The Effect of Specialised Programming on the Exercise Adherence of Corporate Executives

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Dedication

To my loving wife Anne and our three wonderful children Carmen, Gabrielle, and Andrew

for allowing me the time to satisfy my curiosity,

to my mother and father, Ailsa and Ron, for their lasting interest and support,

and

to those who strive to improve work-site health promotion.

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ABSTRACT

THE EFFECTIVENESS OF SPECIALISED PROGRAMMING
ON THE EXERCISE ADHERENCE OF CORPORATE EXECUTIVES

by Craig C. Knox

This thesis examines the effectiveness of a specialised fitness program on the exercise adherence of corporate executives over a six-month period. Seventy executives based at the head office of Coles Myer Ltd, in Melbourne, were randomly assigned to treatment and control groups. The treatment group participants received a specialised fitness program and the control group participants received a traditional facility-based fitness program. The specialised fitness program included features and strategies recommended in the literature, and was structured in accordance with the transtheoretical 'stages of change' model (Prochaska & Marcus, 1994). Sixty-six participants provided data at the completion of the study period. All participants began the study at the action stage and were required to indicate their stage of change at the completion of the six-month period. These quantitative data were measured through the use of a questionnaire (PAQ) designed to assess stages of change relating to exercise participation. All participants were asked two further questions at the end of the study period: a) Why did or didn't you adhere to the program? and b) what program features influenced the outcome? All final data was collected during a short interview with the researcher.

The quantitative results support the research hypothesis. A Mann-Whitney analysis produced a significant difference in final stage scores between the treatment and control groups, [$U = 272.5$, $Z = 3.72$, $p < .001$]. It is concluded that the specialised fitness program is more effective than the traditional facility-based fitness program in raising the exercise adherence levels of corporate executives. The results indicate that the transtheoretical 'stages

of change' model appears to have relevance in designing exercise interventions in a corporate fitness program setting and in the use of the PAQ instrument as a measure of behavioural change and exercise adherence. The theory, however, requires more rigorous testing. The use of multiple strategies in exercise programming for corporate executives is also supported by the quantitative results.

The qualitative findings revealed the participants' underlying reasons for their program outcomes and identified the program features that participants' perceived as being influential to exercise adherence. The importance of high quality exercise counselling, and, in particular, the client-counsellor relationship was highlighted by the qualitative results. The specialised fitness program appeared to increase the participants' sense of control over their programs as well as fostering an increased awareness of the internal and spontaneous benefits of exercise. In contrast, the participants in the traditional facility-based fitness program were largely motivated by external results and viewed the program as 'a means to an end'. Both adherers and nonadherers of the specialised fitness program praised the program content. They displayed an understanding and appreciation for the program, whereas, the participants in the traditional facility-based fitness program were much more critical of their program content following the study period.

The challenge for most corporate organisations is to identify and implement more effective fitness programs for executive personnel. The results of this study may help define the content and methods of implementation that best serve this aim. The findings imply a need for a specialised approach to executive fitness programming, in preference to the traditional facility-based approach. The results also imply that the traditional model for executive fitness programming is not ideal for a large proportion of participants. Larger scale research examining the worth of specialised fitness programming for executives is recommended.

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CHAPTER I

Introduction

The pressure and pace of business seems to be increasing, creating new sets of challenges for modern business people. An expectation to work longer hours, while at the same time handling an increased workload at a faster rate, has made health and fitness in relation to workplace performance a concern for human resource managers (Palmer, 1995). The challenge for most organisations is to implement suitable, effective programs that can enhance the health and fitness of their staff. McCallum (1990) noted that the workplace is an ideal setting for health promotion, providing a suitable channel through which healthier employee habits can be fostered and maintained.

Over the past two decades, a variety of corporate fitness programs (CFP) have been implemented throughout the world (Leepson, 1983; Lovato, Green, & Stainbrook, 1994; Shephard, 1988). The successful implementation and maintenance of a CFP relies on the strong support of senior management (Dorzweiler, 1988; McCallum, 1990). Although all CFPs receive some degree of financial and moral support from senior management, such backing does not ensure the participation of senior executives. (Work, 1989). Many CFPs are designed to attract a cross-section of staff and are not specifically targeted at their executive personnel. Many business executives view exercise as an activity that should be done during "one's own time," and not as part of the working day. The perception is that they do not have the time to exercise during the workday. Certainly, for the broader community, a "lack of time" is cited as the most common reason for not exercising (Shephard, 1988). The lack of time excuse, however, may often mask other reasons for non-participation such as low enthusiasm, poor communication and leadership by fitness staff, unsuitable facilities, and in particular, unsuitable program content (Gettman, 1988; Shephard, 1988, 1999).

