04	-0.48	-0.12	-0.08	0.59	1.71
	DAQ-R 4 Home Maintenance	-0.19	0.07	-0.24	-2.84	0.01	-0.32	-0.06	-0.29	-0.29	-0.20	0.65	1.55
	MPQ PPI	0.67	0.35	0.14	1.92	0.06	-0.02	1.36	0.28	0.20	0.13	0.85	1.17
6.00	(Constant)	12.04	2.79		4.32	0.00	6.50	17.59					
	Education Above/Below Year 12	-0.54	0.64	-0.06	-0.84	0.40	-1.82	0.74	-0.24	-0.09	-0.06	0.85	1.18
	Gender	-2.55	0.83	-0.26	-3.08	0.00	-4.20	-0.91	-0.39	-0.32	-0.21	0.65	1.55
	Litigating/Not Litigating	0.44	1.08	0.04	0.41	0.68	-1.70	2.59	-0.37	0.04	0.03	0.54	1.84
	IPQRF1 Psychological Attributions	0.20	0.06	0.26	3.34	0.00	0.08	0.32	0.40	0.34	0.23	0.76	1.31
	IPQRF4 Accident or Chance	0.31	0.16	0.15	1.97	0.05	0.00	0.63	0.34	0.21	0.13	0.82	1.22
	LOT Positive Life Orientation	-0.17	0.06	-0.27	-3.08	0.00	-0.29	-0.06	-0.58	-0.32	-0.21	0.62	1.62
	DAQ-R 3 Interpersonal Contact & Social Support	-0.05	0.04	-0.10	-1.07	0.29	-0.13	0.04	-0.48	-0.12	-0.07	0.59	1.71
	DAQ-R 4 Home Maintenance	-0.16	0.07	-0.21	-2.50	0.01	-0.30	-0.03	-0.29	-0.26	-0.17	0.63	1.60
	MPQ PPI	0.44	0.36	0.09	1.22	0.23	-0.28	1.16	0.28	0.13	0.08	0.76	1.31
	MPQ Sum	0.05	0.03	0.16	1.96	0.05	0.00	0.10	0.39	0.21	0.13	0.72	1.40
7.00	(Constant)	8.38	2.92		2.86	0.01	2.56	14.19					
	Education Above/Below Year 12	-0.37	0.62	-0.04	-0.59	0.55	-1.59	0.86	-0.24	-0.06	-0.04	0.84	1.19
	Gender	-2.12	0.80	-0.22	-2.63	0.01	-3.72	-0.52	-0.39	-0.28	-0.17	0.63	1.60
	Litigating/Not Litigating	0.25	1.03	0.02	0.24	0.81	-1.80	2.30	-0.37	0.03	0.02	0.54	1.85

IPQRF1 Psychological Attributions	0.19	0.06	0.25	3.34	0.00	0.08	0.30	0.40	0.34	0.22	0.76	1.32
IPQRF4 Accident or Chance	0.28	0.15	0.13	1.81	0.07	-0.03	0.58	0.34	0.19	0.12	0.81	1.23
LOT Positive Life Orientation	-0.15	0.05	-0.23	-2.75	0.01	-0.26	-0.04	-0.58	-0.29	-0.18	0.61	1.65
DAQ-R 3 Interpersonal Contact & Social Support	-0.01	0.04	-0.02	-0.28	0.78	-0.10	0.07	-0.48	-0.03	-0.02	0.54	1.84
DAQ-R 4 Home Maintenance	-0.10	0.07	-0.13	-1.56	0.12	-0.23	0.03	-0.29	-0.17	-0.10	0.57	1.76
MPQ PPI	0.06	0.37	0.01	0.16	0.87	-0.67	0.79	0.28	0.02	0.01	0.68	1.48
MPQ Sum	0.04	0.02	0.12	1.60	0.11	-0.01	0.09	0.39	0.17	0.10	0.70	1.42
Pain Disability Index	0.08	0.03	0.29	3.04	0.00	0.03	0.13	0.62	0.31	0.20	0.46	2.16

a. Dependent Variable: HADS Anxiety

D 15 Research Model Dispositional Optimism Analysis One Predicting Dispositional Optimism

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
dimension0 1.00	0.28 ^a	0.08	0.03	1.28	0.08	1.61	4.00	77.00	0.18
2.00	0.39 ^b	0.15	0.06	1.26	0.08	1.67	4.00	73.00	0.17
3.00	0.47 ^c	0.22	0.09	1.24	0.07	1.56	4.00	69.00	0.20
4.00	0.51 ^d	0.26	0.07	1.25	0.03	0.70	4.00	65.00	0.60
5.00	0.52 ^e	0.27	0.07	1.25	0.01	0.80	1.00	64.00	0.37
6.00	0.58 ^f	0.34	0.15	1.20	0.07	6.72	1.00	63.00	0.01
7.00	0.58 ^g	0.34	0.14	1.21	0.00	0.19	1.00	62.00	0.66

- a. Predictors: (Constant), Litigating/Not Litigating, Education Above/Below Year 12, Working or Not Working, Gender
- b. Predictors: (Constant), Litigating/Not Litigating, Education Above/Below Year 12, Working or Not Working, Gender, IPQRF1 Psychological Attributions, IPQRF4 Accident or Chance, IPQRF3 Immunity, IPQRF2 Risk Factors
- c. Predictors: (Constant), Litigating/Not Litigating, Education Above/Below Year 12, Working or Not Working, Gender, IPQRF1 Psychological Attributions, IPQRF4 Accident or Chance, IPQRF3 Immunity, IPQRF2 Risk Factors, DAQ-R 2 Work, Health, Spirituality & Caring, DAQ-R 4 Home Maintenance, DAQ-R 1 Domestic Chores, DAQ-R 3 Interpersonal Contact & Social Support
- d. Predictors: (Constant), Litigating/Not Litigating, Education Above/Below Year 12, Working or Not Working, Gender, IPQRF1 Psychological Attributions, IPQRF4 Accident or Chance, IPQRF3 Immunity, IPQRF2 Risk Factors, DAQ-R 2 Work, Health, Spirituality & Caring, DAQ-R 4 Home Maintenance, DAQ-R 1 Domestic Chores, DAQ-R 3 Interpersonal Contact & Social Support, MDAQ-R 2 Structured Tasks, MDAQ-R 4 Home Maintenance & Health Maintenance, MDAQ-R 1 Support, Caring & Interpersonal Relationships, MDAQ-R 3 Sensory & Leisure Activities
- e. Predictors: (Constant), Litigating/Not Litigating, Education Above/Below Year 12, Working or Not Working, Gender, IPQRF1 Psychological Attributions, IPQRF4 Accident or Chance, IPQRF3 Immunity, IPQRF2 Risk Factors, DAQ-R 2 Work, Health, Spirituality & Caring, DAQ-R 4 Home Maintenance, DAQ-R 1 Domestic Chores, DAQ-R 3 Interpersonal Contact & Social Support, MDAQ-R 2 Structured Tasks, MDAQ-R 4 Home Maintenance & Health Maintenance, MDAQ-R 1 Support, Caring & Interpersonal Relationships, MDAQ-R 3 Sensory & Leisure Activities, Pain & Disability Factor
- f. Predictors: (Constant), Litigating/Not Litigating, Education Above/Below Year 12, Working or Not Working, Gender, IPQRF1 Psychological Attributions, IPQRF4 Accident or Chance, IPQRF3 Immunity, IPQRF2 Risk Factors, DAQ-R 2 Work, Health, Spirituality & Caring, DAQ-R 4 Home Maintenance, DAQ-R 1 Domestic Chores, DAQ-R 3 Interpersonal Contact & Social Support, MDAQ-R 2 Structured Tasks, MDAQ-R 4 Home Maintenance & Health Maintenance, MDAQ-R 1 Support, Caring & Interpersonal Relationships, MDAQ-R 3 Sensory & Leisure Activities, Pain & Disability Factor, Psychological Distress Factor
- g. Predictors: (Constant), Litigating/Not Litigating, Education Above/Below Year 12, Working or Not Working, Gender, IPQRF1 Psychological Attributions, IPQRF4 Accident or Chance, IPQRF3 Immunity, IPQRF2 Risk Factors, DAQ-R 2 Work, Health, Spirituality & Caring, DAQ-R 4 Home Maintenance, DAQ-R 1 Domestic Chores, DAQ-R 3 Interpersonal Contact & Social Support, MDAQ-R 2 Structured Tasks, MDAQ-R 4 Home Maintenance & Health Maintenance, MDAQ-R 1 Support, Caring & Interpersonal Relationships, MDAQ-R 3 Sensory & Leisure Activities, Pain & Disability Factor, Psychological Distress Factor, Beck Hopelessness Scale

ANOVA^h

Model	Sum of Squares	df	Mean Square	F	Sig.
1.00 Regression	10.49	4.00	2.62	1.61	0.18 ^a
Residual	125.57	77.00	1.63		
Total	136.06	81.00			
2.00 Regression	20.99	8.00	2.62	1.66	0.12 ^b
Residual	115.07	73.00	1.58		
Total	136.06	81.00			
3.00 Regression	30.51	12.00	2.54	1.66	0.09 ^c
Residual	105.55	69.00	1.53		
Total	136.06	81.00			
4.00 Regression	34.86	16.00	2.18	1.40	0.17 ^d
Residual	101.20	65.00	1.56		
Total	136.06	81.00			
5.00 Regression	36.12	17.00	2.12	1.36	0.19 ^e
Residual	99.94	64.00	1.56		
Total	136.06	81.00			
6.00 Regression	45.75	18.00	2.54	1.77	0.05 ^f
Residual	90.31	63.00	1.43		
Total	136.06	81.00			
7.00 Regression	46.03	19.00	2.42	1.67	0.07 ^g
Residual	90.03	62.00	1.45		
Total	136.06	81.00			

a. Predictors: (Constant), Litigating/Not Litigating, Education Above/Below Year 12, Working or Not Working, Gender

b. Predictors: (Constant), Litigating/Not Litigating, Education Above/Below Year 12, Working or Not Working, Gender, IPQRF1 Psychological Attributions, IPQRF4 Accident or Chance, IPQRF3 Immunity, IPQRF2 Risk Factors

c. Predictors: (Constant), Litigating/Not Litigating, Education Above/Below Year 12, Working or Not Working, Gender, IPQRF1 Psychological Attributions, IPQRF4 Accident or Chance, IPQRF3 Immunity, IPQRF2 Risk Factors, DAQ-R 2 Work, Health, Spirituality & Caring, DAQ-R 4 Home Maintenance, DAQ-R 1 Domestic Chores, DAQ-R 3 Interpersonal Contact & Social Support

d. Predictors: (Constant), Litigating/Not Litigating, Education Above/Below Year 12, Working or Not Working, Gender, IPQRF1 Psychological Attributions, IPQRF4 Accident or Chance, IPQRF3 Immunity, IPQRF2 Risk Factors, DAQ-R 2 Work, Health, Spirituality & Caring, DAQ-R 4 Home Maintenance, DAQ-R 1 Domestic Chores, DAQ-R 3 Interpersonal Contact & Social Support, MDAQ-R 2 Structured Tasks, MDAQ-R 4 Home Maintenance & Health Maintenance, MDAQ-R 1 Support, Caring & Interpersonal Relationships, MDAQ-R 3 Sensory & Leisure Activities

e. Predictors: (Constant), Litigating/Not Litigating, Education Above/Below Year 12, Working or Not Working, Gender, IPQRF1 Psychological Attributions, IPQRF4 Accident or Chance, IPQRF3 Immunity, IPQRF2 Risk Factors, DAQ-R 2 Work, Health, Spirituality & Caring, DAQ-R 4 Home Maintenance, DAQ-R 1 Domestic Chores, DAQ-R 3 Interpersonal Contact & Social Support, MDAQ-R 2 Structured Tasks, MDAQ-R 4 Home Maintenance & Health Maintenance, MDAQ-R 1 Support, Caring & Interpersonal Relationships, MDAQ-R 3 Sensory & Leisure Activities, Pain & Disability Factor

f. Predictors: (Constant), Litigating/Not Litigating, Education Above/Below Year 12, Working or Not Working, Gender, IPQRF1 Psychological Attributions, IPQRF4 Accident or Chance, IPQRF3 Immunity, IPQRF2 Risk Factors, DAQ-R 2 Work, Health, Spirituality & Caring, DAQ-R 4 Home Maintenance, DAQ-R 1 Domestic Chores, DAQ-R 3 Interpersonal Contact & Social Support, MDAQ-R 2 Structured Tasks, MDAQ-R 4 Home Maintenance & Health Maintenance, MDAQ-R 1 Support, Caring & Interpersonal Relationships, MDAQ-R 3 Sensory & Leisure Activities, Pain & Disability Factor, Psychological Distress Factor

g. Predictors: (Constant), Litigating/Not Litigating, Education Above/Below Year 12, Working or Not Working, Gender, IPQRF1 Psychological Attributions, IPQRF4 Accident or Chance, IPQRF3 Immunity, IPQRF2 Risk Factors, DAQ-R 2 Work, Health, Spirituality & Caring, DAQ-R 4 Home Maintenance, DAQ-R 1 Domestic Chores, DAQ-R 3 Interpersonal Contact & Social Support, MDAQ-R 2 Structured Tasks, MDAQ-R 4 Home Maintenance & Health Maintenance, MDAQ-R 1 Support, Caring & Interpersonal Relationships, MDAQ-R 3 Sensory & Leisure Activities, Pain & Disability Factor, Psychological Distress Factor, Beck Hopelessness Scale

h. Dependent Variable: Positive Life Orientation

Coefficients ^a													
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Correlations			Collinearity Statistics		
	B	Std. Error	Beta			Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance	VIF	
1.00	(Constant)	0.25	1.04										
	Gender	0.47	0.36	0.16	1.30	0.20	-0.25	1.20	0.18	0.15	0.14	0.77	1.30
	Education Above/Below Year 12	0.49	0.30	0.19	1.66	0.10	-0.10	1.09	0.18	0.19	0.18	0.90	1.11
	Working or Not Working	0.20	0.30	0.08	0.69	0.49	-0.39	0.79	0.00	0.08	0.08	0.91	1.10
	Litigating/Not Litigating	0.26	0.41	0.08	0.64	0.53	-0.56	1.08	0.17	0.07	0.07	0.75	1.34
2.00	(Constant)	1.79	1.30										
	Gender	0.27	0.37	0.09	0.73	0.47	-0.47	1.00	0.18	0.09	0.08	0.72	1.39
	Education	0.44	0.30	0.17	1.45	0.15	-0.17	1.05	0.18	0.17	0.16	0.84	1.20
	Working or Not Working	0.24	0.30	0.09	0.80	0.43	-0.36	0.85	0.00	0.09	0.09	0.83	1.20
	Litigating/Not Litigating	0.34	0.49	0.10	0.68	0.50	-0.65	1.32	0.17	0.08	0.07	0.50	1.99
	IPQRF1 Psychological Attributions	-0.05	0.03	-0.22	-1.54	0.13	-0.11	0.01	-0.23	-0.18	-0.17	0.55	1.83
	IPQRF2 Risk Factors	-0.02	0.04	-0.07	-0.39	0.70	-0.10	0.07	-0.13	-0.05	-0.04	0.41	2.45
	IPQRF3 Immunity	0.05	0.06	0.10	0.77	0.45	-0.08	0.18	0.00	0.09	0.08	0.62	1.62
	IPQRF4 Accident or Chance	-0.08	0.07	-0.13	-1.11	0.27	-0.23	0.07	-0.23	-0.13	-0.12	0.84	1.20
3.00	(Constant)	1.04	1.34										
	Gender	0.38	0.43	0.13	0.88	0.38	-0.48	1.24	0.18	0.10	0.09	0.51	1.95
	Education	0.33	0.31	0.13	1.05	0.30	-0.29	0.95	0.18	0.13	0.11	0.78	1.29
	Working or Not Working	0.46	0.32	0.18	1.46	0.15	-0.17	1.09	0.00	0.17	0.15	0.75	1.34
	Litigating/Not Litigating	0.62	0.53	0.19	1.17	0.25	-0.44	1.69	0.17	0.14	0.12	0.42	2.40
	IPQRF1 Psychological Attributions	-0.04	0.03	-0.20	-1.35	0.18	-0.11	0.02	-0.23	-0.16	-0.14	0.53	1.88
	IPQRF2 Risk Factors	-0.02	0.04	-0.07	-0.41	0.68	-0.10	0.07	-0.13	-0.05	-0.04	0.38	2.65
	IPQRF3 Immunity	0.02	0.07	0.04	0.31	0.75	-0.11	0.15	0.00	0.04	0.03	0.57	1.74
	IPQRF4 Accident or Chance	-0.06	0.08	-0.09	-0.75	0.45	-0.21	0.09	-0.23	-0.09	-0.08	0.78	1.28
	DAQ-R 1 Domestic Chores	-0.05	0.02	-0.28	-2.02	0.05	-0.10	0.00	-0.05	-0.24	-0.21	0.57	1.75
	DAQ-R 2 Work, Health, Spirituality & Caring	0.01	0.02	0.08	0.63	0.53	-0.03	0.05	0.12	0.08	0.07	0.69	1.46
	DAQ-R 3 Interpersonal Contact & Social Support	0.03	0.02	0.21	1.48	0.14	-0.01	0.07	0.21	0.17	0.16	0.53	1.88

	DAQ-R 4 Home Maintenance	-0.02	0.03	-0.10	-0.76	0.45	-0.09	0.04	-0.03	-0.09	-0.08	0.64	1.56
4.00	(Constant)	1.36	1.39		0.98	0.33	-1.42	4.15					
	Gender	0.27	0.46	0.09	0.58	0.56	-0.65	1.19	0.18	0.07	0.06	0.45	2.21
	Education	0.33	0.32	0.13	1.03	0.31	-0.31	0.98	0.18	0.13	0.11	0.74	1.36
	Working or Not Working	0.55	0.33	0.21	1.67	0.10	-0.11	1.20	0.00	0.20	0.18	0.71	1.40
	Litigating/Not Litigating	0.55	0.55	0.17	0.99	0.33	-0.56	1.65	0.17	0.12	0.11	0.40	2.52
	IPQRF1 Psychological Attributions	-0.05	0.03	-0.21	-1.42	0.16	-0.11	0.02	-0.23	-0.17	-0.15	0.51	1.97
	IPQRF2 Risk Factors	-0.01	0.04	-0.03	-0.19	0.85	-0.10	0.08	-0.13	-0.02	-0.02	0.36	2.78
	IPQRF3 Immunity	0.03	0.07	0.07	0.46	0.65	-0.10	0.16	0.00	0.06	0.05	0.55	1.80
	IPQRF4 Accident or Chance	-0.08	0.08	-0.13	-1.00	0.32	-0.24	0.08	-0.23	-0.12	-0.11	0.73	1.37
	DAQ-R 1 Domestic Chores	-0.05	0.03	-0.30	-1.94	0.06	-0.10	0.00	-0.05	-0.23	-0.21	0.48	2.09
	DAQ-R 2 Work, Health, Spirituality & Caring	0.02	0.02	0.16	1.16	0.25	-0.02	0.06	0.12	0.14	0.12	0.59	1.70
	DAQ-R 3 Interpersonal Contact & Social Support	0.02	0.02	0.18	1.07	0.29	-0.02	0.07	0.21	0.13	0.11	0.41	2.45
	DAQ-R 4 Home Maintenance	-0.02	0.03	-0.09	-0.65	0.52	-0.09	0.04	-0.03	-0.08	-0.07	0.59	1.69
	MDAQ-R 1 Support, Caring & Interpersonal Relationships	-0.02	0.02	-0.18	-1.02	0.31	-0.07	0.02	0.01	-0.13	-0.11	0.36	2.79
	MDAQ-R 2 Structured Tasks	0.02	0.02	0.12	0.78	0.44	-0.03	0.06	-0.05	0.10	0.08	0.50	2.00
	MDAQ-R 3 Sensory & Leisure Activities	0.01	0.02	0.13	0.69	0.49	-0.02	0.05	0.07	0.09	0.07	0.32	3.17
	MDAQ-R 4 Home Maintenance & Health Maintenance	-0.03	0.03	-0.18	-1.17	0.25	-0.08	0.02	-0.17	-0.14	-0.13	0.48	2.08
5.00	(Constant)	1.42	1.40		1.01	0.31	-1.38	4.21					
	Gender	0.22	0.47	0.08	0.48	0.63	-0.71	1.15	0.18	0.06	0.05	0.45	2.24
	Education	0.30	0.32	0.12	0.93	0.36	-0.35	0.95	0.18	0.12	0.10	0.73	1.37
	Working or Not Working	0.62	0.34	0.24	1.84	0.07	-0.05	1.30	0.00	0.22	0.20	0.67	1.50
	Litigating/Not Litigating	0.50	0.56	0.15	0.90	0.37	-0.61	1.61	0.17	0.11	0.10	0.39	2.54
	IPQRF1 Psychological Attributions	-0.04	0.03	-0.17	-1.10	0.27	-0.11	0.03	-0.23	-0.14	-0.12	0.47	2.14
	IPQRF2 Risk Factors	-0.01	0.04	-0.06	-0.31	0.76	-0.10	0.07	-0.13	-0.04	-0.03	0.35	2.83
	IPQRF3 Immunity	0.03	0.07	0.07	0.48	0.63	-0.10	0.17	0.00	0.06	0.05	0.55	1.80
	IPQRF4 Accident or Chance	-0.08	0.08	-0.13	-1.06	0.29	-0.24	0.07	-0.23	-0.13	-0.11	0.73	1.38
	DAQ-R 1 Domestic Chores	-0.05	0.03	-0.30	-1.93	0.06	-0.10	0.00	-0.05	-0.23	-0.21	0.48	2.09

	DAQ-R 2 Work, Health, Spirituality & Caring	0.03	0.02	0.20	1.37	0.18	-0.01	0.07	0.12	0.17	0.15	0.54	1.87
	DAQ-R 3 Interpersonal Contact & Social Support	0.02	0.02	0.16	0.95	0.35	-0.02	0.07	0.21	0.12	0.10	0.40	2.49
	DAQ-R 4 Home Maintenance	-0.03	0.03	-0.13	-0.91	0.36	-0.10	0.04	-0.03	-0.11	-0.10	0.53	1.90
	MDAQ-R 1 Support, Caring & Interpersonal Relationships	-0.03	0.02	-0.21	-1.15	0.25	-0.07	0.02	0.01	-0.14	-0.12	0.35	2.87
	MDAQ-R 2 Structured Tasks	0.02	0.02	0.11	0.71	0.48	-0.03	0.06	-0.05	0.09	0.08	0.50	2.02
	MDAQ-R 3 Sensory & Leisure Activities	0.01	0.02	0.14	0.76	0.45	-0.02	0.05	0.07	0.09	0.08	0.31	3.18
	MDAQ-R 4 Home Maintenance & Health Maintenance	-0.03	0.03	-0.16	-1.02	0.31	-0.08	0.03	-0.17	-0.13	-0.11	0.47	2.13
	Pain & Disability Factor	-0.18	0.20	-0.13	-0.90	0.37	-0.57	0.22	-0.16	-0.11	-0.10	0.53	1.88
6.00	(Constant)	2.53	1.41		1.80	0.08	-0.28	5.34					
	Gender	0.00	0.45	0.00	0.00	1.00	-0.91	0.91	0.18	0.00	0.00	0.43	2.32
	Education	0.13	0.32	0.05	0.42	0.67	-0.50	0.77	0.18	0.05	0.04	0.70	1.43
	Working or Not Working	0.53	0.33	0.20	1.62	0.11	-0.12	1.18	0.00	0.20	0.17	0.66	1.52
	Litigating/Not Litigating	0.48	0.53	0.15	0.90	0.37	-0.59	1.54	0.17	0.11	0.09	0.39	2.55
	IPQRF1 Psychological Attributions	-0.03	0.03	-0.12	-0.78	0.44	-0.09	0.04	-0.23	-0.10	-0.08	0.46	2.18
	IPQRF2 Risk Factors	-0.01	0.04	-0.05	-0.31	0.76	-0.10	0.07	-0.13	-0.04	-0.03	0.35	2.83
	IPQRF3 Immunity	0.03	0.06	0.06	0.45	0.66	-0.10	0.16	0.00	0.06	0.05	0.55	1.81
	IPQRF4 Accident or Chance	-0.03	0.08	-0.05	-0.38	0.71	-0.19	0.13	-0.23	-0.05	-0.04	0.67	1.48
	DAQ-R 1 Domestic Chores	-0.05	0.03	-0.31	-2.11	0.04	-0.10	0.00	-0.05	-0.26	-0.22	0.48	2.09
	DAQ-R 2 Work, Health, Spirituality & Caring	0.02	0.02	0.13	0.92	0.36	-0.02	0.06	0.12	0.12	0.09	0.52	1.93
	DAQ-R 3 Interpersonal Contact & Social Support	0.01	0.02	0.04	0.25	0.80	-0.04	0.05	0.21	0.03	0.03	0.37	2.69
	DAQ-R 4 Home Maintenance	-0.04	0.03	-0.16	-1.14	0.26	-0.10	0.03	-0.03	-0.14	-0.12	0.52	1.91
	MDAQ-R 1 Support, Caring & Interpersonal Relationships	-0.03	0.02	-0.20	-1.15	0.25	-0.07	0.02	0.01	-0.14	-0.12	0.35	2.87
	MDAQ-R 2 Structured Tasks	0.02	0.02	0.11	0.74	0.46	-0.03	0.06	-0.05	0.09	0.08	0.50	2.02
	MDAQ-R 3 Sensory & Leisure Activities	0.01	0.02	0.06	0.32	0.75	-0.03	0.04	0.07	0.04	0.03	0.30	3.29

	MDAQ-R 4 Home Maintenance & Health Maintenance	-0.02	0.03	-0.09	-0.61	0.54	-0.07	0.04	-0.17	-0.08	-0.06	0.46	2.19
	Pain & Disability Factor	0.02	0.20	0.02	0.12	0.91	-0.38	0.43	-0.16	0.01	0.01	0.46	2.19
	Psychological Distress Factor	-0.62	0.24	-0.49	-2.59	0.01	-1.10	-0.14	-0.41	-0.31	-0.27	0.29	3.42
7.00	(Constant)	2.71	1.47		1.84	0.07	-0.23	5.64					
	Gender	0.03	0.46	0.01	0.07	0.94	-0.90	0.96	0.18	0.01	0.01	0.42	2.39
	Education	0.12	0.32	0.05	0.38	0.70	-0.52	0.76	0.18	0.05	0.04	0.69	1.44
	Working or Not Working	0.52	0.33	0.20	1.58	0.12	-0.14	1.18	0.00	0.20	0.16	0.66	1.52
	Litigating/Not Litigating	0.51	0.54	0.16	0.95	0.35	-0.57	1.60	0.17	0.12	0.10	0.38	2.61
	IPQRF1 Psychological Attributions	-0.03	0.03	-0.13	-0.82	0.42	-0.09	0.04	-0.23	-0.10	-0.08	0.45	2.20
	IPQRF2 Risk Factors	-0.01	0.04	-0.06	-0.35	0.73	-0.10	0.07	-0.13	-0.04	-0.04	0.35	2.86
	IPQRF3 Immunity	0.03	0.06	0.06	0.41	0.69	-0.10	0.16	0.00	0.05	0.04	0.55	1.82
	IPQRF4 Accident or Chance	-0.03	0.08	-0.04	-0.33	0.75	-0.18	0.13	-0.23	-0.04	-0.03	0.67	1.50
	DAQ-R 1 Domestic Chores	-0.05	0.03	-0.31	-2.09	0.04	-0.10	0.00	-0.05	-0.26	-0.22	0.48	2.10
	DAQ-R 2 Work, Health, Spirituality & Caring	0.02	0.02	0.13	0.91	0.37	-0.02	0.06	0.12	0.11	0.09	0.52	1.93
	DAQ-R 3 Interpersonal Contact & Social Support	0.00	0.02	0.03	0.20	0.84	-0.04	0.05	0.21	0.03	0.02	0.37	2.72
	DAQ-R 4 Home Maintenance	-0.03	0.03	-0.15	-1.00	0.32	-0.10	0.03	-0.03	-0.13	-0.10	0.49	2.02
	MDAQ-R 1 Support, Caring & Interpersonal Relationships	-0.03	0.02	-0.20	-1.13	0.26	-0.07	0.02	0.01	-0.14	-0.12	0.35	2.88
	MDAQ-R 2 Structured Tasks	0.01	0.02	0.09	0.63	0.53	-0.03	0.06	-0.05	0.08	0.06	0.48	2.10
	MDAQ-R 3 Sensory & Leisure Activities	0.00	0.02	0.04	0.21	0.84	-0.03	0.04	0.07	0.03	0.02	0.29	3.47
	MDAQ-R 4 Home Maintenance & Health Maintenance	-0.01	0.03	-0.08	-0.51	0.61	-0.07	0.04	-0.17	-0.06	-0.05	0.44	2.28
	Pain & Disability Factor	0.01	0.21	0.00	0.03	0.98	-0.41	0.42	-0.16	0.00	0.00	0.44	2.28
	Psychological Distress Factor	-0.48	0.40	-0.38	-1.21	0.23	-1.28	0.31	-0.41	-0.15	-0.13	0.11	9.34
	Beck Hopelessness Scale	-0.03	0.07	-0.12	-0.44	0.66	-0.17	0.11	-0.39	-0.06	-0.05	0.14	6.94

a. Dependent Variable: Positive Life Orientation

D 16 Research Model Dispositional Optimism

Analysis Two Predicting Dispositional Optimism

Model Summary^h

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1.00	0.50 ^a	0.25	0.23	6.01	0.25	13.35	2.00	79.00	0.00	
2.00	0.59 ^b	0.35	0.30	5.76	0.09	2.72	4.00	75.00	0.04	
3.00	0.66 ^c	0.44	0.36	5.48	0.09	2.97	4.00	71.00	0.03	
4.00	0.69 ^d	0.48	0.37	5.43	0.04	1.35	4.00	67.00	0.26	
5.00	0.73 ^e	0.54	0.43	5.17	0.05	7.75	1.00	66.00	0.01	
6.00	0.74 ^f	0.55	0.44	5.13	0.01	2.12	1.00	65.00	0.15	
7.00	0.76 ^g	0.58	0.47	5.01	0.03	4.09	1.00	64.00	0.05	2.04

a. Predictors: (Constant), Education Above/Below Year 12, Gender

b. Predictors: (Constant), Education Above/Below Year 12, Gender, IPQRF1 Psychological Attributions, IPQRF4 Accident or Chance, IPQRF3 Immunity, IPQRF2 Risk Factors

c. Predictors: (Constant), Education Above/Below Year 12, Gender, IPQRF1 Psychological Attributions, IPQRF4 Accident or Chance, IPQRF3 Immunity, IPQRF2 Risk Factors, DAQ-R 4 Home Maintenance, DAQ-R 2 Work, Health, Spirituality & Caring, DAQ-R 1 Domestic Chores, DAQ-R 3 Interpersonal Contact & Social Support

d. Predictors: (Constant), Education Above/Below Year 12, Gender, IPQRF1 Psychological Attributions, IPQRF4 Accident or Chance, IPQRF3 Immunity, IPQRF2 Risk Factors, DAQ-R 4 Home Maintenance, DAQ-R 2 Work, Health, Spirituality & Caring, DAQ-R 1 Domestic Chores, DAQ-R 3 Interpersonal Contact & Social Support, MDAQ-R 2 Structured Tasks, MDAQ-R 4 Home Maintenance & Health Maintenance, MDAQ-R 1 Support, Caring & Interpersonal Relationships, MDAQ-R 3 Sensory & Leisure Activities

e. Predictors: (Constant), Education Above/Below Year 12, Gender, IPQRF1 Psychological Attributions, IPQRF4 Accident or Chance, IPQRF3 Immunity, IPQRF2 Risk Factors, DAQ-R 4 Home Maintenance, DAQ-R 2 Work, Health, Spirituality & Caring, DAQ-R 1 Domestic Chores, DAQ-R 3 Interpersonal Contact & Social Support, MDAQ-R 2 Structured Tasks, MDAQ-R 4 Home Maintenance & Health Maintenance, MDAQ-R 1 Support, Caring & Interpersonal Relationships, MDAQ-R 3 Sensory & Leisure Activities, HADS Depression

f. Predictors: (Constant), Education Above/Below Year 12, Gender, IPQRF1 Psychological Attributions, IPQRF4 Accident or Chance, IPQRF3 Immunity, IPQRF2 Risk Factors, DAQ-R 4 Home Maintenance, DAQ-R 2 Work, Health, Spirituality & Caring, DAQ-R 1 Domestic Chores, DAQ-R 3 Interpersonal Contact & Social Support, MDAQ-R 2 Structured Tasks, MDAQ-R 4 Home Maintenance & Health Maintenance, MDAQ-R 1 Support, Caring & Interpersonal Relationships, MDAQ-R 3 Sensory & Leisure Activities, HADS Depression, HADS Anxiety

g. Predictors: (Constant), Education Above/Below Year 12, Gender, IPQRF1 Psychological Attributions, IPQRF4 Accident or Chance, IPQRF3 Immunity, IPQRF2 Risk Factors, DAQ-R 4 Home Maintenance, DAQ-R 2 Work, Health, Spirituality & Caring, DAQ-R 1 Domestic Chores, DAQ-R 3 Interpersonal Contact & Social Support, MDAQ-R 2 Structured Tasks, MDAQ-R 4 Home Maintenance & Health Maintenance, MDAQ-R 1 Support, Caring & Interpersonal Relationships, MDAQ-R 3 Sensory & Leisure Activities, HADS Depression, HADS Anxiety, Beck Hopelessness Scale

h. Dependent Variable: LOT Positive Life Orientation

ANOVA^h

Model	Sum of Squares	df	Mean Square	F	Sig.
1.00 Regression	962.54	2.00	481.27	13.35	0.00 ^a
Residual	2848.97	79.00	36.06		
Total	3811.51	81.00			
2.00 Regression	1323.85	6.00	220.64	6.65	0.00 ^b
Residual	2487.67	75.00	33.17		
Total	3811.51	81.00			
3.00 Regression	1680.32	10.00	168.03	5.60	0.00 ^c
Residual	2131.19	71.00	30.02		
Total	3811.51	81.00			
4.00 Regression	1838.80	14.00	131.34	4.46	0.00 ^d
Residual	1972.71	67.00	29.44		
Total	3811.51	81.00			
5.00 Regression	2046.07	15.00	136.40	5.10	0.00 ^e
Residual	1765.45	66.00	26.75		
Total	3811.51	81.00			
6.00 Regression	2101.75	16.00	131.36	4.99	0.00 ^f
Residual	1709.76	65.00	26.30		
Total	3811.51	81.00			
7.00 Regression	2204.44	17.00	129.67	5.16	0.00 ^g
Residual	1607.07	64.00	25.11		
Total	3811.51	81.00			

a. Predictors: (Constant), Education Above/Below Year 12, Gender

b. Predictors: (Constant), Education Above/Below Year 12, Gender, IPQRF1 Psychological Attributions, IPQRF4 Accident or Chance, IPQRF3 Immunity, IPQRF2 Risk Factors

c. Predictors: (Constant), Education Above/Below Year 12, Gender, IPQRF1 Psychological Attributions, IPQRF4 Accident or Chance, IPQRF3 Immunity, IPQRF2 Risk Factors, DAQ-R 4 Home Maintenance, DAQ-R 2 Work, Health, Spirituality & Caring, DAQ-R 1 Domestic Chores, DAQ-R 3 Interpersonal Contact & Social Support

d. Predictors: (Constant), Education Above/Below Year 12, Gender, IPQRF1 Psychological Attributions, IPQRF4 Accident or Chance, IPQRF3 Immunity, IPQRF2 Risk Factors, DAQ-R 4 Home Maintenance, DAQ-R 2 Work, Health, Spirituality & Caring, DAQ-R 1 Domestic Chores, DAQ-R 3 Interpersonal Contact & Social Support, MDAQ-R 2 Structured Tasks, MDAQ-R 4 Home Maintenance & Health Maintenance, MDAQ-R 1 Support, Caring & Interpersonal Relationships, MDAQ-R 3 Sensory & Leisure Activities

e. Predictors: (Constant), Education Above/Below Year 12, Gender, IPQRF1 Psychological Attributions, IPQRF4 Accident or Chance, IPQRF3 Immunity, IPQRF2 Risk Factors, DAQ-R 4 Home Maintenance, DAQ-R 2 Work, Health, Spirituality & Caring, DAQ-R 1 Domestic Chores, DAQ-R 3 Interpersonal Contact & Social Support, MDAQ-R 2 Structured Tasks, MDAQ-R 4 Home Maintenance & Health Maintenance, MDAQ-R 1 Support, Caring & Interpersonal Relationships, MDAQ-R 3 Sensory & Leisure Activities, HADS Depression

f. Predictors: (Constant), Education Above/Below Year 12, Gender, IPQRF1 Psychological Attributions, IPQRF4 Accident or Chance, IPQRF3 Immunity, IPQRF2 Risk Factors, DAQ-R 4 Home Maintenance, DAQ-R 2 Work, Health, Spirituality & Caring, DAQ-R 1 Domestic Chores, DAQ-R 3 Interpersonal Contact & Social Support, MDAQ-R 2 Structured Tasks, MDAQ-R 4 Home Maintenance & Health Maintenance, MDAQ-R 1 Support, Caring & Interpersonal Relationships, MDAQ-R 3 Sensory & Leisure Activities, HADS Depression, HADS Anxiety

g. Predictors: (Constant), Education Above/Below Year 12, Gender, IPQRF1 Psychological Attributions, IPQRF4 Accident or Chance, IPQRF3 Immunity, IPQRF2 Risk Factors, DAQ-R 4 Home Maintenance, DAQ-R 2 Work, Health, Spirituality & Caring, DAQ-R 1 Domestic Chores, DAQ-R 3 Interpersonal Contact & Social Support, MDAQ-R 2 Structured Tasks, MDAQ-R 4 Home Maintenance & Health Maintenance, MDAQ-R 1 Support, Caring & Interpersonal Relationships, MDAQ-R 3 Sensory & Leisure Activities, HADS Depression, HADS Anxiety, Beck Hopelessness Scale

h. Dependent Variable: LOT Positive Life Orientation

Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Correlations			Collinearity Statistics	
	B	Std. Error	Beta			Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance	VIF
1.00	(Constant)	2.52	3.38	0.74	0.46	-4.21	9.24					
	Gender	6.03	1.50	0.39	4.02	3.05	9.01	0.38	0.41	0.39	1.00	1.00
	Education	4.55	1.33	0.33	3.41	1.90	7.20	0.32	0.36	0.33	1.00	1.00
2.00	(Constant)	9.00	4.90	1.84	0.07	-0.77	18.76					
	Gender	4.99	1.51	0.32	3.31	1.98	7.99	0.38	0.36	0.31	0.91	1.10
	Education	4.57	1.30	0.33	3.50	1.97	7.17	0.32	0.38	0.33	0.96	1.05
	IPQRF1 Psychological Attributions	-0.42	0.14	-0.36	-2.87	-0.70	-0.13	-0.30	-0.31	-0.27	0.56	1.79
	IPQRF2	0.13	0.17	0.10	0.75	-0.21	0.47	-0.10	0.09	0.07	0.49	2.03
	IPQRF3	0.34	0.28	0.14	1.20	-0.23	0.90	0.01	0.14	0.11	0.65	1.53
	IPQRF4	-0.31	0.33	-0.09	-0.96	-0.96	0.34	-0.24	-0.11	-0.09	0.91	1.10
3.00	(Constant)	7.01	4.73	1.48	0.14	-2.43	16.44					
	Gender	4.23	1.79	0.27	2.36	0.66	7.80	0.38	0.27	0.21	0.58	1.72
	Education	3.14	1.33	0.23	2.37	0.49	5.79	0.32	0.27	0.21	0.83	1.20
	IPQRF1 Psychological Attributions	-0.32	0.14	-0.28	-2.27	-0.60	-0.04	-0.30	-0.26	-0.20	0.54	1.87
	IPQRF2	-0.04	0.18	-0.03	-0.22	-0.40	0.32	-0.10	-0.03	-0.02	0.41	2.45
	IPQRF3	0.41	0.28	0.16	1.46	-0.15	0.96	0.01	0.17	0.13	0.62	1.62
	IPQRF4	-0.18	0.32	-0.05	-0.55	-0.81	0.46	-0.24	-0.07	-0.05	0.86	1.16
	DAQ-R 1 Domestic Chores	-0.09	0.10	-0.10	-0.89	-0.30	0.11	0.20	-0.11	-0.08	0.60	1.66
	DAQ-R 2 Work, Health, Spirituality & Caring	0.07	0.08	0.09	0.84	-0.10	0.23	0.32	0.10	0.07	0.70	1.44
	DAQ-R 3 Interpersonal Contact & Social Support	0.23	0.09	0.32	2.74	0.06	0.41	0.48	0.31	0.24	0.56	1.78
	DAQ-R 4 Home Maintenance	0.01	0.13	0.01	0.05	-0.25	0.27	0.12	0.01	0.00	0.71	1.40
4.00	(Constant)	10.30	4.96	2.08	0.04	0.40	20.20					
	Gender	2.98	1.90	0.19	1.57	-0.82	6.77	0.38	0.19	0.14	0.51	1.98
	Education	2.83	1.35	0.21	2.09	0.13	5.54	0.32	0.25	0.18	0.79	1.27
	IPQRF1 Psychological Attributions	-0.36	0.14	-0.31	-2.54	-0.65	-0.08	-0.30	-0.30	-0.22	0.51	1.95
	IPQRF2	0.00	0.18	0.00	-0.02	-0.37	0.36	-0.10	0.00	0.00	0.39	2.54
	IPQRF3	0.50	0.28	0.20	1.76	-0.07	1.06	0.01	0.21	0.15	0.59	1.71
	IPQRF4	-0.16	0.32	-0.05	-0.48	-0.80	0.49	-0.24	-0.06	-0.04	0.82	1.23

	DAQ-R 1 Domestic Chores	-0.14	0.11	-0.16	-1.30	0.20	-0.36	0.08	0.20	-0.16	-0.11	0.52	1.91
	DAQ-R 2 Work, Health, Spirituality & Caring	0.09	0.09	0.12	1.05	0.30	-0.08	0.27	0.32	0.13	0.09	0.60	1.66
	DAQ-R 3 Interpersonal Contact & Social Support	0.15	0.10	0.21	1.54	0.13	-0.04	0.35	0.48	0.19	0.14	0.42	2.40
	DAQ-R 4 Home Maintenance	0.04	0.14	0.04	0.33	0.74	-0.23	0.31	0.12	0.04	0.03	0.65	1.53
	MDAQ-R 1 Support, Caring & Interpersonal Relationships	0.07	0.10	0.10	0.66	0.51	-0.13	0.27	0.31	0.08	0.06	0.37	2.74
	MDAQ-R 2 Structured Tasks	0.06	0.09	0.08	0.63	0.53	-0.13	0.24	0.08	0.08	0.06	0.52	1.93
	MDAQ-R 3 Sensory & Leisure Activities	0.05	0.08	0.09	0.61	0.54	-0.11	0.21	0.30	0.07	0.05	0.32	3.11
	MDAQ-R 4 Home Maintenance & Health Maintenance	-0.25	0.11	-0.28	-2.22	0.03	-0.48	-0.03	-0.22	-0.26	-0.20	0.50	2.01
5.00	(Constant)	21.55	6.22		3.46	0.00	9.13	33.96					
	Gender	1.28	1.91	0.08	0.67	0.51	-2.54	5.10	0.38	0.08	0.06	0.45	2.20
	Education	2.01	1.32	0.15	1.51	0.13	-0.64	4.65	0.32	0.18	0.13	0.75	1.34
	IPQRF1 Psychological Attributions	-0.34	0.14	-0.29	-2.49	0.02	-0.61	-0.07	-0.30	-0.29	-0.21	0.51	1.95
	IPQRF2	-0.04	0.17	-0.03	-0.22	0.83	-0.39	0.31	-0.10	-0.03	-0.02	0.39	2.55
	IPQRF3	0.50	0.27	0.20	1.84	0.07	-0.04	1.03	0.01	0.22	0.15	0.59	1.71
	IPQRF4	0.00	0.31	0.00	0.00	1.00	-0.63	0.63	-0.24	0.00	0.00	0.79	1.27
	DAQ-R 1 Domestic Chores	-0.16	0.10	-0.17	-1.50	0.14	-0.37	0.05	0.20	-0.18	-0.13	0.52	1.92
	DAQ-R 2 Work, Health, Spirituality & Caring	0.08	0.08	0.11	1.00	0.32	-0.08	0.25	0.32	0.12	0.08	0.60	1.66
	DAQ-R 3 Interpersonal Contact & Social Support	0.07	0.10	0.10	0.71	0.48	-0.13	0.27	0.48	0.09	0.06	0.38	2.64
	DAQ-R 4 Home Maintenance	-0.06	0.13	-0.05	-0.47	0.64	-0.33	0.21	0.12	-0.06	-0.04	0.60	1.67
	MDAQ-R 1 Support, Caring & Interpersonal Relationships	0.06	0.10	0.09	0.62	0.54	-0.13	0.25	0.31	0.08	0.05	0.36	2.74
	MDAQ-R 2 Structured Tasks	0.05	0.09	0.06	0.55	0.59	-0.13	0.22	0.08	0.07	0.05	0.52	1.94
	MDAQ-R 3 Sensory & Leisure Activities	0.02	0.08	0.04	0.24	0.81	-0.14	0.18	0.30	0.03	0.02	0.31	3.18
	MDAQ-R 4 Home Maintenance & Health Maintenance	-0.21	0.11	-0.22	-1.86	0.07	-0.43	0.01	-0.22	-0.22	-0.16	0.49	2.06

	HADS Depression	-0.56	0.20	-0.39	-2.78	0.01	-0.96	-0.16	-0.60	-0.32	-0.23	0.35	2.85
6.00	(Constant)	20.91	6.18		3.38	0.00	8.57	33.26					
	Gender	1.19	1.90	0.08	0.63	0.53	-2.60	4.98	0.38	0.08	0.05	0.45	2.20
	Education	1.91	1.32	0.14	1.45	0.15	-0.72	4.54	0.32	0.18	0.12	0.75	1.34
	IPQRF1	-0.24	0.15	-0.20	-1.54	0.13	-0.54	0.07	-0.30	-0.19	-0.13	0.40	2.50
	IPQRF2	-0.03	0.17	-0.03	-0.20	0.84	-0.38	0.31	-0.10	-0.02	-0.02	0.39	2.55
	IPQRF3	0.50	0.27	0.21	1.89	0.06	-0.03	1.04	0.01	0.23	0.16	0.59	1.71
	IPQRF4	0.05	0.31	0.01	0.15	0.88	-0.58	0.67	-0.24	0.02	0.01	0.78	1.28
	DAQ-R 1 Domestic Chores	-0.16	0.10	-0.18	-1.55	0.13	-0.37	0.05	0.20	-0.19	-0.13	0.52	1.92
	DAQ-R 2 Work, Health, Spirituality & Caring	0.08	0.08	0.10	0.96	0.34	-0.09	0.25	0.32	0.12	0.08	0.60	1.66
	DAQ-R 3 Interpersonal Contact & Social Support	0.07	0.10	0.10	0.76	0.45	-0.12	0.27	0.48	0.09	0.06	0.38	2.64
	DAQ-R 4 Home Maintenance	-0.09	0.13	-0.07	-0.68	0.50	-0.36	0.18	0.12	-0.08	-0.06	0.59	1.70
	MDAQ-R 1 Support, Caring & Interpersonal Relationships	0.05	0.09	0.07	0.54	0.59	-0.14	0.24	0.31	0.07	0.04	0.36	2.75
	MDAQ-R 2 Structured Tasks	0.07	0.09	0.09	0.78	0.44	-0.11	0.25	0.08	0.10	0.07	0.50	1.99
	MDAQ-R 3 Sensory & Leisure Activities	0.04	0.08	0.07	0.45	0.65	-0.12	0.19	0.30	0.06	0.04	0.31	3.25
	MDAQ-R 4 Home Maintenance & Health Maintenance	-0.20	0.11	-0.22	-1.83	0.07	-0.42	0.02	-0.22	-0.22	-0.15	0.49	2.06
	HADS Depression	-0.33	0.25	-0.23	-1.30	0.20	-0.83	0.18	-0.60	-0.16	-0.11	0.22	4.62
	HADS Anxiety	-0.36	0.25	-0.23	-1.45	0.15	-0.85	0.13	-0.61	-0.18	-0.12	0.27	3.66
7.00	(Constant)	22.60	6.10		3.71	0.00	10.42	34.78					
	Gender	1.65	1.87	0.11	0.88	0.38	-2.08	5.38	0.38	0.11	0.07	0.45	2.24
	Education	1.62	1.29	0.12	1.25	0.22	-0.97	4.20	0.32	0.15	0.10	0.74	1.36
	IPQRF1	-0.26	0.15	-0.23	-1.77	0.08	-0.56	0.03	-0.30	-0.22	-0.14	0.40	2.52
	IPQRF2	-0.05	0.17	-0.04	-0.28	0.78	-0.38	0.29	-0.10	-0.03	-0.02	0.39	2.56
	IPQRF3	0.46	0.26	0.19	1.75	0.08	-0.06	0.98	0.01	0.21	0.14	0.58	1.72
	IPQRF4	0.16	0.31	0.05	0.51	0.61	-0.46	0.78	-0.24	0.06	0.04	0.76	1.32
	DAQ-R 1 Domestic Chores	-0.16	0.10	-0.17	-1.55	0.13	-0.36	0.05	0.20	-0.19	-0.13	0.52	1.92
	DAQ-R 2 Work, Health, Spirituality & Caring	0.07	0.08	0.09	0.83	0.41	-0.10	0.23	0.32	0.10	0.07	0.60	1.67
	DAQ-R 3 Interpersonal Contact & Social Support	0.04	0.10	0.05	0.38	0.71	-0.16	0.23	0.48	0.05	0.03	0.36	2.74

DAQ-R 4 Home Maintenance	-0.03	0.14	-0.02	-0.20	0.84	-0.30	0.24	0.12	-0.02	-0.02	0.55	1.80
MDAQ-R 1 Support, Caring & Interpersonal Relationships	0.06	0.09	0.08	0.61	0.54	-0.13	0.24	0.31	0.08	0.05	0.36	2.75
MDAQ-R 2 Structured Tasks	0.03	0.09	0.05	0.39	0.70	-0.14	0.21	0.08	0.05	0.03	0.48	2.07
MDAQ-R 3 Sensory & Leisure Activities	-0.01	0.08	-0.01	-0.09	0.93	-0.17	0.15	0.30	-0.01	-0.01	0.29	3.50
MDAQ-R 4 Home Maintenance & Health Maintenance	-0.15	0.11	-0.17	-1.38	0.17	-0.37	0.07	-0.22	-0.17	-0.11	0.46	2.17
HADS Depression	-0.23	0.25	-0.17	-0.93	0.36	-0.74	0.27	-0.60	-0.12	-0.08	0.21	4.79
HADS Anxiety	-0.18	0.26	-0.12	-0.70	0.48	-0.69	0.33	-0.61	-0.09	-0.06	0.24	4.15
Beck Hopelessness Scale	-0.42	0.21	-0.30	-2.02	0.05	-0.83	-0.01	-0.64	-0.25	-0.16	0.29	3.43

a. Dependent Variable: LOT Positive Life Orientation

D 17 Research Model Dispositional Optimism
Abbreviated Analysis Three Predicting Dispositional Optimism

Model Summary^g

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
dimension0 1.00	0.50 ^a	0.25	0.23	6.01	0.25	13.35	2.00	79.00	0.00	
2.00	0.56 ^b	0.31	0.28	5.80	0.06	6.56	1.00	78.00	0.01	
3.00	0.64 ^c	0.41	0.38	5.42	0.10	12.58	1.00	77.00	0.00	
4.00	0.65 ^d	0.42	0.38	5.39	0.01	1.85	1.00	76.00	0.18	
5.00	0.69 ^e	0.48	0.44	5.14	0.06	8.48	1.00	75.00	0.00	
6.00	0.73 ^f	0.53	0.48	4.93	0.05	7.51	1.00	74.00	0.01	
										1.90

a. Predictors: (Constant), Education Above/Below Year 12, Gender

b. Predictors: (Constant), Education Above/Below Year 12, Gender, IPQRF1 Psychological Attributions

c. Predictors: (Constant), Education Above/Below Year 12, Gender, IPQRF1 Psychological Attributions, DAQ-R 3 Interpersonal Contact & Social Support

d. Predictors: (Constant), Education Above/Below Year 12, Gender, IPQRF1 Psychological Attributions, DAQ-R 3 Interpersonal Contact & Social Support, MDAQ-R 4 Home Maintenance & Health Maintenance

e. Predictors: (Constant), Education Above/Below Year 12, Gender, IPQRF1 Psychological Attributions, DAQ-R 3 Interpersonal Contact & Social Support, MDAQ-R 4 Home Maintenance & Health Maintenance, HADS Depression

f. Predictors: (Constant), Education Above/Below Year 12, Gender, IPQRF1 Psychological Attributions, DAQ-R 3 Interpersonal Contact & Social Support, MDAQ-R 4 Home Maintenance & Health Maintenance, HADS Depression, Beck Hopelessness Scale

g. Dependent Variable: LOT Positive Life Orientation

ANOVA^g

Model		Sum of Squares	df	Mean Square	F	Sig.
1.00	Regression	962.54	2.00	481.27	13.35	0.00 ^a
	Residual	2848.97	79.00	36.06		
	Total	3811.51	81.00			
2.00	Regression	1183.64	3.00	394.55	11.71	0.00 ^b
	Residual	2627.87	78.00	33.69		
	Total	3811.51	81.00			
3.00	Regression	1552.56	4.00	388.14	13.23	0.00 ^c
	Residual	2258.95	77.00	29.34		
	Total	3811.51	81.00			
4.00	Regression	1606.18	5.00	321.24	11.07	0.00 ^d
	Residual	2205.33	76.00	29.02		
	Total	3811.51	81.00			
5.00	Regression	1830.08	6.00	305.01	11.55	0.00 ^e
	Residual	1981.43	75.00	26.42		
	Total	3811.51	81.00			
6.00	Regression	2012.54	7.00	287.51	11.83	0.00 ^f
	Residual	1798.98	74.00	24.31		
	Total	3811.51	81.00			

a. Predictors: (Constant), Education Above/Below Year 12, Gender

b. Predictors: (Constant), Education Above/Below Year 12, Gender, IPQRF1 Psychological Attributions

c. Predictors: (Constant), Education Above/Below Year 12, Gender, IPQRF1 Psychological Attributions, DAQ-R 3 Interpersonal Contact & Social Support

d. Predictors: (Constant), Education Above/Below Year 12, Gender, IPQRF1 Psychological Attributions, DAQ-R 3 Interpersonal Contact & Social Support, MDAQ-R 4 Home Maintenance & Health Maintenance

e. Predictors: (Constant), Education Above/Below Year 12, Gender, IPQRF1 Psychological Attributions, DAQ-R 3 Interpersonal Contact & Social Support, MDAQ-R 4 Home Maintenance & Health Maintenance, HADS Depression

f. Predictors: (Constant), Education Above/Below Year 12, Gender, IPQRF1 Psychological Attributions, DAQ-R 3 Interpersonal Contact & Social Support, MDAQ-R 4 Home Maintenance & Health Maintenance, HADS Depression, Beck Hopelessness Scale

g. Dependent Variable: LOT Positive Life Orientation

Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Correlations			Collinearity Statistics	
	B	Std. Error	Beta			Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance	VIF
1.00	(Constant)	2.52	3.38	0.74	0.46	-4.21	9.24					
	Gender	6.03	1.50	0.39	4.02	3.05	9.01	0.38	0.41	0.39	1.00	1.00
	Education	4.55	1.33	0.33	3.41	1.90	7.20	0.32	0.36	0.33	1.00	1.00
2.00	(Constant)	7.96	3.90	2.04	0.04	0.20	15.72					
	Gender	5.76	1.45	0.37	3.97	2.87	8.65	0.38	0.41	0.37	0.99	1.01
	Education	4.24	1.29	0.31	3.28	1.67	6.81	0.32	0.35	0.31	0.99	1.01
	IPQRF1 Psychological Attributions	-0.28	0.11	-0.24	-2.56	-0.50	-0.06	-0.30	-0.28	-0.24	0.99	1.01
3.00	(Constant)	6.67	3.65	1.82	0.07	-0.61	13.95					
	Gender	4.40	1.41	0.29	3.12	1.59	7.20	0.38	0.34	0.27	0.92	1.09
	Education	2.94	1.26	0.21	2.33	0.43	5.45	0.32	0.26	0.20	0.91	1.10
	IPQRF1 Psychological Attributions	-0.27	0.10	-0.23	-2.64	-0.47	-0.07	-0.30	-0.29	-0.23	0.99	1.01
	DAQ-R 3 Interpersonal Contact & Social Support	0.24	0.07	0.34	3.55	0.11	0.38	0.48	0.37	0.31	0.85	1.17
4.00	(Constant)	9.10	4.05	2.25	0.03	1.03	17.17					
	Gender	3.77	1.47	0.25	2.56	0.83	6.71	0.38	0.28	0.22	0.83	1.21
	Education	2.98	1.25	0.22	2.37	0.48	5.47	0.32	0.26	0.21	0.90	1.11
	IPQRF1 Psychological Attributions	-0.26	0.10	-0.22	-2.55	-0.46	-0.06	-0.30	-0.28	-0.22	0.98	1.02
	DAQ-R 3 Interpersonal Contact & Social Support	0.25	0.07	0.34	3.63	0.11	0.38	0.48	0.38	0.32	0.85	1.17
	MDAQ-R 4 Home Maintenance & Health Maintenance	-0.12	0.08	-0.13	-1.36	-0.28	0.05	-0.22	-0.15	-0.12	0.89	1.12
5.00	(Constant)	21.00	5.63	3.73	0.00	9.79	32.21					
	Gender	1.89	1.55	0.12	1.22	-1.19	4.98	0.38	0.14	0.10	0.68	1.46
	Education	2.05	1.24	0.15	1.65	-0.42	4.51	0.32	0.19	0.14	0.84	1.18
	IPQRF1 Psychological Attributions	-0.27	0.10	-0.23	-2.76	-0.46	-0.08	-0.30	-0.30	-0.23	0.98	1.02
	DAQ-R 3 Interpersonal Contact & Social Support	0.10	0.08	0.14	1.25	-0.06	0.27	0.48	0.14	0.10	0.54	1.86

	MDAQ-R 4 Home Maintenance & Health Maintenance	-0.12	0.08	-0.13	-1.45	0.15	-0.28	0.04	-0.22	-0.17	-0.12	0.89	1.12
	HADS Depression	-0.52	0.18	-0.37	-2.91	0.00	-0.88	-0.17	-0.60	-0.32	-0.24	0.43	2.34
6.00	(Constant)	23.49	5.47		4.29	0.00	12.59	34.40					
	Gender	1.90	1.49	0.12	1.28	0.20	-1.06	4.86	0.38	0.15	0.10	0.68	1.46
	Education	1.55	1.20	0.11	1.29	0.20	-0.84	3.95	0.32	0.15	0.10	0.83	1.21
	IPQRF1 Psychological Attributions	-0.26	0.09	-0.22	-2.72	0.01	-0.44	-0.07	-0.30	-0.30	-0.22	0.98	1.02
	DAQ-R 3 Interpersonal Contact & Social Support	0.03	0.08	0.05	0.40	0.69	-0.13	0.20	0.48	0.05	0.03	0.49	2.05
	MDAQ-R 4 Home Maintenance & Health Maintenance	-0.10	0.08	-0.10	-1.23	0.22	-0.25	0.06	-0.22	-0.14	-0.10	0.88	1.13
	HADS Depression	-0.26	0.20	-0.19	-1.34	0.18	-0.66	0.13	-0.60	-0.15	-0.11	0.33	3.04
	Beck Hopelessness Scale	-0.48	0.18	-0.35	-2.74	0.01	-0.83	-0.13	-0.64	-0.30	-0.22	0.39	2.58

a. Dependent Variable: LOT Positive Life Orientation

D 18 Research Model Dispositional Optimism

Analysis Four B Predicting Dispositional Optimism

Model Summary^a

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
dimension0 1.00	0.52 ^a	0.27	0.24	6.00	0.27	7.26	4.00	77.00	0.00	
2.00	0.60 ^b	0.36	0.29	5.76	0.09	2.58	4.00	73.00	0.04	
3.00	0.67 ^c	0.45	0.36	5.50	0.09	2.76	4.00	69.00	0.03	
4.00	0.71 ^d	0.50	0.37	5.42	0.05	1.51	4.00	65.00	0.21	
5.00	0.71 ^e	0.51	0.38	5.42	0.01	1.10	1.00	64.00	0.30	
6.00	0.77 ^f	0.59	0.47	5.00	0.08	12.26	1.00	63.00	0.00	
										2.07

a. Predictors: (Constant), Litigating/Not Litigating, Education Above/Below Year 12, Working or Not Working, Gender

b. Predictors: (Constant), Litigating/Not Litigating, Education Above/Below Year 12, Working or Not Working, Gender, IPQRF1 Psychological Attributions, IPQRF4 Accident or Chance, IPQRF3 Immunity, IPQRF2 Risk Factors

c. Predictors: (Constant), Litigating/Not Litigating, Education Above/Below Year 12, Working or Not Working, Gender, IPQRF1 Psychological Attributions, IPQRF4 Accident or Chance, IPQRF3 Immunity, IPQRF2 Risk Factors, DAQ-R 2 Work, Health, Spirituality & Caring, DAQ-R 4 Home Maintenance, DAQ-R 1 Domestic Chores, DAQ-R 3 Interpersonal Contact & Social Support

d. Predictors: (Constant), Litigating/Not Litigating, Education Above/Below Year 12, Working or Not Working, Gender, IPQRF1 Psychological Attributions, IPQRF4 Accident or Chance, IPQRF3 Immunity, IPQRF2 Risk Factors, DAQ-R 2 Work, Health, Spirituality & Caring, DAQ-R 4 Home Maintenance, DAQ-R 1 Domestic Chores, DAQ-R 3 Interpersonal Contact & Social Support, MDAQ-R 2 Structured Tasks, MDAQ-R 4 Home Maintenance & Health Maintenance, MDAQ-R 1 Support, Caring & Interpersonal Relationships, MDAQ-R 3 Sensory & Leisure Activities

e. Predictors: (Constant), Litigating/Not Litigating, Education Above/Below Year 12, Working or Not Working, Gender, IPQRF1 Psychological Attributions, IPQRF4 Accident or Chance, IPQRF3 Immunity, IPQRF2 Risk Factors, DAQ-R 2 Work, Health, Spirituality & Caring, DAQ-R 4 Home Maintenance, DAQ-R 1 Domestic Chores, DAQ-R 3 Interpersonal Contact & Social Support, MDAQ-R 2 Structured Tasks, MDAQ-R 4 Home Maintenance & Health Maintenance, MDAQ-R 1 Support, Caring & Interpersonal Relationships, MDAQ-R 3 Sensory & Leisure Activities, Pain & Disability Factor

f. Predictors: (Constant), Litigating/Not Litigating, Education Above/Below Year 12, Working or Not Working, Gender, IPQRF1 Psychological Attributions, IPQRF4 Accident or Chance, IPQRF3 Immunity, IPQRF2 Risk Factors, DAQ-R 2 Work, Health, Spirituality & Caring, DAQ-R 4 Home Maintenance, DAQ-R 1 Domestic Chores, DAQ-R 3 Interpersonal Contact & Social Support, MDAQ-R 2 Structured Tasks, MDAQ-R 4 Home Maintenance & Health Maintenance, MDAQ-R 1 Support, Caring & Interpersonal Relationships, MDAQ-R 3 Sensory & Leisure Activities, Pain & Disability Factor, Psychological Distress Factor

g. Dependent Variable: LOT Positive Life Orientation

ANOVA^g

Model	Sum of Squares	df	Mean Square	F	Sig.
1.00 Regression	1044.06	4.00	261.02	7.26	0.00 ^a
Residual	2767.45	77.00	35.94		
Total	3811.51	81.00			
2.00 Regression	1386.41	8.00	173.30	5.22	0.00 ^b
Residual	2425.10	73.00	33.22		
Total	3811.51	81.00			
3.00 Regression	1720.80	12.00	143.40	4.73	0.00 ^c
Residual	2090.72	69.00	30.30		
Total	3811.51	81.00			
4.00 Regression	1898.54	16.00	118.66	4.03	0.00 ^d
Residual	1912.97	65.00	29.43		
Total	3811.51	81.00			
5.00 Regression	1930.96	17.00	113.59	3.87	0.00 ^e
Residual	1880.55	64.00	29.38		
Total	3811.51	81.00			
6.00 Regression	2237.34	18.00	124.30	4.97	0.00 ^f
Residual	1574.17	63.00	24.99		
Total	3811.51	81.00			

- a. Predictors: (Constant), Litigating/Not Litigating, Education Above/Below Year 12, Working or Not Working, Gender
- b. Predictors: (Constant), Litigating/Not Litigating, Education Above/Below Year 12, Working or Not Working, Gender, IPQRF1 Psychological Attributions, IPQRF4 Accident or Chance, IPQRF3 Immunity, IPQRF2 Risk Factors
- c. Predictors: (Constant), Litigating/Not Litigating, Education Above/Below Year 12, Working or Not Working, Gender, IPQRF1 Psychological Attributions, IPQRF4 Accident or Chance, IPQRF3 Immunity, IPQRF2 Risk Factors, DAQ-R 2 Work, Health, Spirituality & Caring, DAQ-R 4 Home Maintenance, DAQ-R 1 Domestic Chores, DAQ-R 3 Interpersonal Contact & Social Support
- d. Predictors: (Constant), Litigating/Not Litigating, Education Above/Below Year 12, Working or Not Working, Gender, IPQRF1 Psychological Attributions, IPQRF4 Accident or Chance, IPQRF3 Immunity, IPQRF2 Risk Factors, DAQ-R 2 Work, Health, Spirituality & Caring, DAQ-R 4 Home Maintenance, DAQ-R 1 Domestic Chores, DAQ-R 3 Interpersonal Contact & Social Support, MDAQ-R 2 Structured Tasks, MDAQ-R 4 Home Maintenance & Health Maintenance, MDAQ-R 1 Support, Caring & Interpersonal Relationships, MDAQ-R 3 Sensory & Leisure Activities
- e. Predictors: (Constant), Litigating/Not Litigating, Education Above/Below Year 12, Working or Not Working, Gender, IPQRF1 Psychological Attributions, IPQRF4 Accident or Chance, IPQRF3 Immunity, IPQRF2 Risk Factors, DAQ-R 2 Work, Health, Spirituality & Caring, DAQ-R 4 Home Maintenance, DAQ-R 1 Domestic Chores, DAQ-R 3 Interpersonal Contact & Social Support, MDAQ-R 2 Structured Tasks, MDAQ-R 4 Home Maintenance & Health Maintenance, MDAQ-R 1 Support, Caring & Interpersonal Relationships, MDAQ-R 3 Sensory & Leisure Activities, Pain & Disability Factor
- f. Predictors: (Constant), Litigating/Not Litigating, Education Above/Below Year 12, Working or Not Working, Gender, IPQRF1 Psychological Attributions, IPQRF4 Accident or Chance, IPQRF3 Immunity, IPQRF2 Risk Factors, DAQ-R 2 Work, Health, Spirituality & Caring, DAQ-R 4 Home Maintenance, DAQ-R 1 Domestic Chores, DAQ-R 3 Interpersonal Contact & Social Support, MDAQ-R 2 Structured Tasks, MDAQ-R 4 Home Maintenance & Health Maintenance, MDAQ-R 1 Support, Caring & Interpersonal Relationships, MDAQ-R 3 Sensory & Leisure Activities, Pain & Disability Factor, Psychological Distress Factor
- g. Dependent Variable: LOT Positive Life Orientation

Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Correlations			Collinearity Statistics	
	B	Std. Error	Beta			Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance	VIF
1.00	(Constant)	1.80	4.89	0.37	0.71	-7.94	11.53					
	Gender	4.84	1.71	0.31	2.84	0.01	1.44	0.38	0.31	0.28	0.77	1.30
	Education	3.99	1.40	0.29	2.85	0.01	1.20	0.32	0.31	0.28	0.90	1.11
	Working Not Working	-0.74	1.39	-0.05	-0.53	0.60	-3.50	-0.19	-0.06	-0.05	0.91	1.10
	Litigating/Not Litigating	2.61	1.93	0.15	1.35	0.18	-1.24	0.35	0.15	0.13	0.75	1.34
2.00	(Constant)	7.87	5.97	1.32	0.19	-4.02	19.77					
	Gender	3.94	1.69	0.26	2.33	0.02	0.56	0.38	0.26	0.22	0.72	1.39
	Education	3.93	1.40	0.29	2.81	0.01	1.14	0.32	0.31	0.26	0.84	1.20
	Working Not Working	-0.46	1.40	-0.03	-0.33	0.74	-3.25	-0.19	-0.04	-0.03	0.83	1.20
	Litigating/Not Litigating	2.83	2.26	0.16	1.25	0.22	-1.68	0.35	0.14	0.12	0.50	1.99
	IPQRF1 Psychological Attributions	-0.39	0.15	-0.33	-2.64	0.01	-0.68	-0.30	-0.30	-0.25	0.55	1.83
	IPQRF2	0.02	0.19	0.02	0.12	0.91	-0.36	-0.10	0.01	0.01	0.41	2.45
	IPQRF3	0.33	0.29	0.13	1.12	0.27	-0.25	0.01	0.13	0.10	0.62	1.62
	IPQRF4	-0.20	0.34	-0.06	-0.58	0.56	-0.87	-0.24	-0.07	-0.05	0.84	1.20
3.00	(Constant)	3.56	5.95	0.60	0.55	-8.31	15.42					
	Gender	3.56	1.92	0.23	1.86	0.07	-0.26	0.38	0.22	0.17	0.51	1.95
	Education	2.94	1.38	0.22	2.13	0.04	0.18	0.32	0.25	0.19	0.78	1.29
	Working Not Working	0.85	1.41	0.06	0.61	0.55	-1.95	-0.19	0.07	0.05	0.75	1.34
	Litigating/Not Litigating	2.58	2.37	0.15	1.09	0.28	-2.16	0.35	0.13	0.10	0.42	2.40
	IPQRF1 Psychological Attributions	-0.31	0.14	-0.27	-2.20	0.03	-0.60	-0.30	-0.26	-0.20	0.53	1.88
	IPQRF2	-0.09	0.19	-0.07	-0.49	0.63	-0.47	-0.10	-0.06	-0.04	0.38	2.65
	IPQRF3	0.32	0.29	0.13	1.11	0.27	-0.26	0.01	0.13	0.10	0.57	1.74
	IPQRF4	-0.06	0.34	-0.02	-0.18	0.86	-0.73	-0.24	-0.02	-0.02	0.78	1.28
	DAQ-R 1	-0.12	0.11	-0.13	-1.13	0.26	-0.33	0.09	-0.13	-0.10	0.57	1.75
	DAQ-R 2	0.08	0.08	0.10	0.90	0.37	-0.09	0.32	0.11	0.08	0.69	1.46
	DAQ-R 3 Interpersonal Contact & Social Support	0.24	0.09	0.34	2.75	0.01	0.07	0.48	0.31	0.25	0.53	1.88
	DAQ-R 4	-0.04	0.14	-0.04	-0.32	0.75	-0.32	0.12	-0.04	-0.03	0.64	1.56
4.00	(Constant)	5.49	6.06	0.91	0.37	-6.61	17.59					
	Gender	2.24	2.01	0.15	1.11	0.27	-1.78	0.38	0.14	0.10	0.45	2.21
	Education	2.65	1.40	0.19	1.89	0.06	-0.14	0.32	0.23	0.17	0.74	1.36
	Working Not Working	1.47	1.42	0.11	1.04	0.30	-1.36	-0.19	0.13	0.09	0.71	1.40
	Litigating/Not Litigating	2.80	2.40	0.16	1.17	0.25	-1.99	0.35	0.14	0.10	0.40	2.52

	IPQRF1 Psychological Attributions	-0.36	0.14	-0.31	-2.52	0.01	-0.65	-0.07	-0.30	-0.30	-0.22	0.51	1.97
	IPQRF2	-0.06	0.19	-0.04	-0.30	0.77	-0.44	0.32	-0.10	-0.04	-0.03	0.36	2.78
	IPQRF3	0.40	0.29	0.16	1.39	0.17	-0.18	0.98	0.01	0.17	0.12	0.55	1.80
	IPQRF4	-0.01	0.34	0.00	-0.04	0.97	-0.70	0.67	-0.24	-0.01	0.00	0.73	1.37
	DAQ-R 1	-0.19	0.11	-0.21	-1.66	0.10	-0.42	0.04	0.20	-0.20	-0.15	0.48	2.09
	DAQ-R 2	0.10	0.09	0.13	1.13	0.26	-0.08	0.28	0.32	0.14	0.10	0.59	1.70
	DAQ-R 3 I	0.16	0.10	0.23	1.65	0.10	-0.03	0.36	0.48	0.20	0.15	0.41	2.45
	DAQ-R 4	-0.01	0.14	-0.01	-0.10	0.92	-0.30	0.27	0.12	-0.01	-0.01	0.59	1.69
	MDAQ-R 1	0.08	0.10	0.11	0.78	0.44	-0.12	0.28	0.31	0.10	0.07	0.36	2.79
	MDAQ-R 2	0.08	0.09	0.11	0.88	0.38	-0.10	0.27	0.08	0.11	0.08	0.50	2.00
	MDAQ-R 3	0.05	0.08	0.09	0.59	0.56	-0.12	0.21	0.30	0.07	0.05	0.32	3.17
	MDAQ-R 4 Home Maintenance & Health Maintenance	-0.27	0.12	-0.30	-2.35	0.02	-0.51	-0.04	-0.22	-0.28	-0.21	0.48	2.08
5.00	(Constant)	5.75	6.06		0.95	0.35	-6.35	17.86					
	Gender	2.01	2.02	0.13	0.99	0.32	-2.03	6.05	0.38	0.12	0.09	0.45	2.24
	Education	2.50	1.41	0.18	1.78	0.08	-0.31	5.31	0.32	0.22	0.16	0.73	1.37
	Working Not Working	1.86	1.47	0.14	1.27	0.21	-1.06	4.79	-0.19	0.16	0.11	0.67	1.50
	Litigating/Not Litigating	2.57	2.41	0.15	1.07	0.29	-2.24	7.38	0.35	0.13	0.09	0.39	2.54
	IPQRF1 Psychological Attributions	-0.32	0.15	-0.27	-2.12	0.04	-0.61	-0.02	-0.30	-0.26	-0.19	0.47	2.14
	IPQRF2	-0.08	0.19	-0.07	-0.44	0.66	-0.47	0.30	-0.10	-0.06	-0.04	0.35	2.83
	IPQRF3	0.41	0.29	0.17	1.42	0.16	-0.17	0.99	0.01	0.17	0.12	0.55	1.80
	IPQRF4	-0.04	0.34	-0.01	-0.11	0.91	-0.72	0.65	-0.24	-0.01	-0.01	0.73	1.38
	DAQ-R 1	-0.19	0.11	-0.21	-1.65	0.10	-0.42	0.04	0.20	-0.20	-0.14	0.48	2.09
	DAQ-R 2	0.13	0.09	0.17	1.39	0.17	-0.06	0.32	0.32	0.17	0.12	0.54	1.87
	DAQ-R 3	0.15	0.10	0.21	1.51	0.14	-0.05	0.35	0.48	0.19	0.13	0.40	2.49
	DAQ-R 4	-0.07	0.15	-0.05	-0.45	0.66	-0.37	0.23	0.12	-0.06	-0.04	0.53	1.90
	MDAQ-R 1	0.06	0.10	0.09	0.59	0.56	-0.14	0.26	0.31	0.07	0.05	0.35	2.87
	MDAQ-R 2	0.08	0.09	0.10	0.80	0.42	-0.11	0.26	0.08	0.10	0.07	0.50	2.02
	MDAQ-R 3	0.06	0.08	0.10	0.67	0.51	-0.11	0.22	0.30	0.08	0.06	0.31	3.18
	MDAQ-R 4 Home Maintenance & Health Maintenance	-0.25	0.12	-0.28	-2.16	0.03	-0.49	-0.02	-0.22	-0.26	-0.19	0.47	2.13
	Pain & Disability Factor	-0.90	0.85	-0.13	-1.05	0.30	-2.60	0.81	-0.37	-0.13	-0.09	0.53	1.88
6.00	(Constant)	12.06	5.87		2.05	0.04	0.33	23.80					
	Gender	0.74	1.90	0.05	0.39	0.70	-3.06	4.53	0.38	0.05	0.03	0.43	2.32
	Education	1.55	1.33	0.11	1.17	0.25	-1.09	4.20	0.32	0.15	0.09	0.70	1.43
	Working Not Working	1.33	1.36	0.10	0.98	0.33	-1.39	4.05	-0.19	0.12	0.08	0.66	1.52
	Litigating/Not Litigating	2.44	2.22	0.14	1.10	0.28	-2.00	6.88	0.35	0.14	0.09	0.39	2.55
	IPQRF1	-0.25	0.14	-0.21	-1.79	0.08	-0.53	0.03	-0.30	-0.22	-0.15	0.46	2.18

IPQRF2	-0.08	0.18	-0.06	-0.45	0.65	-0.44	0.27	-0.10	-0.06	-0.04	0.35	2.83
IPQRF3	0.39	0.27	0.16	1.46	0.15	-0.14	0.92	0.01	0.18	0.12	0.55	1.81
IPQRF4	0.27	0.33	0.08	0.81	0.42	-0.39	0.92	-0.24	0.10	0.07	0.67	1.48
DAQ-R 1 Domestic Chore?s	-0.20	0.11	-0.23	-1.92	0.06	-0.41	0.01	0.20	-0.24	-0.16	0.48	2.09
DAQ-R 2	0.07	0.09	0.09	0.83	0.41	-0.10	0.25	0.32	0.10	0.07	0.52	1.93
DAQ-R 3	0.06	0.10	0.08	0.62	0.53	-0.13	0.25	0.48	0.08	0.05	0.37	2.69
DAQ-R 4	-0.10	0.14	-0.08	-0.74	0.46	-0.38	0.18	0.12	-0.09	-0.06	0.52	1.91
MDAQ-R 1	0.07	0.09	0.10	0.71	0.48	-0.12	0.26	0.31	0.09	0.06	0.35	2.87
MDAQ-R 2	0.07	0.09	0.10	0.86	0.39	-0.10	0.25	0.08	0.11	0.07	0.50	2.02
MDAQ-R 3	0.01	0.08	0.01	0.09	0.93	-0.15	0.16	0.30	0.01	0.01	0.30	3.29
MDAQ-R 4	-0.19	0.11	-0.21	-1.72	0.09	-0.41	0.03	-0.22	-0.21	-0.14	0.46	2.19
Pain & Disability Factor	0.23	0.85	0.03	0.27	0.79	-1.47	1.93	-0.37	0.03	0.02	0.46	2.19
Psychological Distress Factor	-3.51	1.00	-0.52	-3.50	0.00	-5.51	-1.51	-0.68	-0.40	-0.28	0.29	3.42

a. Dependent Variable: LOT Positive Life Orientation

D 19 Research Model Dispositional Optimism

Analysis Five Predicting Dispositional Optimism

Model Summary^f

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
dimension0 1.00	0.44 ^a	0.20	0.18	6.10	0.20	11.57	2.00	95.00	0.00	1.79
2.00	0.62 ^b	0.39	0.37	5.36	0.19	29.26	1.00	94.00	0.00	
3.00	0.68 ^c	0.46	0.44	5.04	0.08	13.39	1.00	93.00	0.00	
4.00	0.70 ^d	0.49	0.46	4.94	0.02	4.50	1.00	92.00	0.04	
5.00	0.70 ^e	0.49	0.46	4.97	0.00	0.01	1.00	91.00	0.91	

a. Predictors: (Constant), Education Above/Below Year 12, Gender

b. Predictors: (Constant), Education Above/Below Year 12, Gender, Beck Hopelessness Scale

c. Predictors: (Constant), Education Above/Below Year 12, Gender, Beck Hopelessness Scale, IPQRF1 Psychological Attributions

d. Predictors: (Constant), Education Above/Below Year 12, Gender, Beck Hopelessness Scale, IPQRF1 Psychological Attributions, HADS Depression

e. Predictors: (Constant), Education Above/Below Year 12, Gender, Beck Hopelessness Scale, IPQRF1 Psychological Attributions, HADS Depression, HADS Anxiety

f. **Dependent Variable: LOT Positive Life Orientation**

ANOVA^f

Model		Sum of Squares	df	Mean Square	F	Sig.
1.00	Regression	861.55	2.00	430.77	11.57	0.00 ^a
	Residual	3536.95	95.00	37.23		
	Total	4398.50	97.00			
2.00	Regression	1701.14	3.00	567.05	19.76	0.00 ^b
	Residual	2697.36	94.00	28.70		
	Total	4398.50	97.00			
3.00	Regression	2040.70	4.00	510.17	20.12	0.00 ^c
	Residual	2357.80	93.00	25.35		
	Total	4398.50	97.00			
4.00	Regression	2150.53	5.00	430.11	17.60	0.00 ^d
	Residual	2247.97	92.00	24.43		
	Total	4398.50	97.00			
5.00	Regression	2150.87	6.00	358.48	14.51	0.00 ^e
	Residual	2247.63	91.00	24.70		
	Total	4398.50	97.00			

a. Predictors: (Constant), Education Above/Below Year 12, Gender

b. Predictors: (Constant), Education Above/Below Year 12, Gender, Beck Hopelessness Scale

c. Predictors: (Constant), Education Above/Below Year 12, Gender, Beck Hopelessness Scale, IPQRF1 Psychological Attributions

d. Predictors: (Constant), Education Above/Below Year 12, Gender, Beck Hopelessness Scale, IPQRF1 Psychological Attributions, HADS Depression

e. Predictors: (Constant), Education Above/Below Year 12, Gender, Beck Hopelessness Scale, IPQRF1 Psychological Attributions, HADS Depression, HADS Anxiety

f. **Dependent Variable: LOT Positive Life Orientation**

Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Correlations			Collinearity Statistics		
	B	Std. Error	Beta			Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance	VIF	
1.00	(Constant)	5.18	3.13		1.65	0.10	-1.04	11.39					
	Gender	5.13	1.38	0.34	3.71	0.00	2.38	7.87	0.33	0.36	0.34	1.00	1.00
	Education	4.00	1.24	0.30	3.24	0.00	1.54	6.45	0.28	0.32	0.30	1.00	1.00
2.00	(Constant)	16.53	3.46		4.78	0.00	9.66	23.39					
	Gender	2.64	1.30	0.18	2.03	0.04	0.06	5.21	0.33	0.21	0.16	0.87	1.15
	Education	1.72	1.16	0.13	1.48	0.14	-0.59	4.03	0.28	0.15	0.12	0.87	1.15
	Hopelessness Scale	-0.66	0.12	-0.49	-5.41	0.00	-0.90	-0.42	-0.59	-0.49	-0.44	0.78	1.28
3.00	(Constant)	22.01	3.58		6.15	0.00	14.90	29.11					
	Gender	2.53	1.22	0.17	2.08	0.04	0.11	4.95	0.33	0.21	0.16	0.87	1.15
	Education	1.57	1.09	0.12	1.43	0.15	-0.60	3.74	0.28	0.15	0.11	0.87	1.15
	Hopelessness Scale	-0.65	0.11	-0.49	-5.70	0.00	-0.88	-0.42	-0.59	-0.51	-0.43	0.78	1.28
	IPQRF1	-0.33	0.09	-0.28	-3.66	0.00	-0.50	-0.15	-0.31	-0.35	-0.28	1.00	1.00
4.00	(Constant)	25.01	3.79		6.60	0.00	17.49	32.54					
	Gender	1.77	1.25	0.12	1.42	0.16	-0.71	4.25	0.33	0.15	0.11	0.80	1.25
	Education	1.15	1.09	0.09	1.05	0.30	-1.02	3.32	0.28	0.11	0.08	0.84	1.19
	Hopelessness Scale	-0.47	0.14	-0.35	-3.32	0.00	-0.75	-0.19	-0.59	-0.33	-0.25	0.49	2.03
	IPQRF1	-0.31	0.09	-0.27	-3.56	0.00	-0.49	-0.14	-0.31	-0.35	-0.27	0.99	1.01
	HADS Depression	-0.33	0.16	-0.23	-2.12	0.04	-0.64	-0.02	-0.58	-0.22	-0.16	0.46	2.19
5.00	(Constant)	25.07	3.84		6.52	0.00	17.44	32.70					
	Gender	1.75	1.27	0.12	1.38	0.17	-0.78	4.27	0.33	0.14	0.10	0.78	1.28
	Education	1.15	1.10	0.09	1.04	0.30	-1.04	3.33	0.28	0.11	0.08	0.84	1.19
	Hopelessness Scale	-0.46	0.15	-0.35	-3.11	0.00	-0.76	-0.17	-0.59	-0.31	-0.23	0.45	2.23
	IPQRF1	-0.31	0.10	-0.26	-2.96	0.00	-0.51	-0.10	-0.31	-0.30	-0.22	0.72	1.39
	HADS Depression	-0.32	0.18	-0.23	-1.75	0.08	-0.69	0.04	-0.58	-0.18	-0.13	0.34	2.97
	HADS Anxiety	-0.02	0.21	-0.02	-0.12	0.91	-0.44	0.39	-0.57	-0.01	-0.01	0.31	3.23

a. Dependent Variable: LOT Positive Life Orientation

D 20 Research Model Dispositional Optimism

Analysis Predicting Meaningful Daily Activity

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1.00	0.39 ^a	0.15	0.10	29.46	0.15	2.73	5.00	76.00	0.03
2.00	0.43 ^b	0.18	0.08	29.75	0.03	0.63	4.00	72.00	0.64
3.00	0.43 ^c	0.18	0.07	29.90	0.00	0.29	1.00	71.00	0.59
4.00	0.49 ^d	0.24	0.12	29.00	0.06	5.45	1.00	70.00	0.02
5.00	0.64 ^e	0.41	0.31	25.70	0.17	20.13	1.00	69.00	0.00
6.00	0.64 ^f	0.41	0.30	25.88	0.00	0.06	1.00	68.00	0.80
7.00	0.66 ^g	0.43	0.31	25.65	0.02	2.20	1.00	67.00	0.14
8.00	0.67 ^h	0.46	0.33	25.35	0.02	2.64	1.00	66.00	0.11

a. Predictors: (Constant), Litigating/Not Litigating, Married/Defacto or Single, Practices a Religion, Education Above/Below Year 12, Gender

b. Predictors: (Constant), Litigating/Not Litigating, Married/Defacto or Single, Practices a Religion, Education Above/Below Year 12, Gender, IPQRF1 Psychological Attributions, IPQRF4 Accident or Chance, IPQRF3 Immunity, IPQRF2 Risk Factors

c. Predictors: (Constant), Litigating/Not Litigating, Married/Defacto or Single, Practices a Religion, Education Above/Below Year 12, Gender, IPQRF1 Psychological Attributions, IPQRF4 Accident or Chance, IPQRF3 Immunity, IPQRF2 Risk Factors, Pain & Disability Factor

d. Predictors: (Constant), Litigating/Not Litigating, Married/Defacto or Single, Practices a Religion, Education Above/Below Year 12, Gender, IPQRF1 Psychological Attributions, IPQRF4 Accident or Chance, IPQRF3 Immunity, IPQRF2 Risk Factors, Pain & Disability Factor, Psychological Distress Factor

e. Predictors: (Constant), Litigating/Not Litigating, Married/Defacto or Single, Practices a Religion, Education Above/Below Year 12, Gender, IPQRF1 Psychological Attributions, IPQRF4 Accident or Chance, IPQRF3 Immunity, IPQRF2 Risk Factors, Pain & Disability Factor, Psychological Distress Factor, DAQR- R Sum

f. Predictors: (Constant), Litigating/Not Litigating, Married/Defacto or Single, Practices a Religion, Education Above/Below Year 12, Gender, IPQRF1 Psychological Attributions, IPQRF4 Accident or Chance, IPQRF3 Immunity, IPQRF2 Risk Factors, Pain & Disability Factor, Psychological Distress Factor, DAQR- R Sum, Positive Life Orientation

g. Predictors: (Constant), Litigating/Not Litigating, Married/Defacto or Single, Practices a Religion, Education Above/Below Year 12, Gender, IPQRF1 Psychological Attributions, IPQRF4 Accident or Chance, IPQRF3 Immunity, IPQRF2 Risk Factors, Pain & Disability Factor, Psychological Distress Factor, DAQR- R Sum, Positive Life Orientation, VAS Satisfaction with Life

h. Predictors: (Constant), Litigating/Not Litigating, Married/Defacto or Single, Practices a Religion, Education Above/Below Year 12, Gender, IPQRF1 Psychological Attributions, IPQRF4 Accident or Chance, IPQRF3 Immunity, IPQRF2 Risk Factors, Pain & Disability Factor, Psychological Distress Factor, DAQR- R Sum, Positive Life Orientation, VAS Satisfaction with Life , VAS Meaningfulness of Daily Activities

ANOVAⁱ

Model		Sum of Squares	df	Mean Square	F	Sig.
1.00	Regression	11858.77	5.00	2371.75	2.73	0.03 ^a
	Residual	65967.24	76.00	867.99		
	Total	77826.01	81.00			
2.00	Regression	14088.21	9.00	1565.36	1.77	0.09 ^b
	Residual	63737.80	72.00	885.25		
	Total	77826.01	81.00			
3.00	Regression	14350.00	10.00	1435.00	1.61	0.12 ^c
	Residual	63476.02	71.00	894.03		
	Total	77826.01	81.00			
4.00	Regression	18936.24	11.00	1721.48	2.05	0.04 ^d
	Residual	58889.77	70.00	841.28		
	Total	77826.01	81.00			
5.00	Regression	32236.53	12.00	2686.38	4.07	0.00 ^e
	Residual	45589.49	69.00	660.72		
	Total	77826.01	81.00			
6.00	Regression	32279.75	13.00	2483.06	3.71	0.00 ^f
	Residual	45546.26	68.00	669.80		
	Total	77826.01	81.00			
7.00	Regression	33728.48	14.00	2409.18	3.66	0.00 ^g
	Residual	44097.53	67.00	658.17		
	Total	77826.01	81.00			
8.00	Regression	35421.46	15.00	2361.43	3.68	0.00 ^h
	Residual	42404.55	66.00	642.49		
	Total	77826.01	81.00			

- a. Predictors: (Constant), Litigating/Not Litigating, Married/Defacto or Single, Practices a Religion, Education Above/Below Year 12, Gender
- b. Predictors: (Constant), Litigating/Not Litigating, Married/Defacto or Single, Practices a Religion, Education Above/Below Year 12, Gender, IPQRF1 Psychological Attributions, IPQRF4 Accident or Chance, IPQRF3 Immunity, IPQRF2 Risk Factors
- c. Predictors: (Constant), Litigating/Not Litigating, Married/Defacto or Single, Practices a Religion, Education Above/Below Year 12, Gender, IPQRF1 Psychological Attributions, IPQRF4 Accident or Chance, IPQRF3 Immunity, IPQRF2 Risk Factors, Pain & Disability Factor
- d. Predictors: (Constant), Litigating/Not Litigating, Married/Defacto or Single, Practices a Religion, Education Above/Below Year 12, Gender, IPQRF1 Psychological Attributions, IPQRF4 Accident or Chance, IPQRF3 Immunity, IPQRF2 Risk Factors, Pain & Disability Factor, Psychological Distress Factor
- e. Predictors: (Constant), Litigating/Not Litigating, Married/Defacto or Single, Practices a Religion, Education Above/Below Year 12, Gender, IPQRF1 Psychological Attributions, IPQRF4 Accident or Chance, IPQRF3 Immunity, IPQRF2 Risk Factors, Pain & Disability Factor, Psychological Distress Factor, DAQR- R Sum
- f. Predictors: (Constant), Litigating/Not Litigating, Married/Defacto or Single, Practices a Religion, Education Above/Below Year 12, Gender, IPQRF1 Psychological Attributions, IPQRF4 Accident or Chance, IPQRF3 Immunity, IPQRF2 Risk Factors, Pain & Disability Factor, Psychological Distress Factor, DAQR- R Sum, Positive Life Orientation
- g. Predictors: (Constant), Litigating/Not Litigating, Married/Defacto or Single, Practices a Religion, Education Above/Below Year 12, Gender, IPQRF1 Psychological Attributions, IPQRF4 Accident or Chance, IPQRF3 Immunity, IPQRF2 Risk Factors, Pain & Disability Factor, Psychological Distress Factor, DAQR- R Sum, Positive Life Orientation, VAS Satisfaction with Life
- h. Predictors: (Constant), Litigating/Not Litigating, Married/Defacto or Single, Practices a Religion, Education Above/Below Year 12, Gender, IPQRF1 Psychological Attributions, IPQRF4 Accident or Chance, IPQRF3 Immunity, IPQRF2 Risk Factors, Pain & Disability Factor, Psychological Distress Factor, DAQR- R Sum, Positive Life Orientation, VAS Satisfaction with Life , VAS Meaningfulness of Daily Activities
- i. Dependent Variable: MDAQ-R Sum

Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Correlations			Collinearity Statistics		
	B	Std. Error	Beta			Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance	VIF	
1.00	(Constant)	70.79	21.35		3.32	0.00	28.26	113.32					
	Gender	-2.78	8.60	-0.04	-0.32	0.75	-19.91	14.35	0.05	-0.04	-0.03	0.73	1.37
	Education	15.52	6.67	0.25	2.33	0.02	2.24	28.81	0.27	0.26	0.25	0.96	1.04
	Above/Below Year 12												
	Married/Defacto or Single	-5.06	7.41	-0.07	-0.68	0.50	-19.83	9.71	-0.08	-0.08	-0.07	0.95	1.05
	Practices a Religion	-14.13	6.74	-0.23	-2.10	0.04	-27.56	-0.70	-0.18	-0.23	-0.22	0.95	1.05
	Litigating/Not Litigating	16.10	9.58	0.21	1.68	0.10	-2.99	35.18	0.19	0.19	0.18	0.73	1.36
2.00	(Constant)	76.03	29.52		2.58	0.01	17.18	134.87					
	Gender	-1.17	9.07	-0.02	-0.13	0.90	-19.24	16.90	0.05	-0.02	-0.01	0.67	1.49
	Education	15.88	7.08	0.26	2.24	0.03	1.77	30.00	0.27	0.26	0.24	0.87	1.15
	Above/Below Year 12												
	Married/Defacto or Single	-5.50	7.85	-0.08	-0.70	0.49	-21.14	10.15	-0.08	-0.08	-0.07	0.87	1.15
	Practices a Religion	-14.44	7.05	-0.23	-2.05	0.04	-28.49	-0.39	-0.18	-0.23	-0.22	0.89	1.13
	Litigating/Not Litigating	11.85	11.91	0.15	1.00	0.32	-11.89	35.59	0.19	0.12	0.11	0.48	2.06
	IPQRF1 Psychological Attributions	0.33	0.77	0.06	0.43	0.67	-1.20	1.86	0.05	0.05	0.05	0.53	1.88
	IPQRF2 Risk Factors	0.86	1.00	0.15	0.85	0.40	-1.14	2.85	0.11	0.10	0.09	0.39	2.55
	IPQRF3 Immunity	-1.84	1.50	-0.17	-1.23	0.22	-4.82	1.14	-0.05	-0.14	-0.13	0.63	1.59
	IPQRF4 Accident or Chance	-1.16	1.78	-0.08	-0.65	0.52	-4.70	2.38	-0.08	-0.08	-0.07	0.81	1.23
3.00	(Constant)	78.37	29.98		2.61	0.01	18.60	138.15					
	Gender	-1.59	9.14	-0.02	-0.17	0.86	-19.83	16.64	0.05	-0.02	-0.02	0.66	1.51
	Education	14.93	7.33	0.24	2.04	0.05	0.32	29.55	0.27	0.24	0.22	0.82	1.23
	Above/Below Year 12												
	Married/Defacto or Single	-4.26	8.21	-0.06	-0.52	0.61	-20.63	12.12	-0.08	-0.06	-0.06	0.80	1.25
	Practices a Religion	-14.22	7.09	-0.23	-2.00	0.05	-28.36	-0.07	-0.18	-0.23	-0.21	0.89	1.13
	Litigating/Not Litigating	10.35	12.28	0.13	0.84	0.40	-14.14	34.84	0.19	0.10	0.09	0.46	2.17
	IPQRF1 Psychological Attributions	0.45	0.80	0.08	0.56	0.58	-1.15	2.04	0.05	0.07	0.06	0.49	2.02