Low exercise adherence among executive personnel presents a problem not only for the individual but also for the organisation. Low exercise adherence levels within CFPs will greatly reduce the effectiveness of the programs. Individual and organisational benefits attained through a CFP only occur when workers participate in the exercise program over time (Blue & Conrad, 1995). Perceived personal benefits include improved work performance, improved attitude toward work, increased stamina, and increased awareness of personal health, which all help to improve the overall productivity of the individual (Dreyer & Strydom, 1992; Shepherd, 1999). Perceived organisational benefits that are derived from CFPs include improved staff morale, reduced absenteeism, reduced staff turnover, and increased staff satisfaction (Baun & Bernacki, 1988; Lynch, 1990; Shepherd, 1999). Baun and Bernacki also suggested that the ultimate success of a CFP is determined by selective programming and motivational support for special groups. Executive personnel within an organization represent an example of the special groups Baun and Bernacki are referring to. Ideally, CFPs should be designed in accordance with an appropriate conceptual framework. The literature, however, contains few reports of programs being designed in accordance with theoretical frameworks. By understanding the reasons for low exercise adherence among executives and by identifying strategies that increase adherence, organisations will be able to further improve the CFPs effectiveness.

It has been noted by Shepherd (1988) that corporate executives may require exercise programming that suits their busy professional lives. Individual characteristics of an executives work routine such as, long hours, frequent car and plane travel, regular meals with business associates and long periods of sitting may provide some grounds for selective exercise programming for this population. The research presented in this thesis was designed to test the effectiveness of a specialised fitness program for corporate executives. The program was developed according to a relevant behavioural model and was designed to

improve exercise adherence. A suitable theory-based instrument measured exercise adherence. The review of literature provides an outline of relevant behavioural theories, including the theory that was used to design the specialised program, and from which the measurement instrument was derived (Appendix A).

CHAPTER II

Review of Literature

Due to the low levels of exercise participation throughout the general population, the health problems that exist throughout society and the costs associated with people leading sedentary lives, researchers and practitioners in community health organisations have been interested in strategies that lead to increased participation in exercise and enhanced health and fitness standards (Dishman, 1994).

According to Blue and Conrad (1995) exercise adherence involves continual participation in an exercise regimen with the necessary frequency, duration, and intensity required for health benefits. This definition may limit the perception of exercise adherence. It could be argued that a person is adhering to regular exercise even if the frequency, duration, and intensity of the activity is less than the accepted levels required to improve fitness. It is important to acknowledge that physical and mental benefits are derived from varying amounts of exercise. These considerations broaden the perception of what constitutes exercise, and furthermore, the definition of exercise adherence.

Research into Exercise Adherence

A large proportion of the research into exercise adherence has been atheoretical (Blue & Conrad, 1995; Godin, 1994). The concern with atheoretical research is that it produces inconsistencies in research designs across studies, and does not contribute to the better organisation of theory, future research, or practice (Maddux, 1993). Godin stated that atheoretical research on exercise behaviour is generally guided by researcher bias and has previously led to a poor understanding of exercise adherence. Maddux noted that among the theory-based exercise adherence studies, social-cognitive models guided the vast majority.

The major social cognitive theories that have guided exercise adherence research will now be reviewed.

Self-Efficacy Theory

In the self-efficacy theory, Bandura (1977, 1986) stated that three cognitive mediating processes determine the adoption and maintenance of behaviour, these are:
(a) the belief about one's ability to execute a specific action, (b) beliefs regarding the probability that the action will led to a certain outcome, and (c) the subjective value that is placed on a certain outcome. These processes are termed self-efficacy expectancies, outcome expectancies, and outcome value, respectively. Self-efficacy expectancies are considered to be important in directly influencing behavioural intentions, behaviour, and affect. Maddux (1993) stated that self-efficacy expectancies influence the adoption of health behaviours, the cessation of unhealthy behaviours, and the maintenance of these behavioural changes when they are being challenged. Bandura contended that outcome expectancies are usually determined by self-efficacy expectancies, and therefore, are not useful in predicting behaviour beyond what can be predicted from measures of self-efficacy. Self-efficacy theory has been successfully applied in explaining exercise behaviour (Godin, 1994). A number of studies have shown a positive association between self-efficacy and either the adoption or maintenance of exercise (McAuley & Jacobson, 1991; McAuley, Lox & Duncan, 1993; Sallis et al., 1986, 1989; Wurtele & Maddux, 1987).

The Health Belief Model

The application of the health belief model (Becker & Maiman, 1975) to the study of exercise behaviour consists of four major cognitive components, namely, perceived susceptibility to illness, perceived severity of health threat, perceived benefits of exercise, and perceived barriers to exercising. For example, a person who has a family history of heart disease may perceive a vulnerability to having a heart attack and realise the benefit of regular

exercise in offsetting such an occurrence. Other influential components are demographic variables, socio-cultural variables, and cues to action (external or internal events that prompt action). An example of a cue to action would be placing jogging shoes near the front door to prompt action. The construct of self-efficacy has been added to the model (Rosenstock, Strecher, & Becker, 1988) and social support has also been added to the original components (Maddux, 1993). Godin (1994) suggested that existing data from studies using the health belief model provide no clear indication that the model is suitable for the study of exercise behaviour. Two investigations have shown no significant association between the model's variables and exercise behaviour (Morgan, Shephard, Finucane, Schimmelfing, & Jazmaji, 1984; Mullen, Hersey, & Iverson, 1987). Maddux noted that the health belief model has been successfully used to investigate preventative health behaviour and compliance to medical regimes (Janz & Becker, 1984; Rosenstock, 1974), although applications to exercise behaviour have been scarce.

Theory of Reasoned Action and Theory of Planned Behaviour

In the theory of reasoned action, Fishbein and Ajzen (1975) proposed that intentions are the most important determinants of behaviour and that they are a function of attitudes and subjective norms. Attitude refers to an individual's positive or negative evaluation of behaviour, and subjective norms are an individual's perception of the expectations other important people would have regarding a particular action (Ajzen & Fishbein, 1980). The amount of influence attitudes and subjective norms have on intention is determined during the individual's decision-making process. Even though there has been support for the use of the theory of reasoned action in exercise adherence research (Ajzen, 1985), the strength of relationships between variables has been weak. Intention has not strongly predicted physical activity participation (Dzewaltowski, 1989), and the relationship between attitudes and

subjective norms with intention to exercise has been weak (Biddle, 1999; Dzewaltowski, 1989).

The theory of planned behaviour (Ajzen, 1985, 1988) extended the theory of reasoned action by including the concept of "perceived behavioural control" as an influence upon intention. Perceived behavioural control is a person's belief regarding the ease or difficulty of performing a behaviour (Ajzen, 1985). Ajzen questioned whether intention could be the only determinant of behaviour when an individual does not have complete control over a behaviour. Ajzen argued that when factors interfere with an intended behaviour, perceived behavioural control is necessary for strong prediction. Perceived behavioural control is influenced by internal factors such as skill, abilities, and willpower and external factors such as time, opportunity, and the dependence on other people. Although attitude, subjective norms, and perceived behavioural control are said to influence intention, perceived behavioural control will directly influence behaviour, independent of intentions, when actual control is low. For example, when actual control over achieving a high academic score is low (due to not attending classes), perceived behavioural control (influenced by internal factors like skill and knowledge) will directly affect behaviour. There is a similarity between perceived behavioural control and the self-efficacy construct in social-cognitive theory (Ajzen & Madden, 1986). Ajzen and Timko (1986), however, suggested a difference in that self-efficacy focuses on factors that are internal to the individual, whereas perceived behavioural control reflects internal and external factors. There has been support for the use the theory of planned behaviour in predicting intention to exercise (Dzewaltowski, Noble, & Shaw, 1990; Gatch & Kendzierski, 1990). In the Dzewaltowski et al. study, the theory of planned behaviour was examined in the prediction of four weeks of physical activity participation. Attitude and perceived control were found to predict intention, and intention predicted participation.

Social-cognitive models share a number of specific variables that are considered to influence decisions and behaviour, namely, outcome expectancy, outcome value, self-efficacy expectancy, and intention (Maddux, 1993). By focussing on the decision-making process that underlies action, the social cognitive models only explain part of the variance in exercise behaviour. Maddux noted that social cognitive factors are critical in the early stages of exercise and become less important as the behaviour becomes more frequent and consistent. The role of situational cues and habit are also crucial to the understanding of behaviour over time. They are not, however, emphasized in the models. Maddux stated that changes in health and exercise behaviour are best understood in stages and to this end recommended an integration of major social cognitive models into a single model for the benefit of future research.

Transtheoretical and Stages of Change Models

Prochaska and DiClemente (1982) developed the transtheoretical model as an integrative perspective that explains the stages encountered when individuals attempt to change behaviour. The model has been successfully used to guide the study of addictive behaviours and is also useful for guiding exercise research (Prochaska & Marcus, 1994). According to the model, individuals who are undergoing behavioural change will move through six stages. These six stages are precontemplation, contemplation, preparation, action, maintenance, and termination. In precontemplation, people do not intend changing their behaviour in the near future, therefore, it is not a stage of change but rather a stage during which people are maintaining their behaviour and change is not being considered. In the contemplation stage, people seriously intend to change behaviour in the next six months. During the preparation stage, the individual intends taking action within the next month, and the action stage marks the time when overt behavioural changes are occurring. The maintenance stage represents the time when the individual has maintained the new behaviour

for at least six months and continues until there is no risk of returning to the former behaviour. Termination is the final stage of the model. It is the stage in which the new behaviour has become consolidated, and there is no temptation to return to the former behaviour.