	IPQRF2 Risk Factors	0.74	1.03	0.13	0.72	0.47	-1.31	2.79	0.11	0.09	0.08	0.38	2.66
	IPQRF3 Immunity	-1.76	1.51	-0.16	-1.16	0.25	-4.77	1.25	-0.05	-0.14	-0.12	0.62	1.61
	IPQRF4 Accident or Chance	-1.13	1.79	-0.08	-0.63	0.53	-4.70	2.43	-0.08	-0.08	-0.07	0.81	1.23
	Pain & Disability Factor	-2.27	4.20	-0.07	-0.54	0.59	-10.64	6.10	-0.22	-0.06	-0.06	0.67	1.49
4.00	(Constant)	93.03	29.75		3.13	0.00	33.69	152.37					
	Gender	-8.53	9.35	-0.12	-0.91	0.36	-27.19	10.13	0.05	-0.11	-0.09	0.60	1.67
	Education	9.91	7.43	0.16	1.33	0.19	-4.91	24.72	0.27	0.16	0.14	0.75	1.34
	Above/Below Year 12												
	Married/Defacto or Single	-2.84	7.99	-0.04	-0.36	0.72	-18.78	13.10	-0.08	-0.04	-0.04	0.80	1.26
	Practices a Religion	-14.07	6.88	-0.23	-2.04	0.04	-27.79	-0.34	-0.18	-0.24	-0.21	0.89	1.13
	Litigating/Not Litigating	6.62	12.02	0.09	0.55	0.58	-17.36	30.60	0.19	0.07	0.06	0.45	2.21
	IPQRF1 Psychological Attributions	0.70	0.78	0.13	0.90	0.37	-0.86	2.27	0.05	0.11	0.09	0.48	2.07
	IPQRF2 Risk Factors	0.55	1.00	0.09	0.55	0.58	-1.44	2.55	0.11	0.07	0.06	0.37	2.67
	IPQRF3 Immunity	-1.60	1.47	-0.14	-1.09	0.28	-4.53	1.32	-0.05	-0.13	-0.11	0.62	1.61
	IPQRF4 Accident or Chance	-0.03	1.80	0.00	-0.02	0.99	-3.62	3.55	-0.08	0.00	0.00	0.76	1.32
	Pain & Disability Factor	2.01	4.46	0.06	0.45	0.65	-6.89	10.92	-0.22	0.05	0.05	0.56	1.79
	Psychological Distress Factor	-11.22	4.81	-0.37	-2.33	0.02	-20.81	-1.64	-0.36	-0.27	-0.24	0.43	2.34
5.00	(Constant)	45.92	28.38		1.62	0.11	-10.70	102.53					
	Gender	-12.82	8.35	-0.18	-1.54	0.13	-29.47	3.83	0.05	-0.18	-0.14	0.59	1.70
	Education	10.03	6.58	0.16	1.52	0.13	-3.10	23.16	0.27	0.18	0.14	0.75	1.34
	Above/Below Year 12												
	Married/Defacto or Single	4.41	7.26	0.06	0.61	0.55	-10.08	18.90	-0.08	0.07	0.06	0.76	1.32
	Practices a Religion	-4.31	6.48	-0.07	-0.67	0.51	-17.23	8.61	-0.18	-0.08	-0.06	0.79	1.27
	Litigating/Not Litigating	-10.35	11.31	-0.13	-0.92	0.36	-32.91	12.20	0.19	-0.11	-0.08	0.40	2.49
	IPQRF1 Psychological Attributions	0.70	0.69	0.13	1.00	0.32	-0.69	2.08	0.05	0.12	0.09	0.48	2.07
	IPQRF2 Risk Factors	-0.29	0.91	-0.05	-0.32	0.75	-2.10	1.52	0.11	-0.04	-0.03	0.36	2.79
	IPQRF3 Immunity	-0.14	1.34	-0.01	-0.10	0.92	-2.81	2.54	-0.05	-0.01	-0.01	0.58	1.72
	IPQRF4 Accident or Chance	-0.97	1.61	-0.06	-0.61	0.55	-4.18	2.23	-0.08	-0.07	-0.06	0.74	1.35
	Pain & Disability Factor	-1.22	4.02	-0.04	-0.30	0.76	-9.24	6.80	-0.22	-0.04	-0.03	0.54	1.85
	Psychological Distress Factor	0.20	4.96	0.01	0.04	0.97	-9.70	10.10	-0.36	0.00	0.00	0.32	3.17

	DAQR- R Sum	0.93	0.21	0.68	4.49	0.00	0.52	1.35	0.57	0.48	0.41	0.37	2.69
6.00	(Constant)	48.35	30.14		1.60	0.11	-11.80	108.50					
	Gender	-12.60	8.45	-0.18	-1.49	0.14	-29.45	4.26	0.05	-0.18	-0.14	0.58	1.72
	Education	10.31	6.72	0.17	1.53	0.13	-3.10	23.72	0.27	0.18	0.14	0.73	1.37
	Above/Below Year 12												
	Married/Defacto or Single	4.41	7.31	0.06	0.60	0.55	-10.19	19.00	-0.08	0.07	0.06	0.76	1.32
	Practices a Religion	-4.38	6.53	-0.07	-0.67	0.50	-17.40	8.64	-0.18	-0.08	-0.06	0.78	1.28
	Litigating/Not Litigating	-10.17	11.41	-0.13	-0.89	0.38	-32.93	12.60	0.19	-0.11	-0.08	0.40	2.50
	IPQRF1 Psychological Attributions	0.66	0.71	0.13	0.92	0.36	-0.76	2.08	0.05	0.11	0.09	0.47	2.15
	IPQRF2 Risk Factors	-0.30	0.91	-0.05	-0.33	0.74	-2.13	1.52	0.11	-0.04	-0.03	0.36	2.80
	IPQRF3 Immunity	-0.07	1.37	-0.01	-0.05	0.96	-2.81	2.67	-0.05	-0.01	-0.01	0.56	1.77
	IPQRF4 Accident or Chance	-0.94	1.62	-0.06	-0.58	0.56	-4.18	2.29	-0.08	-0.07	-0.05	0.74	1.35
	Pain & Disability Factor	-1.13	4.06	-0.04	-0.28	0.78	-9.24	6.97	-0.22	-0.03	-0.03	0.54	1.86
	Psychological Distress Factor	-0.45	5.61	-0.01	-0.08	0.94	-11.65	10.76	-0.36	-0.01	-0.01	0.25	4.01
	DAQR- R Sum	0.93	0.21	0.68	4.44	0.00	0.51	1.35	0.57	0.47	0.41	0.37	2.69
	Positive Life Orientation	-0.16	0.62	-0.03	-0.25	0.80	-1.38	1.07	0.20	-0.03	-0.02	0.46	2.16
7.00	(Constant)	66.28	32.23		2.06	0.04	1.95	130.61					
	Gender	-15.10	8.54	-0.22	-1.77	0.08	-32.15	1.96	0.05	-0.21	-0.16	0.56	1.79
	Education	10.64	6.67	0.17	1.60	0.12	-2.66	23.95	0.27	0.19	0.15	0.73	1.38
	Above/Below Year 12												
	Married/Defacto or Single	4.34	7.25	0.06	0.60	0.55	-10.13	18.82	-0.08	0.07	0.06	0.76	1.32
	Practices a Religion	-5.24	6.49	-0.08	-0.81	0.42	-18.21	7.72	-0.18	-0.10	-0.07	0.78	1.29
	Litigating/Not Litigating	-6.41	11.59	-0.08	-0.55	0.58	-29.54	16.71	0.19	-0.07	-0.05	0.38	2.63
	IPQRF1 Psychological Attributions	0.67	0.71	0.13	0.94	0.35	-0.74	2.08	0.05	0.11	0.09	0.47	2.15
	IPQRF2 Risk Factors	-0.20	0.91	-0.03	-0.22	0.83	-2.01	1.62	0.11	-0.03	-0.02	0.35	2.82
	IPQRF3 Immunity	-0.15	1.36	-0.01	-0.11	0.92	-2.86	2.57	-0.05	-0.01	-0.01	0.56	1.77
	IPQRF4 Accident or Chance	-1.49	1.65	-0.10	-0.91	0.37	-4.79	1.80	-0.08	-0.11	-0.08	0.70	1.43
	Pain & Disability Factor	-1.34	4.03	-0.04	-0.33	0.74	-9.38	6.70	-0.22	-0.04	-0.03	0.54	1.87
	Psychological Distress Factor	-3.53	5.94	-0.12	-0.59	0.55	-15.40	8.33	-0.36	-0.07	-0.05	0.22	4.57
	DAQR- R Sum	0.94	0.21	0.68	4.53	0.00	0.53	1.35	0.57	0.48	0.42	0.37	2.70

	Positive Life Orientation	-0.12	0.61	-0.03	-0.20	0.84	-1.34	1.10	0.20	-0.02	-0.02	0.46	2.16
	VAS Satisfaction with Life	-4.84	3.26	-0.21	-1.48	0.14	-11.35	1.67	0.21	-0.18	-0.14	0.44	2.28
8.00	(Constant)	65.76	31.85		2.06	0.04	2.18	129.34					
	Gender	-17.31	8.55	-0.25	-2.02	0.05	-34.38	-0.24	0.05	-0.24	-0.18	0.55	1.83
	Education Above/Below Year 12	9.81	6.61	0.16	1.49	0.14	-3.37	23.00	0.27	0.18	0.13	0.72	1.38
	Married/Defacto or Single	4.14	7.16	0.06	0.58	0.57	-10.16	18.45	-0.08	0.07	0.05	0.76	1.32
	Practices a Religion	-5.57	6.42	-0.09	-0.87	0.39	-18.39	7.24	-0.18	-0.11	-0.08	0.78	1.29
	Litigating/Not Litigating	-3.36	11.60	-0.04	-0.29	0.77	-26.52	19.80	0.19	-0.04	-0.03	0.37	2.70
	IPQRF1 Psychological Attributions	0.65	0.70	0.12	0.93	0.35	-0.74	2.05	0.05	0.11	0.08	0.47	2.15
	IPQRF2 Risk Factors	-0.19	0.90	-0.03	-0.21	0.84	-1.98	1.61	0.11	-0.03	-0.02	0.35	2.82
	IPQRF3 Immunity	-0.22	1.35	-0.02	-0.16	0.87	-2.91	2.47	-0.05	-0.02	-0.01	0.56	1.78
	IPQRF4 Accident or Chance	-1.64	1.63	-0.11	-1.01	0.32	-4.90	1.61	-0.08	-0.12	-0.09	0.70	1.43
	Pain & Disability Factor	-1.14	3.98	-0.04	-0.29	0.78	-9.09	6.81	-0.22	-0.04	-0.03	0.54	1.87
	Psychological Distress Factor	-3.75	5.87	-0.12	-0.64	0.53	-15.47	7.98	-0.36	-0.08	-0.06	0.22	4.57
	DAQR- R Sum	0.87	0.21	0.63	4.16	0.00	0.45	1.29	0.57	0.46	0.38	0.36	2.81
	Positive Life Orientation	-0.09	0.60	-0.02	-0.16	0.88	-1.30	1.11	0.20	-0.02	-0.01	0.46	2.16
	VAS Satisfaction with Life	-7.66	3.66	-0.33	-2.09	0.04	-14.97	-0.35	0.21	-0.25	-0.19	0.34	2.94
	VAS Meaningfulness of Daily Activities	4.55	2.80	0.20	1.62	0.11	-1.05	10.14	0.34	0.20	0.15	0.54	1.87

a. Dependent Variable: MDAQ-R Sum

D 21 Analysis Predicting Daily Activity

Model Summary^j

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
dimension0 1.00	0.67 ^a	0.45	0.41	17.35	0.45	12.21	5.00	76.00	0.00	
2.00	0.70 ^b	0.49	0.43	17.03	0.05	1.71	4.00	72.00	0.16	
3.00	0.70 ^c	0.50	0.42	17.12	0.00	0.25	1.00	71.00	0.62	
4.00	0.79 ^d	0.63	0.57	14.80	0.13	25.02	1.00	70.00	0.00	
5.00	0.84 ^e	0.71	0.66	13.12	0.08	20.13	1.00	69.00	0.00	
6.00	0.84 ^f	0.71	0.66	13.21	0.00	0.02	1.00	68.00	0.88	
7.00	0.85 ^g	0.72	0.66	13.22	0.00	0.93	1.00	67.00	0.34	
8.00	0.85 ^h	0.72	0.65	13.26	0.00	0.53	1.00	66.00	0.47	1.95

- a. Predictors: (Constant), Litigating/Not Litigating, Married/Defacto or Single, Practices a Religion, Education Above/Below Year 12, Gender
- b. Predictors: (Constant), Litigating/Not Litigating, Married/Defacto or Single, Practices a Religion, Education Above/Below Year 12, Gender, IPQRF1 Psychological Attributions, IPQRF4 Accident or Chance, IPQRF3 Immunity, IPQRF2 Risk Factors
- c. Predictors: (Constant), Litigating/Not Litigating, Married/Defacto or Single, Practices a Religion, Education Above/Below Year 12, Gender, IPQRF1 Psychological Attributions, IPQRF4 Accident or Chance, IPQRF3 Immunity, IPQRF2 Risk Factors, Pain & Disability Factor
- d. Predictors: (Constant), Litigating/Not Litigating, Married/Defacto or Single, Practices a Religion, Education Above/Below Year 12, Gender, IPQRF1 Psychological Attributions, IPQRF4 Accident or Chance, IPQRF3 Immunity, IPQRF2 Risk Factors, Pain & Disability Factor, Psychological Distress Factor
- e. Predictors: (Constant), Litigating/Not Litigating, Married/Defacto or Single, Practices a Religion, Education Above/Below Year 12, Gender, IPQRF1 Psychological Attributions, IPQRF4 Accident or Chance, IPQRF3 Immunity, IPQRF2 Risk Factors, Pain & Disability Factor, Psychological Distress Factor, MDAQ-R Sum
- f. Predictors: (Constant), Litigating/Not Litigating, Married/Defacto or Single, Practices a Religion, Education Above/Below Year 12, Gender, IPQRF1 Psychological Attributions, IPQRF4 Accident or Chance, IPQRF3 Immunity, IPQRF2 Risk Factors, Pain & Disability Factor, Psychological Distress Factor, MDAQ-R Sum, LOT Positive Life Orientation
- g. Predictors: (Constant), Litigating/Not Litigating, Married/Defacto or Single, Practices a Religion, Education Above/Below Year 12, Gender, IPQRF1 Psychological Attributions, IPQRF4 Accident or Chance, IPQRF3 Immunity, IPQRF2 Risk Factors, Pain & Disability Factor, Psychological Distress Factor, MDAQ-R Sum, LOT Positive Life Orientation, VAS Satisfaction with Life
- h. Predictors: (Constant), Litigating/Not Litigating, Married/Defacto or Single, Practices a Religion, Education Above/Below Year 12, Gender, IPQRF1 Psychological Attributions, IPQRF4 Accident or Chance, IPQRF3 Immunity, IPQRF2 Risk Factors, Pain & Disability Factor, Psychological Distress Factor, MDAQ-R Sum, LOT Positive Life Orientation, VAS Satisfaction with Life, VAS Meaningfulness of Daily Activities
- i. Dependent Variable: DAQR- R Sum

ANOVAⁱ

Model	Sum of Squares	df	Mean Square	F	Sig.
1.00 Regression	18369.88	5.00	3673.98	12.21	0.00 ^a
Residual	22874.82	76.00	300.98		
Total	41244.70	81.00			
2.00 Regression	20352.59	9.00	2261.40	7.79	0.00 ^b
Residual	20892.11	72.00	290.17		
Total	41244.70	81.00			
3.00 Regression	20427.26	10.00	2042.73	6.97	0.00 ^c
Residual	20817.43	71.00	293.20		
Total	41244.70	81.00			
4.00 Regression	25908.56	11.00	2355.32	10.75	0.00 ^d
Residual	15336.14	70.00	219.09		
Total	41244.70	81.00			
5.00 Regression	29372.23	12.00	2447.69	14.23	0.00 ^e
Residual	11872.46	69.00	172.06		
Total	41244.70	81.00			
6.00 Regression	29376.01	13.00	2259.69	12.95	0.00 ^f
Residual	11868.69	68.00	174.54		
Total	41244.70	81.00			
7.00 Regression	29538.95	14.00	2109.93	12.08	0.00 ^g
Residual	11705.74	67.00	174.71		
Total	41244.70	81.00			
8.00 Regression	29632.16	15.00	1975.48	11.23	0.00 ^h
Residual	11612.54	66.00	175.95		
Total	41244.70	81.00			

a. Predictors: (Constant), Litigating/Not Litigating, Married/Defacto or Single, Practices a Religion, Education Above/Below Year 12, Gender

b. Predictors: (Constant), Litigating/Not Litigating, Married/Defacto or Single, Practices a Religion, Education Above/Below Year 12, Gender, IPQRF1 Psychological Attributions, IPQRF4 Accident or Chance, IPQRF3 Immunity, IPQRF2 Risk Factors

c. Predictors: (Constant), Litigating/Not Litigating, Married/Defacto or Single, Practices a Religion, Education Above/Below Year 12, Gender, IPQRF1 Psychological Attributions, IPQRF4 Accident or Chance, IPQRF3 Immunity, IPQRF2 Risk Factors, Pain & Disability Factor

d. Predictors: (Constant), Litigating/Not Litigating, Married/Defacto or Single, Practices a Religion, Education Above/Below Year 12, Gender, IPQRF1 Psychological Attributions, IPQRF4 Accident or Chance, IPQRF3 Immunity, IPQRF2 Risk Factors, Pain & Disability Factor, Psychological Distress Factor

e. Predictors: (Constant), Litigating/Not Litigating, Married/Defacto or Single, Practices a Religion, Education Above/Below Year 12, Gender, IPQRF1 Psychological Attributions, IPQRF4 Accident or Chance, IPQRF3 Immunity, IPQRF2 Risk Factors, Pain & Disability Factor, Psychological Distress Factor, MDAQ-R Sum

f. Predictors: (Constant), Litigating/Not Litigating, Married/Defacto or Single, Practices a Religion, Education Above/Below Year 12, Gender, IPQRF1 Psychological Attributions, IPQRF4 Accident or Chance, IPQRF3 Immunity, IPQRF2 Risk Factors, Pain & Disability Factor, Psychological Distress Factor, MDAQ-R Sum, LOT Positive Life Orientation

g. Predictors: (Constant), Litigating/Not Litigating, Married/Defacto or Single, Practices a Religion, Education Above/Below Year 12, Gender, IPQRF1 Psychological Attributions, IPQRF4 Accident or Chance, IPQRF3 Immunity, IPQRF2 Risk Factors, Pain & Disability Factor, Psychological Distress Factor, MDAQ-R Sum, LOT Positive Life Orientation, VAS Satisfaction with Life

h. Predictors: (Constant), Litigating/Not Litigating, Married/Defacto or Single, Practices a Religion, Education Above/Below Year 12, Gender, IPQRF1 Psychological Attributions, IPQRF4 Accident or Chance, IPQRF3 Immunity, IPQRF2 Risk Factors, Pain & Disability Factor, Psychological Distress Factor, MDAQ-R Sum, LOT Positive Life Orientation, VAS Satisfaction with Life, VAS Meaningfulness of Daily Activities

i. Dependent Variable: DAQR- R Sum

Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Correlations		
	B	Std. Error	Beta			Lower Bound	Upper Bound	Zero-order	Partial	Part
1.00 (Constant)	33.39	12.57		2.66	0.01	8.35	58.43			
Gender	11.02	5.06	0.22	2.18	0.03	0.94	21.11	0.41	0.24	0.19
Education Above/Below Year 12	5.57	3.93	0.12	1.42	0.16	-2.25	13.39	0.17	0.16	0.12
Married/Defacto or Single	-10.98	4.37	-0.22	-2.51	0.01	-19.67	-2.28	-0.15	-0.28	-0.21
Practices a Religion	-11.27	3.97	-0.25	-2.84	0.01	-19.18	-3.36	-0.22	-0.31	-0.24
Litigating/Not Litigating	26.29	5.64	0.46	4.66	0.00	15.05	37.53	0.53	0.47	0.40
2.00 (Constant)	33.32	16.90		1.97	0.05	-0.37	67.01			
Gender	12.42	5.19	0.25	2.39	0.02	2.07	22.76	0.41	0.27	0.20
Education Above/Below Year 12	5.87	4.05	0.13	1.45	0.15	-2.21	13.95	0.17	0.17	0.12
Married/Defacto or Single	-9.99	4.49	-0.20	-2.22	0.03	-18.95	-1.04	-0.15	-0.25	-0.19
Practices a Religion	-10.76	4.03	-0.24	-2.67	0.01	-18.81	-2.72	-0.22	-0.30	-0.22
Litigating/Not Litigating	23.10	6.82	0.41	3.39	0.00	9.51	36.70	0.53	0.37	0.28
IPQRF1 Psychological Attributions	-0.33	0.44	-0.09	-0.76	0.45	-1.21	0.54	-0.03	-0.09	-0.06
IPQRF2 Risk Factors	1.17	0.57	0.27	2.05	0.04	0.03	2.32	0.23	0.23	0.17
IPQRF3 Immunity	-1.79	0.86	-0.22	-2.09	0.04	-3.50	-0.08	-0.01	-0.24	-0.18
IPQRF4 Accident or Chance	-0.21	1.02	-0.02	-0.20	0.84	-2.24	1.82	-0.16	-0.02	-0.02
3.00 (Constant)	34.57	17.17		2.01	0.05	0.34	68.80			
Gender	12.19	5.24	0.24	2.33	0.02	1.75	22.63	0.41	0.27	0.20
Education Above/Below Year 12	5.36	4.20	0.12	1.28	0.21	-3.01	13.73	0.17	0.15	0.11
Married/Defacto or Single	-9.33	4.70	-0.19	-1.98	0.05	-18.71	0.05	-0.15	-0.23	-0.17
Practices a Religion	-10.64	4.06	-0.23	-2.62	0.01	-18.75	-2.54	-0.22	-0.30	-0.22
Litigating/Not Litigating	22.30	7.03	0.39	3.17	0.00	8.28	36.33	0.53	0.35	0.27
IPQRF1 Psychological Attributions	-0.27	0.46	-0.07	-0.60	0.55	-1.19	0.64	-0.03	-0.07	-0.05
IPQRF2 Risk Factors	1.11	0.59	0.26	1.89	0.06	-0.06	2.29	0.23	0.22	0.16
IPQRF3 Immunity	-1.75	0.87	-0.22	-2.02	0.05	-3.47	-0.02	-0.01	-0.23	-0.17
IPQRF4 Accident or Chance	-0.20	1.02	-0.02	-0.19	0.85	-2.24	1.85	-0.16	-0.02	-0.02
Pain & Disability Factor	-1.21	2.40	-0.05	-0.50	0.62	-6.00	3.58	-0.38	-0.06	-0.04
4.00 (Constant)	50.59	15.18		3.33	0.00	20.31	80.87			
Gender	4.61	4.77	0.09	0.96	0.34	-4.92	14.13	0.41	0.11	0.07
Education Above/Below Year 12	-0.13	3.79	0.00	-0.03	0.97	-7.69	7.43	0.17	0.00	0.00
Married/Defacto or Single	-7.79	4.08	-0.16	-1.91	0.06	-15.92	0.35	-0.15	-0.22	-0.14

	Practices a Religion	-10.48	3.51	-0.23	-2.98	0.00	-17.48	-3.47	-0.22	-0.34	-0.22
	Litigating/Not Litigating	18.22	6.14	0.32	2.97	0.00	5.99	30.46	0.53	0.33	0.22
	IPQRF1 Psychological Attributions	0.01	0.40	0.00	0.02	0.98	-0.79	0.81	-0.03	0.00	0.00
	IPQRF2 Risk Factors	0.90	0.51	0.21	1.77	0.08	-0.11	1.92	0.23	0.21	0.13
	IPQRF3 Immunity	-1.58	0.75	-0.19	-2.10	0.04	-3.07	-0.08	-0.01	-0.24	-0.15
	IPQRF4 Accident or Chance	1.01	0.92	0.09	1.10	0.27	-0.82	2.84	-0.16	0.13	0.08
	Pain & Disability Factor	3.47	2.28	0.15	1.52	0.13	-1.07	8.01	-0.38	0.18	0.11
	Psychological Distress Factor	-12.27	2.45	-0.56	-5.00	0.00	-17.16	-7.38	-0.66	-0.51	-0.36
5.00	(Constant)	28.03	14.36		1.95	0.06	-0.62	56.69			
	Gender	6.67	4.26	0.13	1.57	0.12	-1.82	15.17	0.41	0.19	0.10
	Education Above/Below Year 12	-2.53	3.40	-0.06	-0.74	0.46	-9.32	4.25	0.17	-0.09	-0.05
	Married/Defacto or Single	-7.10	3.62	-0.14	-1.96	0.05	-14.31	0.12	-0.15	-0.23	-0.13
	Practices a Religion	-7.07	3.20	-0.16	-2.21	0.03	-13.46	-0.68	-0.22	-0.26	-0.14
	Litigating/Not Litigating	16.62	5.45	0.29	3.05	0.00	5.75	27.49	0.53	0.34	0.20
	IPQRF1 Psychological Attributions	-0.16	0.36	-0.04	-0.46	0.65	-0.87	0.55	-0.03	-0.05	-0.03
	IPQRF2 Risk Factors	0.77	0.45	0.18	1.70	0.09	-0.13	1.67	0.23	0.20	0.11
	IPQRF3 Immunity	-1.19	0.67	-0.15	-1.77	0.08	-2.52	0.15	-0.01	-0.21	-0.11
	IPQRF4 Accident or Chance	1.02	0.81	0.09	1.25	0.21	-0.60	2.64	-0.16	0.15	0.08
	Pain & Disability Factor	2.98	2.02	0.13	1.48	0.14	-1.05	7.02	-0.38	0.17	0.10
	Psychological Distress Factor	-9.55	2.26	-0.43	-4.23	0.00	-14.05	-5.04	-0.66	-0.45	-0.27
	MDAQ-R Sum	0.24	0.05	0.33	4.49	0.00	0.13	0.35	0.57	0.48	0.29
6.00	(Constant)	28.75	15.28		1.88	0.06	-1.74	59.25			
	Gender	6.74	4.31	0.13	1.56	0.12	-1.86	15.33	0.41	0.19	0.10
	Education Above/Below Year 12	-2.45	3.48	-0.05	-0.70	0.48	-9.38	4.49	0.17	-0.09	-0.05
	Married/Defacto or Single	-7.09	3.64	-0.14	-1.95	0.06	-14.36	0.18	-0.15	-0.23	-0.13
	Practices a Religion	-7.09	3.23	-0.16	-2.19	0.03	-13.53	-0.64	-0.22	-0.26	-0.14
	Litigating/Not Litigating	16.67	5.50	0.29	3.03	0.00	5.70	27.64	0.53	0.35	0.20
	IPQRF1 Psychological Attributions	-0.17	0.37	-0.05	-0.47	0.64	-0.90	0.56	-0.03	-0.06	-0.03
	IPQRF2 Risk Factors	0.77	0.46	0.18	1.67	0.10	-0.15	1.68	0.23	0.20	0.11
	IPQRF3 Immunity	-1.17	0.69	-0.14	-1.70	0.09	-2.54	0.20	-0.01	-0.20	-0.11
	IPQRF4 Accident or Chance	1.03	0.82	0.09	1.25	0.22	-0.61	2.66	-0.16	0.15	0.08
	Pain & Disability Factor	3.01	2.04	0.13	1.47	0.15	-1.07	7.08	-0.38	0.18	0.10
	Psychological Distress Factor	-9.74	2.61	-0.44	-3.73	0.00	-14.95	-4.52	-0.66	-0.41	-0.24
	MDAQ-R Sum	0.24	0.05	0.33	4.44	0.00	0.13	0.35	0.57	0.47	0.29
	LOT Positive Life Orientation	-0.05	0.31	-0.01	-0.15	0.88	-0.67	0.58	0.42	-0.02	-0.01
7.00	(Constant)	21.77	16.91		1.29	0.20	-11.99	55.53			
	Gender	7.63	4.41	0.15	1.73	0.09	-1.17	16.42	0.41	0.21	0.11

	Education Above/Below Year 12	-2.64	3.48	-0.06	-0.76	0.45	-9.59	4.32	0.17	-0.09	-0.05
	Married/Defacto or Single	-7.02	3.65	-0.14	-1.93	0.06	-14.30	0.26	-0.15	-0.23	-0.13
	Practices a Religion	-6.65	3.26	-0.15	-2.04	0.05	-13.16	-0.14	-0.22	-0.24	-0.13
	Litigating/Not Litigating	15.28	5.68	0.27	2.69	0.01	3.93	26.62	0.53	0.31	0.17
	IPQRF1 Psychological Attributions	-0.18	0.37	-0.05	-0.49	0.62	-0.91	0.55	-0.03	-0.06	-0.03
	IPQRF2 Risk Factors	0.72	0.46	0.17	1.57	0.12	-0.20	1.64	0.23	0.19	0.10
	IPQRF3 Immunity	-1.13	0.69	-0.14	-1.64	0.11	-2.50	0.25	-0.01	-0.20	-0.11
	IPQRF4 Accident or Chance	1.21	0.84	0.11	1.43	0.16	-0.47	2.89	-0.16	0.17	0.09
	Pain & Disability Factor	3.05	2.04	0.13	1.49	0.14	-1.03	7.13	-0.38	0.18	0.10
	Psychological Distress Factor	-8.55	2.89	-0.39	-2.96	0.00	-14.31	-2.79	-0.66	-0.34	-0.19
	MDAQ-R Sum	0.25	0.06	0.34	4.53	0.00	0.14	0.36	0.57	0.48	0.30
	LOT Positive Life Orientation	-0.06	0.31	-0.02	-0.18	0.86	-0.68	0.57	0.42	-0.02	-0.01
	VAS Satisfaction with Life	1.64	1.70	0.10	0.97	0.34	-1.75	5.02	0.52	0.12	0.06
8.00	(Constant)	22.08	16.98		1.30	0.20	-11.82	55.98			
	Gender	6.90	4.53	0.14	1.52	0.13	-2.15	15.95	0.41	0.18	0.10
	Education Above/Below Year 12	-2.72	3.50	-0.06	-0.78	0.44	-9.70	4.27	0.17	-0.10	-0.05
	Married/Defacto or Single	-6.97	3.66	-0.14	-1.91	0.06	-14.28	0.33	-0.15	-0.23	-0.12
	Practices a Religion	-6.72	3.28	-0.15	-2.05	0.04	-13.26	-0.18	-0.22	-0.24	-0.13
	Litigating/Not Litigating	15.82	5.75	0.28	2.75	0.01	4.34	27.31	0.53	0.32	0.18
	IPQRF1 Psychological Attributions	-0.18	0.37	-0.05	-0.48	0.63	-0.91	0.56	-0.03	-0.06	-0.03
	IPQRF2 Risk Factors	0.72	0.46	0.17	1.55	0.13	-0.21	1.64	0.23	0.19	0.10
	IPQRF3 Immunity	-1.14	0.69	-0.14	-1.65	0.10	-2.52	0.24	-0.01	-0.20	-0.11
	IPQRF4 Accident or Chance	1.15	0.85	0.11	1.35	0.18	-0.55	2.84	-0.16	0.16	0.09
	Pain & Disability Factor	3.06	2.05	0.13	1.49	0.14	-1.04	7.15	-0.38	0.18	0.10
	Psychological Distress Factor	-8.57	2.90	-0.39	-2.96	0.00	-14.35	-2.78	-0.66	-0.34	-0.19
	MDAQ-R Sum	0.24	0.06	0.33	4.16	0.00	0.12	0.35	0.57	0.46	0.27
	LOT Positive Life Orientation	-0.05	0.32	-0.02	-0.16	0.88	-0.68	0.58	0.42	-0.02	-0.01
	VAS Satisfaction with Life	0.91	1.98	0.05	0.46	0.65	-3.04	4.85	0.52	0.06	0.03
	VAS Meaningfulness of Daily Activities	1.08	1.49	0.07	0.73	0.47	-1.89	4.05	0.49	0.09	0.05

a. Dependent Variable: DAQR- R Sum

D 22 Hypothesis Testing Psychological Distress: Hypothesis 1 (a) Testing MDAQ-R Scores and HADS Depression Analysis One Depression (HADS Depression) and MDA Scores

Model Summary^d

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
dimension0 1.00	0.62 ^a	0.39	0.34	3.89	0.39	8.39	6.00	79.00	0.00	
2.00	0.72 ^b	0.51	0.47	3.49	0.12	19.94	1.00	78.00	0.00	
3.00	0.76 ^c	0.57	0.53	3.29	0.06	10.67	1.00	77.00	0.00	2.33

a. Predictors: (Constant), Litigating/Not Litigating, Education Above/Below Year 12, Age Above/Below 45 years, Sustained Work Injury, Working or Not Working, Gender

b. Predictors: (Constant), Litigating/Not Litigating, Education Above/Below Year 12, Age Above/Below 45 years, Sustained Work Injury, Working or Not Working, Gender, LOT Positive Life Orientation

c. Predictors: (Constant), Litigating/Not Litigating, Education Above/Below Year 12, Age Above/Below 45 years, Sustained Work Injury, Working or Not Working, Gender, LOT Positive Life Orientation, MDAQ-R Sum

d. Dependent Variable: HADS Depression

ANOVA^d

Model		Sum of Squares	df	Mean Square	F	Sig.
1.00	Regression	761.46	6.00	126.91	8.39	0.00 ^a
	Residual	1194.64	79.00	15.12		
	Total	1956.09	85.00			
2.00	Regression	1004.69	7.00	143.53	11.77	0.00 ^b
	Residual	951.40	78.00	12.20		
	Total	1956.09	85.00			
3.00	Regression	1120.49	8.00	140.06	12.91	0.00 ^c
	Residual	835.60	77.00	10.85		
	Total	1956.09	85.00			

a. Predictors: (Constant), Litigating/Not Litigating, Education Above/Below Year 12, Age Above/Below 45 years, Sustained Work Injury, Working or Not Working, Gender

b. Predictors: (Constant), Litigating/Not Litigating, Education Above/Below Year 12, Age Above/Below 45 years, Sustained Work Injury, Working or Not Working, Gender, LOT Positive Life Orientation

c. Predictors: (Constant), Litigating/Not Litigating, Education Above/Below Year 12, Age Above/Below 45 years, Sustained Work Injury, Working or Not Working, Gender, LOT Positive Life Orientation, MDAQ-R Sum

d. Dependent Variable: HADS Depression

Coefficients ^a												
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Correlations			Collinearity Statistics	
	B	Std. Error	Beta			Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance	VIF
1.00	(Constant)	21.85	3.14	6.97	0.00	15.61	28.09					
	Age Above/Below 45 years	-0.61	1.02	-0.59	0.56	-2.64	1.43	-0.12	-0.07	-0.05	0.80	1.25
	Sustained Work Injury	-1.49	0.94	-1.58	0.12	-3.36	0.38	-0.33	-0.18	-0.14	0.81	1.24
	Education Above/Below Year 12	-1.99	0.91	-2.20	0.03	-3.80	-0.19	-0.28	-0.24	-0.19	0.86	1.16
	Working Not Working	1.08	0.95	1.14	0.26	-0.81	2.96	0.22	0.13	0.10	0.78	1.28
	Gender	-2.16	1.15	-1.87	0.07	-4.45	0.14	-0.42	-0.21	-0.16	0.67	1.48
	Litigating/Not Litigating	-3.72	1.32	-2.81	0.01	-6.35	-1.09	-0.53	-0.30	-0.25	0.63	1.57
2.00	(Constant)	22.97	2.83	8.12	0.00	17.34	28.60					
	Age Above/Below 45 years	-0.21	0.92	-0.23	0.82	-2.05	1.62	-0.12	-0.03	-0.02	0.79	1.26
	Sustained Work Injury	-1.08	0.85	-1.28	0.21	-2.78	0.61	-0.33	-0.14	-0.10	0.80	1.25
	Education Above/Below Year 12	-0.94	0.85	-1.10	0.27	-2.63	0.75	-0.28	-0.12	-0.09	0.79	1.26
	Working Not Working	0.76	0.85	0.88	0.38	-0.95	2.46	0.22	0.10	0.07	0.78	1.29
	Gender	-1.17	1.06	-1.10	0.27	-3.28	0.94	-0.42	-0.12	-0.09	0.64	1.55
	Litigating/Not Litigating	-3.27	1.19	-2.75	0.01	-5.64	-0.90	-0.53	-0.30	-0.22	0.63	1.59
	LOT	-0.28	0.06	-4.47	0.00	-0.41	-0.16	-0.59	-0.45	-0.35	0.77	1.30
3.00	(Constant)	25.56	2.78	9.19	0.00	20.02	31.10					
	Age Above/Below 45 years	-0.27	0.87	-0.31	0.76	-2.00	1.46	-0.12	-0.04	-0.02	0.79	1.26
	Sustained Work Injury	-1.34	0.81	-1.66	0.10	-2.94	0.26	-0.33	-0.19	-0.12	0.79	1.27
	Education Above/Below Year 12	-0.49	0.81	-0.61	0.54	-2.11	1.12	-0.28	-0.07	-0.05	0.77	1.30
	Working Not Working	0.61	0.81	0.76	0.45	-1.00	2.22	0.22	0.09	0.06	0.77	1.29
	Gender	-1.26	1.00	-1.26	0.21	-3.25	0.73	-0.42	-0.14	-0.09	0.64	1.55
	Litigating/Not Litigating	-2.76	1.13	-2.43	0.02	-5.01	-0.50	-0.53	-0.27	-0.18	0.62	1.62
	LOT	-0.26	0.06	-4.39	0.00	-0.38	-0.14	-0.59	-0.45	-0.33	0.76	1.31
	MDAQ-R Sum	-0.04	0.01	-3.27	0.00	-0.07	-0.02	-0.39	-0.35	-0.24	0.89	1.13

a. Dependent Variable: HADS Depression

D 23 Hypothesis Testing Psychological Distress: Hypothesis 1 (b) Testing MDAQ-R Scores and HADS Anxiety

Analysis Two Anxiety (HADS Anxiety) and MDA Scores

Model Summary^d

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1.00	0.54 ^a	0.30	0.24	3.84	0.30	5.53	6.00	79.00	0.00	2.23
2.00	0.65 ^b	0.42	0.37	3.51	0.13	17.00	1.00	78.00	0.00	
3.00	0.65 ^c	0.42	0.36	3.53	0.00	0.03	1.00	77.00	0.87	

a. Predictors: (Constant), Litigating/Not Litigating, Education Above/Below Year 12, Age Above/Below 45 years, Sustained Work Injury, Working or Not Working, Gender

b. Predictors: (Constant), Litigating/Not Litigating, Education Above/Below Year 12, Age Above/Below 45 years, Sustained Work Injury, Working or Not Working, Gender, LOT Positive Life Orientation

c. Predictors: (Constant), Litigating/Not Litigating, Education Above/Below Year 12, Age Above/Below 45 years, Sustained Work Injury, Working or Not Working, Gender, LOT Positive Life Orientation, MDAQ-R Sum

d. Dependent Variable: HADS Anxiety

ANOVA^d

Model		Sum of Squares	df	Mean Square	F	Sig.
1.00	Regression	490.12	6.00	81.69	5.53	0.00 ^a
	Residual	1167.38	79.00	14.78		
	Total	1657.50	85.00			
2.00	Regression	699.00	7.00	99.86	8.13	0.00 ^b
	Residual	958.50	78.00	12.29		
	Total	1657.50	85.00			
3.00	Regression	699.32	8.00	87.41	7.02	0.00 ^c
	Residual	958.18	77.00	12.44		
	Total	1657.50	85.00			

a. Predictors: (Constant), Litigating/Not Litigating, Education Above/Below Year 12, Age Above/Below 45 years, Sustained Work Injury, Working or Not Working, Gender

b. Predictors: (Constant), Litigating/Not Litigating, Education Above/Below Year 12, Age Above/Below 45 years, Sustained Work Injury, Working or Not Working, Gender, LOT Positive Life Orientation

c. Predictors: (Constant), Litigating/Not Litigating, Education Above/Below Year 12, Age Above/Below 45 years, Sustained Work Injury, Working or Not Working, Gender, LOT Positive Life Orientation, MDAQ-R Sum

d. Dependent Variable: HADS Anxiety

Coefficients ^a													
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Correlations			Collinearity Statistics		
	B	Std. Error	Beta			Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance	VIF	
1.00	(Constant)	19.10	3.10	6.16	0.00	12.92	25.27						
	Age Above/Below 45 years	-0.97	1.01	-0.10	-0.96	0.34	-2.98	1.04	-0.12	-0.11	-0.09	0.80	1.25
	Sustained Work Injury	-0.89	0.93	-0.10	-0.96	0.34	-2.74	0.96	-0.24	-0.11	-0.09	0.81	1.24
	Education Above/Below Year 12	-1.78	0.90	-0.20	-1.98	0.05	-3.56	0.01	-0.25	-0.22	-0.19	0.86	1.16
	Working Not Working	1.62	0.94	0.18	1.72	0.09	-0.25	3.48	0.25	0.19	0.16	0.78	1.28
	Gender	-2.72	1.14	-0.27	-2.38	0.02	-4.99	-0.45	-0.40	-0.26	-0.23	0.67	1.48
	Litigating/Not Litigating	-1.47	1.31	-0.13	-1.13	0.26	-4.07	1.13	-0.40	-0.13	-0.11	0.63	1.57
2.00	(Constant)	20.13	2.84	7.09	0.00	14.48	25.78						
	Age Above/Below 45 years	-0.60	0.93	-0.06	-0.65	0.52	-2.45	1.24	-0.12	-0.07	-0.06	0.79	1.26
	Sustained Work Injury	-0.52	0.85	-0.06	-0.61	0.54	-2.22	1.18	-0.24	-0.07	-0.05	0.80	1.25
	Education Above/Below Year 12	-0.80	0.85	-0.09	-0.94	0.35	-2.49	0.90	-0.25	-0.11	-0.08	0.79	1.26
	Working Not Working	1.32	0.86	0.15	1.54	0.13	-0.39	3.03	0.25	0.17	0.13	0.78	1.29
	Gender	-1.80	1.06	-0.18	-1.70	0.09	-3.92	0.31	-0.40	-0.19	-0.15	0.64	1.55
	Litigating/Not Litigating	-1.06	1.20	-0.10	-0.89	0.38	-3.44	1.32	-0.40	-0.10	-0.08	0.63	1.59
	LOT	-0.26	0.06	-0.40	-4.12	0.00	-0.39	-0.14	-0.57	-0.42	-0.35	0.77	1.30
3.00	(Constant)	19.99	2.98	6.71	0.00	14.06	25.93						
	Age Above/Below 45 years	-0.60	0.93	-0.06	-0.65	0.52	-2.46	1.25	-0.12	-0.07	-0.06	0.79	1.26
	Sustained Work Injury	-0.51	0.86	-0.06	-0.59	0.56	-2.22	1.21	-0.24	-0.07	-0.05	0.79	1.27
	Education Above/Below Year 12	-0.82	0.87	-0.09	-0.94	0.35	-2.55	0.91	-0.25	-0.11	-0.08	0.77	1.30
	Working Not Working	1.33	0.86	0.15	1.53	0.13	-0.40	3.05	0.25	0.17	0.13	0.77	1.29
	Gender	-1.80	1.07	-0.18	-1.68	0.10	-3.93	0.33	-0.40	-0.19	-0.15	0.64	1.55
	Litigating/Not Litigating	-1.09	1.21	-0.10	-0.89	0.37	-3.50	1.33	-0.40	-0.10	-0.08	0.62	1.62
	LOT	-0.26	0.06	-0.41	-4.09	0.00	-0.39	-0.13	-0.57	-0.42	-0.35	0.76	1.31
	MDAQ-R Sum	0.00	0.01	0.01	0.16	0.87	-0.02	0.03	-0.13	0.02	0.01	0.89	1.13

a. Dependent Variable: HADS Anxiety

D 24 Hypothesis Testing Psychological Distress: Hypothesis 1 (c) Testing MDAQ-R Scores and Hopelessness