The advantage of applying the transtheoretical model to the study of exercise behaviour is its dynamic nature. Researchers have previously recommended the use of a dynamic model for the study of adoption and maintenance of exercise (Dishman, 1982; Sonstroem, 1988). The dynamic exercise cycle model (Brawley & Rodgers, 1992) and the health action process model (Schwarzer, 1992) are examples of models that relate the stages of change to exercise and health behaviour. Brawley and Rodgers, in the dynamic exercise cycle model, proposed that the development and maintenance of exercise behaviour occurs in four stages: a sedentary pre-exercise phase, an initiation and adoption phase, a maintenance to drop out or relapse stage, and exercise resumption. An over-riding contention in this progression of stages is that exercise behaviours begin under the control of deliberate cognitive processes, such as decisions and intentions, but gradually become controlled more by automatic cognitive processes. In the later stages, situational cues initiate the decision-making process that will elicit a decision to exercise or not. As the target behaviours become more frequent, maintenance of exercise is easier and relapses become fewer.

In the health action process model, Schwarzer (1992) distinguished between a motivation/decision-making stage and an action/maintenance stage. In the initial stage people are said to make decisions and form intentions to change. In the action stage the person carries out the intentions and begins the new behaviour. In some cases, individuals may progress to a habit stage where the actions may come to be performed automatically in response to situational cues.

Behavioural Processes and Change

An advantage of the transtheoretical model is that it provides the researcher with a dynamic description of the cognitive processes employed by people at a particular stage of change. These cognitive processes of change are activities that people use both covertly and overtly to alter their experiences or environments so that behaviour may be modified. Prochaska and Marcus (1994) outlined ten processes that can be categorised as being experiential or behavioural. Experiential processes are useful in understanding and predicting progress in the early stages of change. The experiential processes include consciousness-raising, dramatic relief, self re-evaluation and social re-evaluation. An example of consciousness-raising for a person about to start exercise would be to gather new information and feedback from others regarding exercise. Dramatic relief relates to the affective aspects of changed behaviour that involve intense emotional experiences. An example of dramatic relief may be the satisfaction an overweight person experiences through losing some weight at the beginning of an exercise program. Self re-evaluation is the emotional and cognitive reappraisal of values by an individual with respect to a particular behaviour. An example of self re-evaluation would be a person recognising that they place a high value on regular exercise. Social re-evaluation is the assessment an individual will make regarding the social changes they experience as a result of their new behaviour. For example, social re-evaluation would be the recognition of new friendships formed as a result of beginning exercise in a new environment.

The behavioural processes are more useful in understanding the transition from preparation to action and action to maintenance and include environmental re-evaluation, relationship fostering, counter-conditioning, contingency management, and stimulus control. Environmental re-evaluation is the assessment of how behaviour affects the physical and social environment. For example, a parent may ascertain that their regular exercise sessions at

home encourage their children and partner to exercise as well. For the person starting an exercise program, relationship fostering would involve the development of relationships with other trusted people and accepting and using their support in relation to exercise. Counter-conditioning is the substitution of a problem behaviour with a healthier alternative. An example of counter-conditioning for an individual beginning exercise would be to substitute a sedentary behaviour (e.g., watching television) with an exercise session (e.g., a vigorous walk). Contingency management involves changing the contingencies that control or maintain a problem behaviour. An example of contingency management for a person starting an exercise program would be to avoid going to bed late if they intend to exercise early the next morning. Stimulus control is the control of situations and causes that trigger a problem behaviour. The problem behaviour for someone attempting regular exercise is being sedentary. Therefore, the individual may decide to avoid situations that can reinforce sedentary behaviour. Examples of avoiding sedentary behaviour may be having exercise clothes permanently in the car or within easy access and engaging in the company of others who exercise rather than those who do not exercise.

In reference to exercise adherence, a sound knowledge of stages and processes of change might lead to the use of strategies that facilitate acquisition and maintenance of exercise (O'Connor, 1994; Prochaska & Marcus, 1994). For example, knowledge of dramatic relief as a process of change in the initial stages of change enables the exercise counsellor to be aware of the emotional experiences the individual may encounter and to offer feedback and support regarding these experiences. Prior to beginning an exercise program, an elderly person may not be confident of their capabilities, therefore, to complete an initial exercise session may be perceived by this person as an enormous accomplishment. If the counsellor understands this reaction and encourages the enjoyment of such experiences, adherence to the exercise is being promoted.

Use of the Transtheoretical Model in Exercise Counselling

Pender, Sallis, Long, and Calfas (1994) used the transtheoretical model as a basis for assessment and intervention in developing a project named Physician-Based Assessment Counselling for Exercise (PACE), a counselling program designed for doctors to promote physical activity in the United States. The assessment format enables health care providers to identify an individual's stage of change and apply a protocol of counselling and program strategies suitable for that stage. Three protocols are used. One for individuals in precontemplation, one for those in contemplation stage, and another for those in an active stage. The relevant processes of change for each of the three stages determine the content of each protocol. In the protocol for people in precontemplation stage, the individuals are asked to identify how they might benefit from activity and why they are not currently active. The counsellor is asked to give clear advice regarding the way exercise can benefit the person. The individuals are asked to consider starting a moderate exercise program and to state how they may benefit from it. The protocol also outlines a summary of the benefits of exercise, and a worksheet is provided that lists potential barriers and suggestions for overcoming them. In the contemplator protocol, individuals are asked to plan their exercise programs, including the types of exercises, the specific time and days of the week they exercise, the duration of activities, the venues for exercises and identifying the people who will support them. They are also asked to indicate potential barriers to their exercise. The counsellors are asked to highlight the possible benefits of exercise and provide advice regarding the most suitable activities. Counsellors ask that clients also take advantage of social support, recognise the existence of potential barriers, and that they schedule follow-up appointments. Both the counsellor and the individual sign the plan as though it was a contract, signalling their commitment to carrying it out. On the reverse side of the protocol are examples of activities, a worksheet to identify their two main benefits from exercise, and an exercise diary. The

protocol for people in the active stage includes a directive for the counsellor to praise individuals for their current activities and to review and make recommendations about their programs. The most important part of this protocol is relapse prevention. If interruptions to exercise occur, the counsellor encourages individuals not to feel guilty and to restart exercise as soon as possible. To avoid relapses, individuals are asked to anticipate possible barriers to their exercise and to plan a method to overcome them. The protocol for actives also includes information about injury prevention.

Recent studies (Marcus et al., 1997; Long et al., 1996) supported the use of PACE as an intervention to be used by physicians in promoting exercise to their patients. The study conducted by Long et al. involved the participation of a diverse range of patients (N = 107) over ten locations in the USA. The results of this study included improvements in the use of exercise counselling, exercise knowledge, and enhanced confidence regarding counselling ability for the physicians.

The counselling protocol and program strategies used in project PACE are suitable for use in a CFP setting. The programming is specialised, catering to an individual's specific circumstance and requirements and helps each person progress in regard to their exercise behaviour. Implementation of a format similar to the PACE project might increase the exercise adherence of participants and the effectiveness of their CFP.

Exercise Adherence in Corporate Fitness Programs.

Research into exercise adherence in CFPs has revealed an average recruitment of only 20% of eligible workers with just half of the initial participants progressing to become long-term adherents (Shephard, 1988). Blue and Conrad (1995) conducted a review of research into adherence to worksite exercise programs. The authors identified three categories of interventions aimed at improving adherence: (a) person-oriented strategies, (b) situation-oriented strategies, and (c) exercise-oriented strategies. Person-oriented strategies introduce

interventions that are intended to improve motivation and personal control. Situation-oriented strategies involve environmental and program components that enhance accessibility and convenience. Exercise-oriented strategies include characteristics within the exercise program, such as content preference and intensity, in order to improve adherence. All but one of the ten studies reviewed revealed that the preceding strategies improved exercise adherence, with the most impressive results coming from the studies that used multiple interventions. Blue and Conrad concluded that the use of a combination of strategies in programming is effective in increasing adherence for at least six months.

A number of studies that have examined the effect of one variable on exercise adherence have reported no significant effects. Leslie and Schuster (1991) examined the effect of contingency contracting on the exercise adherence of cardiac rehabilitation patients. Weekly contingency contracts were negotiated with patients in the contracting group for eight consecutive weeks. Adherence, defined as the number of days in attendance, was compared between the contracting group and the standard treatment group. Both groups produced high attendance levels, and there was no significant difference in attendance between the groups. Cain (1996) studied the effect of instruction on exercise adherence. Participants in both control and treatment groups were offered three one-hour exercise sessions per week for eight weeks. The treatment group also received instruction on the basic facts about exercise. The effect of instruction on the total number of days attended by all participants was not significant, however this result may have been influenced low power. At the end of the eight-week study period there was greater attrition among the control group (48%) compared to the treatment group (35%), and there was a larger average attendance score for those in the treatment group (11.6 days) compared to the control group (9.6 days). White, Croce, Loureiro, and Vroman (1991) examined the effect of exercise duration and intensity on exercise adherence. Participants were divided into three groups with different demands: (a) 40

minutes of exercise twice per week at an intensity of 60% to 70% maximal heart rate, (b) 20 minutes of exercise four times per week at 60% to 70% heart rate, and (c) a control group in which participants did not have to exercise. The study found that exercise duration and intensity did not effect adherence for the two exercise groups. It was noted, however, that those in group (a) were more likely to exercise in their leisure time after the termination of the exercise program.