Analysis Three Hopelessness (BHS) and MDA Scores

Model Summary^d

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1.00	0.49 ^a	0.24	0.17	4.60	0.24	3.55	7.00	80.00	0.00	
2.00	0.64 ^b	0.41	0.35	4.08	0.17	22.87	1.00	79.00	0.00	
3.00	0.69 ^c	0.48	0.42	3.85	0.07	10.68	1.00	78.00	0.00	1.91

a. Predictors: (Constant), Pain Duration 3-18 /19 -36+months, Litigating/Not Litigating, Education Above/Below Year 12, Married/Defacto or Single, Sustained Work Injury, Working or Not Working, Gender

b. Predictors: (Constant), Pain Duration 3-18 /19 -36+months, Litigating/Not Litigating, Education Above/Below Year 12, Married/Defacto or Single, Sustained Work Injury, Working or Not Working, Gender, LOT Positive Life Orientation

c. Predictors: (Constant), Pain Duration 3-18 /19 -36+months, Litigating/Not Litigating, Education Above/Below Year 12, Married/Defacto or Single, Sustained Work Injury, Working or Not Working, Gender, LOT Positive Life Orientation, MDAQ-R Sum

d. Dependent Variable: Beck Hopelessness Scale

ANOVA^d

Model		Sum of Squares	df	Mean Square	F	Sig.
1.00	Regression	525.36	7.00	75.05	3.55	0.00 ^a
	Residual	1691.91	80.00	21.15		
	Total	2217.27	87.00			
2.00	Regression	905.19	8.00	113.15	6.81	0.00 ^b
	Residual	1312.08	79.00	16.61		
	Total	2217.27	87.00			
3.00	Regression	1063.19	9.00	118.13	7.98	0.00 ^c
	Residual	1154.08	78.00	14.80		
	Total	2217.27	87.00			

a. Predictors: (Constant), Pain Duration 3-18 /19 -36+months, Litigating/Not Litigating, Education Above/Below Year 12, Married/Defacto or Single, Sustained Work Injury, Working or Not Working, Gender

b. Predictors: (Constant), Pain Duration 3-18 /19 -36+months, Litigating/Not Litigating, Education Above/Below Year 12, Married/Defacto or Single, Sustained Work Injury, Working or Not Working, Gender, LOT Positive Life Orientation

c. Predictors: (Constant), Pain Duration 3-18 /19 -36+months, Litigating/Not Litigating, Education Above/Below Year 12, Married/Defacto or Single, Sustained Work Injury, Working or Not Working, Gender, LOT Positive Life Orientation, MDAQ-R Sum

d. Dependent Variable: Beck Hopelessness Scale

Coefficients ^a												
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Correlations			Collinearity Statistics	
	B	Std. Error	Beta			Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance	VIF
1.00 (Constant)	15.15	3.92		3.86	0.00	7.35	22.95					
Sustained Work Injury	-1.52	1.11	-0.15	-1.37	0.17	-3.72	0.69	-0.25	-0.15	-0.13	0.79	1.26
Education Above/Below Year 12	-2.53	1.07	-0.25	-2.36	0.02	-4.67	-0.40	-0.27	-0.26	-0.23	0.84	1.19
Working Not Working	0.12	1.15	0.01	0.10	0.92	-2.17	2.41	0.17	0.01	0.01	0.73	1.37
Gender	-2.49	1.30	-0.22	-1.91	0.06	-5.07	0.10	-0.30	-0.21	-0.19	0.72	1.40
Litigating/Not Litigating	-1.46	1.50	-0.12	-0.98	0.33	-4.44	1.51	-0.30	-0.11	-0.10	0.69	1.45
Married/Defacto or Single	1.58	1.11	0.15	1.43	0.16	-0.62	3.78	0.12	0.16	0.14	0.92	1.08
Pain Duration 3-18 /19 - 36+months	0.90	1.19	0.08	0.76	0.45	-1.46	3.26	0.13	0.08	0.07	0.82	1.22
2.00 (Constant)	16.01	3.48		4.60	0.00	9.08	22.93					
Sustained Work Injury	-0.96	0.99	-0.10	-0.98	0.33	-2.93	1.00	-0.25	-0.11	-0.08	0.78	1.28
Education	-1.37	0.98	-0.14	-1.39	0.17	-3.32	0.59	-0.27	-0.15	-0.12	0.79	1.27
Working Not Working	-0.25	1.02	-0.03	-0.25	0.80	-2.29	1.78	0.17	-0.03	-0.02	0.72	1.38
Gender	-1.29	1.18	-0.11	-1.09	0.28	-3.64	1.06	-0.30	-0.12	-0.09	0.68	1.46
Litigating/Not Litigating	-0.75	1.33	-0.06	-0.56	0.58	-3.40	1.91	-0.30	-0.06	-0.05	0.68	1.47
Married/Defacto or Single	1.67	0.98	0.15	1.70	0.09	-0.28	3.62	0.12	0.19	0.15	0.92	1.08
Pain Duration	1.26	1.05	0.11	1.19	0.24	-0.84	3.36	0.13	0.13	0.10	0.82	1.23
LOT	-0.35	0.07	-0.47	-4.78	0.00	-0.50	-0.20	-0.57	-0.47	-0.41	0.78	1.29
3.00 (Constant)	18.93	3.40		5.56	0.00	12.15	25.71					
Sustained Work Injury	-1.12	0.93	-0.11	-1.20	0.23	-2.98	0.74	-0.25	-0.13	-0.10	0.78	1.28
Education	-0.79	0.94	-0.08	-0.84	0.41	-2.66	1.09	-0.27	-0.09	-0.07	0.76	1.31
Working Not Working	-0.53	0.97	-0.05	-0.55	0.59	-2.46	1.40	0.17	-0.06	-0.04	0.72	1.39
Gender	-1.25	1.11	-0.11	-1.12	0.27	-3.46	0.97	-0.30	-0.13	-0.09	0.68	1.46
Litigating/Not Litigating	-0.26	1.27	-0.02	-0.20	0.84	-2.78	2.27	-0.30	-0.02	-0.02	0.67	1.49
Married/Defacto or Single	1.40	0.93	0.13	1.50	0.14	-0.45	3.25	0.12	0.17	0.12	0.92	1.09
Pain Duration	1.42	1.00	0.13	1.42	0.16	-0.56	3.40	0.13	0.16	0.12	0.81	1.23
LOT	-0.34	0.07	-0.45	-4.88	0.00	-0.48	-0.20	-0.57	-0.48	-0.40	0.78	1.29
MDAQ-R Sum	-0.05	0.01	-0.29	-3.27	0.00	-0.07	-0.02	-0.39	-0.35	-0.27	0.88	1.14

a. Dependent Variable: Beck Hopelessness Scale

D 25 Hypothesis Testing Psychological Distress: Hypothesis 1 (d) Testing MDAQ-R Scores and Psychological Affect (Distress) Factor

Analysis Four Psychological Distress Factor and MDA Scores

Model Summary^d

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1.00	0.62 ^a	0.38	0.32	0.84	0.38	6.90	7.00	79.00	0.00	2.13
2.00	0.74 ^b	0.55	0.51	0.71	0.18	30.73	1.00	78.00	0.00	
3.00	0.77 ^c	0.59	0.55	0.69	0.04	7.36	1.00	77.00	0.01	

a. Predictors: (Constant), Pain Duration 3-18 /19 -36+months, Litigating/Not Litigating, Education Above/Below Year 12, Married/Defacto or Single, Sustained Work Injury, Working or Not Working, Gender

b. Predictors: (Constant), Pain Duration 3-18 /19 -36+months, Litigating/Not Litigating, Education Above/Below Year 12, Married/Defacto or Single, Sustained Work Injury, Working or Not Working, Gender, LOT Positive Life Orientation

c. Predictors: (Constant), Pain Duration 3-18 /19 -36+months, Litigating/Not Litigating, Education Above/Below Year 12, Married/Defacto or Single, Sustained Work Injury, Working or Not Working, Gender, LOT Positive Life Orientation, MDAQ-R Sum

d. Dependent Variable: Psychological Distress Factor

ANOVA^d

Model		Sum of Squares	df	Mean Square	F	Sig.
1.00	Regression	33.94	7.00	4.85	6.90	0.00 ^a
	Residual	55.47	79.00	0.70		
	Total	89.41	86.00			
2.00	Regression	49.62	8.00	6.20	12.16	0.00 ^b
	Residual	39.80	78.00	0.51		
	Total	89.41	86.00			
3.00	Regression	53.09	9.00	5.90	12.50	0.00 ^c
	Residual	36.32	77.00	0.47		
	Total	89.41	86.00			

a. Predictors: (Constant), Pain Duration 3-18 /19 -36+months, Litigating/Not Litigating, Education Above/Below Year 12, Married/Defacto or Single, Sustained Work Injury, Working or Not Working, Gender

b. Predictors: (Constant), Pain Duration 3-18 /19 -36+months, Litigating/Not Litigating, Education Above/Below Year 12, Married/Defacto or Single, Sustained Work Injury, Working or Not Working, Gender, LOT Positive Life Orientation

c. Predictors: (Constant), Pain Duration 3-18 /19 -36+months, Litigating/Not Litigating, Education Above/Below Year 12, Married/Defacto or Single, Sustained Work Injury, Working or Not Working, Gender, LOT Positive Life Orientation, MDAQ-R Sum

d. Dependent Variable: Psychological Distress Factor

Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Correlations			Collinearity Statistics	
	B	Std. Error	Beta			Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance	VIF
1.00	(Constant)	2.60	0.72	3.64	0.00	1.18	4.03					
	Sustained Work Injury	-0.36	0.20	-1.76	0.08	-0.76	0.05	-0.32	-0.19	-0.16	0.79	1.27
	Education Above/Below Year 12	-0.50	0.20	-2.57	0.01	-0.89	-0.11	-0.30	-0.28	-0.23	0.85	1.18
	Working Not Working	0.15	0.21	0.72	0.47	-0.27	0.57	0.24	0.08	0.06	0.73	1.38
	Gender	-0.60	0.24	-2.53	0.01	-1.07	-0.13	-0.41	-0.27	-0.22	0.72	1.39
	Litigating/Not Litigating	-0.58	0.27	-2.14	0.04	-1.13	-0.04	-0.46	-0.23	-0.19	0.69	1.45
	Married/Defacto or Single	0.22	0.20	1.10	0.28	-0.18	0.63	0.06	0.12	0.10	0.92	1.09
	Pain Duration 3-18 /19 - 36+months	0.18	0.22	0.82	0.42	-0.26	0.61	0.15	0.09	0.07	0.81	1.24
2.00	(Constant)	2.75	0.61	4.51	0.00	1.54	3.97					
	Sustained Work Injury	-0.23	0.17	-1.29	0.20	-0.57	0.12	-0.32	-0.14	-0.10	0.77	1.29
	Education	-0.25	0.17	-1.47	0.15	-0.60	0.09	-0.30	-0.16	-0.11	0.79	1.26
	Working Not Working	0.06	0.18	0.31	0.76	-0.30	0.42	0.24	0.04	0.02	0.72	1.39
	Gender	-0.35	0.21	-1.67	0.10	-0.76	0.07	-0.41	-0.19	-0.13	0.68	1.46
	Litigating/Not Litigating	-0.44	0.23	-1.89	0.06	-0.91	0.02	-0.46	-0.21	-0.14	0.68	1.47
	Married/Defacto or Single	0.23	0.17	1.31	0.19	-0.12	0.57	0.06	0.15	0.10	0.92	1.09
	Pain Duration	0.27	0.19	1.47	0.15	-0.10	0.65	0.15	0.16	0.11	0.80	1.25
	LOT	-0.07	0.01	-5.54	0.00	-0.10	-0.05	-0.64	-0.53	-0.42	0.76	1.31
3.00	(Constant)	3.22	0.61	5.27	0.00	2.00	4.44					
	Sustained Work Injury	-0.27	0.17	-1.59	0.12	-0.61	0.07	-0.32	-0.18	-0.12	0.77	1.30
	Education	-0.18	0.17	-1.05	0.30	-0.51	0.16	-0.30	-0.12	-0.08	0.77	1.30
	Working Not Working	0.03	0.17	0.18	0.86	-0.32	0.38	0.24	0.02	0.01	0.72	1.39
	Gender	-0.35	0.20	-1.77	0.08	-0.75	0.05	-0.41	-0.20	-0.13	0.68	1.46
	Litigating/Not Litigating	-0.36	0.23	-1.61	0.11	-0.82	0.09	-0.46	-0.18	-0.12	0.67	1.49
	Married/Defacto or Single	0.20	0.17	1.18	0.24	-0.13	0.53	0.06	0.13	0.09	0.92	1.09
	Pain	0.28	0.18	1.56	0.12	-0.08	0.64	0.15	0.17	0.11	0.80	1.25
	LOT	-0.07	0.01	-5.47	0.00	-0.09	-0.04	-0.64	-0.53	-0.40	0.75	1.33
	MDAQ-R Sum	-0.01	0.00	-2.71	0.01	-0.01	0.00	-0.36	-0.30	-0.20	0.89	1.13

a. Dependent Variable: Psychological Distress Factor

D 26 Hypothesis Testing Psychological Distress: Hypothesis 2 (a) Testing DAQ-R Scores and HADS Depression

Analysis One Depression (HADS Depression) and DA Scores

Model Summary^d

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
dimension0 1.00	0.64 ^a	0.41	0.37	3.80	0.41	10.26	6.00	89.00	0.00	2.21
2.00	0.72 ^b	0.51	0.48	3.46	0.11	19.21	1.00	88.00	0.00	
3.00	0.79 ^c	0.62	0.59	3.06	0.11	25.56	1.00	87.00	0.00	

a. Predictors: (Constant), Litigating/Not Litigating, Education Above/Below Year 12, Age Above/Below 45 years, Sustained Work Injury, Working or Not Working, Gender

b. Predictors: (Constant), Litigating/Not Litigating, Education Above/Below Year 12, Age Above/Below 45 years, Sustained Work Injury, Working or Not Working, Gender, LOT Positive Life Orientation

c. Predictors: (Constant), Litigating/Not Litigating, Education Above/Below Year 12, Age Above/Below 45 years, Sustained Work Injury, Working or Not Working, Gender, LOT Positive Life Orientation, DAQR- R Sum

d. Dependent Variable: HADS Depression

ANOVA^d

Model		Sum of Squares	df	Mean Square	F	Sig.
1.00	Regression	889.62	6.00	148.27	10.26	0.00 ^a
	Residual	1286.22	89.00	14.45		
	Total	2175.83	95.00			
2.00	Regression	1120.05	7.00	160.01	13.34	0.00 ^b
	Residual	1055.78	88.00	12.00		
	Total	2175.83	95.00			
3.00	Regression	1359.79	8.00	169.97	18.12	0.00 ^c
	Residual	816.04	87.00	9.38		
	Total	2175.83	95.00			

a. Predictors: (Constant), Litigating/Not Litigating, Education Above/Below Year 12, Age Above/Below 45 years, Sustained Work Injury, Working or Not Working, Gender

b. Predictors: (Constant), Litigating/Not Litigating, Education Above/Below Year 12, Age Above/Below 45 years, Sustained Work Injury, Working or Not Working, Gender, LOT Positive Life Orientation

c. Predictors: (Constant), Litigating/Not Litigating, Education Above/Below Year 12, Age Above/Below 45 years, Sustained Work Injury, Working or Not Working, Gender, LOT Positive Life Orientation, DAQR- R Sum

d. Dependent Variable: HADS Depression

Coefficients ^a													
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Correlations			Collinearity Statistics	
		B	Std. Error	Beta			Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance	VIF
1.00	(Constant)	21.42	2.95		7.26	0.00	15.56	27.28					
	Age Above/Below 45 years	-0.62	0.96	-0.06	-0.64	0.52	-2.52	1.29	-0.12	-0.07	-0.05	0.79	1.26
	Sustained Work Injury	-1.96	0.86	-0.20	-2.27	0.03	-3.68	-0.25	-0.37	-0.23	-0.19	0.84	1.19
	Education Above/Below Year 12	-1.97	0.82	-0.21	-2.39	0.02	-3.61	-0.33	-0.31	-0.25	-0.19	0.89	1.13
	Working Not Working	1.41	0.87	0.15	1.62	0.11	-0.32	3.13	0.26	0.17	0.13	0.80	1.25
	Gender	-1.78	1.03	-0.17	-1.73	0.09	-3.81	0.26	-0.39	-0.18	-0.14	0.73	1.38
	Litigating/Not Litigating	-3.79	1.25	-0.30	-3.03	0.00	-6.27	-1.31	-0.53	-0.31	-0.25	0.66	1.51
2.00	(Constant)	23.03	2.71		8.49	0.00	17.64	28.42					
	Age Above/Below 45 years	-0.50	0.87	-0.05	-0.57	0.57	-2.23	1.24	-0.12	-0.06	-0.04	0.79	1.26
	Sustained Work Injury	-1.47	0.79	-0.15	-1.85	0.07	-3.05	0.11	-0.37	-0.19	-0.14	0.82	1.22
	Education Above/Below Year 12	-1.21	0.77	-0.13	-1.57	0.12	-2.74	0.32	-0.31	-0.17	-0.12	0.84	1.19
	Working Not Working	0.94	0.80	0.10	1.18	0.24	-0.65	2.53	0.26	0.12	0.09	0.79	1.27
	Gender	-0.82	0.96	-0.08	-0.86	0.39	-2.73	1.09	-0.39	-0.09	-0.06	0.69	1.45
	Litigating/Not Litigating	-3.45	1.14	-0.28	-3.02	0.00	-5.71	-1.18	-0.53	-0.31	-0.22	0.66	1.52
	LOT	-0.26	0.06	-0.37	-4.38	0.00	-0.38	-0.14	-0.57	-0.42	-0.33	0.78	1.29
3.00	(Constant)	25.16	2.43		10.34	0.00	20.32	30.00					
	Age Above/Below 45 years	-0.61	0.77	-0.06	-0.79	0.43	-2.14	0.93	-0.12	-0.08	-0.05	0.79	1.26
	Sustained Work Injury	-1.54	0.70	-0.16	-2.19	0.03	-2.94	-0.15	-0.37	-0.23	-0.14	0.82	1.22
	Education Above/Below Year 12	-1.26	0.68	-0.13	-1.85	0.07	-2.62	0.09	-0.31	-0.19	-0.12	0.84	1.19
	Working Not Working	0.39	0.71	0.04	0.54	0.59	-1.03	1.80	0.26	0.06	0.04	0.77	1.30
	Gender	0.00	0.86	0.00	0.00	1.00	-1.71	1.72	-0.39	0.00	0.00	0.66	1.51
	Litigating/Not Litigating	-1.65	1.07	-0.13	-1.54	0.13	-3.77	0.48	-0.53	-0.16	-0.10	0.59	1.71
	LOT	-0.20	0.05	-0.29	-3.78	0.00	-0.31	-0.10	-0.57	-0.38	-0.25	0.74	1.35
	DAQR- R Sum	-0.09	0.02	-0.41	-5.06	0.00	-0.12	-0.05	-0.66	-0.48	-0.33	0.64	1.55

a. Dependent Variable: HADS Depression

D 27 Hypothesis Testing Psychological Distress: Hypothesis 2 (b) Testing DAQ-R Scores and HADS Anxiety

Analysis Two Anxiety (HADS Anxiety) and MDA Scores

Model Summary^d

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1.00	0.57 ^a	0.32	0.28	3.79	0.32	7.07	6.00	89.00	0.00	2.29
2.00	0.66 ^b	0.43	0.39	3.49	0.11	16.78	1.00	88.00	0.00	
3.00	0.68 ^c	0.47	0.42	3.39	0.04	6.13	1.00	87.00	0.02	

a. Predictors: (Constant), Litigating/Not Litigating, Education Above/Below Year 12, Age Above/Below 45 years, Sustained Work Injury, Working or Not Working, Gender

b. Predictors: (Constant), Litigating/Not Litigating, Education Above/Below Year 12, Age Above/Below 45 years, Sustained Work Injury, Working or Not Working, Gender, LOT Positive Life Orientation

c. Predictors: (Constant), Litigating/Not Litigating, Education Above/Below Year 12, Age Above/Below 45 years, Sustained Work Injury, Working or Not Working, Gender, LOT Positive Life Orientation, DAQR- R Sum

d. Dependent Variable: HADS Anxiety

ANOVA^d

Model		Sum of Squares	df	Mean Square	F	Sig.
1.00	Regression	608.06	6.00	101.34	7.07	0.00 ^a
	Residual	1276.43	89.00	14.34		
	Total	1884.49	95.00			
2.00	Regression	812.48	7.00	116.07	9.53	0.00 ^b
	Residual	1072.01	88.00	12.18		
	Total	1884.49	95.00			
3.00	Regression	883.01	8.00	110.38	9.59	0.00 ^c
	Residual	1001.48	87.00	11.51		
	Total	1884.49	95.00			

a. Predictors: (Constant), Litigating/Not Litigating, Education Above/Below Year 12, Age Above/Below 45 years, Sustained Work Injury, Working or Not Working, Gender

b. Predictors: (Constant), Litigating/Not Litigating, Education Above/Below Year 12, Age Above/Below 45 years, Sustained Work Injury, Working or Not Working, Gender, LOT Positive Life Orientation

c. Predictors: (Constant), Litigating/Not Litigating, Education Above/Below Year 12, Age Above/Below 45 years, Sustained Work Injury, Working or Not Working, Gender, LOT Positive Life Orientation, DAQR- R Sum

d. Dependent Variable: HADS Anxiety

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Correlations			Collinearity Statistics	
		B	Std. Error	Beta			Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance	VIF
1.00	(Constant)	18.87	2.94		6.42	0.00	13.04	24.71					
	Age Above/Below 45 years	-1.10	0.95	-0.11	-1.15	0.25	-3.00	0.80	-0.14	-0.12	-0.10	0.79	1.26
	Sustained Work Injury	-1.50	0.86	-0.17	-1.74	0.08	-3.21	0.21	-0.30	-0.18	-0.15	0.84	1.19
	Education Above/Below Year 12	-1.59	0.82	-0.18	-1.93	0.06	-3.22	0.04	-0.26	-0.20	-0.17	0.89	1.13
	Working Not Working	1.91	0.86	0.22	2.21	0.03	0.20	3.63	0.28	0.23	0.19	0.80	1.25
	Gender	-2.64	1.02	-0.26	-2.58	0.01	-4.67	-0.61	-0.41	-0.26	-0.23	0.73	1.38
	Litigating/Not Litigating	-1.30	1.24	-0.11	-1.04	0.30	-3.77	1.17	-0.39	-0.11	-0.09	0.66	1.51
2.00	(Constant)	20.39	2.73		7.46	0.00	14.96	25.82					
	Age Above/Below 45 years	-0.99	0.88	-0.10	-1.12	0.27	-2.74	0.76	-0.14	-0.12	-0.09	0.79	1.26
	Sustained Work Injury	-1.03	0.80	-0.11	-1.29	0.20	-2.63	0.56	-0.30	-0.14	-0.10	0.82	1.22
	Education Above/Below Year 12	-0.87	0.78	-0.10	-1.13	0.26	-2.42	0.67	-0.26	-0.12	-0.09	0.84	1.19
	Working Not Working	1.47	0.80	0.17	1.83	0.07	-0.12	3.07	0.28	0.19	0.15	0.79	1.27
	Gender	-1.74	0.97	-0.17	-1.80	0.08	-3.66	0.18	-0.41	-0.19	-0.14	0.69	1.45
	Litigating/Not Litigating	-0.98	1.15	-0.08	-0.85	0.40	-3.26	1.30	-0.39	-0.09	-0.07	0.66	1.52
	LOT	-0.25	0.06	-0.37	-4.10	0.00	-0.37	-0.13	-0.55	-0.40	-0.33	0.78	1.29
3.00	(Constant)	21.54	2.70		7.99	0.00	16.18	26.90					
	Age Above/Below 45 years	-1.05	0.86	-0.11	-1.22	0.22	-2.75	0.66	-0.14	-0.13	-0.10	0.79	1.26
	Sustained Work Injury	-1.07	0.78	-0.12	-1.38	0.17	-2.62	0.47	-0.30	-0.15	-0.11	0.82	1.22
	Education	-0.90	0.76	-0.10	-1.19	0.24	-2.40	0.60	-0.26	-0.13	-0.09	0.84	1.19
	Working Not Working	1.17	0.79	0.13	1.48	0.14	-0.40	2.74	0.28	0.16	0.12	0.77	1.30
	Gender	-1.29	0.96	-0.13	-1.35	0.18	-3.19	0.61	-0.41	-0.14	-0.11	0.66	1.51
	Litigating/Not Litigating	0.00	1.18	0.00	0.00	1.00	-2.36	2.35	-0.39	0.00	0.00	0.59	1.71
	LOT	-0.22	0.06	-0.33	-3.60	0.00	-0.33	-0.10	-0.55	-0.36	-0.28	0.74	1.35
	DAQR- R Sum	-0.05	0.02	-0.24	-2.48	0.02	-0.08	-0.01	-0.50	-0.26	-0.19	0.64	1.55

a. Dependent Variable: HADS Anxiety

D 28 Hypothesis Testing Psychological Distress: Hypothesis 2 (c) Testing DAQ-R Scores and Hopelessness

Analysis Three Hopelessness (BHS) and MDA Scores

Model Summary^d

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1.00	0.54 ^a	0.30	0.24	4.36	0.30	5.32	7.00	89.00	0.00	1.87
2.00	0.71 ^b	0.50	0.46	3.68	0.21	36.91	1.00	88.00	0.00	
3.00	0.77 ^c	0.59	0.54	3.38	0.08	17.52	1.00	87.00	0.00	

a. Predictors: (Constant), Pain Duration 3-18 /19 -36+months, Litigating/Not Litigating, Married/Defacto or Single, Education Above/Below Year 12, Sustained Work Injury, Gender, Working or Not Working

b. Predictors: (Constant), Pain Duration 3-18 /19 -36+months, Litigating/Not Litigating, Married/Defacto or Single, Education Above/Below Year 12, Sustained Work Injury, Gender, Working or Not Working, LOT Positive Life Orientation

c. Predictors: (Constant), Pain Duration 3-18 /19 -36+months, Litigating/Not Litigating, Married/Defacto or Single, Education Above/Below Year 12, Sustained Work Injury, Gender, Working or Not Working, LOT Positive Life Orientation, DAQR- R Sum

d. Dependent Variable: Beck Hopelessness Scale

ANOVA^d

Model		Sum of Squares	df	Mean Square	F	Sig.
1.00	Regression	708.86	7.00	101.27	5.32	0.00 ^a
	Residual	1693.32	89.00	19.03		
	Total	2402.19	96.00			
2.00	Regression	1209.26	8.00	151.16	11.15	0.00 ^b
	Residual	1192.93	88.00	13.56		
	Total	2402.19	96.00			
3.00	Regression	1409.27	9.00	156.59	13.72	0.00 ^c
	Residual	992.92	87.00	11.41		
	Total	2402.19	96.00			

a. Predictors: (Constant), Pain Duration 3-18 /19 -36+months, Litigating/Not Litigating, Married/Defacto or Single, Education Above/Below Year 12, Sustained Work Injury, Gender, Working or Not Working

b. Predictors: (Constant), Pain Duration 3-18 /19 -36+months, Litigating/Not Litigating, Married/Defacto or Single, Education Above/Below Year 12, Sustained Work Injury, Gender, Working or Not Working, LOT Positive Life Orientation

c. Predictors: (Constant), Pain Duration 3-18 /19 -36+months, Litigating/Not Litigating, Married/Defacto or Single, Education Above/Below Year 12, Sustained Work Injury, Gender, Working or Not Working, LOT Positive Life Orientation, DAQR- R Sum

d. Dependent Variable: Beck Hopelessness Scale

Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Correlations			Collinearity Statistics	
	B	Std. Error	Beta			Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance	VIF
1.00	(Constant)	13.58	3.58	3.80	0.00	6.47	20.69					
	Sustained Work Injury	-1.45	1.00	-1.45	0.15	-3.43	0.54	-0.26	-0.15	-0.13	0.82	1.22
	Education Above/Below Year 12	-2.88	0.96	-3.01	0.00	-4.79	-0.98	-0.34	-0.30	-0.27	0.86	1.17
	Working Not Working	0.91	1.01	0.09	0.37	-1.11	2.92	0.27	0.09	0.08	0.76	1.31
	Gender	-2.31	1.13	-2.05	0.04	-4.55	-0.07	-0.30	-0.21	-0.18	0.77	1.30
	Litigating/Not Litigating	-1.62	1.38	-1.12	0.24	-4.37	1.13	-0.33	-0.12	-0.10	0.71	1.41
	Married/Defacto or Single	1.03	1.01	0.09	0.31	-0.97	3.03	0.08	0.11	0.09	0.94	1.06
	Pain Duration 3-18 /19 - 36+months	1.60	1.07	1.50	0.14	-0.52	3.71	0.17	0.16	0.13	0.84	1.19
2.00	(Constant)	15.76	3.04	5.18	0.00	9.71	21.80					
	Sustained Work Injury	-0.73	0.85	-0.07	0.39	-2.42	0.96	-0.26	-0.09	-0.06	0.80	1.25
	Education	-1.81	0.83	-2.19	0.03	-3.45	-0.17	-0.34	-0.23	-0.16	0.82	1.22
	Working Not Working	0.28	0.86	0.03	0.75	-1.44	1.99	0.27	0.03	0.02	0.75	1.33
	Gender	-0.96	0.98	-0.09	0.33	-2.90	0.98	-0.30	-0.10	-0.07	0.73	1.37
	Litigating/Not Litigating	-1.01	1.17	-0.08	0.39	-3.34	1.32	-0.33	-0.09	-0.06	0.70	1.42
	Married/Defacto or Single	1.16	0.85	1.36	0.18	-0.53	2.85	0.08	0.14	0.10	0.94	1.06
	Pain Duration	1.62	0.90	1.80	0.07	-0.17	3.41	0.17	0.19	0.14	0.84	1.19
	LOT	-0.38	0.06	-6.08	0.00	-0.51	-0.26	-0.64	-0.54	-0.46	0.78	1.28
3.00	(Constant)	17.98	2.84	6.33	0.00	12.33	23.62					
	Sustained Work Injury	-0.66	0.78	-0.07	0.40	-2.21	0.89	-0.26	-0.09	-0.06	0.80	1.25
	Education	-1.92	0.76	-2.52	0.01	-3.43	-0.41	-0.34	-0.26	-0.17	0.82	1.22
	Working Not Working	-0.38	0.81	-0.04	0.64	-1.98	1.22	0.27	-0.05	-0.03	0.72	1.38
	Gender	-0.11	0.92	-0.01	-0.12	0.91	1.72	-0.30	-0.01	-0.01	0.69	1.44
	Litigating/Not Litigating	0.55	1.14	0.04	0.48	-1.71	2.81	-0.33	0.05	0.03	0.63	1.59
	Married/Defacto or Single	0.51	0.79	0.05	0.64	-1.07	2.09	0.08	0.07	0.04	0.91	1.10
	Pain Duration	2.02	0.83	2.43	0.02	0.37	3.67	0.17	0.25	0.17	0.83	1.21
	LOT	-0.33	0.06	-4.45	0.00	-0.45	-0.21	-0.64	-0.51	-0.39	0.75	1.34
	DAQR- R Sum	-0.08	0.02	-4.19	0.00	-0.12	-0.04	-0.55	-0.41	-0.29	0.61	1.63

a. Dependent Variable: Beck Hopelessness Scale

D 29 Hypothesis Testing Psychological Distress: Hypothesis 2 (d) Testing DAQ-R Scores and Psychological Affect (Distress) Factor

Analysis Four Psychological Distress Factor and DA Scores

Model Summary^d

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1.00	0.67 ^a	0.44	0.40	0.79	0.44	9.98	7.00	88.00	0.00	2.05
2.00	0.78 ^b	0.60	0.57	0.67	0.16	35.42	1.00	87.00	0.00	
3.00	0.84 ^c	0.70	0.67	0.59	0.09	26.56	1.00	86.00	0.00	

a. Predictors: (Constant), Pain Duration 3-18 /19 -36+months, Litigating/Not Litigating, Married/Defacto or Single, Education Above/Below Year 12, Sustained Work Injury, Gender, Working or Not Working

b. Predictors: (Constant), Pain Duration 3-18 /19 -36+months, Litigating/Not Litigating, Married/Defacto or Single, Education Above/Below Year 12, Sustained Work Injury, Gender, Working or Not Working, LOT Positive Life Orientation

c. Predictors: (Constant), Pain Duration 3-18 /19 -36+months, Litigating/Not Litigating, Married/Defacto or Single, Education Above/Below Year 12, Sustained Work Injury, Gender, Working or Not Working, LOT Positive Life Orientation, DAQR- R Sum

d. Dependent Variable: Psychological Distress Factor

ANOVA^d

Model		Sum of Squares	df	Mean Square	F	Sig.
1.00	Regression	43.55	7.00	6.22	9.98	0.00 ^a
	Residual	54.86	88.00	0.62		
	Total	98.41	95.00			
2.00	Regression	59.43	8.00	7.43	16.58	0.00 ^b
	Residual	38.99	87.00	0.45		
	Total	98.41	95.00			
3.00	Regression	68.62	9.00	7.62	22.01	0.00 ^c
	Residual	29.79	86.00	0.35		
	Total	98.41	95.00			

a. Predictors: (Constant), Pain Duration 3-18 /19 -36+months, Litigating/Not Litigating, Married/Defacto or Single, Education Above/Below Year 12, Sustained Work Injury, Gender, Working or Not Working

b. Predictors: (Constant), Pain Duration 3-18 /19 -36+months, Litigating/Not Litigating, Married/Defacto or Single, Education Above/Below Year 12, Sustained Work Injury, Gender, Working or Not Working, LOT Positive Life Orientation

c. Predictors: (Constant), Pain Duration 3-18 /19 -36+months, Litigating/Not Litigating, Married/Defacto or Single, Education Above/Below Year 12, Sustained Work Injury, Gender, Working or Not Working, LOT Positive Life Orientation, DAQR- R Sum

d. Dependent Variable: Psychological Distress Factor

Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Correlations			Collinearity Statistics	
	B	Std. Error	Beta			Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance	VIF
1.00 (Constant)	2.43	0.65		3.76	0.00	1.15	3.72					
Sustained Work Injury	-0.40	0.18	-0.19	-2.20	0.03	-0.76	-0.04	-0.35	-0.23	-0.18	0.82	1.22
Education Above/Below Year 12	-0.54	0.17	-0.27	-3.13	0.00	-0.89	-0.20	-0.35	-0.32	-0.25	0.86	1.16
Workingr Not Working	0.28	0.18	0.14	1.50	0.14	-0.09	0.64	0.31	0.16	0.12	0.76	1.31
Gender	-0.61	0.20	-0.27	-3.00	0.00	-1.02	-0.21	-0.42	-0.30	-0.24	0.77	1.30
Litigating/Not Litigating	-0.58	0.25	-0.22	-2.32	0.02	-1.08	-0.08	-0.47	-0.24	-0.18	0.71	1.41
Married/Defacto or Single	0.20	0.18	0.09	1.09	0.28	-0.16	0.56	0.05	0.12	0.09	0.94	1.06
Pain Duration 3-18 /19 - 36+months	0.24	0.19	0.11	1.22	0.23	-0.15	0.62	0.16	0.13	0.10	0.83	1.20
2.00 (Constant)	2.81	0.55		5.08	0.00	1.71	3.91					
Sustained Work Injury	-0.26	0.16	-0.13	-1.66	0.10	-0.57	0.05	-0.35	-0.18	-0.11	0.80	1.25
Education	-0.34	0.15	-0.17	-2.27	0.03	-0.64	-0.04	-0.35	-0.24	-0.15	0.82	1.22
Working Not Working	0.15	0.16	0.07	0.95	0.34	-0.16	0.46	0.31	0.10	0.06	0.75	1.34
Gender	-0.36	0.18	-0.16	-2.03	0.05	-0.72	-0.01	-0.42	-0.21	-0.14	0.73	1.37
Litigating/Not Litigating	-0.48	0.21	-0.18	-2.25	0.03	-0.90	-0.06	-0.47	-0.23	-0.15	0.71	1.42
Married/Defacto or Single	0.21	0.15	0.09	1.36	0.18	-0.10	0.52	0.05	0.14	0.09	0.94	1.06
Pain Duration	0.26	0.16	0.12	1.56	0.12	-0.07	0.58	0.16	0.17	0.11	0.83	1.20
LOT	-0.07	0.01	-0.46	-5.95	0.00	-0.09	-0.05	-0.66	-0.54	-0.40	0.77	1.30
3.00 (Constant)	3.29	0.50		6.64	0.00	2.30	4.27					
Sustained Work Injury	-0.25	0.14	-0.12	-1.79	0.08	-0.52	0.03	-0.35	-0.19	-0.11	0.80	1.25
Education	-0.37	0.13	-0.18	-2.77	0.01	-0.63	-0.10	-0.35	-0.29	-0.16	0.82	1.22
Working Not Working	0.01	0.14	0.01	0.09	0.93	-0.27	0.29	0.31	0.01	0.01	0.72	1.39
Gender	-0.18	0.16	-0.08	-1.13	0.26	-0.50	0.14	-0.42	-0.12	-0.07	0.69	1.44
Litigating/Not Litigating	-0.14	0.20	-0.05	-0.72	0.47	-0.54	0.25	-0.47	-0.08	-0.04	0.63	1.59
Married/Defacto or Single	0.07	0.14	0.03	0.53	0.60	-0.20	0.35	0.05	0.06	0.03	0.91	1.10
Pain Duration	0.34	0.15	0.15	2.33	0.02	0.05	0.63	0.16	0.24	0.14	0.82	1.21
LOT	-0.06	0.01	-0.38	-5.52	0.00	-0.08	-0.04	-0.66	-0.51	-0.33	0.73	1.37
DAQR- R Sum	-0.02	0.00	-0.39	-5.15	0.00	-0.02	-0.01	-0.65	-0.49	-0.31	0.61	1.63

a. Dependent Variable: Psychological Distress Factor

D 30 Hypothesis Testing Pain and Disability: Hypothesis 3 (a) Testing Daily Activity MDAQ-R Scores and Pain

Analysis One and MDA Scores MPQ PRI Scores

Model Summary^d

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1.00	0.40 ^a	0.16	0.08	13.75	0.16	2.11	7.00	79.00	0.05	2.06
2.00	0.40 ^b	0.16	0.07	13.83	0.00	0.11	1.00	78.00	0.74	
3.00	0.40 ^c	0.16	0.06	13.92	0.00	0.07	1.00	77.00	0.80	

a. Predictors: (Constant), Age Above/Below 45 years, Sustained Work Injury, Education Above/Below Year 12, Married/Defacto or Single, Working or Not Working, Gender, Litigating/Not Litigating

b. Predictors: (Constant), Age Above/Below 45 years, Sustained Work Injury, Education Above/Below Year 12, Married/Defacto or Single, Working or Not Working, Gender, Litigating/Not Litigating, LOT Positive Life Orientation

c. Predictors: (Constant), Age Above/Below 45 years, Sustained Work Injury, Education Above/Below Year 12, Married/Defacto or Single, Working or Not Working, Gender, Litigating/Not Litigating, LOT Positive Life Orientation, MDAQ-R Sum

d. Dependent Variable: MPQ Sum

ANOVA^d

Model		Sum of Squares	df	Mean Square	F	Sig.
1.00	Regression	2789.76	7.00	398.54	2.11	0.05 ^a
	Residual	14945.99	79.00	189.19		
	Total	17735.75	86.00			
2.00	Regression	2811.75	8.00	351.47	1.84	0.08 ^b
	Residual	14924.00	78.00	191.33		
	Total	17735.75	86.00			
3.00	Regression	2824.67	9.00	313.85	1.62	0.12 ^c
	Residual	14911.08	77.00	193.65		
	Total	17735.75	86.00			

a. Predictors: (Constant), Age Above/Below 45 years, Sustained Work Injury, Education Above/Below Year 12, Married/Defacto or Single, Working or Not Working, Gender, Litigating/Not Litigating

b. Predictors: (Constant), Age Above/Below 45 years, Sustained Work Injury, Education Above/Below Year 12, Married/Defacto or Single, Working or Not Working, Gender, Litigating/Not Litigating, LOT Positive Life Orientation

c. Predictors: (Constant), Age Above/Below 45 years, Sustained Work Injury, Education Above/Below Year 12, Married/Defacto or Single, Working or Not Working, Gender, Litigating/Not Litigating, LOT Positive Life Orientation, MDAQ-R Sum

d. Dependent Variable: MPQ Sum

Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Correlations			Collinearity Statistics		
	B	Std. Error	Beta			Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance	VIF	
1.00	(Constant)	21.03	11.34	1.85	0.07	-1.55	43.60						
	Gender	0.05	4.09	0.00	0.01	0.99	-8.10	8.19	-0.06	0.00	0.00	0.67	1.50
	Education Above/Below Year 12	-2.78	3.20	-0.10	-0.87	0.39	-9.14	3.59	-0.20	-0.10	-0.09	0.85	1.17
	Working Not Working	5.22	3.40	0.18	1.54	0.13	-1.54	11.98	0.27	0.17	0.16	0.75	1.33
	Married/Defacto or Single	7.01	3.32	0.23	2.11	0.04	0.40	13.61	0.26	0.23	0.22	0.92	1.08
	Sustained Work Injury	0.26	3.32	0.01	0.08	0.94	-6.34	6.86	0.00	0.01	0.01	0.80	1.24
	Litigating/Not Litigating	-5.54	4.68	-0.15	-1.18	0.24	-14.86	3.79	-0.19	-0.13	-0.12	0.63	1.59
	Age Above/Below 45 years	-0.92	3.63	-0.03	-0.25	0.80	-8.16	6.31	-0.02	-0.03	-0.03	0.79	1.27
2.00	(Constant)	21.33	11.44	1.86	0.07	-1.45	44.10						
	Gender	0.33	4.20	0.01	0.08	0.94	-8.03	8.69	-0.06	0.01	0.01	0.64	1.56
	Education	-2.47	3.34	-0.09	-0.74	0.46	-9.12	4.17	-0.20	-0.08	-0.08	0.79	1.26
	Working Not Working	5.14	3.43	0.18	1.50	0.14	-1.68	11.96	0.27	0.17	0.16	0.75	1.33
	Married/Defacto or Single	7.07	3.34	0.23	2.11	0.04	0.41	13.72	0.26	0.23	0.22	0.92	1.09
	Sustained Work Injury	0.36	3.35	0.01	0.11	0.91	-6.31	7.03	0.00	0.01	0.01	0.80	1.25
	Litigating/Not Litigating	-5.40	4.73	-0.15	-1.14	0.26	-14.81	4.02	-0.19	-0.13	-0.12	0.63	1.60
	Age	-0.82	3.67	-0.03	-0.22	0.82	-8.12	6.48	-0.02	-0.03	-0.02	0.78	1.28
	LOT	-0.08	0.25	-0.04	-0.34	0.74	-0.58	0.41	-0.13	-0.04	-0.04	0.78	1.28
3.00	(Constant)	22.22	12.01	1.85	0.07	-1.71	46.14						
	Gender	0.32	4.23	0.01	0.08	0.94	-8.09	8.74	-0.06	0.01	0.01	0.64	1.56
	Education	-2.30	3.42	-0.08	-0.67	0.50	-9.12	4.51	-0.20	-0.08	-0.07	0.76	1.31
	Working or Not Working	5.08	3.45	0.18	1.47	0.15	-1.80	11.95	0.27	0.17	0.15	0.75	1.34
	Married/Defacto or Single	6.98	3.38	0.23	2.07	0.04	0.26	13.71	0.26	0.23	0.22	0.91	1.10
	Sustained Work Injury	0.31	3.37	0.01	0.09	0.93	-6.41	7.03	0.00	0.01	0.01	0.79	1.26
	Litigating/Not Litigating	-5.24	4.80	-0.15	-1.09	0.28	-14.79	4.32	-0.19	-0.12	-0.11	0.62	1.63
	Age	-0.82	3.69	-0.03	-0.22	0.83	-8.16	6.53	-0.02	-0.03	-0.02	0.78	1.28
	LOT	-0.08	0.25	-0.04	-0.32	0.75	-0.58	0.42	-0.13	-0.04	-0.03	0.78	1.28
	MDAQ-R Sum	-0.01	0.05	-0.03	-0.26	0.80	-0.12	0.09	-0.15	-0.03	-0.03	0.88	1.14

a. Dependent Variable: MPQ Sum

Analysis Two MDA Scores MPQ PPI Scores

Model Summary^d

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1.00	0.37 ^a	0.14	0.06	0.91	0.14	1.76	7.00	79.00	0.11	2.07
2.00	0.37 ^b	0.14	0.05	0.92	0.00	0.01	1.00	78.00	0.93	
3.00	0.38 ^c	0.14	0.04	0.92	0.01	0.54	1.00	77.00	0.46	

a. Predictors: (Constant), Age Above/Below 45 years, Sustained Work Injury, Education Above/Below Year 12, Married/Defacto or Single, Working or Not Working, Gender, Litigating/Not Litigating

b. Predictors: (Constant), Age Above/Below 45 years, Sustained Work Injury, Education Above/Below Year 12, Married/Defacto or Single, Working or Not Working, Gender, Litigating/Not Litigating, LOT Positive Life Orientation

c. Predictors: (Constant), Age Above/Below 45 years, Sustained Work Injury, Education Above/Below Year 12, Married/Defacto or Single, Working or Not Working, Gender, Litigating/Not Litigating, LOT Positive Life Orientation, MDAQ-R Sum

d. Dependent Variable: MPQ PPI

ANOVA^d

Model		Sum of Squares	df	Mean Square	F	Sig.
1.00	Regression	10.23	7.00	1.46	1.76	0.11 ^a
	Residual	65.45	79.00	0.83		
	Total	75.68	86.00			
2.00	Regression	10.24	8.00	1.28	1.53	0.16 ^b
	Residual	65.44	78.00	0.84		
	Total	75.68	86.00			
3.00	Regression	10.69	9.00	1.19	1.41	0.20 ^c
	Residual	64.98	77.00	0.84		
	Total	75.68	86.00			

a. Predictors: (Constant), Age Above/Below 45 years, Sustained Work Injury, Education Above/Below Year 12, Married/Defacto or Single, Working or Not Working, Gender, Litigating/Not Litigating

b. Predictors: (Constant), Age Above/Below 45 years, Sustained Work Injury, Education Above/Below Year 12, Married/Defacto or Single, Working or Not Working, Gender, Litigating/Not Litigating, LOT Positive Life Orientation

c. Predictors: (Constant), Age Above/Below 45 years, Sustained Work Injury, Education Above/Below Year 12, Married/Defacto or Single, Working or Not Working, Gender, Litigating/Not Litigating, LOT Positive Life Orientation, MDAQ-R Sum

d. Dependent Variable: MPQ PPI

Coefficients ^a												
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Correlations			Collinearity Statistics	
	B	Std. Error	Beta			Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance	VIF
1.00 (Constant)	3.66	0.75		4.87	0.00	2.16	5.15					
Gender	-0.01	0.27	0.00	-0.04	0.97	-0.55	0.53	-0.15	0.00	0.00	0.67	1.50
Education Above/Below Year 12	-0.16	0.21	-0.09	-0.78	0.44	-0.59	0.26	-0.15	-0.09	-0.08	0.85	1.17
Working Not Working	-0.05	0.22	-0.03	-0.21	0.83	-0.49	0.40	0.08	-0.02	-0.02	0.75	1.33
Married/Defacto or Single	0.26	0.22	0.13	1.18	0.24	-0.18	0.70	0.10	0.13	0.12	0.92	1.08
Sustained Work Injury	-0.09	0.22	-0.05	-0.40	0.69	-0.53	0.35	-0.14	-0.05	-0.04	0.80	1.24
Litigating/Not Litigating	-0.74	0.31	-0.31	-2.39	0.02	-1.36	-0.12	-0.33	-0.26	-0.25	0.63	1.59
Age Above/Below 45 years	0.01	0.24	0.00	0.03	0.98	-0.47	0.48	-0.08	0.00	0.00	0.79	1.27
2.00 (Constant)	3.65	0.76		4.82	0.00	2.14	5.16					
Gender	-0.01	0.28	-0.01	-0.05	0.96	-0.57	0.54	-0.15	-0.01	-0.01	0.64	1.56
Education	-0.17	0.22	-0.09	-0.77	0.45	-0.61	0.27	-0.15	-0.09	-0.08	0.79	1.26
Working Not Working	-0.05	0.23	-0.02	-0.20	0.84	-0.50	0.41	0.08	-0.02	-0.02	0.75	1.33
Married/Defacto or Single	0.26	0.22	0.13	1.16	0.25	-0.18	0.70	0.10	0.13	0.12	0.92	1.09
Sustained Work Injury	-0.09	0.22	-0.05	-0.41	0.68	-0.53	0.35	-0.14	-0.05	-0.04	0.80	1.25
Litigating/Not Litigating	-0.74	0.31	-0.32	-2.37	0.02	-1.37	-0.12	-0.33	-0.26	-0.25	0.63	1.60
Age	0.00	0.24	0.00	0.02	0.99	-0.48	0.49	-0.08	0.00	0.00	0.78	1.28
LOT	0.00	0.02	0.01	0.08	0.93	-0.03	0.03	-0.12	0.01	0.01	0.78	1.28
3.00 (Constant)	3.82	0.79		4.82	0.00	2.24	5.40					
Gender	-0.02	0.28	-0.01	-0.05	0.96	-0.57	0.54	-0.15	-0.01	-0.01	0.64	1.56
Education	-0.14	0.23	-0.07	-0.61	0.54	-0.59	0.31	-0.15	-0.07	-0.06	0.76	1.31
Working or Not Working	-0.06	0.23	-0.03	-0.25	0.80	-0.51	0.40	0.08	-0.03	-0.03	0.75	1.34
Married/Defacto or Single	0.24	0.22	0.12	1.09	0.28	-0.20	0.69	0.10	0.12	0.11	0.91	1.10
Sustained Work Injury	-0.10	0.22	-0.05	-0.45	0.66	-0.54	0.34	-0.14	-0.05	-0.05	0.79	1.26
Litigating/Not Litigating	-0.71	0.32	-0.30	-2.25	0.03	-1.34	-0.08	-0.33	-0.25	-0.24	0.62	1.63
Age Above/Below 45 years	0.00	0.24	0.00	0.02	0.98	-0.48	0.49	-0.08	0.00	0.00	0.78	1.28
LOT	0.00	0.02	0.02	0.13	0.90	-0.03	0.03	-0.12	0.01	0.01	0.78	1.28
MDAQ-R Sum	0.00	0.00	-0.08	-0.74	0.46	-0.01	0.00	-0.17	-0.08	-0.08	0.88	1.14

a. Dependent Variable: MPQ PPI

D 31 Hypothesis Testing Pain and Disability: Hypothesis 3 (b) Testing MDAQ-R Scores and Disability

Analysis Three MDA Scores PDI Scores

Model Summary^d

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1.00	0.56 ^a	0.31	0.26	13.77	0.31	6.07	6.00	80.00	0.00	2.07
2.00	0.60 ^b	0.35	0.30	13.43	0.04	5.10	1.00	79.00	0.03	
3.00	0.62 ^c	0.38	0.32	13.23	0.03	3.42	1.00	78.00	0.07	

a. Predictors: (Constant), Age Above/Below 45 years, Sustained Work Injury, Education Above/Below Year 12, Married/Defacto or Single, Working or Not Working, Litigating/Not Litigating

b. Predictors: (Constant), Age Above/Below 45 years, Sustained Work Injury, Education Above/Below Year 12, Married/Defacto or Single, Working or Not Working, Litigating/Not Litigating, LOT Positive Life Orientation

c. Predictors: (Constant), Age Above/Below 45 years, Sustained Work Injury, Education Above/Below Year 12, Married/Defacto or Single, Working or Not Working, Litigating/Not Litigating, LOT Positive Life Orientation, MDAQ-R Sum

d. Dependent Variable: Pain Disability Index

ANOVA^d

Model		Sum of Squares	df	Mean Square	F	Sig.
1.00	Regression	6915.25	6.00	1152.54	6.07	0.00 ^a
	Residual	15179.19	80.00	189.74		
	Total	22094.44	86.00			
2.00	Regression	7836.04	7.00	1119.43	6.20	0.00 ^b
	Residual	14258.40	79.00	180.49		
	Total	22094.44	86.00			
3.00	Regression	8434.31	8.00	1054.29	6.02	0.00 ^c
	Residual	13660.13	78.00	175.13		
	Total	22094.44	86.00			

a. Predictors: (Constant), Age Above/Below 45 years, Sustained Work Injury, Education Above/Below Year 12, Married/Defacto or Single, Working or Not Working, Litigating/Not Litigating

b. Predictors: (Constant), Age Above/Below 45 years, Sustained Work Injury, Education Above/Below Year 12, Married/Defacto or Single, Working or Not Working, Litigating/Not Litigating, LOT Positive Life Orientation

c. Predictors: (Constant), Age Above/Below 45 years, Sustained Work Injury, Education Above/Below Year 12, Married/Defacto or Single, Working or Not Working, Litigating/Not Litigating, LOT Positive Life Orientation, MDAQ-R Sum

d. Dependent Variable: Pain Disability Index

Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Correlations			Collinearity Statistics		
	B	Std. Error	Beta			Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance	VIF	
1.00	(Constant)	52.97	10.90	4.86	0.00	31.28	74.65						
	Education Above/Below Year 12	-2.62	3.16	-0.08	-0.83	0.41	-8.92	3.67	-0.21	-0.09	-0.08	0.88	1.14
	Working Not Working	5.76	3.38	0.18	1.70	0.09	-0.97	12.49	0.26	0.19	0.16	0.76	1.31
	Married/Defacto or Single	8.19	3.31	0.24	2.47	0.02	1.59	14.78	0.22	0.27	0.23	0.93	1.08
	Sustained Work Injury	-9.57	3.21	-0.30	-2.99	0.00	-15.95	-3.19	-0.34	-0.32	-0.28	0.86	1.16
	Litigating/Not Litigating	-9.70	4.36	-0.24	-2.22	0.03	-18.38	-1.02	-0.38	-0.24	-0.21	0.73	1.37
	Age Above/Below 45 years	-1.85	3.59	-0.05	-0.51	0.61	-9.00	5.31	-0.08	-0.06	-0.05	0.81	1.24
2.00	(Constant)	56.28	10.73	5.25	0.00	34.92	77.63						
	Education	-0.94	3.17	-0.03	-0.29	0.77	-7.25	5.38	-0.21	-0.03	-0.03	0.83	1.21
	Working Not Working	5.04	3.31	0.16	1.52	0.13	-1.55	11.63	0.26	0.17	0.14	0.76	1.32
	Married/Defacto or Single	8.68	3.24	0.25	2.68	0.01	2.23	15.13	0.22	0.29	0.24	0.92	1.08
	Sustained Work Injury	-8.55	3.16	-0.27	-2.71	0.01	-14.84	-2.27	-0.34	-0.29	-0.24	0.85	1.18
	Litigating/Not Litigating	-8.06	4.31	-0.20	-1.87	0.07	-16.65	0.53	-0.38	-0.21	-0.17	0.71	1.41
	Age	-0.93	3.53	-0.03	-0.26	0.79	-7.95	6.10	-0.08	-0.03	-0.02	0.79	1.26
	LOT	-0.53	0.24	-0.23	-2.26	0.03	-1.00	-0.06	-0.37	-0.25	-0.20	0.81	1.23
3.00	(Constant)	62.31	11.06	5.63	0.00	40.29	84.33						
	Education	0.22	3.19	0.01	0.07	0.94	-6.12	6.57	-0.21	0.01	0.01	0.80	1.26
	Working or Not Working	4.63	3.27	0.15	1.41	0.16	-1.88	11.14	0.26	0.16	0.13	0.75	1.33
	Married/Defacto or Single	8.13	3.20	0.24	2.54	0.01	1.75	14.51	0.22	0.28	0.23	0.92	1.09
	Sustained Work Injury	-8.91	3.12	-0.28	-2.86	0.01	-15.11	-2.70	-0.34	-0.31	-0.25	0.84	1.19
	Litigating/Not Litigating	-6.97	4.29	-0.17	-1.62	0.11	-15.51	1.57	-0.38	-0.18	-0.14	0.70	1.44
	Age	-0.92	3.48	-0.03	-0.27	0.79	-7.85	6.00	-0.08	-0.03	-0.02	0.79	1.26
	LOT Positive Life Orientation	-0.51	0.23	-0.22	-2.18	0.03	-0.97	-0.04	-0.37	-0.24	-0.19	0.81	1.23
	MDAQ-R Sum	-0.09	0.05	-0.18	-1.85	0.07	-0.19	0.01	-0.30	-0.20	-0.16	0.88	1.14

a. Dependent Variable: Pain Disability Index

D 32 Hypothesis Testing Pain and Disability: Hypothesis 3 (c) Testing MDAQ-R Scores and Pain & Disability Factor

Analysis Four Pain and Disability Factor and MDA Scores

Model Summary^d

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1.00	0.53 ^a	0.29	0.22	0.89	0.29	4.51	7.00	79.00	0.00	
2.00	0.55 ^b	0.30	0.23	0.89	0.02	1.88	1.00	78.00	0.17	
3.00	0.56 ^c	0.31	0.23	0.89	0.01	1.40	1.00	77.00	0.24	2.08

a. Predictors: (Constant), Age Above/Below 45 years, Sustained Work Injury, Education Above/Below Year 12, Married/Defacto or Single, Working or Not Working, Gender, Litigating/Not Litigating

b. Predictors: (Constant), Age Above/Below 45 years, Sustained Work Injury, Education Above/Below Year 12, Married/Defacto or Single, Working or Not Working, Gender, Litigating/Not Litigating, LOT Positive Life Orientation

c. Predictors: (Constant), Age Above/Below 45 years, Sustained Work Injury, Education Above/Below Year 12, Married/Defacto or Single, Working or Not Working, Gender, Litigating/Not Litigating, LOT Positive Life Orientation, MDAQ-R Sum

d. Dependent Variable: Pain & Disability Factor

ANOVA^d

Model		Sum of Squares	df	Mean Square	F	Sig.
1.00	Regression	25.16	7.00	3.59	4.51	0.00 ^a
	Residual	62.99	79.00	0.80		
	Total	88.15	86.00			
2.00	Regression	26.64	8.00	3.33	4.22	0.00 ^b
	Residual	61.51	78.00	0.79		
	Total	88.15	86.00			
3.00	Regression	27.74	9.00	3.08	3.93	0.00 ^c
	Residual	60.41	77.00	0.78		
	Total	88.15	86.00			

a. Predictors: (Constant), Age Above/Below 45 years, Sustained Work Injury, Education Above/Below Year 12, Married/Defacto or Single, Working or Not Working, Gender, Litigating/Not Litigating

b. Predictors: (Constant), Age Above/Below 45 years, Sustained Work Injury, Education Above/Below Year 12, Married/Defacto or Single, Working or Not Working, Gender, Litigating/Not Litigating, LOT Positive Life Orientation

c. Predictors: (Constant), Age Above/Below 45 years, Sustained Work Injury, Education Above/Below Year 12, Married/Defacto or Single, Working or Not Working, Gender, Litigating/Not Litigating, LOT Positive Life Orientation, MDAQ-R Sum

d. Dependent Variable: Pain & Disability Factor

Coefficients ^a												
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Correlations			Collinearity Statistics	
	B	Std. Error	Beta			Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance	VIF
1.00 (Constant)	0.74	0.74		1.00	0.32	-0.73	2.20					
Gender	-0.16	0.27	-0.07	-0.61	0.54	-0.69	0.37	-0.21	-0.07	-0.06	0.67	1.50
Education Above/Below Year 12	-0.23	0.21	-0.12	-1.12	0.26	-0.65	0.18	-0.24	-0.13	-0.11	0.85	1.17
Working Not Working	0.42	0.22	0.21	1.89	0.06	-0.02	0.85	0.32	0.21	0.18	0.75	1.33
Married/Defacto or Single	0.61	0.22	0.28	2.81	0.01	0.18	1.03	0.28	0.30	0.27	0.92	1.08
Sustained Work Injury	-0.30	0.22	-0.15	-1.41	0.16	-0.73	0.12	-0.20	-0.16	-0.13	0.80	1.24
Litigating/Not Litigating	-0.52	0.30	-0.20	-1.71	0.09	-1.12	0.09	-0.34	-0.19	-0.16	0.63	1.59
Age Above/Below 45 years	-0.08	0.24	-0.04	-0.36	0.72	-0.55	0.39	-0.06	-0.04	-0.03	0.79	1.27
2.00 (Constant)	0.81	0.73		1.11	0.27	-0.65	2.28					
Gender	-0.09	0.27	-0.04	-0.33	0.74	-0.62	0.45	-0.21	-0.04	-0.03	0.64	1.56
Education	-0.16	0.21	-0.08	-0.72	0.47	-0.58	0.27	-0.24	-0.08	-0.07	0.79	1.26
Working Not Working	0.39	0.22	0.20	1.79	0.08	-0.04	0.83	0.32	0.20	0.17	0.75	1.33
Married/Defacto or Single	0.62	0.21	0.29	2.89	0.00	0.19	1.05	0.28	0.31	0.27	0.92	1.09
Sustained Work Injury	-0.28	0.21	-0.14	-1.29	0.20	-0.71	0.15	-0.20	-0.15	-0.12	0.80	1.25
Litigating/Not Litigating	-0.48	0.30	-0.19	-1.59	0.12	-1.09	0.12	-0.34	-0.18	-0.15	0.63	1.60
Age	-0.06	0.24	-0.03	-0.24	0.81	-0.53	0.41	-0.06	-0.03	-0.02	0.78	1.28
LOT	-0.02	0.02	-0.15	-1.37	0.17	-0.05	0.01	-0.29	-0.15	-0.13	0.78	1.28
3.00 (Constant)	1.07	0.76		1.40	0.16	-0.45	2.60					
Gender	-0.09	0.27	-0.04	-0.33	0.74	-0.63	0.45	-0.21	-0.04	-0.03	0.64	1.56
Education	-0.11	0.22	-0.05	-0.49	0.63	-0.54	0.33	-0.24	-0.06	-0.05	0.76	1.31
Working Not Working	0.38	0.22	0.19	1.71	0.09	-0.06	0.81	0.32	0.19	0.16	0.75	1.34
Married/Defacto or Single	0.60	0.21	0.27	2.78	0.01	0.17	1.03	0.28	0.30	0.26	0.91	1.10
Sustained Work Injury	-0.29	0.21	-0.14	-1.36	0.18	-0.72	0.13	-0.20	-0.15	-0.13	0.79	1.26
Litigating/Not Litigating	-0.44	0.31	-0.17	-1.43	0.16	-1.04	0.17	-0.34	-0.16	-0.13	0.62	1.63
Age	-0.06	0.23	-0.03	-0.24	0.81	-0.52	0.41	-0.06	-0.03	-0.02	0.78	1.28
LOT	-0.02	0.02	-0.14	-1.30	0.20	-0.05	0.01	-0.29	-0.15	-0.12	0.78	1.28
MDAQ-R Sum	0.00	0.00	-0.12	-1.18	0.24	-0.01	0.00	-0.26	-0.13	-0.11	0.88	1.14

a. Dependent Variable: Pain & Disability Factor

D 33 Hypothesis Testing Pain and Disability: Hypothesis 4 (a) Testing DAQ-R Scores and Pain

Analysis One and DA Scores MPQ PRI Scores

Model Summary^a

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1.00	0.42 ^a	0.18	0.11	13.00	0.18	2.76	7.00	89.00	0.01	2.14
2.00	0.43 ^b	0.18	0.11	13.04	0.00	0.45	1.00	88.00	0.50	
3.00	0.43 ^c	0.18	0.10	13.11	0.00	0.04	1.00	87.00	0.85	

a. Predictors: (Constant), Age Above/Below 45 years, Sustained Work Injury, Education Above/Below Year 12, Married/Defacto or Single, Working or Not Working, Gender, Litigating/Not Litigating

b. Predictors: (Constant), Age Above/Below 45 years, Sustained Work Injury, Education Above/Below Year 12, Married/Defacto or Single, Working or Not Working, Gender, Litigating/Not Litigating, LOT Positive Life Orientation

c. Predictors: (Constant), Age Above/Below 45 years, Sustained Work Injury, Education Above/Below Year 12, Married/Defacto or Single, Working or Not Working, Gender, Litigating/Not Litigating, LOT Positive Life Orientation, DAQR- R Sum

d. Dependent Variable: MPQ Sum

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1.00	Regression	3262.79	7.00	466.11	2.76	0.01 ^a
	Residual	15042.57	89.00	169.02		
	Total	18305.36	96.00			
2.00	Regression	3339.85	8.00	417.48	2.45	0.02 ^b
	Residual	14965.51	88.00	170.06		
	Total	18305.36	96.00			
3.00	Regression	3346.22	9.00	371.80	2.16	0.03 ^c
	Residual	14959.14	87.00	171.94		
	Total	18305.36	96.00			

a. Predictors: (Constant), Age Above/Below 45 years, Sustained Work Injury, Education Above/Below Year 12, Married/Defacto or Single, Working or Not Working, Gender, Litigating/Not Litigating

b. Predictors: (Constant), Age Above/Below 45 years, Sustained Work Injury, Education Above/Below Year 12, Married/Defacto or Single, Working or Not Working, Gender, Litigating/Not Litigating, LOT Positive Life Orientation

c. Predictors: (Constant), Age Above/Below 45 years, Sustained Work Injury, Education Above/Below Year 12, Married/Defacto or Single, Working or Not Working, Gender, Litigating/Not Litigating, LOT Positive Life Orientation, DAQR- R Sum

d. Dependent Variable: MPQ Sum

Coefficients ^a													
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Correlations			Collinearity Statistics	
		B	Std. Error	Beta			Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance	VIF
1.00	(Constant)	20.50	10.37		1.98	0.05	-0.11	41.11					
	Gender	2.59	3.53	0.08	0.73	0.46	-4.43	9.61	-0.03	0.08	0.07	0.71	1.40
	Education Above/Below Year 12	-2.77	2.82	-0.10	-0.98	0.33	-8.37	2.83	-0.21	-0.10	-0.09	0.88	1.14
	Workingr Not Working	6.94	2.99	0.25	2.32	0.02	1.01	12.87	0.31	0.24	0.22	0.78	1.28
	Married/Defacto or Single	4.05	3.04	0.13	1.34	0.19	-1.98	10.08	0.18	0.14	0.13	0.92	1.09
	Sustained Work Injury	0.92	2.96	0.03	0.31	0.76	-4.96	6.80	0.00	0.03	0.03	0.83	1.21
	Litigating/Not Litigating	-7.40	4.27	-0.20	-1.73	0.09	-15.88	1.08	-0.24	-0.18	-0.17	0.66	1.51
	Age Above/Below 45 years	-3.05	3.32	-0.10	-0.92	0.36	-9.65	3.54	-0.07	-0.10	-0.09	0.77	1.30
2.00	(Constant)	21.36	10.48		2.04	0.04	0.53	42.20					
	Gender	3.12	3.63	0.10	0.86	0.39	-4.09	10.33	-0.03	0.09	0.08	0.68	1.47
	Education	-2.35	2.89	-0.09	-0.81	0.42	-8.10	3.40	-0.21	-0.09	-0.08	0.84	1.19
	Working Not Working	6.69	3.02	0.24	2.22	0.03	0.69	12.69	0.31	0.23	0.21	0.77	1.30
	Married/Defacto or Single	4.14	3.05	0.14	1.36	0.18	-1.92	10.19	0.18	0.14	0.13	0.92	1.09
	Sustained Work Injury	1.17	2.99	0.04	0.39	0.70	-4.77	7.12	0.00	0.04	0.04	0.82	1.23
	Litigating/Not Litigating	-7.19	4.29	-0.20	-1.68	0.10	-15.73	1.34	-0.24	-0.18	-0.16	0.66	1.52
	Age	-3.00	3.33	-0.10	-0.90	0.37	-9.62	3.62	-0.07	-0.10	-0.09	0.77	1.30
	LOT	-0.15	0.22	-0.07	-0.67	0.50	-0.59	0.29	-0.16	-0.07	-0.06	0.79	1.27
3.00	(Constant)	21.81	10.79		2.02	0.05	0.36	43.26					
	Gender	3.28	3.74	0.11	0.88	0.38	-4.15	10.70	-0.03	0.09	0.08	0.65	1.55
	Education Above/Below Year 12	-2.36	2.91	-0.09	-0.81	0.42	-8.15	3.42	-0.21	-0.09	-0.08	0.84	1.19
	Working or Not Working	6.61	3.06	0.24	2.16	0.03	0.52	12.70	0.31	0.23	0.21	0.76	1.32
	Married/Defacto or Single	4.02	3.12	0.13	1.29	0.20	-2.19	10.23	0.18	0.14	0.12	0.88	1.13
	Sustained Work Injury	1.18	3.01	0.04	0.39	0.70	-4.80	7.15	0.00	0.04	0.04	0.82	1.23
	Litigating/Not Litigating	-6.89	4.60	-0.19	-1.50	0.14	-16.02	2.24	-0.24	-0.16	-0.15	0.58	1.72
	Age	-3.04	3.35	-0.10	-0.91	0.37	-9.70	3.63	-0.07	-0.10	-0.09	0.77	1.30
	LOT	-0.14	0.23	-0.07	-0.61	0.54	-0.60	0.32	-0.16	-0.07	-0.06	0.75	1.33
	DAQR- R Sum	-0.01	0.07	-0.02	-0.19	0.85	-0.16	0.13	-0.20	-0.02	-0.02	0.62	1.62

a. Dependent Variable: MPQ Sum

Analysis Two DA Scores MPQ PPI Scores

Model Summary^d

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1.00	0.37 ^a	0.13	0.07	0.92	0.13	1.96	7.00	89.00	0.07	2.09
2.00	0.37 ^b	0.13	0.06	0.92	0.00	0.14	1.00	88.00	0.71	
3.00	0.37 ^c	0.14	0.05	0.93	0.00	0.11	1.00	87.00	0.75	

a. Predictors: (Constant), Age Above/Below 45 years, Sustained Work Injury, Education Above/Below Year 12, Married/Defacto or Single, Working or Not Working, Gender, Litigating/Not Litigating

b. Predictors: (Constant), Age Above/Below 45 years, Sustained Work Injury, Education Above/Below Year 12, Married/Defacto or Single, Working or Not Working, Gender, Litigating/Not Litigating, LOT Positive Life Orientation

c. Predictors: (Constant), Age Above/Below 45 years, Sustained Work Injury, Education Above/Below Year 12, Married/Defacto or Single, Working or Not Working, Gender, Litigating/Not Litigating, LOT Positive Life Orientation, DAQR- R Sum

d. Dependent Variable: MPQ PPI

ANOVA^d

Model		Sum of Squares	df	Mean Square	F	Sig.
1.00	Regression	11.56	7.00	1.65	1.96	0.07 ^a
	Residual	75.12	89.00	0.84		
	Total	86.68	96.00			
2.00	Regression	11.68	8.00	1.46	1.71	0.11 ^b
	Residual	75.00	88.00	0.85		
	Total	86.68	96.00			
3.00	Regression	11.77	9.00	1.31	1.52	0.15 ^c
	Residual	74.91	87.00	0.86		
	Total	86.68	96.00			

a. Predictors: (Constant), Age Above/Below 45 years, Sustained Work Injury, Education Above/Below Year 12, Married/Defacto or Single, Working or Not Working, Gender, Litigating/Not Litigating

b. Predictors: (Constant), Age Above/Below 45 years, Sustained Work Injury, Education Above/Below Year 12, Married/Defacto or Single, Working or Not Working, Gender, Litigating/Not Litigating, LOT Positive Life Orientation

c. Predictors: (Constant), Age Above/Below 45 years, Sustained Work Injury, Education Above/Below Year 12, Married/Defacto or Single, Working or Not Working, Gender, Litigating/Not Litigating, LOT Positive Life Orientation, DAQR- R Sum

d. Dependent Variable: MPQ PPI

Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Correlations			Collinearity Statistics		
	B	Std. Error				Beta	Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance	VIF
1.00	(Constant)	3.59	0.73		4.90	0.00	2.14	5.05					
	Gender	0.10	0.25	0.04	0.38	0.70	-0.40	0.59	-0.10	0.04	0.04	0.71	1.40
	Education Above/Below Year 12	-0.25	0.20	-0.13	-1.24	0.22	-0.64	0.15	-0.21	-0.13	-0.12	0.88	1.14
	Working Not Working	0.08	0.21	0.04	0.37	0.71	-0.34	0.50	0.15	0.04	0.04	0.78	1.28
	Married/Defacto or Single	0.08	0.21	0.04	0.38	0.71	-0.35	0.51	0.04	0.04	0.04	0.92	1.09
	Sustained Work Injury	-0.03	0.21	-0.02	-0.16	0.88	-0.45	0.38	-0.11	-0.02	-0.02	0.83	1.21
	Litigating/Not Litigating	-0.77	0.30	-0.31	-2.57	0.01	-1.37	-0.17	-0.33	-0.26	-0.25	0.66	1.51
	Age Above/Below 45 years	0.01	0.23	0.00	0.04	0.97	-0.46	0.48	-0.04	0.00	0.00	0.77	1.30
2.00	(Constant)	3.63	0.74		4.89	0.00	2.15	5.10					
	Gender	0.12	0.26	0.05	0.45	0.65	-0.39	0.63	-0.10	0.05	0.04	0.68	1.47
	Education Above/Below Year 12	-0.23	0.20	-0.12	-1.13	0.26	-0.64	0.18	-0.21	-0.12	-0.11	0.84	1.19
	Working Not Working	0.07	0.21	0.04	0.32	0.75	-0.36	0.49	0.15	0.03	0.03	0.77	1.30
	Married/Defacto or Single	0.08	0.22	0.04	0.39	0.70	-0.34	0.51	0.04	0.04	0.04	0.92	1.09
	Sustained Work Injury	-0.02	0.21	-0.01	-0.11	0.91	-0.44	0.40	-0.11	-0.01	-0.01	0.82	1.23
	Litigating/Not Litigating	-0.77	0.30	-0.31	-2.52	0.01	-1.37	-0.16	-0.33	-0.26	-0.25	0.66	1.52
	Age	0.01	0.24	0.01	0.05	0.96	-0.46	0.48	-0.04	0.01	0.00	0.77	1.30
	LOT	-0.01	0.02	-0.04	-0.37	0.71	-0.04	0.03	-0.16	-0.04	-0.04	0.79	1.27
3.00	(Constant)	3.58	0.76		4.68	0.00	2.06	5.09					
	Gender	0.10	0.26	0.05	0.37	0.71	-0.43	0.62	-0.10	0.04	0.04	0.65	1.55
	Education Above/Below Year 12	-0.23	0.21	-0.12	-1.11	0.27	-0.64	0.18	-0.21	-0.12	-0.11	0.84	1.19
	Working or Not Working	0.08	0.22	0.04	0.36	0.72	-0.35	0.51	0.15	0.04	0.04	0.76	1.32
	Married/Defacto or Single	0.10	0.22	0.05	0.44	0.66	-0.34	0.54	0.04	0.05	0.04	0.88	1.13
	Sustained Work Injury	-0.02	0.21	-0.01	-0.11	0.91	-0.45	0.40	-0.11	-0.01	-0.01	0.82	1.23
	Litigating/Not Litigating	-0.80	0.33	-0.32	-2.47	0.02	-1.45	-0.16	-0.33	-0.26	-0.25	0.58	1.72
	Age	0.02	0.24	0.01	0.07	0.95	-0.46	0.49	-0.04	0.01	0.01	0.77	1.30
	LOT	-0.01	0.02	-0.05	-0.43	0.67	-0.04	0.03	-0.16	-0.05	-0.04	0.75	1.33
	DAQR- R Sum	0.00	0.01	0.04	0.33	0.75	-0.01	0.01	-0.16	0.03	0.03	0.62	1.62

a. Dependent Variable: MPQ PPI

D 34 Hypothesis Testing Pain and Disability: Hypothesis 4 (b) Testing Daily Activity DAQ-R and Disability

Analysis Three DA Scores PDI Scores

Model Summary^d

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1.00	0.59 ^a	0.35	0.31	13.30	0.35	8.18	6.00	90.00	0.00	1.96
2.00	0.63 ^b	0.39	0.35	12.95	0.04	6.05	1.00	89.00	0.02	
3.00	0.65 ^c	0.43	0.37	12.68	0.03	4.83	1.00	88.00	0.03	

a. Predictors: (Constant), Age Above/Below 45 years, Sustained Work Injury, Education Above/Below Year 12, Married/Defacto or Single, Working or Not Working, Litigating/Not Litigating

b. Predictors: (Constant), Age Above/Below 45 years, Sustained Work Injury, Education Above/Below Year 12, Married/Defacto or Single, Working or Not Working, Litigating/Not Litigating, LOT Positive Life Orientation

c. Predictors: (Constant), Age Above/Below 45 years, Sustained Work Injury, Education Above/Below Year 12, Married/Defacto or Single, Working or Not Working, Litigating/Not Litigating, LOT Positive Life Orientation, DAQR- R Sum

d. Dependent Variable: Pain Disability Index

ANOVA^d

Model		Sum of Squares	df	Mean Square	F	Sig.
1.00	Regression	8684.48	6.00	1447.41	8.18	0.00 ^a
	Residual	15929.75	90.00	177.00		
	Total	24614.23	96.00			
2.00	Regression	9698.53	7.00	1385.50	8.27	0.00 ^b
	Residual	14915.69	89.00	167.59		
	Total	24614.23	96.00			
3.00	Regression	10475.07	8.00	1309.38	8.15	0.00 ^c
	Residual	14139.15	88.00	160.67		
	Total	24614.23	96.00			

a. Predictors: (Constant), Age Above/Below 45 years, Sustained Work Injury, Education Above/Below Year 12, Married/Defacto or Single, Working or Not Working, Litigating/Not Litigating

b. Predictors: (Constant), Age Above/Below 45 years, Sustained Work Injury, Education Above/Below Year 12, Married/Defacto or Single, Working or Not Working, Litigating/Not Litigating, LOT Positive Life Orientation

c. Predictors: (Constant), Age Above/Below 45 years, Sustained Work Injury, Education Above/Below Year 12, Married/Defacto or Single, Working or Not Working, Litigating/Not Litigating, LOT Positive Life Orientation, DAQR- R Sum

d. Dependent Variable: Pain Disability Index

Coefficients ^a												
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Correlations			Collinearity Statistics	
	B	Std. Error	Beta			Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance	VIF
1.00 (Constant)	52.88	10.32		5.13	0.00	32.38	73.37					
Education Above/Below Year 12	-4.40	2.87	-0.14	-1.53	0.13	-10.11	1.31	-0.28	-0.16	-0.13	0.88	1.13
Working Not Working	7.30	3.04	0.23	2.40	0.02	1.26	13.35	0.33	0.25	0.20	0.79	1.27
Married/Defacto or Single	7.75	3.08	0.22	2.51	0.01	1.62	13.87	0.21	0.26	0.21	0.94	1.07
Sustained Work Injury	-9.69	2.97	-0.30	-3.26	0.00	-15.60	-3.79	-0.35	-0.33	-0.28	0.86	1.16
Litigating/Not Litigating	-9.12	4.14	-0.22	-2.20	0.03	-17.35	-0.89	-0.39	-0.23	-0.19	0.74	1.36
Age Above/Below 45 years	-2.12	3.31	-0.06	-0.64	0.52	-8.68	4.45	-0.07	-0.07	-0.05	0.81	1.23
2.00 (Constant)	57.25	10.19		5.62	0.00	36.99	77.50					
Education	-3.04	2.85	-0.10	-1.07	0.29	-8.70	2.62	-0.28	-0.11	-0.09	0.85	1.17
Working Not Working	6.26	2.99	0.20	2.09	0.04	0.32	12.21	0.33	0.22	0.17	0.77	1.29
Married/Defacto or Single	8.24	3.01	0.23	2.74	0.01	2.27	14.21	0.21	0.28	0.23	0.93	1.07
Sustained Work Injury	-8.50	2.93	-0.26	-2.90	0.00	-14.32	-2.68	-0.35	-0.29	-0.24	0.84	1.20
Litigating/Not Litigating	-7.66	4.07	-0.18	-1.88	0.06	-15.75	0.43	-0.39	-0.20	-0.16	0.72	1.39
Age	-1.51	3.23	-0.04	-0.47	0.64	-7.92	4.90	-0.07	-0.05	-0.04	0.81	1.24
LOT	-0.53	0.22	-0.22	-2.46	0.02	-0.96	-0.10	-0.40	-0.25	-0.20	0.83	1.21
3.00 (Constant)	63.02	10.32		6.11	0.00	42.51	83.54					
Education	-3.34	2.79	-0.10	-1.20	0.23	-8.90	2.21	-0.28	-0.13	-0.10	0.85	1.18
Working or Not Working	5.33	2.96	0.17	1.80	0.07	-0.55	11.21	0.33	0.19	0.15	0.76	1.32
Married/Defacto or Single	7.13	2.99	0.20	2.39	0.02	1.20	13.07	0.21	0.25	0.19	0.90	1.11
Sustained Work Injury	-8.26	2.87	-0.25	-2.88	0.01	-13.97	-2.56	-0.35	-0.29	-0.23	0.84	1.20
Litigating/Not Litigating	-3.81	4.35	-0.09	-0.87	0.38	-12.46	4.84	-0.39	-0.09	-0.07	0.60	1.65
Age	-1.59	3.16	-0.05	-0.50	0.62	-7.87	4.69	-0.07	-0.05	-0.04	0.81	1.24
LOT	-0.41	0.22	-0.17	-1.86	0.07	-0.84	0.03	-0.40	-0.19	-0.15	0.77	1.30
DAQR- R Sum	-0.16	0.07	-0.22	-2.20	0.03	-0.30	-0.01	-0.47	-0.23	-0.18	0.65	1.54

a. Dependent Variable: Pain Disability Index

D 35 Hypothesis Testing Pain and Disability: Hypothesis 4 (c) Testing DAQ-R and Pain and Disability Factor

Analysis Four Pain and Disability Factor and DA Scores

Model Summary^d

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1.00	0.57 ^a	0.33	0.28	0.83	0.33	6.28	7.00	89.00	0.00	
2.00	0.60 ^b	0.36	0.30	0.82	0.03	3.43	1.00	88.00	0.07	
3.00	0.61 ^c	0.37	0.31	0.81	0.01	2.03	1.00	87.00	0.16	2.09

a. Predictors: (Constant), Age Above/Below 45 years, Sustained Work Injury, Education Above/Below Year 12, Married/Defacto or Single, Working or Not Working, Gender, Litigating/Not Litigating

b. Predictors: (Constant), Age Above/Below 45 years, Sustained Work Injury, Education Above/Below Year 12, Married/Defacto or Single, Working or Not Working, Gender, Litigating/Not Litigating, LOT Positive Life Orientation

c. Predictors: (Constant), Age Above/Below 45 years, Sustained Work Injury, Education Above/Below Year 12, Married/Defacto or Single, Working or Not Working, Gender, Litigating/Not Litigating, LOT Positive Life Orientation, DAQR- R Sum

d. Dependent Variable: Pain & Disability Factor

ANOVA^d

Model		Sum of Squares	df	Mean Square	F	Sig.
1.00	Regression	30.23	7.00	4.32	6.28	0.00 ^a
	Residual	61.21	89.00	0.69		
	Total	91.44	96.00			
2.00	Regression	32.52	8.00	4.07	6.07	0.00 ^b
	Residual	58.91	88.00	0.67		
	Total	91.44	96.00			
3.00	Regression	33.87	9.00	3.76	5.69	0.00 ^c
	Residual	57.57	87.00	0.66		
	Total	91.44	96.00			

a. Predictors: (Constant), Age Above/Below 45 years, Sustained Work Injury, Education Above/Below Year 12, Married/Defacto or Single, Working or Not Working, Gender, Litigating/Not Litigating

b. Predictors: (Constant), Age Above/Below 45 years, Sustained Work Injury, Education Above/Below Year 12, Married/Defacto or Single, Working or Not Working, Gender, Litigating/Not Litigating, LOT Positive Life Orientation

c. Predictors: (Constant), Age Above/Below 45 years, Sustained Work Injury, Education Above/Below Year 12, Married/Defacto or Single, Working or Not Working, Gender, Litigating/Not Litigating, LOT Positive Life Orientation, DAQR- R Sum

d. Dependent Variable: Pain & Disability Factor

Coefficients ^a													
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Correlations			Collinearity Statistics	
		B	Std. Error	Beta			Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance	VIF
1.00	(Constant)	0.62	0.66		0.94	0.35	-0.69	1.94					
	Gender	0.05	0.23	0.02	0.23	0.82	-0.40	0.50	-0.15	0.02	0.02	0.71	1.40
	Education Above/Below Year 12	-0.28	0.18	-0.14	-1.57	0.12	-0.64	0.08	-0.29	-0.16	-0.14	0.88	1.14
	Working Not Working	0.55	0.19	0.29	2.91	0.00	0.18	0.93	0.38	0.30	0.25	0.78	1.28
	Married/Defacto or Single	0.46	0.19	0.21	2.38	0.02	0.08	0.84	0.23	0.24	0.21	0.92	1.09
	Sustained Work Injury	-0.31	0.19	-0.15	-1.63	0.11	-0.68	0.07	-0.21	-0.17	-0.14	0.83	1.21
	Litigating/Not Litigating	-0.62	0.27	-0.24	-2.29	0.02	-1.16	-0.08	-0.38	-0.24	-0.20	0.66	1.51
	Age Above/Below 45 years	-0.19	0.21	-0.09	-0.91	0.36	-0.61	0.23	-0.08	-0.10	-0.08	0.77	1.30
2.00	(Constant)	0.77	0.66		1.17	0.24	-0.54	2.08					
	Gender	0.14	0.23	0.07	0.63	0.53	-0.31	0.60	-0.15	0.07	0.05	0.68	1.47
	Education	-0.21	0.18	-0.11	-1.15	0.25	-0.57	0.15	-0.29	-0.12	-0.10	0.84	1.19
	Working Not Working	0.51	0.19	0.26	2.70	0.01	0.13	0.89	0.38	0.28	0.23	0.77	1.30
	Married/Defacto or Single	0.47	0.19	0.22	2.48	0.01	0.09	0.85	0.23	0.26	0.21	0.92	1.09
	Sustained Work Injury	-0.26	0.19	-0.13	-1.40	0.16	-0.64	0.11	-0.21	-0.15	-0.12	0.82	1.23
	Litigating/Not Litigating	-0.59	0.27	-0.23	-2.18	0.03	-1.12	-0.05	-0.38	-0.23	-0.19	0.66	1.52
	Age	-0.18	0.21	-0.09	-0.88	0.38	-0.60	0.23	-0.08	-0.09	-0.08	0.77	1.30
	LOT	-0.03	0.01	-0.18	-1.85	0.07	-0.05	0.00	-0.33	-0.19	-0.16	0.79	1.27
3.00	(Constant)	0.98	0.67		1.46	0.15	-0.35	2.31					
	Gender	0.21	0.23	0.10	0.92	0.36	-0.25	0.68	-0.15	0.10	0.08	0.65	1.55
	Education	-0.22	0.18	-0.11	-1.19	0.24	-0.57	0.14	-0.29	-0.13	-0.10	0.84	1.19
	Working Not Working	0.48	0.19	0.24	2.50	0.01	0.10	0.85	0.38	0.26	0.21	0.76	1.32
	Married/Defacto or Single	0.42	0.19	0.20	2.17	0.03	0.04	0.81	0.23	0.23	0.18	0.88	1.13
	Sustained Work Injury	-0.26	0.19	-0.13	-1.41	0.16	-0.63	0.11	-0.21	-0.15	-0.12	0.82	1.23
	Litigating/Not Litigating	-0.45	0.29	-0.18	-1.57	0.12	-1.01	0.12	-0.38	-0.17	-0.13	0.58	1.72
	Age	-0.20	0.21	-0.09	-0.97	0.34	-0.62	0.21	-0.08	-0.10	-0.08	0.77	1.30
	LOT	-0.02	0.01	-0.15	-1.51	0.13	-0.05	0.01	-0.33	-0.16	-0.13	0.75	1.33
	DAQR- R Sum	-0.01	0.00	-0.15	-1.43	0.16	-0.02	0.00	-0.40	-0.15	-0.12	0.62	1.62

a. Dependent Variable: Pain & Disability Factor

APPENDIX E CONFIRMATORY FACTOR ANALYSIS CONSULTANCY MELBOURNE UNIVERSITY 2011

E 1 CONFIRMATORY FACTOR ANALYSIS EFA-DA

29/06/2010 10:46:53 AM

Tally for Discrete Variables: C33

C33	Count
0	179
1	35
2	9
3	7
4	2
5	1
13	1
N=	234

MTB > tally c1-c32

Tally for Discrete Variables: DA1, DA2, DA3, DA4, DA5, DA6, DA7, DA8, ...

DA1	Count	DA2	Count	DA3	Count	DA4	Count	DA5	Count
0	7	0	105	0	4	0	63	0	5
1	16	1	20	1	22	1	56	1	14
2	10	2	13	2	24	2	29	2	12
3	39	3	32	3	94	3	56	3	38
4	36	4	23	4	48	4	14	4	46
5	36	5	15	5	27	5	7	5	32
6	88	6	24	6	11	6	8	6	83
N=	232	N=	232	N=	230	N=	233	N=	230
*=	2	*=	2	*=	4	*=	1	*=	4

DA6	Count	DA7	Count	DA8	Count	DA9	Count	DA10	Count
0	30	0	20	0	8	0	9	0	104
1	23	1	56	1	15	1	14	1	51
2	23	2	40	2	21	2	14	2	17
3	54	3	65	3	62	3	23	3	31
4	37	4	31	4	56	4	36	4	14
5	24	5	11	5	48	5	38	5	8
6	41	6	9	6	22	6	94	6	9
N=	232	N=	232	N=	232	N=	228	N=	234
*=	2	*=	2	*=	2	*=	6		

DA11	Count	DA12	Count	DA13	Count	DA14	Count	DA15	Count
0	7	0	13	0	7	0	49	0	9
1	17	1	19	1	15	1	54	1	33
2	14	2	27	2	8	2	31	2	37
3	28	3	56	3	31	3	40	3	69
4	24	4	51	4	32	4	30	4	41
5	31	5	28	5	43	5	10	5	28
6	109	6	39	6	94	6	17	6	14
N=	230	N=	233	N=	230	N=	231	N=	231
*=	4	*=	1	*=	4	*=	3	*=	3

DA16	Count	DA17	Count	DA18	Count	DA19	Count	DA20	Count
0	15	0	18	0	44	0	18	0	38
1	34	1	14	1	56	1	95	1	43
2	29	2	16	2	20	2	40	2	41

3	45	3	15	3	53	3	52	3	37
4	40	4	28	4	23	4	19	4	24
5	36	5	38	5	18	5	3	5	27
6	31	6	100	6	17	6	4	6	19
N=	230	N=	229	N=	231	N=	231	N=	229
*=	4	*=	5	*=	3	*=	3	*=	5

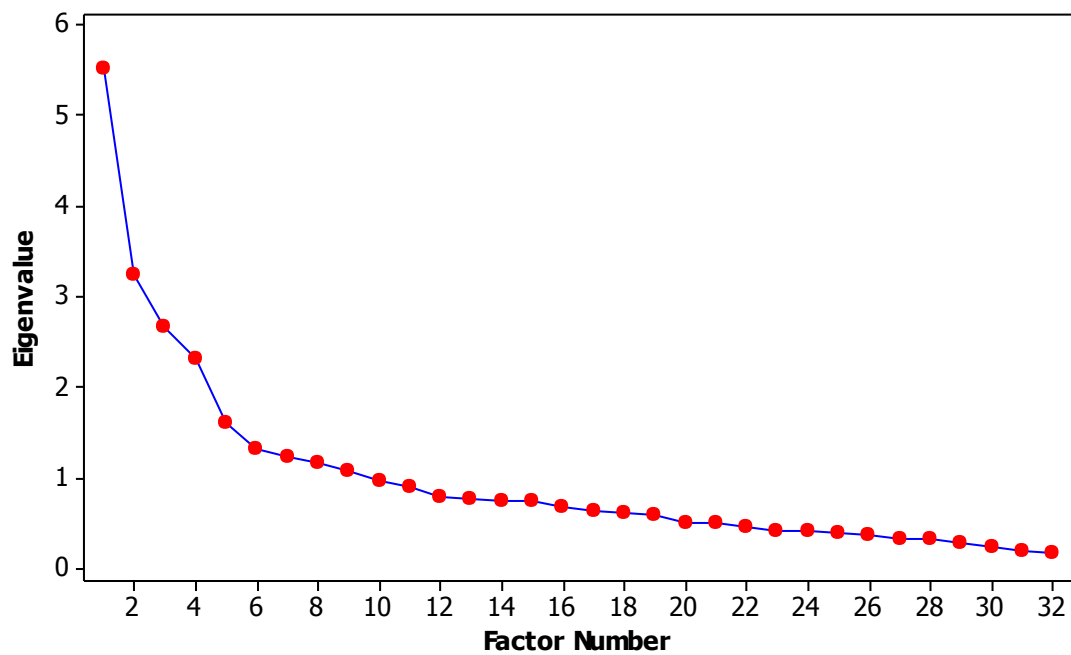
DA21	Count	DA22	Count	DA23	Count	DA24	Count	DA25	Count
0	17	0	68	0	40	0	20	0	99
1	21	1	44	1	27	1	5	1	58
2	16	2	18	2	26	2	2	2	16
3	37	3	35	3	46	3	9	3	31
4	41	4	27	4	29	4	13	4	13
5	38	5	16	5	19	5	22	5	4
6	58	6	23	6	44	6	161	6	7
N=	228	N=	231	N=	231	N=	232	N=	228
*=	6	*=	3	*=	3	*=	2	*=	6

DA26	Count	DA27	Count	DA28	Count	DA29	Count	DA30	Count
0	3	0.0	26	0	95	0	40	0	92
1	9	1.0	21	1	47	1	55	1	44
2	4	2.0	18	2	20	2	33	2	25
3	21	3.0	44	3	30	3	57	3	33
4	40	4.0	56	4	9	4	19	4	13
5	53	4.5	1	5	12	5	17	5	12
6	102	5.0	43	6	19	6	9	6	13
N=	232	6.0	18	N=	232	N=	230	N=	232
*=	2	N=	227	*=	2	*=	4	*=	2
		*=	7						

DA31	Count	DA32	Count
0	80	0	12
1	61	1	11
2	17	2	21
3	24	3	57
4	4	4	42
5	9	5	38
6	37	6	52
N=	232	N=	233
*=	2	*=	1

```
MTB > Factor c1-c32;
SUBC>   NFactors 4;
SUBC>   VMax;
SUBC>   Sort 0.4;
SUBC>   Correlation;
SUBC>   GScree;
SUBC>   GScore.
```

Scree Plot of DA1, ..., DA32



Factor Analysis: DA1, DA2, DA3, DA4, DA5, DA6, DA7, DA8, DA9, DA10, DA11, DA12,

Principal Component Factor Analysis of the Correlation Matrix
 179 cases used 55 cases contain missing values

Rotated Factor Loadings and Communalities
 Varimax Rotation

Variable	Factor1	Factor2	Factor3	Factor4	Communality
DA1	0.602	-0.049	-0.071	-0.189	0.406
DA2	-0.245	0.050	-0.064	-0.732	0.602
DA3	-0.093	0.092	0.600	0.188	0.412
DA4	-0.144	-0.154	0.309	-0.058	0.143
DA5	0.703	-0.200	0.025	0.061	0.538
DA6	0.282	-0.154	0.282	-0.496	0.429
DA7	-0.047	0.023	0.569	0.098	0.336
DA8	0.052	-0.222	0.646	0.081	0.475
DA9	0.815	-0.081	0.107	-0.020	0.684
DA10	-0.188	-0.046	-0.176	-0.708	0.569
DA11	0.403	-0.092	0.141	-0.422	0.368
DA12	0.324	-0.152	0.508	-0.277	0.463
DA13	0.781	-0.179	-0.004	0.052	0.645
DA14	0.133	-0.036	0.009	-0.720	0.537
DA15	0.060	-0.242	0.523	0.059	0.339
DA16	0.140	-0.147	0.495	-0.085	0.294
DA17	0.817	-0.094	0.104	0.212	0.732
DA18	0.012	-0.034	-0.000	-0.687	0.473
DA19	0.228	-0.570	-0.095	-0.067	0.390
DA20	-0.186	-0.295	0.228	-0.219	0.222
DA21	0.212	-0.056	0.640	-0.144	0.479
DA22	-0.267	-0.515	0.288	-0.217	0.467
DA23	0.230	-0.516	0.078	-0.233	0.379