Studies, such as the one by Stoffelmayr et al. (1992), showed how the use of a combination of strategies in programming could be successful. The goal in the Stoffelmayr et al. study was for participants to exercise for thirty minutes four times per week. Participant adherence levels following the intervention in this study ranged from 90% to 100% after six months duration, which is well above the rates that are usually reported in the literature. The successful results obtained by Stoffelmayr et al. can be attributed to the use of behavioural modification principles in the design of the intervention. Behavioural modification principles enabled the design of contingencies of reinforcement aimed at enhancing the participant's self-control. The interventions used to encourage high exercise adherence were contracting, incentives, social support, monitoring, and competition. Contracting involved the commitment of the participant to exercise aerobically four times a week for the term of the study. The participant, the program leader, and a witness signed the contracts. The signature of a third party verified ongoing exercise. Monitoring of the program was provided at group meetings of participants with program leaders. Individual exercise prescription was provided during these meetings. Incentives were provided by way of a response-cost financial contingency. Participants deposited $40 and lost funds if they did not comply with the terms of their contract. The participants were also divided into groups, and to reinforce competition, the funds lost by individuals in one group were distributed among the groups in which everybody adhered to the contracts. This condition led to social support or social pressure

being provided among those participants in the same group and from the people who helped monitor adherence to the contract.

The design of this study was influenced by the Stoffelmayr et al. study in relation to the use of multiple program strategies in the intervention. Similarities included the use of interventions aimed at making exercise more accessible, enjoyable, as well as contributing to the overall enhancement of participants' sense of control over their programs.

Specialised Programming

Shephard (1988) stated there may be grounds for specialised programming in CFPs for senior management that will accommodate their demanding work schedules. It appears that the traditional model of exercise programming has been sub-optimal for most segments of the population, including corporate executives (Dirkin, 1994; Work, 1989). The traditional model of exercise programming consists of an initial fitness evaluation followed by the prescription of an exercise program. The exercise program would usually be designed for use within a gymnasium facility and include exercises aimed at improving muscular strength, flexibility, and cardiovascular fitness. Most traditional programs would offer a re-evaluation of fitness parameters and adjustments to the exercise program every three months. Baun and Bernacki (1988) supported a style of programming that included regular re-testing and counselling, stating that these features highlight the success participants experience and allow for the setting of new and realistic goals. Counselling in an exercise setting involves a meeting between the exercise participant and a fitness adviser during which a working alliance is formed. The adviser provides advice and guidance, and within the exchange of feedback and ideas, the participant would also contribute to the design of the exercise program. Wankel (1993) also supported the inclusion of counselling as a means of increasing enjoyment, which in turn can enhance adherence. To increase the enjoyment of an activity would require the selection of an activity type and context that appealed to the person and

also had personal meaning. Wankel stated that regular counselling helps people select programs that are most appropriate to their current needs and interests.

The Use of Technology in Exercise Programming

The use of technological supports as a part of specialised programming may also assist in increasing exercise adherence. Dirkin (1994) listed a number of facilities that enable the provision of monitoring, evaluation, and goal setting between remote locations without time restrictions. Dirkin included personal computer (PC) services, phone systems, television systems, and print communications. Touch-tone telephones can be used to input data that can be analysed by an automated local or remote processor. A client-counsellor relationship can be maintained through the use of phone systems, in particular, the individual's voice-mailbox. One important advantage of this technology is the potential it has in reaching all population groups, considering most people have access to phones. Television based systems can provide important feedback including the actions involved in specific exercises. Dirkin explained that VCRs and existing cable television systems could be adapted to transmit and record information efficiently and help create a more specialised form of personal feedback. Print technologies are now capable of providing publications that are tailored to the needs of an individual. Such publications provide another means of interactive monitoring and programming of exercise. The use of PCs in relation to exercise are varied and include, data collection, data processing, and feedback regarding the evaluation, prescription, and planning of an exercise program. For example, the use of heart rate monitors and pedometers and the transferring of the information they gather onto a PC can provide individuals with valuable feedback on their programs. Sophisticated multimedia capabilities of PCs also allow for moving images, sound, and text to be used to present information and feedback. Recently, worldwide internet communications have emerged, and this development in communications will have considerable implications for the corporate executive. Specifically, email has

become an important communication tool in the business environment and its use in fitness programming is a logical extension for CFPs. A majority of business executives have access to email from personal computers at their desks. This service allows for detailed frequent communication between individuals in the corporate environment. Professionals in charge of CFPs can use email to communicate with groups of participants or individuals within the program. For example, a program newsletter could be distributed via email to an unlimited number of participants instantaneously, or a personal report or message could be sent via email to just one individual. The flexibility of email, in being able to attach other documents as well as graphics, sound, and video clips, has made it a suitable and convenient form of communication within a CFP.