DA24	-0.100	0.401	0.085	-0.178	0.209
DA25	0.102	-0.473	0.034	-0.061	0.239
DA26	0.349	0.079	0.252	0.025	0.192
DA27	0.119	0.230	0.587	-0.090	0.419
DA28	0.009	-0.530	0.164	-0.004	0.308
DA29	0.138	-0.641	0.277	-0.018	0.507
DA30	-0.289	-0.668	0.064	-0.084	0.541
DA31	0.176	-0.587	-0.056	0.089	0.386
DA32	0.375	-0.468	0.325	-0.215	0.511
Variance	4.0014	3.4048	3.3286	2.9590	13.6938
% Var	0.125	0.106	0.104	0.092	0.428

Sorted Rotated Factor Loadings and Communalities

Variable	Factor1	Factor2	Factor3	Factor4	Communality
DA17	0.817	0.000	0.000	0.000	0.732
DA9	0.815	0.000	0.000	0.000	0.684
DA13	0.781	0.000	0.000	0.000	0.645
DA5	0.703	0.000	0.000	0.000	0.538
DA1	0.602	0.000	0.000	0.000	0.406
DA30	0.000	-0.668	0.000	0.000	0.541
DA29	0.000	-0.641	0.000	0.000	0.507
DA31	0.000	-0.587	0.000	0.000	0.386
DA19	0.000	-0.570	0.000	0.000	0.390
DA28	0.000	-0.530	0.000	0.000	0.308
DA23	0.000	-0.516	0.000	0.000	0.379
DA22	0.000	-0.515	0.000	0.000	0.467
DA25	0.000	-0.473	0.000	0.000	0.239
DA32	0.000	-0.468	0.000	0.000	0.511
DA24	0.000	0.401	0.000	0.000	0.209
DA8	0.000	0.000	0.646	0.000	0.475
DA21	0.000	0.000	0.640	0.000	0.479
DA3	0.000	0.000	0.600	0.000	0.412
DA27	0.000	0.000	0.587	0.000	0.419
DA7	0.000	0.000	0.569	0.000	0.336
DA15	0.000	0.000	0.523	0.000	0.339
DA12	0.000	0.000	0.508	0.000	0.463
DA16	0.000	0.000	0.495	0.000	0.294
DA2	0.000	0.000	0.000	-0.732	0.602
DA14	0.000	0.000	0.000	-0.720	0.537
DA10	0.000	0.000	0.000	-0.708	0.569
DA18	0.000	0.000	0.000	-0.687	0.473
DA6	0.000	0.000	0.000	-0.496	0.429
DA11	0.403	0.000	0.000	-0.422	0.368
DA4	0.000	0.000	0.000	0.000	0.143
DA26	0.000	0.000	0.000	0.000	0.192
DA20	0.000	0.000	0.000	0.000	0.222
Variance	4.0014	3.4048	3.3286	2.9590	13.6938
% Var	0.125	0.106	0.104	0.092	0.428

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MTB > Factor c1-c32;
SUBC>   NFactors 4;
SUBC>   VMax;
SUBC>   Sort 0.41;
SUBC>   Correlation;
SUBC>   GScree;
SUBC>   GScore.

```

Sorted Rotated Factor Loadings and Communalities

Variable	Factor1	Factor2	Factor3	Factor4	Communality
DA17	0.817	0.000	0.000	0.000	0.732
DA9	0.815	0.000	0.000	0.000	0.684
DA13	0.781	0.000	0.000	0.000	0.645
DA5	0.703	0.000	0.000	0.000	0.538
DA1	0.602	0.000	0.000	0.000	0.406
DA30	0.000	-0.668	0.000	0.000	0.541
DA29	0.000	-0.641	0.000	0.000	0.507
DA31	0.000	-0.587	0.000	0.000	0.386
DA19	0.000	-0.570	0.000	0.000	0.390
DA28	0.000	-0.530	0.000	0.000	0.308
DA23	0.000	-0.516	0.000	0.000	0.379
DA22	0.000	-0.515	0.000	0.000	0.467
DA25	0.000	-0.473	0.000	0.000	0.239
DA32	0.000	-0.468	0.000	0.000	0.511
DA8	0.000	0.000	0.646	0.000	0.475
DA21	0.000	0.000	0.640	0.000	0.479
DA3	0.000	0.000	0.600	0.000	0.412
DA27	0.000	0.000	0.587	0.000	0.419
DA7	0.000	0.000	0.569	0.000	0.336
DA15	0.000	0.000	0.523	0.000	0.339
DA12	0.000	0.000	0.508	0.000	0.463
DA16	0.000	0.000	0.495	0.000	0.294
DA2	0.000	0.000	0.000	-0.732	0.602
DA14	0.000	0.000	0.000	-0.720	0.537
DA10	0.000	0.000	0.000	-0.708	0.569
DA18	0.000	0.000	0.000	-0.687	0.473
DA6	0.000	0.000	0.000	-0.496	0.429
DA11	0.000	0.000	0.000	-0.422	0.368
DA26	0.000	0.000	0.000	0.000	0.192
DA24	0.000	0.000	0.000	0.000	0.209
DA4	0.000	0.000	0.000	0.000	0.143
DA20	0.000	0.000	0.000	0.000	0.222
Variance	4.0014	3.4048	3.3286	2.9590	13.6938
% Var	0.125	0.106	0.104	0.092	0.428

```

MTB > Factor c1-c3 c5-c19 c21-c23 c25 c27-c32;
SUBC>   NFactors 4;
SUBC>   VMax;
SUBC>   Sort 0.4;
SUBC>   Correlation;
SUBC>   GScree;
SUBC>   GScore.

```

Sorted Rotated Factor Loadings and Communalities

Variable	Factor1	Factor2	Factor3	Factor4	Communality
DA17	0.820	0.000	0.000	0.000	0.733
DA9	0.818	0.000	0.000	0.000	0.687
DA13	0.812	0.000	0.000	0.000	0.673
DA5	0.718	0.000	0.000	0.000	0.542
DA1	0.592	0.000	0.000	0.000	0.387
DA29	0.000	-0.667	0.000	0.000	0.530
DA30	0.000	-0.665	0.000	0.000	0.521
DA31	0.000	-0.612	0.000	0.000	0.421
DA19	0.000	-0.566	0.000	0.000	0.396
DA28	0.000	-0.540	0.000	0.000	0.321
DA25	0.000	-0.531	0.000	0.000	0.292
DA22	0.000	-0.518	0.000	0.000	0.428
DA32	0.000	-0.484	0.000	0.000	0.521
DA23	0.000	-0.476	0.000	0.000	0.364
DA8	0.000	0.000	0.647	0.000	0.485
DA21	0.000	0.000	0.633	0.000	0.466
DA3	0.000	0.000	0.629	0.000	0.452
DA27	0.000	0.000	0.623	0.000	0.447
DA7	0.000	0.000	0.576	0.000	0.344
DA15	0.000	0.000	0.521	0.000	0.368
DA12	0.000	0.000	0.509	0.000	0.463
DA16	0.000	0.000	0.503	0.000	0.300
DA14	0.000	0.000	0.000	-0.737	0.555
DA2	0.000	0.000	0.000	-0.734	0.602
DA10	0.000	0.000	0.000	-0.709	0.572
DA18	0.000	0.000	0.000	-0.674	0.457
DA6	0.000	0.000	0.000	-0.489	0.419
DA11	0.000	0.000	0.000	0.000	0.330
Variance	3.8748	3.2074	3.1654	2.8313	13.0789
% Var	0.138	0.115	0.113	0.101	0.467

```

MTB > Factor c1-c3 c5-c10 c12-c19 c21-c23 c25 c27-c32;
SUBC>   NFactors 4;
SUBC>   VMax;
SUBC>   Sort 0.4;
SUBC>   Correlation;
SUBC>   GScree;
SUBC>   GScore.

```

Factor Analysis: DA1, DA2, DA3, DA5, DA6, DA7, DA8, DA9, DA10, DA12, DA13, DA14

Principal Component Factor Analysis of the Correlation Matrix

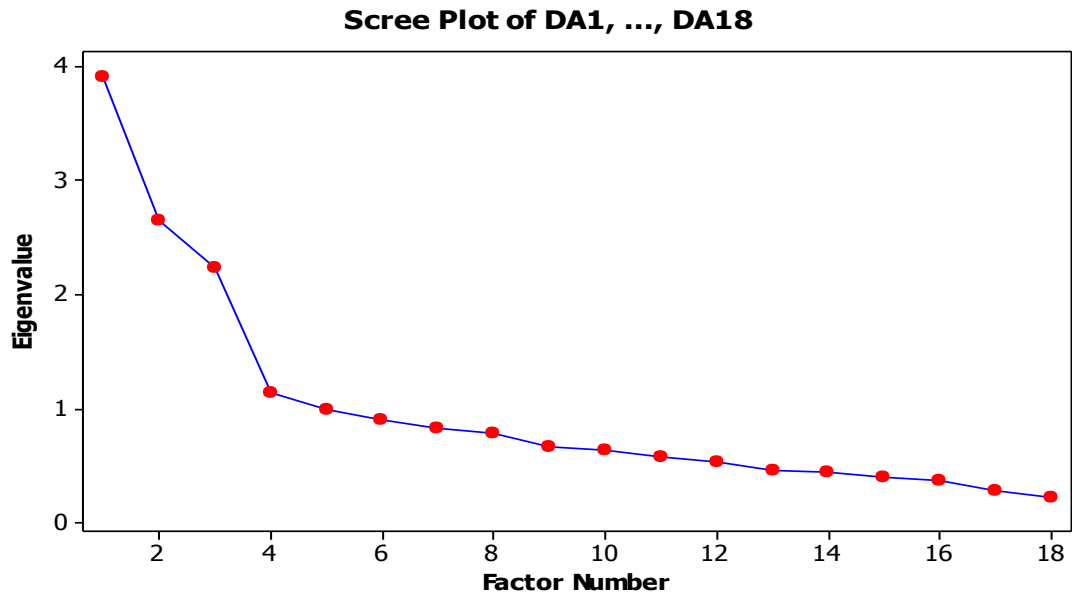
Unrotated Factor Loadings and Communalities

186 cases used 48 cases contain missing values

Sorted Rotated Factor Loadings and Communalities

Variable	Factor1	Factor2	Factor3	Factor4	Communality
DA17	0.822	0.000	0.000	0.000	0.736
DA13	0.819	0.000	0.000	0.000	0.686
DA9	0.793	0.000	0.000	0.000	0.648
DA5	0.720	0.000	0.000	0.000	0.547
DA1	0.610	0.000	0.000	0.000	0.418
DA29	0.000	0.665	0.000	0.000	0.529
DA30	0.000	0.656	0.000	0.000	0.511
DA31	0.000	0.616	0.000	0.000	0.426
DA19	0.000	0.575	0.000	0.000	0.396
DA28	0.000	0.535	0.000	0.000	0.315
DA25	0.000	0.529	0.000	0.000	0.293
DA22	0.000	0.516	0.000	0.000	0.427
DA32	0.000	0.493	0.000	0.000	0.517
DA23	0.000	0.481	0.000	0.000	0.367
DA8	0.000	0.000	0.644	0.000	0.481
DA21	0.000	0.000	0.636	0.000	0.463
DA3	0.000	0.000	0.625	0.000	0.450
DA27	0.000	0.000	0.624	0.000	0.441
DA7	0.000	0.000	0.577	0.000	0.342
DA12	0.000	0.000	0.514	0.000	0.442
DA15	0.000	0.000	0.505	0.000	0.362
DA16	0.000	0.000	0.500	0.000	0.299
DA2	0.000	0.000	0.000	0.755	0.625
DA14	0.000	0.000	0.000	0.727	0.541
DA10	0.000	0.000	0.000	0.694	0.544
DA18	0.000	0.000	0.000	0.685	0.472
DA6	0.000	0.000	0.000	0.502	0.446
Variance	3.6829	3.2153	3.1394	2.6867	12.7242
% Var	0.136	0.119	0.116	0.100	0.471

E 2 July 4: EFA with Variables DA1-DA18 (only)



```
MTB > Factor c1-c18;
SUBC>   NFactors 3;
SUBC>   VMax;
SUBC>   Sort 0.4;
```

Factor Analysis: DA1, DA2, DA3, DA4, DA5, DA6, DA7, DA8, DA9, DA10, DA11, DA12,

Principal Component Factor Analysis of the Correlation Matrix
 Unrotated Factor Loadings and Communalities
 203 cases used 31 cases contain missing values

Variable	Factor1	Factor2	Factor3	Communality
DA1	0.544	0.221	-0.288	0.427
DA2	-0.259	0.724	0.161	0.617
DA3	0.220	-0.251	0.579	0.447
DA4	0.144	-0.015	0.372	0.159
DA5	0.694	-0.017	-0.274	0.557
DA6	0.378	0.505	0.104	0.409
DA7	0.300	-0.147	0.598	0.469
DA8	0.467	-0.109	0.551	0.534
DA9	0.734	0.025	-0.347	0.659
DA10	-0.209	0.711	0.073	0.555
DA11	0.416	0.381	-0.021	0.319
DA12	0.594	0.194	0.363	0.522
DA13	0.773	-0.043	-0.327	0.707
DA14	0.109	0.746	0.046	0.571
DA15	0.310	-0.066	0.544	0.396
DA16	0.361	-0.011	0.357	0.258
DA17	0.773	-0.177	-0.330	0.737
DA18	0.014	0.668	0.025	0.447
Variance	3.9052	2.6545	2.2293	8.7890
% Var	0.217	0.147	0.124	0.488

Rotated Factor Loadings and Communalities
 Varimax Rotation

Variable	Factor1	Factor2	Factor3	Communality
DA1	0.624	0.192	-0.031	0.427
DA2	-0.273	0.734	-0.063	0.617
DA3	-0.079	-0.173	0.640	0.447
DA4	-0.043	0.034	0.395	0.159
DA5	0.741	-0.040	0.078	0.557
DA6	0.310	0.520	0.205	0.409
DA7	-0.013	-0.067	0.682	0.469
DA8	0.160	-0.032	0.712	0.534
DA9	0.812	-0.006	0.027	0.659
DA10	-0.189	0.711	-0.115	0.555
DA11	0.396	0.382	0.127	0.319
DA12	0.370	0.248	0.569	0.522
DA13	0.835	-0.071	0.071	0.707
DA14	0.108	0.748	0.002	0.571
DA15	0.024	0.008	0.629	0.396
DA16	0.157	0.039	0.481	0.258
DA17	0.830	-0.204	0.084	0.737
DA18	0.030	0.666	-0.051	0.447
Variance	3.5543	2.6482	2.5865	8.7890
% Var	0.197	0.147	0.144	0.488

Sorted Rotated Factor Loadings and Communalities

Variable	Factor1	Factor2	Factor3	Communality
DA13	0.835	0.000	0.000	0.707
DA17	0.830	0.000	0.000	0.737
DA9	0.812	0.000	0.000	0.659
DA5	0.741	0.000	0.000	0.557
DA1	0.624	0.000	0.000	0.427
DA14	0.000	0.748	0.000	0.571
DA2	0.000	0.734	0.000	0.617
DA10	0.000	0.711	0.000	0.555
DA18	0.000	0.666	0.000	0.447
DA6	0.000	0.520	0.000	0.409
DA8	0.000	0.000	0.712	0.534
DA7	0.000	0.000	0.682	0.469
DA3	0.000	0.000	0.640	0.447
DA15	0.000	0.000	0.629	0.396
DA12	0.000	0.000	0.569	0.522
DA16	0.000	0.000	0.481	0.258
DA4	0.000	0.000	0.000	0.159
DA11	0.000	0.000	0.000	0.319
Variance	3.5543	2.6482	2.5865	8.7890
% Var	0.197	0.147	0.144	0.488

Factor Score Coefficients

Variable	Factor1	Factor2	Factor3
DA1	0.186	0.069	-0.060
DA2	-0.080	0.278	0.001
DA3	-0.072	-0.061	0.266
DA4	-0.044	0.016	0.165
DA5	0.214	-0.019	-0.026
DA6	0.073	0.196	0.063
DA7	-0.056	-0.020	0.278
DA8	-0.008	-0.008	0.277
DA9	0.238	-0.007	-0.052
DA10	-0.051	0.269	-0.027
DA11	0.105	0.143	0.024
DA12	0.064	0.095	0.204
DA13	0.242	-0.031	-0.037
DA14	0.027	0.282	-0.002

DA15	-0.042	0.007	0.254
DA16	0.009	0.017	0.184
DA17	0.241	-0.081	-0.032
DA18	0.009	0.251	-0.018

E 3 CONFIRMATORY FACTOR ANALYSIS CFA – DA Items 1-32

```
> da.dat <- read.csv("DA.csv")
> head(da.dat)
  DA1 DA2 DA3 DA4 DA5 DA6 DA7 DA8 DA9 DA10 DA11 DA12 DA13 DA14 DA15 DA16 DA17 DA18
DA19 DA20 DA21 DA22 DA23 DA24 DA25 DA26 DA27
1    4    0    5    2    5    2    4    5    5    0    6    4    5    0    4    5    6    3
0    3    4    3    4    5    1    4    4    4    1    3    3    3    0    5    4    3    2
2    3    0    3    4    5    4    4    4    4    1    3    3    3    0    5    4    3    2
1    2    4    1    3    6    0    4    5    1    6    4    4    4    4    5    2    3
3    3    2    3    2    3    2    2    2    1    6    4    4    4    4    5    2    3
1    2    6    6    2    6    0    6    4    1    2    2    1    1    2    5    2    2
4    1    1    5    2    2    1    4    3    1    2    2    1    1    2    5    2    2
1    5    5    5    4    6    0    2    6    1    6    6    6    4    4    4    5    3
5    6    0    5    1    5    0    5    5    1    6    6    6    4    4    4    5    3
0    2    6    1    2    6    0    6    5    1    6    6    6    4    4    4    5    3
6    3    4    4    1    5    4    2    5    1    6    5    3    2    5    5    3    3
1    1    5    3    1    6    5    5    5
  DA28 DA29 DA30 DA31 DA32
1    0    3    0    6    4
2    0    2    0    1    3
3    2    2    2    1    5
4    1    3    3    1    4
5    3    1    0    1    4
6    2    1    1    1    4
>
> library(sem)

> cfaDA1.model <- specify.model("CFAdA1.txt")
Read 62 records
> cfaDA1.fit <- sem(cfaDA1.model, daData.R, 179)
Warning message:
In sem.mod(cfaDA1.model, daData.R, 179) :
  The following observed variables are in the input covariance or raw-
moment matrix but do not appear in the model:
DA4, DA20, DA26

> summary(cfaDA1.fit)

Model Chisquare = 872.85    Df = 377 Pr(>Chisq) = 0
Chisquare (null model) = 1903.9    Df = 406
Goodness-of-fit index = 0.73827
Adjusted goodness-of-fit index = 0.69801
RMSEA index = 0.08596    90% CI: (NA, NA)
Bentler-Bonnett NFI = 0.54155
Tucker-Lewis NNFI = 0.6435
Bentler CFI = 0.66897
SRMR = 0.13194
BIC = -1082.8

Normalized Residuals
  Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
-4.230 -0.407   0.676   0.784   1.810   5.300

Parameter Estimates
      Estimate Std Error z value Pr(>|z|)
theta01  0.71781 0.074249   9.6676 0.0000e+00 DA29 <--- Support
theta02  0.53442 0.078327   6.8229 8.9193e-12 DA23 <--- Support
theta03  0.61858 0.076476   8.0885 6.6613e-16 DA32 <--- Support
theta04  0.42292 0.081289   5.2026 1.9649e-07 DA25 <--- Support
theta05  0.50506 0.080799   6.2508 4.0827e-10 DA30 <--- Support
theta06 -0.23120 0.084115  -2.7486 5.9851e-03 DA24 <--- Support
```

theta07	0.47491	0.079909	5.9431	2.7974e-09	DA28	<---	Support
theta08	0.50466	0.080518	6.2676	3.6662e-10	DA31	<---	Support
theta09	0.47808	0.081432	5.8709	4.3336e-09	DA19	<---	Support
theta10	0.41938	0.082593	5.0777	3.8202e-07	DA22	<---	Support
theta11	0.75978	0.067279	11.2930	0.0000e+00	DA9	<---	Tasks
theta12	0.84604	0.064202	13.1777	0.0000e+00	DA17	<---	Tasks
theta13	0.55709	0.073272	7.6030	2.8866e-14	DA1	<---	Tasks
theta14	0.64607	0.071173	9.0774	0.0000e+00	DA5	<---	Tasks
theta15	0.82399	0.065237	12.6307	0.0000e+00	DA13	<---	Tasks
theta16	0.49581	0.082741	5.9924	2.0678e-09	DA3	<---	Leisure
theta17	0.44366	0.082607	5.3708	7.8401e-08	DA16	<---	Leisure
theta18	0.61703	0.079915	7.7210	1.1546e-14	DA8	<---	Leisure
theta19	0.51286	0.082658	6.2046	5.4843e-10	DA7	<---	Leisure
theta20	0.49917	0.081944	6.0916	1.1176e-09	DA15	<---	Leisure
theta21	0.59044	0.082402	7.1653	7.7605e-13	DA21	<---	Leisure
theta22	0.52796	0.080940	6.5229	6.8976e-11	DA12	<---	Leisure
theta23	0.45677	0.085522	5.3410	9.2458e-08	DA27	<---	Leisure
theta24	0.39471	0.084356	4.6791	2.8818e-06	DA6	<---	Care
theta25	0.30933	0.086168	3.5898	3.3087e-04	DA11	<---	Care
theta26	0.65516	0.077710	8.4308	0.0000e+00	DA10	<---	Care
theta27	0.69142	0.077415	8.9314	0.0000e+00	DA2	<---	Care
theta28	0.67618	0.078555	8.6077	0.0000e+00	DA14	<---	Care
theta29	0.58752	0.078964	7.4403	1.0036e-13	DA18	<---	Care
theta33	0.48474	0.073539	6.5916	4.3500e-11	DA29	<-->	DA29
theta34	0.71439	0.085115	8.3933	0.0000e+00	DA23	<-->	DA23
theta35	0.61736	0.079263	7.7887	6.6613e-15	DA32	<-->	DA32
theta36	0.72125	0.088101	8.1867	2.2204e-16	DA12	<-->	DA12
theta37	0.74491	0.088871	8.3819	0.0000e+00	DA30	<-->	DA30
theta38	0.65138	0.088149	7.3896	1.4722e-13	DA21	<-->	DA21
theta39	0.77446	0.089479	8.6552	0.0000e+00	DA28	<-->	DA28
theta40	0.42274	0.056838	7.4376	1.0258e-13	DA9	<-->	DA9
theta41	0.28422	0.048762	5.8288	5.5836e-09	DA17	<-->	DA17
theta42	0.68965	0.078223	8.8165	0.0000e+00	DA1	<-->	DA1
theta43	0.58260	0.069642	8.3657	0.0000e+00	DA5	<-->	DA5
theta44	0.32104	0.051338	6.2535	4.0140e-10	DA13	<-->	DA13
theta45	0.94656	0.102056	9.2749	0.0000e+00	DA24	<-->	DA24
theta46	0.75416	0.090997	8.2878	2.2204e-16	DA3	<-->	DA3
theta47	0.80316	0.092931	8.6425	0.0000e+00	DA16	<-->	DA16
theta48	0.61927	0.084324	7.3440	2.0717e-13	DA8	<-->	DA8
theta49	0.73698	0.090338	8.1580	4.4409e-16	DA7	<-->	DA7
theta50	0.75082	0.090156	8.3280	0.0000e+00	DA15	<-->	DA15
theta52	0.90432	0.099935	9.0490	0.0000e+00	DA11	<-->	DA11
theta55	0.79136	0.094577	8.3674	0.0000e+00	DA27	<-->	DA27
theta56	0.84421	0.096008	8.7931	0.0000e+00	DA6	<-->	DA6
theta57	0.77143	0.090573	8.5173	0.0000e+00	DA19	<-->	DA19
theta58	0.74532	0.088628	8.4095	0.0000e+00	DA31	<-->	DA31
theta59	0.82114	0.092991	8.8303	0.0000e+00	DA25	<-->	DA25
theta60	0.57078	0.080344	7.1042	1.2104e-12	DA10	<-->	DA10
theta61	0.52194	0.079674	6.5509	5.7176e-11	DA2	<-->	DA2
theta62	0.54279	0.081684	6.6450	3.0328e-11	DA14	<-->	DA14
theta63	0.65483	0.083735	7.8203	5.3291e-15	DA18	<-->	DA18
theta64	0.82412	0.093965	8.7705	0.0000e+00	DA22	<-->	DA22

```

Iterations = 14
>
> ?sem::sem
starting httpd help server ... done
> ?sem::path.diagram
>
> mod.indices(cfaDA1.fit)

```



```

5 largest modification indices, A matrix:
  DA30:DA22 Leisure:DA32    DA22:DA30    DA11:DA9    DA12:DA11
  30.00586    27.06965    26.39306    25.83033    24.59411

5 largest modification indices, P matrix:
  DA30:DA22    Tasks:DA2    DA27:DA21    DA31:DA19 Leisure:Support
  37.87069    23.02902    22.50692    21.36354    21.33040
>

> cfaDA2.model <- specify.model("CFAda2.txt")
Read 60 records
> cfaDA3.model <- specify.model("CFAda3.txt")
Read 69 records

> cfaDA2.fit <- sem(cfaDA2.model,daData.R,179)
Warning message:
In sem.mod(cfaDA2.model, daData.R, 179) :
  The following observed variables are in the input covariance or raw-
moment matrix but do not appear in the model:
DA4, DA11, DA20, DA26

> summary(cfaDA2.fit)

Model Chisquare = 789.04    Df = 350 Pr(>Chisq) = 0
Chisquare (null model) = 1807.4    Df = 378
Goodness-of-fit index = 0.7573
Adjusted goodness-of-fit index = 0.71847
RMSEA index = 0.083948    90% CI: (NA, NA)
Bentler-Bonnett NFI = 0.56344
Tucker-Lewis NNFI = 0.66828
Bentler CFI = 0.69285
SRMR = 0.12807
BIC = -1026.5

Normalized Residuals
  Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
-4.230 -0.431   0.630   0.722   1.710   4.730

Parameter Estimates
      Estimate Std Error z value Pr(>|z|)
theta01  0.71781 0.074249   9.6676 0.0000e+00 DA29 <--- Support
theta02  0.53442 0.078327   6.8229 8.9213e-12 DA23 <--- Support
theta03  0.61858 0.076476   8.0885 6.6613e-16 DA32 <--- Support
theta04  0.42292 0.081289   5.2027 1.9646e-07 DA25 <--- Support
theta05  0.50506 0.080799   6.2508 4.0824e-10 DA30 <--- Support
theta06 -0.23120 0.084115  -2.7487 5.9840e-03 DA24 <--- Support
theta07  0.47491 0.079910   5.9431 2.7973e-09 DA28 <--- Support
theta08  0.50466 0.080518   6.2676 3.6659e-10 DA31 <--- Support
theta09  0.47809 0.081432   5.8710 4.3328e-09 DA19 <--- Support
theta10  0.41938 0.082593   5.0777 3.8199e-07 DA22 <--- Support
theta11  0.75978 0.067279  11.2930 0.0000e+00 DA9 <--- Tasks
theta12  0.84604 0.064202  13.1777 0.0000e+00 DA17 <--- Tasks
theta13  0.55709 0.073273   7.6029 2.8866e-14 DA1 <--- Tasks
theta14  0.64607 0.071173   9.0774 0.0000e+00 DA5 <--- Tasks
theta15  0.82399 0.065237  12.6307 0.0000e+00 DA13 <--- Tasks
theta16  0.49581 0.082741   5.9924 2.0680e-09 DA3 <--- Leisure
theta17  0.44367 0.082607   5.3708 7.8384e-08 DA16 <--- Leisure
theta18  0.61702 0.079916   7.7209 1.1546e-14 DA8 <--- Leisure
theta19  0.51285 0.082658   6.2045 5.4870e-10 DA7 <--- Leisure

```

```

theta20 0.49917 0.081944 6.0916 1.1179e-09 DA15 <--- Leisure
theta21 0.59044 0.082402 7.1654 7.7582e-13 DA21 <--- Leisure
theta22 0.52796 0.080940 6.5229 6.8984e-11 DA12 <--- Leisure
theta23 0.45677 0.085522 5.3410 9.2423e-08 DA27 <--- Leisure
theta24 0.36712 0.084593 4.3398 1.4263e-05 DA6 <--- Care
theta26 0.67093 0.077091 8.7031 0.0000e+00 DA10 <--- Care
theta27 0.72452 0.076291 9.4968 0.0000e+00 DA2 <--- Care
theta28 0.64013 0.078352 8.1699 2.2204e-16 DA14 <--- Care
theta29 0.58758 0.078843 7.4526 9.1482e-14 DA18 <--- Care
theta33 0.48474 0.073539 6.5916 4.3500e-11 DA29 <--> DA29
theta34 0.71439 0.085115 8.3933 0.0000e+00 DA23 <--> DA23
theta35 0.61736 0.079263 7.7887 6.6613e-15 DA32 <--> DA32
theta36 0.72125 0.088101 8.1867 2.2204e-16 DA12 <--> DA12
theta37 0.74491 0.088871 8.3819 0.0000e+00 DA30 <--> DA30
theta38 0.65138 0.088148 7.3896 1.4722e-13 DA21 <--> DA21
theta39 0.77446 0.089479 8.6552 0.0000e+00 DA28 <--> DA28
theta40 0.42274 0.056838 7.4376 1.0258e-13 DA9 <--> DA9
theta41 0.28422 0.048762 5.8288 5.5839e-09 DA17 <--> DA17
theta42 0.68965 0.078223 8.8164 0.0000e+00 DA1 <--> DA1
theta43 0.58260 0.069642 8.3657 0.0000e+00 DA5 <--> DA5
theta44 0.32105 0.051339 6.2535 4.0141e-10 DA13 <--> DA13
theta45 0.94656 0.102056 9.2749 0.0000e+00 DA24 <--> DA24
theta46 0.75417 0.090998 8.2878 2.2204e-16 DA3 <--> DA3
theta47 0.80316 0.092931 8.6425 0.0000e+00 DA16 <--> DA16
theta48 0.61928 0.084324 7.3440 2.0717e-13 DA8 <--> DA8
theta49 0.73698 0.090339 8.1580 4.4409e-16 DA7 <--> DA7
theta50 0.75083 0.090157 8.3280 0.0000e+00 DA15 <--> DA15
theta55 0.79136 0.094576 8.3674 0.0000e+00 DA27 <--> DA27
theta56 0.86523 0.097203 8.9012 0.0000e+00 DA6 <--> DA6
theta57 0.77143 0.090572 8.5173 0.0000e+00 DA19 <--> DA19
theta58 0.74532 0.088628 8.4095 0.0000e+00 DA31 <--> DA31
theta59 0.82114 0.092990 8.8303 0.0000e+00 DA25 <--> DA25
theta60 0.54986 0.079126 6.9491 3.6762e-12 DA10 <--> DA10
theta61 0.47508 0.077833 6.1038 1.0359e-09 DA2 <--> DA2
theta62 0.59024 0.081591 7.2341 4.6851e-13 DA14 <--> DA14
theta63 0.65476 0.083574 7.8345 4.6629e-15 DA18 <--> DA18
theta64 0.82412 0.093964 8.7705 0.0000e+00 DA22 <--> DA22

Iterations = 14
>

> mod.indices(cfaDA2.fit)

5 largest modification indices, A matrix:
      DA30:DA22      Leisure:DA32      DA22:DA30      Tasks:DA32      Support:Leisure
      30.00578      27.06982      26.39297      23.75340      21.33025

5 largest modification indices, P matrix:
      DA30:DA22      DA27:DA21      DA31:DA19      Leisure:Support      Tasks:DA2
      37.87071      22.50661      21.36347      21.33025      19.47418
>

```

```
> cfaDA3.model <- specify.model("CFAda3.txt")
Read 69 records
> cfaDA3.fit <- sem(cfaDA3.model,daData.R,179)
> summary(cfaDA3.fit)
```

```
Model Chisquare = 983.12 Df = 463 Pr(>Chisq) = 0
Chisquare (null model) = 2068.5 Df = 496
Goodness-of-fit index = 0.74046
Adjusted goodness-of-fit index = 0.70402
RMSEA index = 0.079442 90% CI: (NA, NA)
Bentler-Bonnett NFI = 0.52471
Tucker-Lewis NNFI = 0.64566
Bentler CFI = 0.66924
SRMR = 0.12460
BIC = -1418.6
```

Normalized Residuals

Min.	1st Qu.	Median	Mean	3rd Qu.	Max.
-4.230	-0.427	0.579	0.694	1.630	5.240

Parameter Estimates

	Estimate	Std Error	z value	Pr(> z)			
theta01	0.71369	0.074117	9.6292	0.0000e+00	DA29	<---	Support
theta02	0.53313	0.078298	6.8089	9.8315e-12	DA23	<---	Support
theta03	0.60980	0.076762	7.9441	1.9984e-15	DA32	<---	Support
theta04	0.40915	0.081473	5.0218	5.1183e-07	DA25	<---	Support
theta05	0.52179	0.080636	6.4709	9.7389e-11	DA30	<---	Support
theta06	-0.23274	0.083884	-2.7746	5.5275e-03	DA24	<---	Support
theta07	0.48148	0.079556	6.0520	1.4301e-09	DA28	<---	Support
theta08	0.49391	0.080462	6.1384	8.3350e-10	DA31	<---	Support
theta09	0.47059	0.081204	5.7952	6.8258e-09	DA19	<---	Support
theta10	0.44773	0.082753	5.4105	6.2844e-08	DA22	<---	Support
theta11	0.77875	0.066459	11.7178	0.0000e+00	DA9	<---	Tasks
theta12	0.84734	0.063663	13.3098	0.0000e+00	DA17	<---	Tasks
theta13	0.55113	0.073273	7.5216	5.4179e-14	DA1	<---	Tasks
theta14	0.64142	0.071139	9.0165	0.0000e+00	DA5	<---	Tasks
theta15	0.81021	0.065341	12.3997	0.0000e+00	DA13	<---	Tasks
theta16	0.48828	0.082434	5.9234	3.1542e-09	DA3	<---	Leisure
theta17	0.44789	0.082299	5.4423	5.2607e-08	DA16	<---	Leisure
theta18	0.62499	0.079204	7.8909	3.1086e-15	DA8	<---	Leisure
theta19	0.52028	0.081985	6.3460	2.2096e-10	DA7	<---	Leisure
theta20	0.49912	0.081484	6.1254	9.0478e-10	DA15	<---	Leisure
theta21	0.58105	0.081896	7.0949	1.2943e-12	DA21	<---	Leisure
theta22	0.53323	0.080474	6.6261	3.4473e-11	DA12	<---	Leisure
theta23	0.44614	0.085157	5.2390	1.6142e-07	DA27	<---	Leisure
theta24	0.38029	0.084002	4.5272	5.9783e-06	DA6	<---	Care
theta25	0.35043	0.080514	4.3524	1.3466e-05	DA11	<---	Care
theta26	0.66317	0.076861	8.6282	0.0000e+00	DA10	<---	Care
theta27	0.70235	0.076353	9.1988	0.0000e+00	DA2	<---	Care
theta28	0.66961	0.077816	8.6051	0.0000e+00	DA14	<---	Care
theta29	0.58224	0.078610	7.4067	1.2945e-13	DA18	<---	Care
theta33	0.49063	0.073261	6.6970	2.1269e-11	DA29	<-->	DA29
theta34	0.71577	0.085147	8.4063	0.0000e+00	DA23	<-->	DA23
theta35	0.62814	0.079984	7.8533	3.9968e-15	DA32	<-->	DA32
theta36	0.71566	0.087420	8.1864	2.2204e-16	DA12	<-->	DA12
theta37	0.72772	0.088030	8.2668	2.2204e-16	DA30	<-->	DA30
theta38	0.66238	0.087660	7.5562	4.1522e-14	DA21	<-->	DA21
theta39	0.76817	0.088864	8.6444	0.0000e+00	DA28	<-->	DA28

```

theta40 0.39353 0.054379 7.2368 4.5963e-13 DA9 <--> DA9
theta41 0.28200 0.046774 6.0290 1.6501e-09 DA17 <--> DA17
theta42 0.69625 0.078633 8.8544 0.0000e+00 DA1 <--> DA1
theta43 0.58857 0.069844 8.4269 0.0000e+00 DA5 <--> DA5
theta44 0.34355 0.051232 6.7058 2.0037e-11 DA13 <--> DA13
theta45 0.94583 0.101962 9.2762 0.0000e+00 DA24 <--> DA24
theta46 0.76157 0.091004 8.3685 0.0000e+00 DA3 <--> DA3
theta47 0.79938 0.092534 8.6388 0.0000e+00 DA16 <--> DA16
theta48 0.60938 0.083147 7.3290 2.3204e-13 DA8 <--> DA8
theta49 0.72930 0.089431 8.1549 4.4409e-16 DA7 <--> DA7
theta50 0.75087 0.089743 8.3670 0.0000e+00 DA15 <--> DA15
theta51 0.93514 0.101461 9.2167 0.0000e+00 DA4 <--> DA4
theta52 0.78183 0.089302 8.7549 0.0000e+00 DA11 <--> DA11
theta53 0.92814 0.100655 9.2210 0.0000e+00 DA20 <--> DA20
theta54 0.90817 0.097686 9.2969 0.0000e+00 DA26 <--> DA26
theta55 0.80095 0.094646 8.4626 0.0000e+00 DA27 <--> DA27
theta56 0.85539 0.096396 8.8737 0.0000e+00 DA6 <--> DA6
theta57 0.77854 0.090717 8.5821 0.0000e+00 DA19 <--> DA19
theta58 0.75605 0.089051 8.4900 0.0000e+00 DA31 <--> DA31
theta59 0.83259 0.093757 8.8803 0.0000e+00 DA25 <--> DA25
theta60 0.56020 0.078808 7.1084 1.1742e-12 DA10 <--> DA10
theta61 0.50671 0.077706 6.5208 6.9918e-11 DA2 <--> DA2
theta62 0.55163 0.080399 6.8612 6.8303e-12 DA14 <--> DA14
theta63 0.66100 0.083453 7.9207 2.4425e-15 DA18 <--> DA18
theta64 0.79952 0.092864 8.6096 0.0000e+00 DA22 <--> DA22
theta65 0.25467 0.085012 2.9956 2.7387e-03 DA4 <--- Leisure
theta66 0.30300 0.078102 3.8795 1.0468e-04 DA26 <--- Tasks
theta67 0.26804 0.083525 3.2091 1.3317e-03 DA20 <--- Support
theta68 0.34713 0.075622 4.5903 4.4255e-06 DA11 <--- Tasks

```

```

Iterations = 13
>
> mod.indices(cfaDA3.fit)

```

```

5 largest modification indices, A matrix:

```

DA30:DA22	Leisure:DA32	Tasks:DA32	DA12:DA11	DA22:DA30
27.08846	26.70705	25.12349	24.58042	24.02288

```

5 largest modification indices, P matrix:

```

DA30:DA22	DA27:DA21	Leisure:Support	DA31:DA19
Tasks:DA2			
35.46105	23.57111	22.51314	22.22092
20.37601			

```

>

```

E 4 CONFIRMATORY FACTOR ANALYSIS CFA Based on Variables DA1-DA18 (only)

```

> library(sem)
> da18.R <- cor(da18.dat)
> da18.dat <- da18.dat[,1:18]
> da18.R <- cor(da18.dat)
>
> cfaDA11.model <- specify.model("CFAda11.txt")
Read 40 records
> cfaDA12.model <- specify.model("CFAda12.txt")
Read 35 records
>
>
> cfaDA11.fit <- sem(cfaDA11.model, da18.R, 203)
>
> cfaDA12.fit <- sem(cfaDA12.model, da18.R, 203)
Warning message:
In sem.mod(cfaDA12.model, da18.R, 203) :
  The following observed variables are in the input covariance or raw-
moment matrix but do not appear in the model:
DA4, DA11

> summary(cfaDA11.fit)

Model Chisquare = 328.02   Df = 134   Pr(>Chisq) = 0
Chisquare (null model) = 1142.7   Df = 153
Goodness-of-fit index = 0.84693
Adjusted goodness-of-fit index = 0.80467
RMSEA index = 0.084662   90% CI: (NA, NA)
Bentler-Bonnett NFI = 0.71295
Tucker-Lewis NNFI = 0.77617
Bentler CFI = 0.80397
SRMR = 0.10923
BIC = -383.95

Normalized Residuals
  Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
-4.240 -0.546   0.192   0.320   1.120   5.330

Parameter Estimates
      Estimate Std Error z value Pr(>|z|)
theta11 0.75672  0.063532 11.9109 0.0000e+00 DA9 <--- Tasks
theta12 0.83871  0.060563 13.8486 0.0000e+00 DA17 <--- Tasks
theta13 0.55141  0.068993  7.9922 1.3323e-15 DA1 <--- Tasks
theta14 0.66597  0.066409 10.0284 0.0000e+00 DA5 <--- Tasks
theta15 0.81523  0.061605 13.2332 0.0000e+00 DA13 <--- Tasks
theta10 0.32835  0.071943  4.5640 5.0178e-06 DA11 <--- Tasks
theta16 0.50357  0.078605  6.4063 1.4910e-10 DA3 <--- Leisure
theta17 0.40232  0.079443  5.0643 4.0993e-07 DA16 <--- Leisure
theta18 0.68473  0.074736  9.1620 0.0000e+00 DA8 <--- Leisure
theta19 0.61279  0.076110  8.0513 8.8818e-16 DA7 <--- Leisure
theta20 0.49594  0.078263  6.3368 2.3458e-10 DA15 <--- Leisure
theta21 0.29722  0.080273  3.7026 2.1338e-04 DA4 <--- Leisure
theta22 0.52380  0.077374  6.7697 1.2907e-11 DA12 <--- Leisure
theta24 0.39036  0.079538  4.9078 9.2093e-07 DA6 <--- Care
theta25 0.30781  0.077481  3.9727 7.1050e-05 DA11 <--- Care
theta26 0.65682  0.073592  8.9251 0.0000e+00 DA10 <--- Care
theta27 0.67967  0.073325  9.2693 0.0000e+00 DA2 <--- Care
theta28 0.65674  0.074499  8.8154 0.0000e+00 DA14 <--- Care

```

theta29	0.57048	0.074907	7.6159	2.6201e-14	DA18 <--- Care
theta36	0.72564	0.084253	8.6125	0.0000e+00	DA12 <--> DA12
theta40	0.42738	0.054405	7.8555	3.9968e-15	DA9 <--> DA9
theta41	0.29656	0.046460	6.3830	1.7363e-10	DA17 <--> DA17
theta42	0.69595	0.074034	9.4004	0.0000e+00	DA1 <--> DA1
theta43	0.55648	0.063683	8.7382	0.0000e+00	DA5 <--> DA5
theta44	0.33539	0.049128	6.8268	8.6802e-12	DA13 <--> DA13
theta46	0.74642	0.086033	8.6760	0.0000e+00	DA3 <--> DA3
theta47	0.83813	0.089993	9.3133	0.0000e+00	DA16 <--> DA16
theta48	0.53115	0.078501	6.7662	1.3225e-11	DA8 <--> DA8
theta49	0.62449	0.080776	7.7311	1.0658e-14	DA7 <--> DA7
theta50	0.75405	0.085947	8.7734	0.0000e+00	DA15 <--> DA15
theta51	0.91165	0.094007	9.6977	0.0000e+00	DA4 <--> DA4
theta52	0.81816	0.086620	9.4454	0.0000e+00	DA11 <--> DA11
theta56	0.84762	0.090472	9.3688	0.0000e+00	DA6 <--> DA6
theta60	0.56859	0.076476	7.4349	1.0458e-13	DA10 <--> DA10
theta61	0.53806	0.075947	7.0846	1.3944e-12	DA2 <--> DA2
theta62	0.56869	0.077976	7.2932	3.0265e-13	DA14 <--> DA14
theta63	0.67455	0.080100	8.4213	0.0000e+00	DA18 <--> DA18

Iterations = 13

>

>

> summary(cfaDA12.fit)

Model Chisquare = 267.77 Df = 104 Pr(>Chisq) = 2.2204e-16
 Chisquare (null model) = 1038.0 Df = 120
 Goodness-of-fit index = 0.85623
 Adjusted goodness-of-fit index = 0.812
 RMSEA index = 0.088293 90% CI: (NA, NA)
 Bentler-Bonnett NFI = 0.74204
 Tucker-Lewis NNFI = 0.79416
 Bentler CFI = 0.8216
 SRMR = 0.11275
 BIC = -284.8

Normalized Residuals

Min.	1st Qu.	Median	Mean	3rd Qu.	Max.
-4.240	-0.587	0.245	0.331	1.140	4.500

Parameter Estimates

	Estimate	Std Error	z value	Pr(> z)	
theta11	0.74977	0.063794	11.7530	0.0000e+00	DA9 <--- Tasks
theta12	0.84280	0.060701	13.8846	0.0000e+00	DA17 <--- Tasks
theta13	0.55549	0.068990	8.0517	8.8818e-16	DA1 <--- Tasks
theta14	0.66194	0.066647	9.9319	0.0000e+00	DA5 <--- Tasks
theta15	0.81731	0.061755	13.2347	0.0000e+00	DA13 <--- Tasks
theta16	0.51206	0.079200	6.4654	1.0103e-10	DA3 <--- Leisure
theta17	0.40463	0.080029	5.0560	4.2822e-07	DA16 <--- Leisure
theta18	0.67328	0.075706	8.8933	0.0000e+00	DA8 <--- Leisure
theta19	0.60998	0.077044	7.9173	2.4425e-15	DA7 <--- Leisure
theta20	0.50462	0.078859	6.3991	1.5631e-10	DA15 <--- Leisure
theta22	0.52551	0.078112	6.7277	1.7242e-11	DA12 <--- Leisure
theta24	0.38189	0.080038	4.7714	1.8298e-06	DA6 <--- Care
theta26	0.66359	0.073745	8.9984	0.0000e+00	DA10 <--- Care
theta27	0.70388	0.073129	9.6252	0.0000e+00	DA2 <--- Care
theta28	0.62663	0.074736	8.3846	0.0000e+00	DA14 <--- Care
theta29	0.57340	0.075162	7.6288	2.3759e-14	DA18 <--- Care
theta36	0.72384	0.084952	8.5206	0.0000e+00	DA12 <--> DA12
theta40	0.43784	0.055188	7.9336	2.2204e-15	DA9 <--> DA9
theta41	0.28968	0.047192	6.1384	8.3377e-10	DA17 <--> DA17

```

theta42 0.69144 0.073774 9.3724 0.0000e+00 DA1 <--> DA1
theta43 0.56184 0.064307 8.7368 0.0000e+00 DA5 <--> DA5
theta44 0.33200 0.049698 6.6803 2.3847e-11 DA13 <--> DA13
theta46 0.73780 0.086371 8.5423 0.0000e+00 DA3 <--> DA3
theta47 0.83628 0.090252 9.2661 0.0000e+00 DA16 <--> DA16
theta48 0.54670 0.080073 6.8276 8.6373e-12 DA8 <--> DA8
theta49 0.62792 0.082119 7.6465 2.0650e-14 DA7 <--> DA7
theta50 0.74536 0.086240 8.6429 0.0000e+00 DA15 <--> DA15
theta56 0.85416 0.091032 9.3831 0.0000e+00 DA6 <--> DA6
theta60 0.55965 0.076695 7.2971 2.9399e-13 DA10 <--> DA10
theta61 0.50456 0.075761 6.6598 2.7412e-11 DA2 <--> DA2
theta62 0.60733 0.078600 7.7269 1.1102e-14 DA14 <--> DA14
theta63 0.67122 0.080327 8.3561 0.0000e+00 DA18 <--> DA18

```