Marcus, Owen, Forsyth, Cavill, and Frindinger (1998) reviewed 28 studies of media-based physical activity interventions. They reported that interventions using print or telephone were effective in changing exercise behaviour in the short term, and positive behavioural change occurred when contacts and interventions were tailored to the target audience. Furthermore, conceptual models from health education, social cognitive theory, social marketing frameworks, and the transtheoretical model shaped the media-based interventions.

Theory Based Research and Program Design

In a review of the worksite exercise literature, Blue and Conrad (1995) reported that only three of the ten studies reviewed were guided by theory. The authors stated that it would be appropriate to use theoretical models to guide program design and that program interventions could ideally match the stage of behavioural change, as well as include strategies for relapse prevention. Other inadequacies the authors raised in this review included a lack of long-term results, unreliable measures of exercise adherence, and susceptibility to low statistical power.

Blue and Conrad (1995) suggested that to examine the effectiveness of a fitness program for enhancing the exercise adherence of people in a worksite setting, there should be a conceptual base for both research design and program intervention. The transtheoretical model (Prochaska & Marcus, 1994) provides a suitable framework for this purpose and was selected for use in this study. In regard to program content, there is also strong support for the use of multiple strategies including personalised exercise counselling that provides evaluation, goal setting, and ongoing program adjustments, with the use of technological aides such as email and communication via phone. Dishman (1990) noted that the use of these strategies and the attention they provide individuals is effective in promoting exercise adherence. More recently, Griffin (1998) emphasized the importance of making exercise prescription client-centered. Exercise counsellors need to listen to the clients' needs and help them identify and develop their under-used potential. Griffin described the prescription of exercise as a journey during which a counsellor and client work together to determine the client's needs, wants, and lifestyle. In doing so, the client must have trust in the counsellor's empathy, personal reliability, and professional competence. Griffin stated that the effectiveness of counselling depends on the ability to target needs at specific stages of change. It is also a process during which client priorities, goals, and objectives need to be discovered and established. These features of counselling enable clients to take control and responsibility for their programs. Petitpas (1999) also highlighted the importance of the client-counsellor relationship, stating that it needs to evolve as a "working alliance" to increase the likelihood of a positive outcome. Petitpas stated that the quality of the client-counsellor relationship would depend on the specific skills and knowledge of the counsellor. Counsellors require considerable self-knowledge about personal values, needs, and interests, and they need to be aware of the processes that occur during interaction with the client such as, control battles, complementary behaviour, and the appropriate stages of treatment. To acquire these skills and

self-knowledge is an ongoing learning experience for the counsellor. Personalised exercise counselling and other social support strategies were an integral component of the specialised program used in this study.

Blue and Conrad (1995), in their review of literature, found that the reliabilities of the measures used to assess participation in exercise programs were not provided and stated that standards are necessary for quantifying exercise adherence so that results can be compared across studies. Prochaska and Marcus (1994) noted that a limitation in previous exercise adherence research is the reliance on self-reporting of physical activity. In this study, a reliable and valid measurement of adherence was provided through the use of an instrument based upon the transtheoretical model (Marcus, Selby, Niaura, & Rossi, 1992). The instrument used for this study measured individuals' stages of behavioural change and in doing so, indicated their levels of exercise adherence.

Shephard (1988) argued that the key to solving the problem of low exercise adherence in the CFP setting is to be found in modifying the behaviour of the individual. Blue and Conrad (1995) noted that few recent studies in the corporate fitness setting have measured the effect of a specialised program on exercise adherence while basing their interventions and research designs on pertinent behavioural theory and relevant recommendations from the literature.

The research hypothesis of this study was that corporate executives who receive specialised fitness programs, based on the transtheoretical model, will have a higher exercise adherence rate than corporate executives who receive a traditional facility based program. To test this hypothesis the researcher used quantitative and qualitative analyses. The first phase was an analysis of the participants' stages of change, and the second phase was an analysis of participants' descriptive information regarding why they did or did not adhere.

Included within this qualitative analysis was an examination of those aspects of the program that were more likely to lead to participant adherence.