```

Iterations = 14
>
> mod.indices(cfaDA11.fit)

```

```

5 largest modification indices, A matrix:
DA12:DA11 Tasks:DA12 DA2:Tasks DA6:DA9 DA2:DA13
29.70074 21.83191 19.52613 19.37772 19.14484

```

```

5 largest modification indices, P matrix:
Tasks:DA2 Tasks:DA6 Tasks:DA12 DA12:DA11 Care:DA17
19.52613 18.64460 16.07500 15.75926 14.21067
>
> mod.indices(cfaDA12.fit)

```

```

5 largest modification indices, A matrix:
Tasks:DA12 DA6:DA9 DA2:DA13 DA6:DA12 DA6:DA5
20.14573 20.02762 19.48719 19.47727 18.83748

```

```

5 largest modification indices, P matrix:
Tasks:DA2 Tasks:DA6 Care:DA1 Tasks:DA12 Care:DA17
18.70936 18.68399 15.06850 14.55309 13.75823

```

```

> cfal.fit <- sem(cfal.model, S1Data.R, 167)
> summary(cfal.fit)

Model Chisquare = 1078.9   Df = 464   Pr(>Chisq) = 0
Chisquare (null model) = 2522.8   Df = 496
Goodness-of-fit index = 0.71553
Adjusted goodness-of-fit index = 0.67629
RMSEA index = 0.089347   90% CI: (NA, NA)
Bentler-Bonnett NFI = 0.57236
Tucker-Lewis NNFI = 0.67571
Bentler CFI = 0.69663
SRMR = 0.15254
BIC = -1295.9

Normalized Residuals
  Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
-2.0800 -0.0376  0.7410  1.1000  2.2100  7.5500

Parameter Estimates
      Estimate Std Error z value Pr(>|z|)
theta01 0.82403  0.066767 12.3419 0.0000e+00 mda29 <--- Support
theta02 0.81896  0.066731 12.2726 0.0000e+00 mda23 <--- Support
theta03 0.80474  0.067327 11.9528 0.0000e+00 mda32 <--- Support
theta04 0.69676  0.071171  9.7899 0.0000e+00 mda12 <--- Support
theta05 0.49356  0.077153  6.3972 1.5826e-10 mda30 <--- Support
theta06 0.50494  0.076738  6.5801 4.7016e-11 mda21 <--- Support
theta07 0.37680  0.080112  4.7034 2.5589e-06 mda28 <--- Support
theta08 0.83441  0.066087 12.6260 0.0000e+00 mda9 <--- Tasks
theta09 0.83088  0.066188 12.5533 0.0000e+00 mda17 <--- Tasks
theta10 0.77880  0.068252 11.4107 0.0000e+00 mda1 <--- Tasks
theta11 0.71770  0.070365 10.1996 0.0000e+00 mda5 <--- Tasks
theta12 0.67280  0.072071  9.3353 0.0000e+00 mda13 <--- Tasks
theta13 0.33793  0.079753  4.2371 2.2638e-05 mda24 <--- Tasks
theta14 0.67986  0.077093  8.8186 0.0000e+00 mda3 <--- Leisure
theta15 0.57435  0.080028  7.1769 7.1321e-13 mda16 <--- Leisure
theta16 0.69410  0.075792  9.1580 0.0000e+00 mda8 <--- Leisure
theta17 0.52146  0.081220  6.4204 1.3592e-10 mda7 <--- Leisure
theta18 0.54621  0.080717  6.7669 1.3157e-11 mda15 <--- Leisure
theta19 0.42190  0.083939  5.0262 5.0031e-07 mda4 <--- Leisure
theta20 0.33222  0.084231  3.9442 8.0075e-05 mda11 <--- Leisure
theta21 0.40812  0.083134  4.9092 9.1463e-07 mda20 <--- Leisure
theta22 0.42428  0.082774  5.1257 2.9640e-07 mda26 <--- Leisure
theta23 0.43590  0.082774  5.2661 1.3932e-07 mda27 <--- Leisure
theta24 0.36295  0.083763  4.3331 1.4703e-05 mda6 <--- Leisure
theta25 0.76731  0.077007  9.9641 0.0000e+00 mda19 <--- Care
theta26 0.66726  0.079467  8.3967 0.0000e+00 mda31 <--- Care
theta27 0.69801  0.076070  9.1758 0.0000e+00 mda25 <--- Care
theta28 0.48927  0.084307  5.8034 6.4975e-09 mda10 <--- Care
theta29 0.58973  0.085430  6.9031 5.0882e-12 mda2 <--- Care
theta30 0.60569  0.082609  7.3321 2.2671e-13 mda14 <--- Care
theta31 0.56192  0.081637  6.8832 5.8518e-12 mda18 <--- Care
theta32 0.18457  0.084381  2.1873 2.8720e-02 mda22 <--- Care
theta33 0.32099  0.050382  6.3711 1.8771e-10 mda29 <--> mda29
theta34 0.32931  0.050078  6.5759 4.8350e-11 mda23 <--> mda23
theta35 0.35240  0.051798  6.8034 1.0220e-11 mda32 <--> mda32
theta36 0.51453  0.064552  7.9708 1.5543e-15 mda12 <--> mda12
theta37 0.75639  0.086840  8.7102 0.0000e+00 mda30 <--> mda30
theta38 0.74503  0.085647  8.6988 0.0000e+00 mda21 <--> mda21
theta39 0.85803  0.096646  8.8781 0.0000e+00 mda28 <--> mda28
theta40 0.30377  0.048314  6.2874 3.2279e-10 mda9 <--> mda9
theta41 0.30965  0.048534  6.3799 1.7720e-10 mda17 <--> mda17

```



```

theta42 0.39347 0.054603 7.2060 5.7621e-13 mda1 <--> mda1
theta43 0.48491 0.061792 7.8474 4.2188e-15 mda5 <--> mda5
theta44 0.54734 0.067643 8.0916 6.6613e-16 mda13 <--> mda13
theta45 0.88581 0.098836 8.9624 0.0000e+00 mda24 <--> mda24
theta46 0.53779 0.076880 6.9952 2.6490e-12 mda3 <--> mda3
theta47 0.67011 0.085005 7.8832 3.1086e-15 mda16 <--> mda16
theta48 0.51822 0.074122 6.9914 2.7214e-12 mda8 <--> mda8
theta49 0.72807 0.088900 8.1897 2.2204e-16 mda7 <--> mda7
theta50 0.70166 0.087138 8.0523 8.8818e-16 mda15 <--> mda15
theta51 0.82200 0.096197 8.5450 0.0000e+00 mda4 <--> mda4
theta52 0.88963 0.100793 8.8263 0.0000e+00 mda11 <--> mda11
theta53 0.83344 0.096427 8.6432 0.0000e+00 mda20 <--> mda20
theta54 0.81999 0.095346 8.6001 0.0000e+00 mda26 <--> mda26
theta55 0.80999 0.094721 8.5513 0.0000e+00 mda27 <--> mda27
theta56 0.86827 0.099091 8.7623 0.0000e+00 mda6 <--> mda6
theta57 0.41125 0.077421 5.3119 1.0850e-07 mda19 <--> mda19
theta58 0.55476 0.081343 6.8201 9.1005e-12 mda31 <--> mda31
theta59 0.51279 0.074608 6.8731 6.2819e-12 mda25 <--> mda25
theta60 0.76061 0.093282 8.1539 4.4409e-16 mda10 <--> mda10
theta61 0.65222 0.091421 7.1342 9.7322e-13 mda2 <--> mda2
theta62 0.63314 0.087337 7.2494 4.1878e-13 mda14 <--> mda14
theta63 0.68424 0.087484 7.8213 5.3291e-15 mda18 <--> mda18
theta64 0.96594 0.106814 9.0431 0.0000e+00 mda22 <--> mda22

```

```

Iterations = 17
>
> mod.indices(cfa1.fit)

```

5 largest modification indices, A matrix:

mda22:mda30	Support:mda8	mda30:mda22	Tasks:Care	Care:Tasks
53.99718	50.40579	41.67426	41.32675	41.32675

5 largest modification indices, P matrix:

Care:Tasks	mda30:mda22	Leisure:Support	mda14:mda2
Support:mda8			
41.32675	40.97288	39.89635	28.60261
23.39645			

```
> cfa3.model <- specify.model("CFA3.txt")
Read 69 records
> cfa3.fit <- sem(cfa3.model,S1Data.R,167)
> summary(cfa3.fit)
```

```
Model Chisquare = 1047.0   Df = 463 Pr(>Chisq) = 0
Chisquare (null model) = 2522.8   Df = 496
Goodness-of-fit index = 0.71826
Adjusted goodness-of-fit index = 0.6787
RMSEA index = 0.08717   90% CI: (NA, NA)
Bentler-Bonnett NFI = 0.58498
Tucker-Lewis NNFI = 0.69131
Bentler CFI = 0.71185
SRMR = 0.14676
BIC = -1322.6
```

```
Normalized Residuals
      Min.    1st Qu.    Median      Mean   3rd Qu.      Max.
-2.080000 -0.000415  0.802000  1.080000  2.140000  7.550000
```

```
Parameter Estimates
      Estimate Std Error z value Pr(>|z|)
theta01 0.83311 0.066200 12.5848 0.0000e+00 mda29 <--- Support
theta02 0.80533 0.067141 11.9946 0.0000e+00 mda23 <--- Support
theta03 0.79664 0.067544 11.7944 0.0000e+00 mda32 <--- Support
theta04 0.71447 0.070616 10.1177 0.0000e+00 mda12 <--- Support
theta05 0.49111 0.077009 6.3773 1.8022e-10 mda30 <--- Support
theta06 0.50010 0.076723 6.5182 7.1140e-11 mda21 <--- Support
theta07 0.38178 0.079715 4.7892 1.6741e-06 mda28 <--- Support
theta08 0.83441 0.066087 12.6260 0.0000e+00 mda9 <--- Tasks
theta09 0.83088 0.066188 12.5533 0.0000e+00 mda17 <--- Tasks
theta10 0.77880 0.068252 11.4108 0.0000e+00 mda1 <--- Tasks
theta11 0.71770 0.070365 10.1996 0.0000e+00 mda5 <--- Tasks
theta12 0.67280 0.072071 9.3353 0.0000e+00 mda13 <--- Tasks
theta13 0.33793 0.079753 4.2371 2.2639e-05 mda24 <--- Tasks
theta14 0.69583 0.077808 8.9429 0.0000e+00 mda3 <--- Leisure
theta15 0.56313 0.081782 6.8857 5.7485e-12 mda16 <--- Leisure
theta16 0.51683 0.073686 7.0140 2.3161e-12 mda8 <--- Leisure
theta17 0.52663 0.081950 6.4262 1.3081e-10 mda7 <--- Leisure
theta18 0.52780 0.082425 6.4034 1.5197e-10 mda15 <--- Leisure
theta19 0.43019 0.084666 5.0810 3.7551e-07 mda4 <--- Leisure
theta20 0.35602 0.084571 4.2097 2.5570e-05 mda11 <--- Leisure
theta21 0.40815 0.083898 4.8648 1.1455e-06 mda20 <--- Leisure
theta22 0.42243 0.083698 5.0471 4.4853e-07 mda26 <--- Leisure
theta23 0.41815 0.084080 4.9733 6.5837e-07 mda27 <--- Leisure
theta24 0.36399 0.084449 4.3102 1.6310e-05 mda6 <--- Leisure
theta25 0.76731 0.077007 9.9641 0.0000e+00 mda19 <--- Care
theta26 0.66726 0.079467 8.3968 0.0000e+00 mda31 <--- Care
theta27 0.69801 0.076070 9.1759 0.0000e+00 mda25 <--- Care
theta28 0.48927 0.084307 5.8034 6.4976e-09 mda10 <--- Care
theta29 0.58973 0.085430 6.9031 5.0882e-12 mda2 <--- Care
theta30 0.60569 0.082609 7.3321 2.2671e-13 mda14 <--- Care
theta31 0.56192 0.081637 6.8832 5.8515e-12 mda18 <--- Care
theta32 0.18456 0.084380 2.1873 2.8722e-02 mda22 <--- Care
theta33 0.30593 0.048677 6.2848 3.2828e-10 mda29 <--> mda29
theta34 0.35145 0.051178 6.8671 6.5501e-12 mda23 <--> mda23
theta35 0.36536 0.052409 6.9713 3.1406e-12 mda32 <--> mda32
theta36 0.48953 0.062507 7.8316 4.8850e-15 mda12 <--> mda12
theta37 0.75881 0.086894 8.7326 0.0000e+00 mda30 <--> mda30
theta38 0.74990 0.085988 8.7210 0.0000e+00 mda21 <--> mda21
theta39 0.85425 0.096149 8.8847 0.0000e+00 mda28 <--> mda28
```

theta40	0.30377	0.048314	6.2874	3.2276e-10	mda9 <--> mda9
theta41	0.30964	0.048534	6.3799	1.7719e-10	mda17 <--> mda17
theta42	0.39347	0.054603	7.2060	5.7621e-13	mda1 <--> mda1
theta43	0.48491	0.061792	7.8474	4.2188e-15	mda5 <--> mda5
theta44	0.54734	0.067643	8.0916	6.6613e-16	mda13 <--> mda13
theta45	0.88581	0.098837	8.9624	0.0000e+00	mda24 <--> mda24
theta46	0.51582	0.078035	6.6102	3.8377e-11	mda3 <--> mda3
theta47	0.68288	0.087609	7.7946	6.4393e-15	mda16 <--> mda16
theta48	0.44087	0.059905	7.3596	1.8452e-13	mda8 <--> mda8
theta49	0.72266	0.089381	8.0851	6.6613e-16	mda7 <--> mda7
theta50	0.72143	0.089813	8.0326	8.8818e-16	mda15 <--> mda15
theta51	0.81494	0.096255	8.4665	0.0000e+00	mda4 <--> mda4
theta52	0.87325	0.099786	8.7512	0.0000e+00	mda11 <--> mda11
theta53	0.83342	0.096866	8.6039	0.0000e+00	mda20 <--> mda20
theta54	0.82155	0.096020	8.5561	0.0000e+00	mda26 <--> mda26
theta55	0.82515	0.096471	8.5534	0.0000e+00	mda27 <--> mda27
theta56	0.86751	0.099347	8.7322	0.0000e+00	mda6 <--> mda6
theta57	0.41125	0.077420	5.3119	1.0849e-07	mda19 <--> mda19
theta58	0.55476	0.081343	6.8201	9.1007e-12	mda31 <--> mda31
theta59	0.51279	0.074609	6.8731	6.2819e-12	mda25 <--> mda25
theta60	0.76062	0.093282	8.1539	4.4409e-16	mda10 <--> mda10
theta61	0.65222	0.091421	7.1342	9.7322e-13	mda2 <--> mda2
theta62	0.63314	0.087337	7.2494	4.1878e-13	mda14 <--> mda14
theta63	0.68424	0.087485	7.8213	5.3291e-15	mda18 <--> mda18
theta64	0.96594	0.106814	9.0431	0.0000e+00	mda22 <--> mda22
theta65	0.39256	0.068833	5.7030	1.1770e-08	mda8 <--- Support

Iterations = 17
>

```
> cfa4.model <- specify.model("CFA4.txt")
Read 70 records
> cfa4.fit <- sem(cfa4.model,S1Data.R,167)
> summary(cfa4.fit)
```

```
Model Chisquare = 1033.1 Df = 462 Pr(>Chisq) = 0
Chisquare (null model) = 2522.8 Df = 496
Goodness-of-fit index = 0.72399
Adjusted goodness-of-fit index = 0.68456
RMSEA index = 0.086297 90% CI: (NA, NA)
Bentler-Bonnett NFI = 0.59048
Tucker-Lewis NNFI = 0.69747
Bentler CFI = 0.7182
SRMR = 0.14342
BIC = -1331.4
```

```
Normalized Residuals
      Min.    1st Qu.    Median      Mean    3rd Qu.      Max.
-2.20e+00 -5.19e-05  8.03e-01  1.07e+00  2.17e+00  7.55e+00
```

```
Parameter Estimates
      Estimate Std Error z value Pr(>|z|)
theta01 0.83311 0.066200 12.5848 0.0000e+00 mda29 <--- Support
theta02 0.80533 0.067141 11.9947 0.0000e+00 mda23 <--- Support
theta03 0.79665 0.067544 11.7944 0.0000e+00 mda32 <--- Support
theta04 0.71446 0.070615 10.1177 0.0000e+00 mda12 <--- Support
theta05 0.49111 0.077009 6.3773 1.8021e-10 mda30 <--- Support
theta06 0.50010 0.076723 6.5182 7.1139e-11 mda21 <--- Support
theta07 0.38178 0.079715 4.7893 1.6738e-06 mda28 <--- Support
theta08 0.83665 0.065919 12.6921 0.0000e+00 mda9 <--- Tasks
theta09 0.82980 0.066113 12.5512 0.0000e+00 mda17 <--- Tasks
theta10 0.78065 0.068126 11.4589 0.0000e+00 mda1 <--- Tasks
theta11 0.71290 0.070432 10.1219 0.0000e+00 mda5 <--- Tasks
theta12 0.67181 0.072010 9.3293 0.0000e+00 mda13 <--- Tasks
theta13 0.34267 0.079621 4.3037 1.6796e-05 mda24 <--- Tasks
theta14 0.69583 0.077808 8.9429 0.0000e+00 mda3 <--- Leisure
theta15 0.56313 0.081782 6.8858 5.7478e-12 mda16 <--- Leisure
theta16 0.51683 0.073686 7.0139 2.3168e-12 mda8 <--- Leisure
theta17 0.52663 0.081950 6.4262 1.3083e-10 mda7 <--- Leisure
theta18 0.52780 0.082425 6.4034 1.5195e-10 mda15 <--- Leisure
theta19 0.43019 0.084666 5.0810 3.7552e-07 mda4 <--- Leisure
theta20 0.35602 0.084571 4.2097 2.5568e-05 mda11 <--- Leisure
theta21 0.40815 0.083897 4.8649 1.1454e-06 mda20 <--- Leisure
theta22 0.42243 0.083698 5.0471 4.4850e-07 mda26 <--- Leisure
theta23 0.41815 0.084080 4.9733 6.5830e-07 mda27 <--- Leisure
theta24 0.36400 0.084449 4.3102 1.6308e-05 mda6 <--- Leisure
theta25 0.78975 0.074079 10.6609 0.0000e+00 mda19 <--- Care
theta26 0.69362 0.076391 9.0798 0.0000e+00 mda31 <--- Care
theta27 0.71167 0.074047 9.6111 0.0000e+00 mda25 <--- Care
theta28 0.46732 0.084559 5.5265 3.2671e-08 mda10 <--- Care
theta29 0.55064 0.084647 6.5051 7.7621e-11 mda2 <--- Care
theta30 0.44405 0.087042 5.1015 3.3699e-07 mda14 <--- Care
theta31 0.53791 0.081749 6.5800 4.7037e-11 mda18 <--- Care
theta32 0.19191 0.084296 2.2767 2.2807e-02 mda22 <--- Care
theta33 0.30593 0.048677 6.2848 3.2828e-10 mda29 <--> mda29
theta34 0.35144 0.051177 6.8672 6.5483e-12 mda23 <--> mda23
theta35 0.36536 0.052409 6.9713 3.1404e-12 mda32 <--> mda32
theta36 0.48954 0.062507 7.8317 4.8850e-15 mda12 <--> mda12
theta37 0.75880 0.086894 8.7326 0.0000e+00 mda30 <--> mda30
theta38 0.74990 0.085987 8.7211 0.0000e+00 mda21 <--> mda21
```

```

theta39 0.85425 0.096148 8.8847 0.0000e+00 mda28 <--> mda28
theta40 0.30002 0.047779 6.2793 3.4003e-10 mda9 <--> mda9
theta41 0.31144 0.048204 6.4609 1.0411e-10 mda17 <--> mda17
theta42 0.39060 0.054209 7.2054 5.7887e-13 mda1 <--> mda1
theta43 0.49177 0.062152 7.9123 2.4425e-15 mda5 <--> mda5
theta44 0.54868 0.067581 8.1188 4.4409e-16 mda13 <--> mda13
theta45 0.88258 0.098505 8.9598 0.0000e+00 mda24 <--> mda24
theta46 0.51583 0.078035 6.6102 3.8376e-11 mda3 <--> mda3
theta47 0.68288 0.087609 7.7946 6.4393e-15 mda16 <--> mda16
theta48 0.44087 0.059905 7.3596 1.8452e-13 mda8 <--> mda8
theta49 0.72266 0.089381 8.0851 6.6613e-16 mda7 <--> mda7
theta50 0.72143 0.089813 8.0326 8.8818e-16 mda15 <--> mda15
theta51 0.81494 0.096254 8.4665 0.0000e+00 mda4 <--> mda4
theta52 0.87325 0.099786 8.7513 0.0000e+00 mda11 <--> mda11
theta53 0.83342 0.096865 8.6039 0.0000e+00 mda20 <--> mda20
theta54 0.82155 0.096019 8.5561 0.0000e+00 mda26 <--> mda26
theta55 0.82515 0.096470 8.5534 0.0000e+00 mda27 <--> mda27
theta56 0.86751 0.099346 8.7322 0.0000e+00 mda6 <--> mda6
theta57 0.37631 0.071099 5.2927 1.2052e-07 mda19 <--> mda19
theta58 0.51890 0.075310 6.8902 5.5695e-12 mda31 <--> mda31
theta59 0.49353 0.070210 7.0293 2.0755e-12 mda25 <--> mda25
theta60 0.78162 0.094458 8.2747 2.2204e-16 mda10 <--> mda10
theta61 0.69680 0.091346 7.6281 2.3759e-14 mda2 <--> mda2
theta62 0.61450 0.076458 8.0371 8.8818e-16 mda14 <--> mda14
theta63 0.71065 0.088649 8.0165 1.1102e-15 mda18 <--> mda18
theta64 0.96317 0.106570 9.0379 0.0000e+00 mda22 <--> mda22
theta65 0.39256 0.068833 5.7030 1.1769e-08 mda8 <--- Support
theta66 0.29224 0.078484 3.7235 1.9645e-04 mda14 <--- Tasks

```

```

Iterations = 17
>
> mod.indices(cfa4.fit)

```

```

5 largest modification indices, A matrix:
mda22:mda30 mda30:mda22 Tasks:Care Care:Tasks Care:mda5
53.79985 42.23805 35.03659 35.03659 30.41381

```

```

5 largest modification indices, P matrix:
mda30:mda22 Care:Tasks Leisure:Support mda14:mda2
mda22:mda4
41.21523 35.03659 27.09137 25.66045
18.34001

```

```
> cfa5.model <- specify.model("CFA5.txt")
Read 71 records
> cfa5.fit <- sem(cfa5.model,S1Data.R,167)
> summary(cfa5.fit)
```

```
Model Chisquare = 980.45 Df = 461 Pr(>Chisq) = 0
Chisquare (null model) = 2522.8 Df = 496
Goodness-of-fit index = 0.73455
Adjusted goodness-of-fit index = 0.69597
RMSEA index = 0.082388 90% CI: (NA, NA)
Bentler-Bonnett NFI = 0.61137
Tucker-Lewis NNFI = 0.72426
Bentler CFI = 0.74371
SRMR = 0.14182
BIC = -1378.9
```

```
Normalized Residuals
      Min.    1st Qu.    Median      Mean    3rd Qu.      Max.
-2.20e+00 -6.19e-06  9.00e-01  1.08e+00  2.18e+00  5.95e+00
```

```
Parameter Estimates
      Estimate Std Error z value Pr(>|z|)
theta01 0.83248 0.066326 12.5514 0.0000e+00 mda29 <--- Support
theta02 0.80623 0.067184 12.0003 0.0000e+00 mda23 <--- Support
theta03 0.79603 0.067638 11.7688 0.0000e+00 mda32 <--- Support
theta04 0.71424 0.070690 10.1039 0.0000e+00 mda12 <--- Support
theta05 0.34424 0.067614 5.0913 3.5568e-07 mda30 <--- Support
theta06 0.50290 0.076719 6.5551 5.5598e-11 mda21 <--- Support
theta07 0.37660 0.079878 4.7147 2.4201e-06 mda28 <--- Support
theta08 0.83662 0.065920 12.6914 0.0000e+00 mda9 <--- Tasks
theta09 0.82982 0.066112 12.5517 0.0000e+00 mda17 <--- Tasks
theta10 0.78065 0.068125 11.4591 0.0000e+00 mda1 <--- Tasks
theta11 0.71290 0.070432 10.1219 0.0000e+00 mda5 <--- Tasks
theta12 0.67180 0.072010 9.3293 0.0000e+00 mda13 <--- Tasks
theta13 0.34268 0.079620 4.3040 1.6775e-05 mda24 <--- Tasks
theta14 0.69625 0.077742 8.9559 0.0000e+00 mda3 <--- Leisure
theta15 0.56282 0.081755 6.8843 5.8080e-12 mda16 <--- Leisure
theta16 0.51952 0.073370 7.0808 1.4331e-12 mda8 <--- Leisure
theta17 0.52722 0.081895 6.4378 1.2122e-10 mda7 <--- Leisure
theta18 0.52717 0.082407 6.3971 1.5834e-10 mda15 <--- Leisure
theta19 0.43140 0.084589 5.1000 3.3970e-07 mda4 <--- Leisure
theta20 0.35641 0.084544 4.2157 2.4905e-05 mda11 <--- Leisure
theta21 0.40804 0.083875 4.8649 1.1450e-06 mda20 <--- Leisure
theta22 0.42179 0.083686 5.0401 4.6522e-07 mda26 <--- Leisure
theta23 0.41768 0.084061 4.9688 6.7373e-07 mda27 <--- Leisure
theta24 0.36322 0.084446 4.3012 1.6986e-05 mda6 <--- Leisure
theta25 0.79187 0.074448 10.6365 0.0000e+00 mda19 <--- Care
theta26 0.69309 0.076609 9.0471 0.0000e+00 mda31 <--- Care
theta27 0.70649 0.074268 9.5126 0.0000e+00 mda25 <--- Care
theta28 0.46797 0.084907 5.5116 3.5558e-08 mda10 <--- Care
theta29 0.55307 0.085130 6.4967 8.2091e-11 mda2 <--- Care
theta30 0.44320 0.087539 5.0629 4.1291e-07 mda14 <--- Care
theta31 0.54078 0.081955 6.5985 4.1522e-11 mda18 <--- Care
theta32 0.13161 0.071665 1.8364 6.6293e-02 mda22 <--- Care
theta33 0.30698 0.049122 6.2492 4.1249e-10 mda29 <--> mda29
theta34 0.35000 0.051341 6.8171 9.2881e-12 mda23 <--> mda23
theta35 0.36635 0.052710 6.9502 3.6475e-12 mda32 <--> mda32
theta36 0.48986 0.062688 7.8142 5.5511e-15 mda12 <--> mda12
theta37 0.79226 0.091353 8.6726 0.0000e+00 mda30 <--> mda30
theta38 0.74709 0.085779 8.7095 0.0000e+00 mda21 <--> mda21
```

```

theta39 0.85817 0.096546 8.8887 0.0000e+00 mda28 <--> mda28
theta40 0.30007 0.047782 6.2800 3.3857e-10 mda9 <--> mda9
theta41 0.31140 0.048202 6.4603 1.0447e-10 mda17 <--> mda17
theta42 0.39059 0.054208 7.2053 5.7909e-13 mda1 <--> mda1
theta43 0.49177 0.062153 7.9122 2.4425e-15 mda5 <--> mda5
theta44 0.54868 0.067582 8.1187 4.4409e-16 mda13 <--> mda13
theta45 0.88256 0.098503 8.9598 0.0000e+00 mda24 <--> mda24
theta46 0.51523 0.077905 6.6136 3.7502e-11 mda3 <--> mda3
theta47 0.68323 0.087588 7.8005 6.2172e-15 mda16 <--> mda16
theta48 0.43862 0.059793 7.3356 2.2071e-13 mda8 <--> mda8
theta49 0.72204 0.089298 8.0857 6.6613e-16 mda7 <--> mda7
theta50 0.72210 0.089822 8.0392 8.8818e-16 mda15 <--> mda15
theta51 0.81389 0.096146 8.4651 0.0000e+00 mda4 <--> mda4
theta52 0.87297 0.099755 8.7512 0.0000e+00 mda11 <--> mda11
theta53 0.83350 0.096857 8.6055 0.0000e+00 mda20 <--> mda20
theta54 0.82209 0.096044 8.5596 0.0000e+00 mda26 <--> mda26
theta55 0.82554 0.096481 8.5565 0.0000e+00 mda27 <--> mda27
theta56 0.86807 0.099382 8.7347 0.0000e+00 mda6 <--> mda6
theta57 0.37295 0.072153 5.1688 2.3563e-07 mda19 <--> mda19
theta58 0.51962 0.075743 6.8603 6.8698e-12 mda31 <--> mda31
theta59 0.50088 0.070782 7.0763 1.4806e-12 mda25 <--> mda25
theta60 0.78100 0.094701 8.2470 2.2204e-16 mda10 <--> mda10
theta61 0.69411 0.091824 7.5592 4.0634e-14 mda2 <--> mda2
theta62 0.61531 0.076722 8.0200 1.1102e-15 mda14 <--> mda14
theta63 0.70755 0.088741 7.9732 1.5543e-15 mda18 <--> mda18
theta64 0.96958 0.107289 9.0372 0.0000e+00 mda22 <--> mda22
theta65 0.39379 0.068623 5.7385 9.5533e-09 mda8 <--- Support
theta66 0.29208 0.078695 3.7115 2.0602e-04 mda14 <--- Tasks
theta67 0.47793 0.080339 5.9489 2.6990e-09 mda30 <--> mda22

```

```
Iterations = 20
```

```
>
```

```
> mod.indices(cfa5.fit)
```

```
5 largest modification indices, A matrix:
```

Care:Tasks	Tasks:Care	Care:mda5	Tasks:mda2	Leisure:mda21
35.23879	35.23879	30.60334	29.43369	29.37696

```
5 largest modification indices, P matrix:
```

Care:Tasks	Leisure:Support	mda14:mda2	mda27:mda21
mda17:mda10			
35.23879	26.09330	25.63244	16.81551
16.75201			

```
>
```

```

> cfa6.model <- specify.model("CFA6.txt")
Read 72 records
> cfa6.fit <- sem(cfa6.model,S1Data.R,167)
> summary(cfa6.fit)

Model Chisquare = 973.36 Df = 460 Pr(>Chisq) = 0
Chisquare (null model) = 2522.8 Df = 496
Goodness-of-fit index = 0.7377
Adjusted goodness-of-fit index = 0.69893
RMSEA index = 0.081994 90% CI: (NA, NA)
Bentler-Bonnett NFI = 0.61418
Tucker-Lewis NNFI = 0.72689
Bentler CFI = 0.74671
SRMR = 0.13969
BIC = -1380.9

Normalized Residuals
      Min.    1st Qu.    Median      Mean    3rd Qu.      Max.
-2.19e+00  1.13e-05  9.11e-01  1.08e+00  2.17e+00  5.95e+00

Parameter Estimates
      Estimate Std Error z value Pr(>|z|)
theta01 0.83248 0.066325 12.5515 0.0000e+00 mda29 <--- Support
theta02 0.80623 0.067183 12.0005 0.0000e+00 mda23 <--- Support
theta03 0.79608 0.067635 11.7701 0.0000e+00 mda32 <--- Support
theta04 0.71419 0.070691 10.1029 0.0000e+00 mda12 <--- Support
theta05 0.34456 0.067601 5.0969 3.4527e-07 mda30 <--- Support
theta06 0.50288 0.076719 6.5549 5.5689e-11 mda21 <--- Support
theta07 0.37663 0.079877 4.7151 2.4162e-06 mda28 <--- Support
theta08 0.83718 0.066113 12.6630 0.0000e+00 mda9 <--- Tasks
theta09 0.83195 0.066222 12.5629 0.0000e+00 mda17 <--- Tasks
theta10 0.77867 0.068344 11.3934 0.0000e+00 mda1 <--- Tasks
theta11 0.63144 0.073865 8.5486 0.0000e+00 mda5 <--- Tasks
theta12 0.67095 0.072175 9.2961 0.0000e+00 mda13 <--- Tasks
theta13 0.34175 0.079743 4.2856 1.8224e-05 mda24 <--- Tasks
theta14 0.69624 0.077742 8.9557 0.0000e+00 mda3 <--- Leisure
theta15 0.56283 0.081754 6.8845 5.8005e-12 mda16 <--- Leisure
theta16 0.51954 0.073372 7.0809 1.4324e-12 mda8 <--- Leisure
theta17 0.52722 0.081895 6.4377 1.2130e-10 mda7 <--- Leisure
theta18 0.52718 0.082406 6.3973 1.5819e-10 mda15 <--- Leisure
theta19 0.43140 0.084589 5.1000 3.3967e-07 mda4 <--- Leisure
theta20 0.35640 0.084544 4.2156 2.4912e-05 mda11 <--- Leisure
theta21 0.40804 0.083875 4.8649 1.1450e-06 mda20 <--- Leisure
theta22 0.42179 0.083686 5.0401 4.6520e-07 mda26 <--- Leisure
theta23 0.41768 0.084060 4.9688 6.7354e-07 mda27 <--- Leisure
theta24 0.36322 0.084446 4.3012 1.6987e-05 mda6 <--- Leisure
theta25 0.80438 0.072371 11.1147 0.0000e+00 mda19 <--- Care
theta26 0.70603 0.074788 9.4403 0.0000e+00 mda31 <--- Care
theta27 0.71166 0.073225 9.7189 0.0000e+00 mda25 <--- Care
theta28 0.45818 0.084005 5.4542 4.9206e-08 mda10 <--- Care
theta29 0.53758 0.083765 6.4177 1.3838e-10 mda2 <--- Care
theta30 0.43269 0.085228 5.0768 3.8380e-07 mda14 <--- Care
theta31 0.52178 0.081353 6.4138 1.4192e-10 mda18 <--- Care
theta32 0.13409 0.071413 1.8777 6.0422e-02 mda22 <--- Care
theta33 0.30697 0.049121 6.2493 4.1224e-10 mda29 <--> mda29
theta34 0.35000 0.051339 6.8174 9.2721e-12 mda23 <--> mda23
theta35 0.36625 0.052703 6.9494 3.6682e-12 mda32 <--> mda32
theta36 0.48994 0.062694 7.8147 5.5511e-15 mda12 <--> mda12
theta37 0.79215 0.091334 8.6731 0.0000e+00 mda30 <--> mda30
theta38 0.74711 0.085781 8.7096 0.0000e+00 mda21 <--> mda21
theta39 0.85815 0.096544 8.8887 0.0000e+00 mda28 <--> mda28

```


theta40	0.29912	0.048555	6.1605	7.2532e-10	mda9 <--> mda9
theta41	0.30786	0.048714	6.3198	2.6185e-10	mda17 <--> mda17
theta42	0.39367	0.054884	7.1729	7.3452e-13	mda1 <--> mda1
theta43	0.47712	0.059290	8.0473	8.8818e-16	mda5 <--> mda5
theta44	0.54983	0.067948	8.0919	6.6613e-16	mda13 <--> mda13
theta45	0.88320	0.098605	8.9570	0.0000e+00	mda24 <--> mda24
theta46	0.51525	0.077906	6.6137	3.7473e-11	mda3 <--> mda3
theta47	0.68322	0.087587	7.8004	6.2172e-15	mda16 <--> mda16
theta48	0.43865	0.059797	7.3357	2.2049e-13	mda8 <--> mda8
theta49	0.72204	0.089298	8.0858	6.6613e-16	mda7 <--> mda7
theta50	0.72209	0.089822	8.0391	8.8818e-16	mda15 <--> mda15
theta51	0.81389	0.096146	8.4651	0.0000e+00	mda4 <--> mda4
theta52	0.87298	0.099755	8.7512	0.0000e+00	mda11 <--> mda11
theta53	0.83350	0.096857	8.6055	0.0000e+00	mda20 <--> mda20
theta54	0.82210	0.096044	8.5596	0.0000e+00	mda26 <--> mda26
theta55	0.82554	0.096481	8.5565	0.0000e+00	mda27 <--> mda27
theta56	0.86808	0.099383	8.7347	0.0000e+00	mda6 <--> mda6
theta57	0.35296	0.067151	5.2563	1.4697e-07	mda19 <--> mda19
theta58	0.50152	0.071877	6.9775	3.0045e-12	mda31 <--> mda31
theta59	0.49353	0.068440	7.2112	5.5445e-13	mda25 <--> mda25
theta60	0.79007	0.094458	8.3643	0.0000e+00	mda10 <--> mda10
theta61	0.71101	0.090815	7.8292	4.8850e-15	mda2 <--> mda2
theta62	0.62828	0.076622	8.1998	2.2204e-16	mda14 <--> mda14
theta63	0.72774	0.089016	8.1754	2.2204e-16	mda18 <--> mda18
theta64	0.96896	0.107200	9.0388	0.0000e+00	mda22 <--> mda22
theta65	0.39373	0.068624	5.7376	9.6051e-09	mda8 <--- Support
theta66	0.29669	0.078088	3.7994	1.4503e-04	mda14 <--- Tasks
theta67	0.47787	0.080290	5.9517	2.6531e-09	mda30 <--> mda22
theta68	0.18752	0.069911	2.6823	7.3114e-03	mda5 <--- Care

Iterations = 19

```
> library(sem)
> cfa11.model <- specify.model("CFA11.txt")
Read 62 records
> cfa11.fit <- sem(cfa11.model, S1Data.R, 167)
Warning message:
In sem.mod(cfa11.model, S1Data.R, 167) :
  The following observed variables are in the input covariance or raw-
moment matrix but do not appear in the model:
mda8, mda14, mda22
```

```
> summary(cfa11.fit)
```

```
Model Chisquare = 778.01 Df = 377 Pr(>Chisq) = 0
Chisquare (null model) = 2089.0 Df = 406
Goodness-of-fit index = 0.76042
Adjusted goodness-of-fit index = 0.72357
RMSEA index = 0.080048 90% CI: (NA, NA)
Bentler-Bonnett NFI = 0.62756
Tucker-Lewis NNFI = 0.7434
Bentler CFI = 0.76172
SRMR = 0.14130
BIC = -1151.5
```

Normalized Residuals

Min.	1st Qu.	Median	Mean	3rd Qu.	Max.
-2.0700	-0.0109	0.7110	1.0400	2.1600	5.9500

Parameter Estimates

Estimate	Std Error	z value	Pr(> z)
----------	-----------	---------	----------

theta01	0.82403	0.066767	12.3419	0.0000e+00	mda29	<--- Support
theta02	0.81896	0.066731	12.2726	0.0000e+00	mda23	<--- Support
theta03	0.80474	0.067326	11.9528	0.0000e+00	mda32	<--- Support
theta04	0.69676	0.071171	9.7899	0.0000e+00	mda12	<--- Support
theta05	0.49356	0.077153	6.3972	1.5826e-10	mda30	<--- Support
theta06	0.50494	0.076738	6.5801	4.7016e-11	mda21	<--- Support
theta07	0.37680	0.080112	4.7034	2.5581e-06	mda28	<--- Support
theta08	0.83441	0.066087	12.6259	0.0000e+00	mda9	<--- Tasks
theta09	0.83088	0.066188	12.5533	0.0000e+00	mda17	<--- Tasks
theta10	0.77880	0.068252	11.4107	0.0000e+00	mda1	<--- Tasks
theta11	0.71770	0.070366	10.1996	0.0000e+00	mda5	<--- Tasks
theta12	0.67280	0.072071	9.3353	0.0000e+00	mda13	<--- Tasks
theta13	0.33793	0.079754	4.2372	2.2630e-05	mda24	<--- Tasks
theta14	0.69339	0.080968	8.5638	0.0000e+00	mda3	<--- Leisure
theta15	0.54289	0.085190	6.3727	1.8575e-10	mda16	<--- Leisure
theta17	0.51660	0.084522	6.1121	9.8354e-10	mda7	<--- Leisure
theta18	0.51005	0.085662	5.9542	2.6132e-09	mda15	<--- Leisure
theta19	0.46250	0.086328	5.3574	8.4421e-08	mda4	<--- Leisure
theta20	0.35111	0.086483	4.0599	4.9094e-05	mda11	<--- Leisure
theta21	0.44563	0.084917	5.2478	1.5390e-07	mda20	<--- Leisure
theta22	0.42429	0.086000	4.9336	8.0734e-07	mda26	<--- Leisure
theta23	0.39703	0.086477	4.5911	4.4084e-06	mda27	<--- Leisure
theta24	0.39498	0.085591	4.6147	3.9366e-06	mda6	<--- Leisure
theta25	0.83653	0.069747	11.9939	0.0000e+00	mda19	<--- Care
theta26	0.73530	0.072039	10.2070	0.0000e+00	mda31	<--- Care
theta27	0.71425	0.072780	9.8139	0.0000e+00	mda25	<--- Care
theta28	0.40357	0.082904	4.8680	1.1276e-06	mda10	<--- Care
theta29	0.47747	0.081736	5.8417	5.1681e-09	mda2	<--- Care
theta31	0.49336	0.080481	6.1302	8.7758e-10	mda18	<--- Care
theta33	0.32099	0.050382	6.3711	1.8772e-10	mda29	<--> mda29
theta34	0.32931	0.050078	6.5759	4.8362e-11	mda23	<--> mda23
theta35	0.35240	0.051797	6.8034	1.0218e-11	mda32	<--> mda32
theta36	0.51453	0.064552	7.9708	1.5543e-15	mda12	<--> mda12
theta37	0.75640	0.086841	8.7101	0.0000e+00	mda30	<--> mda30
theta38	0.74503	0.085647	8.6989	0.0000e+00	mda21	<--> mda21
theta39	0.85803	0.096646	8.8780	0.0000e+00	mda28	<--> mda28
theta40	0.30377	0.048314	6.2874	3.2280e-10	mda9	<--> mda9
theta41	0.30965	0.048535	6.3799	1.7722e-10	mda17	<--> mda17
theta42	0.39347	0.054603	7.2060	5.7643e-13	mda1	<--> mda1
theta43	0.48491	0.061792	7.8474	4.2188e-15	mda5	<--> mda5
theta44	0.54734	0.067643	8.0916	6.6613e-16	mda13	<--> mda13
theta45	0.88581	0.098836	8.9624	0.0000e+00	mda24	<--> mda24
theta46	0.51921	0.084009	6.1804	6.3920e-10	mda3	<--> mda3
theta47	0.70528	0.092176	7.6515	1.9762e-14	mda16	<--> mda16
theta49	0.73313	0.092372	7.9367	1.9984e-15	mda7	<--> mda7
theta50	0.73985	0.093706	7.8955	2.8866e-15	mda15	<--> mda15
theta51	0.78610	0.096034	8.1857	2.2204e-16	mda4	<--> mda4
theta52	0.87672	0.100824	8.6955	0.0000e+00	mda11	<--> mda11
theta53	0.80142	0.095705	8.3738	0.0000e+00	mda20	<--> mda20
theta54	0.81998	0.097380	8.4204	0.0000e+00	mda26	<--> mda26
theta55	0.84237	0.098841	8.5225	0.0000e+00	mda27	<--> mda27
theta56	0.84399	0.098446	8.5732	0.0000e+00	mda6	<--> mda6
theta57	0.30021	0.061149	4.9095	9.1328e-07	mda19	<--> mda19
theta58	0.45933	0.065264	7.0380	1.9500e-12	mda31	<--> mda31
theta59	0.48984	0.067403	7.2673	3.6682e-13	mda25	<--> mda25
theta60	0.83713	0.096539	8.6714	0.0000e+00	mda10	<--> mda10
theta61	0.77202	0.091702	8.4188	0.0000e+00	mda2	<--> mda2
theta63	0.75659	0.089749	8.4301	0.0000e+00	mda18	<--> mda18

Iterations = 16

>

```
> mod.indices(cfall1.fit)
```

```
5 largest modification indices, A matrix:
```

Care:Tasks	Tasks:Care	Care:mda5	Leisure:mda21
Support:Leisure			
34.30198	34.30198	32.11825	31.74219
27.89123			

```
5 largest modification indices, P matrix:
```

Care:Tasks	Leisure:Support	mda18:mda2	mda10:mda2
mda27:mda21			
34.30198	27.89123	22.55332	17.98494
17.21591			

E 5 CONFIRMATORY FACTOR ANALYSIS Factor Analysis MDA and DA Items 1-32

19/06/2010 4:51:31 PM

```
Welcome to Minitab, press F1 for help.
Retrieving project from file: 'D:\KENS\MY
DOCUMENTS\SCC-2010\MULCAHY\STUDY1CFA.MPJ'
MTB > Factor c1-c32;
SUBC>   NFactors 4;
SUBC>   VMax;
SUBC>   Correlation;
SUBC>   Loadings c41-c44;
SUBC>   Coefficients c46-c49;
SUBC>   Scores c51-c54;
SUBC>   GScree.
```

Factor Analysis: mda1, mda2, mda3, mda4, mda5, mda6, mda7, mda8, mda9, mda10, m

Principal Component Factor Analysis of the Correlation Matrix

Unrotated Factor Loadings and Communalities

Variable	Factor1	Factor2	Factor3	Factor4	Communality
mda1	0.427	0.635	-0.065	-0.276	0.666
mda2	0.413	0.503	-0.034	0.272	0.499
mda3	0.436	-0.366	-0.317	0.367	0.559
mda4	0.244	-0.383	-0.109	0.379	0.362
mda5	0.491	0.510	-0.067	-0.229	0.558
mda6	0.442	0.022	-0.292	0.131	0.298
mda7	0.289	-0.402	-0.238	0.155	0.325
mda8	0.488	-0.562	-0.168	-0.105	0.592
mda9	0.537	0.506	-0.092	-0.392	0.707
mda10	0.336	0.304	0.187	0.443	0.436
mda11	0.345	0.126	-0.466	0.231	0.405
mda12	0.502	-0.468	0.194	-0.188	0.544
mda13	0.517	0.353	-0.118	-0.337	0.520
mda14	0.490	0.497	-0.070	0.205	0.534
mda15	0.414	-0.345	-0.223	0.103	0.351
mda16	0.326	-0.465	-0.405	-0.063	0.490
mda17	0.453	0.579	-0.170	-0.360	0.699
mda18	0.417	0.397	0.050	0.275	0.409
mda19	0.555	0.369	0.234	0.231	0.552
mda20	0.384	-0.207	-0.174	0.214	0.266
mda21	0.383	-0.475	-0.117	-0.260	0.454
mda22	0.401	-0.264	0.215	0.330	0.385
mda23	0.590	-0.330	0.362	-0.266	0.659
mda24	0.325	0.213	-0.267	-0.039	0.224
mda25	0.546	0.278	0.294	0.226	0.513
mda26	0.421	-0.089	-0.438	-0.220	0.425
mda27	0.328	-0.341	-0.197	0.069	0.267
mda28	0.354	-0.216	0.268	-0.106	0.255
mda29	0.565	-0.439	0.383	-0.293	0.744
mda30	0.454	-0.321	0.343	0.108	0.439
mda31	0.413	0.356	0.302	0.306	0.483

mda32	0.627	-0.367	0.335	-0.172	0.670
Variance	6.3092	4.8905	2.0584	2.0316	15.2896
% Var	0.197	0.153	0.064	0.063	0.478

Rotated Factor Loadings and Communalities
Varimax Rotation

Variable	Factor1	Factor2	Factor3	Factor4	Communality
mda1	0.751	-0.011	0.146	0.284	0.666
mda2	0.350	-0.128	-0.073	0.595	0.499
mda3	-0.092	0.102	-0.716	0.166	0.559
mda4	-0.274	0.122	-0.499	0.151	0.362
mda5	0.686	0.067	0.037	0.286	0.558
mda6	0.256	0.015	-0.439	0.200	0.298
mda7	-0.092	0.158	-0.539	-0.033	0.325
mda8	0.037	0.476	-0.580	-0.166	0.592
mda9	0.807	0.136	0.051	0.187	0.707
mda10	0.028	-0.005	-0.045	0.658	0.436
mda11	0.270	-0.225	-0.487	0.211	0.405
mda12	0.025	0.680	-0.280	-0.046	0.544
mda13	0.687	0.164	-0.047	0.135	0.520
mda14	0.435	-0.081	-0.115	0.570	0.534
mda15	0.026	0.226	-0.546	0.021	0.351
mda16	0.069	0.186	-0.623	-0.250	0.490
mda17	0.814	-0.003	0.066	0.177	0.699
mda18	0.262	-0.027	-0.073	0.579	0.409
mda19	0.278	0.186	-0.019	0.663	0.552
mda20	0.012	0.134	-0.470	0.163	0.266
mda21	0.105	0.461	-0.403	-0.261	0.454
mda22	-0.208	0.359	-0.292	0.357	0.385
mda23	0.134	0.789	-0.121	0.064	0.659
mda24	0.394	-0.067	-0.217	0.130	0.224
mda25	0.205	0.261	-0.018	0.634	0.513
mda26	0.429	0.093	-0.459	-0.148	0.425
mda27	-0.004	0.204	-0.474	-0.030	0.267
mda28	0.023	0.493	-0.067	0.084	0.255
mda29	0.068	0.849	-0.139	-0.008	0.744
mda30	-0.133	0.568	-0.189	0.251	0.439
mda31	0.135	0.128	0.063	0.666	0.483
mda32	0.087	0.778	-0.206	0.118	0.670
Variance	4.0206	3.9957	3.7149	3.5584	15.2896
% Var	0.126	0.125	0.116	0.111	0.478

Factor Score Coefficients

Variable	Factor1	Factor2	Factor3	Factor4
mda1	0.195	0.004	0.054	-0.011
mda2	0.021	-0.069	-0.038	0.162
mda3	-0.058	-0.079	-0.230	0.065
mda4	-0.113	-0.037	-0.153	0.088
mda5	0.172	0.013	0.028	-0.003
mda6	0.049	-0.070	-0.146	0.028
mda7	-0.028	-0.030	-0.162	-0.006
mda8	0.029	0.068	-0.128	-0.081
mda9	0.225	0.038	0.043	-0.058
mda10	-0.091	-0.023	-0.010	0.231
mda11	0.054	-0.155	-0.199	0.035
mda12	0.006	0.177	0.007	-0.037
mda13	0.194	0.035	0.013	-0.060
mda14	0.051	-0.061	-0.045	0.139
mda15	0.000	-0.011	-0.153	-0.006
mda16	0.055	-0.031	-0.188	-0.110
mda17	0.230	-0.004	0.027	-0.059
mda18	-0.005	-0.035	-0.023	0.168
mda19	-0.015	0.040	0.029	0.191
mda20	-0.025	-0.033	-0.140	0.050
mda21	0.066	0.091	-0.070	-0.123
mda22	-0.125	0.066	-0.043	0.149
mda23	0.023	0.233	0.080	-0.015
mda24	0.105	-0.062	-0.082	-0.014
mda25	-0.035	0.066	0.041	0.190
mda26	0.155	-0.042	-0.143	-0.124
mda27	-0.001	-0.006	-0.132	-0.019
mda28	-0.011	0.147	0.053	0.015
mda29	0.012	0.252	0.082	-0.033
mda30	-0.087	0.150	0.024	0.096
mda31	-0.060	0.035	0.048	0.216
mda32	-0.000	0.216	0.050	0.010

Scree Plot of mda1, ..., mda32

```
MTB > Factor c1-c32;
SUBC>   NFactors 4;
SUBC>   VMax;
SUBC>   Sort .4;
SUBC>   Correlation;
SUBC>   Brief 1;
SUBC>   Eigen c60 m1;
SUBC>   GScore.
```

Factor Analysis: mda1, mda2, mda3, mda4, mda5, mda6, mda7, mda8, mda9, mda10, m

Principal Component Factor Analysis of the Correlation Matrix

Rotated Factor Loadings and Communalities
Varimax Rotation

Variable	Factor1	Factor2	Factor3	Factor4	Communality
mda1	0.751	-0.011	0.146	0.284	0.666
mda2	0.350	-0.128	-0.073	0.595	0.499
mda3	-0.092	0.102	-0.716	0.166	0.559
mda4	-0.274	0.122	-0.499	0.151	0.362
mda5	0.686	0.067	0.037	0.286	0.558
mda6	0.256	0.015	-0.439	0.200	0.298
mda7	-0.092	0.158	-0.539	-0.033	0.325
mda8	0.037	0.476	-0.580	-0.166	0.592
mda9	0.807	0.136	0.051	0.187	0.707
mda10	0.028	-0.005	-0.045	0.658	0.436
mda11	0.270	-0.225	-0.487	0.211	0.405
mda12	0.025	0.680	-0.280	-0.046	0.544
mda13	0.687	0.164	-0.047	0.135	0.520
mda14	0.435	-0.081	-0.115	0.570	0.534
mda15	0.026	0.226	-0.546	0.021	0.351
mda16	0.069	0.186	-0.623	-0.250	0.490
mda17	0.814	-0.003	0.066	0.177	0.699
mda18	0.262	-0.027	-0.073	0.579	0.409
mda19	0.278	0.186	-0.019	0.663	0.552
mda20	0.012	0.134	-0.470	0.163	0.266
mda21	0.105	0.461	-0.403	-0.261	0.454
mda22	-0.208	0.359	-0.292	0.357	0.385
mda23	0.134	0.789	-0.121	0.064	0.659
mda24	0.394	-0.067	-0.217	0.130	0.224
mda25	0.205	0.261	-0.018	0.634	0.513
mda26	0.429	0.093	-0.459	-0.148	0.425
mda27	-0.004	0.204	-0.474	-0.030	0.267
mda28	0.023	0.493	-0.067	0.084	0.255
mda29	0.068	0.849	-0.139	-0.008	0.744
mda30	-0.133	0.568	-0.189	0.251	0.439
mda31	0.135	0.128	0.063	0.666	0.483
mda32	0.087	0.778	-0.206	0.118	0.670
Variance	4.0206	3.9957	3.7149	3.5584	15.2896
% Var	0.126	0.125	0.116	0.111	0.478

Sorted Rotated Factor Loadings and Communalities

Variable	Factor1	Factor2	Factor3	Factor4	Communality
mda17	0.814	0.000	0.000	0.000	0.699
mda9	0.807	0.000	0.000	0.000	0.707
mda1	0.751	0.000	0.000	0.000	0.666
mda13	0.687	0.000	0.000	0.000	0.520
mda5	0.686	0.000	0.000	0.000	0.558
mda29	0.000	0.849	0.000	0.000	0.744
mda23	0.000	0.789	0.000	0.000	0.659
mda32	0.000	0.778	0.000	0.000	0.670
mda12	0.000	0.680	0.000	0.000	0.544
mda30	0.000	0.568	0.000	0.000	0.439
mda28	0.000	0.493	0.000	0.000	0.255
mda21	0.000	0.461	-0.403	0.000	0.454
mda3	0.000	0.000	-0.716	0.000	0.559
mda16	0.000	0.000	-0.623	0.000	0.490
mda8	0.000	0.476	-0.580	0.000	0.592
mda15	0.000	0.000	-0.546	0.000	0.351
mda7	0.000	0.000	-0.539	0.000	0.325
mda4	0.000	0.000	-0.499	0.000	0.362
mda11	0.000	0.000	-0.487	0.000	0.405
mda27	0.000	0.000	-0.474	0.000	0.267
mda20	0.000	0.000	-0.470	0.000	0.266
mda26	0.429	0.000	-0.459	0.000	0.425
mda6	0.000	0.000	-0.439	0.000	0.298
mda31	0.000	0.000	0.000	0.666	0.483
mda19	0.000	0.000	0.000	0.663	0.552
mda10	0.000	0.000	0.000	0.658	0.436
mda25	0.000	0.000	0.000	0.634	0.513
mda2	0.000	0.000	0.000	0.595	0.499
mda18	0.000	0.000	0.000	0.579	0.409
mda14	0.435	0.000	0.000	0.570	0.534
mda24	0.000	0.000	0.000	0.000	0.224
mda22	0.000	0.000	0.000	0.000	0.385
Variance	4.0206	3.9957	3.7149	3.5584	15.2896
% Var	0.126	0.125	0.116	0.111	0.478

E 6 CONFIRMATORY FACTOR ANALYSIS CFA for CP Subjects

Acknowledgement for assistance with the Confirmatory Factor Analyses, to Dr Ken Sharpe, Statistical Consulting Centre, Department of Mathematics and Statistics, University of Melbourne, Melbourne.

Reference

John Fox with contributions from Adam Kramer and Michael Friendly (2010).

sem: Structural Equation Models. R package version 0.9-20.

<http://CRAN.R-project.org/package=sem>

```
> MDACP.dat <- read.csv("MDAQRCP.csv")
>
> library(sem)
> cfaMDACP1.model <- specify.model("CFARCP1.txt")
Read 62 records
> MDACP.R <- cor(MDACP.dat)
> cfaMDACP1.fit <- sem(cfaMDACP1.model,MDACP.R,94)
> summary(cfaMDACP1.fit)

Model Chisquare = 803.5    Df = 377 Pr(>Chisq) = 0
Chisquare (null model) = 1622.8    Df = 406
Goodness-of-fit index = 0.6513
Adjusted goodness-of-fit index = 0.59765
RMSEA index = 0.11029    90% CI: (NA, NA)
Bentler-Bonnett NFI = 0.50489
Tucker-Lewis NNFI = 0.62255
Bentler CFI = 0.64951
SRMR = 0.22141
BIC = -909.33

Normalized Residuals
    Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
-1.920   0.216   1.460   1.560   2.760   5.750

Parameter Estimates
      Estimate Std Error z value Pr(>|z|)
theta01 0.84782  0.087163   9.7269 0.0000e+00 mda26 <--- Support
theta02 0.72957  0.093161   7.8313 4.8850e-15 mda20 <--- Support
theta03 0.87471  0.085858  10.1878 0.0000e+00 mda29 <--- Support
theta04 0.54359  0.101290   5.3666 8.0217e-08 mda11 <--- Support
theta05 0.49743  0.102329   4.8611 1.1676e-06 mda27 <--- Support
theta06 0.61048  0.098686   6.1860 6.1698e-10 mda19 <--- Support
theta07 0.37085  0.106938   3.4679 5.2453e-04 mda25 <--- Support
theta08 0.75366  0.093258   8.0814 6.6613e-16 mda8 <--- Tasks
theta09 0.85596  0.088037   9.7227 0.0000e+00 mda15 <--- Tasks
theta10 0.73662  0.093734   7.8586 3.7748e-15 mda1 <--- Tasks
theta11 0.65055  0.097783   6.6530 2.8714e-11 mda5 <--- Tasks
theta12 0.72575  0.094409   7.6873 1.5099e-14 mda12 <--- Tasks
theta13 0.32091  0.107897   2.9743 2.9368e-03 mda21 <--- Tasks
theta14 0.66406  0.096063   6.9128 4.7522e-12 mda3 <--- Leisure
theta15 0.72909  0.092872   7.8505 4.2188e-15 mda14 <--- Leisure
theta17 0.71772  0.093602   7.6678 1.7542e-14 mda7 <--- Leisure
theta18 0.87436  0.085196  10.2630 0.0000e+00 mda13 <--- Leisure
theta19 0.25137  0.107954   2.3285 1.9884e-02 mda4 <--- Leisure
```

```

theta20 0.36973 0.105540 3.5032 4.5965e-04 mda10 <--- Leisure
theta21 0.57020 0.099906 5.7074 1.1473e-08 mda18 <--- Leisure
theta22 0.48991 0.102639 4.7731 1.8137e-06 mda23 <--- Leisure
theta23 0.72459 0.093022 7.7894 6.6613e-15 mda24 <--- Leisure
theta24 0.59520 0.098789 6.0250 1.6916e-09 mda6 <--- Leisure
theta25 0.81048 0.108545 7.4668 8.2157e-14 mda17 <--- Care
theta26 0.60676 0.108837 5.5750 2.4759e-08 mda28 <--- Care
theta27 0.65216 0.108063 6.0350 1.5893e-09 mda22 <--- Care
theta28 0.23013 0.121248 1.8980 5.7694e-02 mda9 <--- Care
theta29 0.27605 0.121041 2.2806 2.2570e-02 mda2 <--- Care
theta31 0.29346 0.121344 2.4185 1.5587e-02 mda16 <--- Care
theta33 0.23489 0.058469 4.0174 5.8843e-05 mda29 <--> mda29
theta34 0.75999 0.115998 6.5517 5.6881e-11 mda23 <--> mda23
theta36 0.47328 0.083105 5.6950 1.2335e-08 mda12 <--> mda12
theta38 0.89701 0.133812 6.7035 2.0343e-11 mda21 <--> mda21
theta39 0.63184 0.114517 5.5174 3.4404e-08 mda28 <--> mda28
theta40 0.94704 0.142102 6.6645 2.6549e-11 mda9 <--> mda9
theta41 0.34312 0.120499 2.8475 4.4064e-03 mda17 <--> mda17
theta42 0.45738 0.080999 5.6468 1.6351e-08 mda1 <--> mda1
theta43 0.57678 0.094821 6.0828 1.1808e-09 mda5 <--> mda5
theta44 0.23549 0.055356 4.2540 2.0999e-05 mda13 <--> mda13
theta45 0.47497 0.079796 5.9524 2.6432e-09 mda24 <--> mda24
theta46 0.55902 0.090626 6.1685 6.8957e-10 mda3 <--> mda3
theta47 0.91388 0.139630 6.5450 5.9484e-11 mda16 <--> mda16
theta48 0.43199 0.079239 5.4518 4.9873e-08 mda8 <--> mda8
theta49 0.48488 0.081588 5.9430 2.7980e-09 mda7 <--> mda7
theta50 0.26733 0.065390 4.0883 4.3454e-05 mda15 <--> mda15
theta51 0.93681 0.138547 6.7617 1.3637e-11 mda4 <--> mda4
theta52 0.70451 0.109420 6.4386 1.2060e-10 mda11 <--> mda11
theta53 0.46773 0.079876 5.8557 4.7501e-09 mda20 <--> mda20
theta54 0.28120 0.061083 4.6036 4.1522e-06 mda26 <--> mda26
theta55 0.75257 0.114990 6.5446 5.9645e-11 mda27 <--> mda27
theta56 0.64574 0.101295 6.3748 1.8317e-10 mda6 <--> mda6
theta57 0.62732 0.099704 6.2918 3.1382e-10 mda19 <--> mda19
theta59 0.86247 0.129561 6.6569 2.7976e-11 mda25 <--> mda25
theta60 0.86330 0.129024 6.6910 2.2171e-11 mda10 <--> mda10
theta61 0.92380 0.140264 6.5861 4.5139e-11 mda2 <--> mda2
theta62 0.46843 0.079174 5.9164 3.2899e-09 mda14 <--> mda14
theta63 0.67487 0.105202 6.4150 1.4086e-10 mda18 <--> mda18
theta64 0.57468 0.112116 5.1258 2.9628e-07 mda22 <--> mda22

```

Iterations = 24

```
> mod.indices(cfaMDACP1.fit)
```

5 largest modification indices, A matrix:

```

Support:Leisure Leisure:Support Leisure:mda19 Support:mda13
Support:mda14
      39.78859      39.78859      39.47196      36.24275
29.73512

```

5 largest modification indices, P matrix:

```

Leisure:Support mda16:mda2 mda16:mda9 Tasks:mda16 Leisure:mda16
      39.78859      23.00357      19.64097      19.06881      18.29281

```

```
>
```

```
>
```

```
> cfaMDACP2.model <- specify.model("CFARCP2.txt")
```

Read 54 records

```
> cfaMDACP2.fit <- sem(cfaMDACP2.model,MDACP.R,94)
```

Warning message:

```
In sem.mod(cfaMDACP2.model, MDACP.R, 94) :
```

The following observed variables are in the input covariance or raw-moment matrix but do not appear in the model:

mda2, mda4, mda9, mda16

```
> summary(cfaMDACP2.fit)
```

```
Model Chisquare = 544.44 Df = 275 Pr(>Chisq) = 0
Chisquare (null model) = 1347.4 Df = 300
Goodness-of-fit index = 0.71092
Adjusted goodness-of-fit index = 0.65836
RMSEA index = 0.10264 90% CI: (NA, NA)
Bentler-Bonnett NFI = 0.59593
Tucker-Lewis NNFI = 0.71936
Bentler CFI = 0.74275
SRMR = 0.22291
BIC = -704.97
```

Normalized Residuals

Min.	1st Qu.	Median	Mean	3rd Qu.	Max.
-1.880	0.213	1.460	1.580	2.790	5.750

Parameter Estimates

	Estimate	Std Error	z value	Pr(> z)		
theta01	0.84782	0.087163	9.7268	0.0000e+00	mda26	<--- Support
theta02	0.72957	0.093161	7.8313	4.8850e-15	mda20	<--- Support
theta03	0.87471	0.085858	10.1878	0.0000e+00	mda29	<--- Support
theta04	0.54359	0.101291	5.3666	8.0221e-08	mda11	<--- Support
theta05	0.49743	0.102329	4.8611	1.1676e-06	mda27	<--- Support
theta06	0.61048	0.098687	6.1860	6.1699e-10	mda19	<--- Support
theta07	0.37085	0.106938	3.4679	5.2455e-04	mda25	<--- Support
theta08	0.75367	0.093259	8.0814	6.6613e-16	mda8	<--- Tasks
theta09	0.85596	0.088038	9.7227	0.0000e+00	mda15	<--- Tasks
theta10	0.73663	0.093735	7.8586	3.7748e-15	mda1	<--- Tasks
theta11	0.65055	0.097784	6.6530	2.8715e-11	mda5	<--- Tasks
theta12	0.72576	0.094410	7.6873	1.5099e-14	mda12	<--- Tasks
theta13	0.32092	0.107897	2.9743	2.9368e-03	mda21	<--- Tasks
theta14	0.66485	0.096046	6.9222	4.4464e-12	mda3	<--- Leisure
theta15	0.73426	0.092659	7.9243	2.2204e-15	mda14	<--- Leisure
theta17	0.71204	0.093813	7.5900	3.1974e-14	mda7	<--- Leisure
theta18	0.87508	0.085194	10.2716	0.0000e+00	mda13	<--- Leisure
theta20	0.36378	0.105654	3.4431	5.7501e-04	mda10	<--- Leisure
theta21	0.56389	0.100095	5.6335	1.7657e-08	mda18	<--- Leisure
theta22	0.49104	0.102657	4.7833	1.7245e-06	mda23	<--- Leisure
theta23	0.72821	0.092863	7.8417	4.4409e-15	mda24	<--- Leisure
theta24	0.59499	0.098822	6.0208	1.7359e-09	mda6	<--- Leisure
theta25	0.78683	0.112995	6.9634	3.3213e-12	mda17	<--- Care
theta26	0.63688	0.109881	5.7961	6.7880e-09	mda28	<--- Care
theta27	0.68850	0.110890	6.2089	5.3370e-10	mda22	<--- Care
theta33	0.23489	0.058469	4.0174	5.8845e-05	mda29	<--> mda29
theta34	0.75888	0.115904	6.5475	5.8511e-11	mda23	<--> mda23
theta36	0.47328	0.083105	5.6950	1.2335e-08	mda12	<--> mda12
theta38	0.89701	0.133812	6.7035	2.0343e-11	mda21	<--> mda21
theta39	0.59439	0.115254	5.1572	2.5068e-07	mda28	<--> mda28
theta41	0.38090	0.127900	2.9781	2.9006e-03	mda17	<--> mda17
theta42	0.45738	0.080999	5.6467	1.6351e-08	mda1	<--> mda1
theta43	0.57678	0.094822	6.0828	1.1808e-09	mda5	<--> mda5
theta44	0.23422	0.055454	4.2238	2.4027e-05	mda13	<--> mda13
theta45	0.46971	0.079204	5.9303	3.0233e-09	mda24	<--> mda24
theta46	0.55797	0.090531	6.1633	7.1253e-10	mda3	<--> mda3
theta48	0.43199	0.079239	5.4518	4.9874e-08	mda8	<--> mda8
theta49	0.49299	0.082428	5.9809	2.2193e-09	mda7	<--> mda7

```

theta50 0.26734 0.065390 4.0883 4.3454e-05 mda15 <--> mda15
theta52 0.70451 0.109421 6.4386 1.2061e-10 mda11 <--> mda11
theta53 0.46773 0.079875 5.8557 4.7500e-09 mda20 <--> mda20
theta54 0.28120 0.061083 4.6036 4.1521e-06 mda26 <--> mda26
theta55 0.75257 0.114990 6.5446 5.9650e-11 mda27 <--> mda27
theta56 0.64599 0.101362 6.3730 1.8532e-10 mda6 <--> mda6
theta57 0.62732 0.099704 6.2918 3.1382e-10 mda19 <--> mda19
theta59 0.86247 0.129562 6.6568 2.7980e-11 mda25 <--> mda25
theta60 0.86766 0.129579 6.6960 2.1422e-11 mda10 <--> mda10
theta62 0.46085 0.078372 5.8803 4.0949e-09 mda14 <--> mda14
theta63 0.68202 0.106057 6.4307 1.2698e-10 mda18 <--> mda18
theta64 0.52598 0.117101 4.4917 7.0673e-06 mda22 <--> mda22

Iterations = 18
>

```

```

> cfaDACP1.model <- specify.model("CFAQRda1.txt")
Read 60 records
> cfaDACP1.fit <- sem(cfaDACP1.model,DACP.R,101)
>
> summary(cfaDACP1.fit)

```

```

Model Chisquare = 692.3    Df = 350 Pr(>Chisq) = 0
Chisquare (null model) = 1294.9    Df = 378
Goodness-of-fit index = 0.66834
Adjusted goodness-of-fit index = 0.61528
RMSEA index = 0.098894    90% CI: (NA, NA)
Bentler-Bonnett NFI = 0.46537
Tucker-Lewis NNFI = 0.59682
Bentler CFI = 0.62668
SRMR = 0.18492
BIC = -923

```

Normalized Residuals

```

      Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
-3.880  -0.176   0.872   0.919   2.230   4.820

```

Parameter Estimates

	Estimate	Std Error	z value	Pr(> z)			
theta01	-0.035197	0.112317	-0.31338	7.5399e-01	DA17	<---	Support
theta02	0.470137	0.105622	4.45115	8.5414e-06	DA19	<---	Support
theta03	0.667178	0.098769	6.75496	1.4288e-11	DA20	<---	Support
theta04	0.097489	0.110871	0.87930	3.7924e-01	DA21	<---	Support
theta05	0.148556	0.110581	1.34342	1.7914e-01	DA22	<---	Support
theta06	0.356443	0.107085	3.32861	8.7280e-04	DA24	<---	Support
theta07	0.793879	0.093776	8.46570	0.0000e+00	DA25	<---	Support
theta08	0.574874	0.102272	5.62104	1.8982e-08	DA26	<---	Support
theta09	-0.086375	0.111414	-0.77526	4.3818e-01	DA27	<---	Support
theta10	0.732630	0.095681	7.65700	1.9096e-14	DA28	<---	Support
theta11	0.718291	0.091948	7.81194	5.5511e-15	DA1	<---	Tasks
theta12	0.712118	0.092297	7.71551	1.1990e-14	DA4	<---	Tasks
theta13	0.777911	0.089611	8.68098	0.0000e+00	DA8	<---	Tasks
theta14	0.786863	0.089120	8.82929	0.0000e+00	DA11	<---	Tasks
theta15	0.736780	0.091077	8.08964	6.6613e-16	DA15	<---	Tasks
theta16	0.674495	0.097513	6.91698	4.6136e-12	DA3	<---	Leisure
theta17	0.556755	0.101914	5.46300	4.6816e-08	DA6	<---	Leisure
theta18	0.713450	0.096149	7.42022	1.1702e-13	DA7	<---	Leisure
theta19	0.462148	0.105149	4.39519	1.1068e-05	DA10	<---	Leisure
theta20	0.625711	0.100444	6.22944	4.6809e-10	DA13	<---	Leisure
theta21	0.527502	0.104078	5.06831	4.0136e-07	DA14	<---	Leisure
theta22	0.573527	0.102630	5.58829	2.2932e-08	DA18	<---	Leisure
theta23	0.535640	0.103629	5.16884	2.3555e-07	DA23	<---	Leisure
theta24	0.554027	0.114056	4.85748	1.1889e-06	DA2	<---	Care
theta25	0.550824	0.130656	4.21585	2.4884e-05	DA5	<---	Care
theta26	0.571318	0.125925	4.53696	5.7070e-06	DA9	<---	Care
theta27	0.581657	0.125274	4.64309	3.4324e-06	DA12	<---	Care
theta28	0.535666	0.126058	4.24935	2.1439e-05	DA16	<---	Care
theta34	0.713085	0.112557	6.33534	2.3681e-10	DA23	<-->	DA23
theta36	0.661672	0.136962	4.83105	1.3581e-06	DA12	<-->	DA12
theta38	0.990498	0.140423	7.05368	1.7424e-12	DA21	<-->	DA21
theta39	0.463256	0.090774	5.10338	3.3365e-07	DA28	<-->	DA28
theta40	0.673594	0.137335	4.90476	9.3544e-07	DA9	<-->	DA9
theta41	0.998762	0.141321	7.06734	1.5794e-12	DA17	<-->	DA17
theta42	0.484055	0.082583	5.86145	4.5883e-09	DA1	<-->	DA1
theta43	0.696590	0.141901	4.90898	9.1553e-07	DA5	<-->	DA5
theta44	0.608481	0.103021	5.90636	3.4976e-09	DA13	<-->	DA13
theta45	0.872950	0.127734	6.83412	8.2510e-12	DA24	<-->	DA24

theta46	0.545051	0.095860	5.68590	1.3012e-08	DA3 <-->	DA3
theta47	0.713059	0.136326	5.23056	1.6900e-07	DA16 <-->	DA16
theta48	0.394852	0.075310	5.24303	1.5796e-07	DA8 <-->	DA8
theta49	0.490983	0.092014	5.33598	9.5032e-08	DA7 <-->	DA7
theta50	0.457156	0.079813	5.72782	1.0173e-08	DA15 <-->	DA15
theta51	0.492886	0.083649	5.89233	3.8078e-09	DA4 <-->	DA4
theta52	0.380849	0.073953	5.14990	2.6062e-07	DA11 <-->	DA11
theta53	0.554878	0.098421	5.63778	1.7226e-08	DA20 <-->	DA20
theta54	0.669523	0.108449	6.17363	6.6740e-10	DA26 <-->	DA26
theta55	0.992542	0.140656	7.05653	1.7071e-12	DA27 <-->	DA27
theta56	0.690019	0.109214	6.31803	2.6491e-10	DA6 <-->	DA6
theta57	0.778976	0.118915	6.55069	5.7270e-11	DA19 <-->	DA19
theta59	0.369760	0.087393	4.23102	2.3264e-05	DA25 <-->	DA25
theta60	0.786415	0.119120	6.60190	4.0592e-11	DA10 <-->	DA10
theta61	0.693052	0.123252	5.62306	1.8760e-08	DA2 <-->	DA2
theta62	0.721736	0.113569	6.35502	2.0840e-10	DA14 <-->	DA14
theta63	0.671062	0.108977	6.15785	7.3739e-10	DA18 <-->	DA18
theta64	0.977929	0.139072	7.03182	2.0386e-12	DA22 <-->	DA22

Iterations = 17

```
> cfaDACP2.model <- specify.model("CFAQRda2.txt")
Read 52 records
> cfaDACP2.fit <- sem(cfaDACP2.model,DACP.R,101)
Warning message:
In sem.mod(cfaDACP2.model, DACP.R, 101) :
  The following observed variables are in the input covariance
or raw-moment matrix
but do not appear in the model:
DA17, DA21, DA22, DA27
```

```
> summary(cfaDACP2.fit)
```

```
Model Chisquare = 476.56 Df = 252 Pr(>Chisq) = 4.4409e-16
Chisquare (null model) = 1075.9 Df = 276
Goodness-of-fit index = 0.72102
Adjusted goodness-of-fit index = 0.66788
RMSEA index = 0.094398 90% CI: (NA, NA)
Bentler-Bonnett NFI = 0.55706
Tucker-Lewis NNFI = 0.69253
Bentler CFI = 0.71926
SRMR = 0.19134
BIC = -686.45
```

Normalized Residuals

Min.	1st Qu.	Median	Mean	3rd Qu.	Max.
-1.930	0.101	1.410	1.340	2.490	4.820

Parameter Estimates

	Estimate	Std Error	z value	Pr(> z)		
theta02	0.46253	0.105695	4.3761	1.2085e-05	DA19 <---	Support
theta03	0.66959	0.098695	6.7845	1.1653e-11	DA20 <---	Support
theta06	0.36280	0.106877	3.3945	6.8752e-04	DA24 <---	Support
theta07	0.79466	0.093814	8.4707	0.0000e+00	DA25 <---	Support
theta08	0.57377	0.102308	5.6082	2.0438e-08	DA26 <---	Support
theta10	0.73211	0.095656	7.6535	1.9540e-14	DA28 <---	Support
theta11	0.71829	0.091948	7.8119	5.5511e-15	DA1 <---	Tasks
theta12	0.71212	0.092297	7.7155	1.1990e-14	DA4 <---	Tasks
theta13	0.77791	0.089612	8.6810	0.0000e+00	DA8 <---	Tasks

theta14	0.78686	0.089120	8.8293	0.0000e+00	DA11 <--- Tasks
theta15	0.73678	0.091077	8.0896	6.6613e-16	DA15 <--- Tasks
theta16	0.67449	0.097513	6.9170	4.6145e-12	DA3 <--- Leisure
theta17	0.55676	0.101914	5.4630	4.6815e-08	DA6 <--- Leisure
theta18	0.71345	0.096149	7.4202	1.1702e-13	DA7 <--- Leisure
theta19	0.46215	0.105149	4.3952	1.1068e-05	DA10 <--- Leisure
theta20	0.62571	0.100444	6.2295	4.6804e-10	DA13 <--- Leisure
theta21	0.52750	0.104078	5.0683	4.0132e-07	DA14 <--- Leisure
theta22	0.57353	0.102630	5.5883	2.2931e-08	DA18 <--- Leisure
theta23	0.53564	0.103628	5.1689	2.3551e-07	DA23 <--- Leisure
theta24	0.55403	0.114056	4.8575	1.1889e-06	DA2 <--- Care
theta25	0.55082	0.130655	4.2159	2.4883e-05	DA5 <--- Care
theta26	0.57132	0.125925	4.5369	5.7075e-06	DA9 <--- Care
theta27	0.58166	0.125274	4.6431	3.4326e-06	DA12 <--- Care
theta28	0.53567	0.126058	4.2494	2.1439e-05	DA16 <--- Care
theta34	0.71308	0.112555	6.3354	2.3677e-10	DA23 <--> DA23
theta36	0.66167	0.136963	4.8311	1.3581e-06	DA12 <--> DA12
theta39	0.46402	0.090722	5.1147	3.1420e-07	DA28 <--> DA28
theta40	0.67360	0.137335	4.9048	9.3543e-07	DA9 <--> DA9
theta42	0.48406	0.082583	5.8614	4.5886e-09	DA1 <--> DA1
theta43	0.69659	0.141901	4.9090	9.1557e-07	DA5 <--> DA5
theta44	0.60848	0.103021	5.9064	3.4974e-09	DA13 <--> DA13
theta45	0.86839	0.127218	6.8260	8.7319e-12	DA24 <--> DA24
theta46	0.54505	0.095861	5.6859	1.3013e-08	DA3 <--> DA3
theta47	0.71306	0.136326	5.2306	1.6900e-07	DA16 <--> DA16
theta48	0.39485	0.075311	5.2430	1.5799e-07	DA8 <--> DA8
theta49	0.49098	0.092014	5.3360	9.5031e-08	DA7 <--> DA7
theta50	0.45716	0.079813	5.7278	1.0173e-08	DA15 <--> DA15
theta51	0.49289	0.083649	5.8923	3.8080e-09	DA4 <--> DA4
theta52	0.38085	0.073953	5.1499	2.6064e-07	DA11 <--> DA11
theta53	0.55165	0.098202	5.6175	1.9370e-08	DA20 <--> DA20
theta54	0.67079	0.108562	6.1789	6.4564e-10	DA26 <--> DA26
theta56	0.69002	0.109214	6.3180	2.6490e-10	DA6 <--> DA6
theta57	0.78608	0.119507	6.5777	4.7780e-11	DA19 <--> DA19
theta59	0.36851	0.087534	4.2099	2.5543e-05	DA25 <--> DA25
theta60	0.78641	0.119119	6.6019	4.0589e-11	DA10 <--> DA10
theta61	0.69305	0.123252	5.6231	1.8760e-08	DA2 <--> DA2
theta62	0.72173	0.113569	6.3550	2.0837e-10	DA14 <--> DA14
theta63	0.67106	0.108976	6.1579	7.3736e-10	DA18 <--> DA18

Iterations = 17

E 7 CONFIRMATORY FACTOR ANALYSIS FA for CP Subjects

```
> MDACP.dat <- read.csv("MDAQRCF.csv")
>
> library(sem)
> cfaMDACP1.model <- specify.model("CFARCP1.txt")
Read 62 records
> MDACP.R <- cor(MDACP.dat)
> cfaMDACP1.fit <- sem(cfaMDACP1.model,MDACP.R,94)
> summary(cfaMDACP1.fit)
```

Model Chisquare = 803.5 Df = 377 Pr(>Chisq) = 0
Chisquare (null model) = 1622.8 Df = 406
Goodness-of-fit index = 0.6513
Adjusted goodness-of-fit index = 0.59765
RMSEA index = 0.11029 90% CI: (NA, NA)
Bentler-Bonnett NFI = 0.50489
Tucker-Lewis NNFI = 0.62255
Bentler CFI = 0.64951
SRMR = 0.22141
BIC = -909.33

Normalized Residuals

Min.	1st Qu.	Median	Mean	3rd Qu.	Max.
-1.920	0.216	1.460	1.560	2.760	5.750

Parameter Estimates

	Estimate	Std Error	z value	Pr(> z)	
theta01	0.84782	0.087163	9.7269	0.0000e+00	mda26 <--- Support
theta02	0.72957	0.093161	7.8313	4.8850e-15	mda20 <--- Support
theta03	0.87471	0.085858	10.1878	0.0000e+00	mda29 <--- Support
theta04	0.54359	0.101290	5.3666	8.0217e-08	mda11 <--- Support
theta05	0.49743	0.102329	4.8611	1.1676e-06	mda27 <--- Support
theta06	0.61048	0.098686	6.1860	6.1698e-10	mda19 <--- Support
theta07	0.37085	0.106938	3.4679	5.2453e-04	mda25 <--- Support
theta08	0.75366	0.093258	8.0814	6.6613e-16	mda8 <--- Tasks
theta09	0.85596	0.088037	9.7227	0.0000e+00	mda15 <--- Tasks
theta10	0.73662	0.093734	7.8586	3.7748e-15	mda1 <--- Tasks
theta11	0.65055	0.097783	6.6530	2.8714e-11	mda5 <--- Tasks
theta12	0.72575	0.094409	7.6873	1.5099e-14	mda12 <--- Tasks
theta13	0.32091	0.107897	2.9743	2.9368e-03	mda21 <--- Tasks
theta14	0.66406	0.096063	6.9128	4.7522e-12	mda3 <--- Leisure
theta15	0.72909	0.092872	7.8505	4.2188e-15	mda14 <--- Leisure
theta17	0.71772	0.093602	7.6678	1.7542e-14	mda7 <--- Leisure
theta18	0.87436	0.085196	10.2630	0.0000e+00	mda13 <--- Leisure
theta19	0.25137	0.107954	2.3285	1.9884e-02	mda4 <--- Leisure
theta20	0.36973	0.105540	3.5032	4.5965e-04	mda10 <--- Leisure
theta21	0.57020	0.099906	5.7074	1.1473e-08	mda18 <--- Leisure
theta22	0.48991	0.102639	4.7731	1.8137e-06	mda23 <--- Leisure
theta23	0.72459	0.093022	7.7894	6.6613e-15	mda24 <--- Leisure
theta24	0.59520	0.098789	6.0250	1.6916e-09	mda6 <--- Leisure
theta25	0.81048	0.108545	7.4668	8.2157e-14	mda17 <--- Care
theta26	0.60676	0.108837	5.5750	2.4759e-08	mda28 <--- Care
theta27	0.65216	0.108063	6.0350	1.5893e-09	mda22 <--- Care
theta28	0.23013	0.121248	1.8980	5.7694e-02	mda9 <--- Care
theta29	0.27605	0.121041	2.2806	2.2570e-02	mda2 <--- Care
theta31	0.29346	0.121344	2.4185	1.5587e-02	mda16 <--- Care
theta33	0.23489	0.058469	4.0174	5.8843e-05	mda29 <--> mda29
theta34	0.75999	0.115998	6.5517	5.6881e-11	mda23 <--> mda23
theta36	0.47328	0.083105	5.6950	1.2335e-08	mda12 <--> mda12


```

theta38 0.89701 0.133812 6.7035 2.0343e-11 mda21 <--> mda21
theta39 0.63184 0.114517 5.5174 3.4404e-08 mda28 <--> mda28
theta40 0.94704 0.142102 6.6645 2.6549e-11 mda9 <--> mda9
theta41 0.34312 0.120499 2.8475 4.4064e-03 mda17 <--> mda17
theta42 0.45738 0.080999 5.6468 1.6351e-08 mda1 <--> mda1
theta43 0.57678 0.094821 6.0828 1.1808e-09 mda5 <--> mda5
theta44 0.23549 0.055356 4.2540 2.0999e-05 mda13 <--> mda13
theta45 0.47497 0.079796 5.9524 2.6432e-09 mda24 <--> mda24
theta46 0.55902 0.090626 6.1685 6.8957e-10 mda3 <--> mda3
theta47 0.91388 0.139630 6.5450 5.9484e-11 mda16 <--> mda16
theta48 0.43199 0.079239 5.4518 4.9873e-08 mda8 <--> mda8
theta49 0.48488 0.081588 5.9430 2.7980e-09 mda7 <--> mda7
theta50 0.26733 0.065390 4.0883 4.3454e-05 mda15 <--> mda15
theta51 0.93681 0.138547 6.7617 1.3637e-11 mda4 <--> mda4
theta52 0.70451 0.109420 6.4386 1.2060e-10 mda11 <--> mda11
theta53 0.46773 0.079876 5.8557 4.7501e-09 mda20 <--> mda20
theta54 0.28120 0.061083 4.6036 4.1522e-06 mda26 <--> mda26
theta55 0.75257 0.114990 6.5446 5.9645e-11 mda27 <--> mda27
theta56 0.64574 0.101295 6.3748 1.8317e-10 mda6 <--> mda6
theta57 0.62732 0.099704 6.2918 3.1382e-10 mda19 <--> mda19
theta59 0.86247 0.129561 6.6569 2.7976e-11 mda25 <--> mda25
theta60 0.86330 0.129024 6.6910 2.2171e-11 mda10 <--> mda10
theta61 0.92380 0.140264 6.5861 4.5139e-11 mda2 <--> mda2
theta62 0.46843 0.079174 5.9164 3.2899e-09 mda14 <--> mda14
theta63 0.67487 0.105202 6.4150 1.4086e-10 mda18 <--> mda18
theta64 0.57468 0.112116 5.1258 2.9628e-07 mda22 <--> mda22

```

Iterations = 24

```
> mod.indices(cfaMDACP1.fit)
```

5 largest modification indices, A matrix:

Support:Leisure	Leisure:Support	Leisure:mda19	Support:mda13	Support:mda14
39.78859	39.78859	39.47196	36.24275	29.73512

5 largest modification indices, P matrix:

Leisure:Support	mda16:mda2	mda16:mda9	Tasks:mda16	Leisure:mda16
39.78859	23.00357	19.64097	19.06881	18.29281

```
> cfaMDACP2.model <- specify.model("CFARCP2.txt")
```

Read 54 records

```
> cfaMDACP2.fit <- sem(cfaMDACP2.model,MDACP.R,94)
```

Warning message:

In sem.mod(cfaMDACP2.model, MDACP.R, 94) :

The following observed variables are in the input covariance or raw-moment matrix but do not appear in the model:

mda2, mda4, mda9, mda16

```
> summary(cfaMDACP2.fit)
```

```

Model Chisquare = 544.44 Df = 275 Pr(>Chisq) = 0
Chisquare (null model) = 1347.4 Df = 300
Goodness-of-fit index = 0.71092
Adjusted goodness-of-fit index = 0.65836
RMSEA index = 0.10264 90% CI: (NA, NA)
Bentler-Bonnett NFI = 0.59593
Tucker-Lewis NNFI = 0.71936
Bentler CFI = 0.74275
SRMR = 0.22291
BIC = -704.97

```

Normalized Residuals

Min.	1st Qu.	Median	Mean	3rd Qu.	Max.
-1.880	0.213	1.460	1.580	2.790	5.750

Parameter Estimates

	Estimate	Std Error	z value	Pr(> z)			
theta01	0.84782	0.087163	9.7268	0.0000e+00	mda26	<---	Support
theta02	0.72957	0.093161	7.8313	4.8850e-15	mda20	<---	Support
theta03	0.87471	0.085858	10.1878	0.0000e+00	mda29	<---	Support
theta04	0.54359	0.101291	5.3666	8.0221e-08	mda11	<---	Support
theta05	0.49743	0.102329	4.8611	1.1676e-06	mda27	<---	Support
theta06	0.61048	0.098687	6.1860	6.1699e-10	mda19	<---	Support
theta07	0.37085	0.106938	3.4679	5.2455e-04	mda25	<---	Support
theta08	0.75367	0.093259	8.0814	6.6613e-16	mda8	<---	Tasks
theta09	0.85596	0.088038	9.7227	0.0000e+00	mda15	<---	Tasks
theta10	0.73663	0.093735	7.8586	3.7748e-15	mda1	<---	Tasks
theta11	0.65055	0.097784	6.6530	2.8715e-11	mda5	<---	Tasks
theta12	0.72576	0.094410	7.6873	1.5099e-14	mda12	<---	Tasks
theta13	0.32092	0.107897	2.9743	2.9368e-03	mda21	<---	Tasks
theta14	0.66485	0.096046	6.9222	4.4464e-12	mda3	<---	Leisure
theta15	0.73426	0.092659	7.9243	2.2204e-15	mda14	<---	Leisure
theta17	0.71204	0.093813	7.5900	3.1974e-14	mda7	<---	Leisure
theta18	0.87508	0.085194	10.2716	0.0000e+00	mda13	<---	Leisure
theta20	0.36378	0.105654	3.4431	5.7501e-04	mda10	<---	Leisure
theta21	0.56389	0.100095	5.6335	1.7657e-08	mda18	<---	Leisure
theta22	0.49104	0.102657	4.7833	1.7245e-06	mda23	<---	Leisure
theta23	0.72821	0.092863	7.8417	4.4409e-15	mda24	<---	Leisure
theta24	0.59499	0.098822	6.0208	1.7359e-09	mda6	<---	Leisure
theta25	0.78683	0.112995	6.9634	3.3213e-12	mda17	<---	Care
theta26	0.63688	0.109881	5.7961	6.7880e-09	mda28	<---	Care
theta27	0.68850	0.110890	6.2089	5.3370e-10	mda22	<---	Care
theta33	0.23489	0.058469	4.0174	5.8845e-05	mda29	<-->	mda29
theta34	0.75888	0.115904	6.5475	5.8511e-11	mda23	<-->	mda23
theta36	0.47328	0.083105	5.6950	1.2335e-08	mda12	<-->	mda12
theta38	0.89701	0.133812	6.7035	2.0343e-11	mda21	<-->	mda21
theta39	0.59439	0.115254	5.1572	2.5068e-07	mda28	<-->	mda28
theta41	0.38090	0.127900	2.9781	2.9006e-03	mda17	<-->	mda17
theta42	0.45738	0.080999	5.6467	1.6351e-08	mda1	<-->	mda1
theta43	0.57678	0.094822	6.0828	1.1808e-09	mda5	<-->	mda5
theta44	0.23422	0.055454	4.2238	2.4027e-05	mda13	<-->	mda13
theta45	0.46971	0.079204	5.9303	3.0233e-09	mda24	<-->	mda24
theta46	0.55797	0.090531	6.1633	7.1253e-10	mda3	<-->	mda3
theta48	0.43199	0.079239	5.4518	4.9874e-08	mda8	<-->	mda8
theta49	0.49299	0.082428	5.9809	2.2193e-09	mda7	<-->	mda7
theta50	0.26734	0.065390	4.0883	4.3454e-05	mda15	<-->	mda15
theta52	0.70451	0.109421	6.4386	1.2061e-10	mda11	<-->	mda11
theta53	0.46773	0.079875	5.8557	4.7500e-09	mda20	<-->	mda20
theta54	0.28120	0.061083	4.6036	4.1521e-06	mda26	<-->	mda26
theta55	0.75257	0.114990	6.5446	5.9650e-11	mda27	<-->	mda27
theta56	0.64599	0.101362	6.3730	1.8532e-10	mda6	<-->	mda6
theta57	0.62732	0.099704	6.2918	3.1382e-10	mda19	<-->	mda19
theta59	0.86247	0.129562	6.6568	2.7980e-11	mda25	<-->	mda25
theta60	0.86766	0.129579	6.6960	2.1422e-11	mda10	<-->	mda10
theta62	0.46085	0.078372	5.8803	4.0949e-09	mda14	<-->	mda14
theta63	0.68202	0.106057	6.4307	1.2698e-10	mda18	<-->	mda18
theta64	0.52598	0.117101	4.4917	7.0673e-06	mda22	<-->	mda22

Iterations = 18

>

APPENDIX F PERMISSION TO INCLUDE DIAGRAMS IN THESIS



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email: mira.ponomarchuk@iasp-pain.org

21 May 2009
date

May 18, 2009

date

 You replied on 2/25/2009 5:04 PM.

Jane Mulcahy

From: Harding, Nigel [nigel.harding@aihw.gov.au] **Sent:** Wed 2/25/2009 4:39 PM
To: Jane Mulcahy
Cc:
Subject: Your copyright request
Attachments:

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I apologise for the delay in replying.

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Nigel Harding

Head, Media and Communications

Australian Institute of Health and Welfare

Telephone 02 6244 1025

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From: Paul Karoly [pkaroly@asu.edu]

Sent: Sun 19/04/2009 12:05 PM

To: Jane Mulcahy

Cc:

Subject: Re: Permission to include diagram in PhD thesis

Attachments:

Jane: You have my permission to reprint this figure.
Paul

On Thu, Apr 16, 2009 at 9:05 PM, Jane Mulcahy <Jane.Mulcahy@vu.edu.au> wrote:

Dear Professor Karoly

I am writing to you to obtain your permission to include a diagram from one of your publications in my PhD thesis. I have attached the details of this diagram to this email. Professor Jensen has given his permission to do so and assisted me in locating your email address (See below).

Thank you for your assistance with this matter.

Warm Regards

Jane C. Mulcahy

Lecturer
Osteopathic Medicine Unit, School of Biomedical and Clinical Sciences
Faculty of Health, Science & Engineering
Victoria University
PO Box 14428
MCMC Melbourne 8001

Hi Jane,

It is fine with me for you to include the diagram in your thesis. That is, "I agree". You may also wish to seek permission from Paul Karoly, who is the first author of the book the diagram comes from (his email address is in the cc list, above).

-Mark

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Paul Karoly, PhD
Professor of Psychology
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