CHAPTER III

Method

Participants

Executive personnel (N = 70) who had just begun or had begun an on-site exercise program in the past three months were randomly selected and assigned to either a control (n = 35) or treatment group (n = 35). All 70 executives were employed at the central office of Coles Myer Ltd. in Melbourne, and were eligible to use the on-site company fitness centre. Initially, a recruitment letter (see Appendix B) was sent to potential participants, inviting them to take part in the study. All of the participants returned their response letter to the researcher via the fitness centre manager. After the participants indicated their willingness to take part in the study, the researcher contacted them individually to arrange an initial consultation appointment. Participants were employed at grade 12 level of management or higher. The grade levels of employment extend to grade 20. At grade 12 level and above, the company provided employee benefits intended for executive personnel only. At the beginning of the study all participants were in the action stage of change as defined by the transtheoretical model in relation to their adoption of exercise. To determine that they were at this specific stage of change, all participants were required to complete an exercise history form. Participants initially completed a consent form (see Appendix C) to indicate their willingness to participate. The consent form provided a general outline of the study, guaranteed participant confidentiality, and also informed the participants that the research had been approved under the ethical guidelines adopted by Victoria University of Technology.

Measures

Participants in both groups completed the Physical Activity Questionnaire (PAQ) (Marcus, Selby, Niaura, & Rossi, 1992) as a measure of their stage of change after six months

of following their respective programs. The PAQ is attached as Appendix A. PAQ data were collected again after six-months so that each participant could potentially progress from the action to maintenance stage of behavioural change. By completing the PAQ, participants in both groups indicated whether or not they had moved from the action stage to the maintenance stage of behaviour. To progress to maintenance stage the participants must have exercised vigorously (i.e., with their heart rate elevated to a level between 60-90% of their maximum heart rate) for twenty minutes or longer at least three times per week for a six-month period. The preceding criteria for exercise intensity and frequency have been endorsed by the American College of Sports Medicine (1990) as an appropriate level for producing health benefits. For those who were not at maintenance stage, the PAQ indicated which stage they were at after the six-month program (i.e., precontemplation, contemplation, preparation, or action). The PAQ lists five descriptions of current exercise status. Participants were required to choose one description that identified their current level of exercise. The five descriptions provide for rank order data to be collected and used in analysis. The scores for each stage were as follows: 1 = precontemplation, 2 = contemplation, 3 = preparation 4 = action, and 5 = maintenance. O'Connor (1994) stated that the PAQ is easily understood, can be quickly administered and evaluated, and indicates the effectiveness of the relevant exercise program. Reliability of the instrument was tested by Marcus et al. (1992) and found to have a kappa index reliability of .78. Fleiss (1981) argued that a result over .75 indicates strong agreement. The PAQ was administered to each participant, in person, at the time of recruitment and in a private interview after completion of the six-month program.

Following the six-month program, qualitative response measures were obtained by way of asking all participants two questions: (a) why they did or did not adhere to the fitness program, and (b) what were the most influential features of the program. These qualitative response measures were recorded in an interview with each participant.

Treatment

The participants who were assigned to the control group were provided with a traditional facility-based fitness program for the duration of the six-month research project. The services provided by fitness centre staff included: (a) an initial health and fitness evaluation; (b) prescription and demonstration of a personalised exercise program for use at the centre; (c) a personalised exercise program card kept on file at the centre; (d) the option of a follow-up fitness evaluation; and (e) a program adjustment consultation every three months.

Participants assigned to the specialised treatment group also received a program for the six-month research period. This program consisted of: (a) an initial health and fitness evaluation; (b) prescription and demonstration of a personalised exercise program for use at the centre; (c) a personalised program card kept on file at the centre; (d) an initial consultation that included strategic planning, goal setting, a home exercise program (see Appendix D), and a travel exercise program (see Appendix E) consisting of exercise that does not require equipment; (e) two bi-monthly follow-up consultations that included evaluation, program adjustments, strategic planning, and goal setting; (f) training diary sheets that could be used by the participant to record details concerning their assigned program; and (g) the optional use of email once per month as a means of receiving further feedback. A report detailing program adjustments, strategies, and goals was sent to each participant's home address following each consultation (see Appendix F). The strategies implemented during the consultation sessions were guided by the processes that are applicable to the action and maintenance stages of change as described by Prochaska and Marcus (1994). The counselling sessions and programming strategies were in line with the sequential proposed stages of change in the transtheoretical model. The researcher developed a counselling protocol (see Appendix G) in accordance with the theory, which included stage-specific strategies suggested by Pender, Sallis, Long, and Calfas (1994). Relapse prevention strategies were

incorporated in the specialised program for the treatment group. These strategies were adapted from the behavioural processes of change that are used by individuals to adjust their experiences and environments in order to modify behaviour.

Procedure

To confirm the number of exercise sessions completed, participants from both the control and treatment groups were asked to initial their respective program cards and training diaries as well as having a witness initial the documents following each exercise session. Many of the participants from both groups did not initially have an appropriate witness sign their program card or diary as a verification of their adherence. This problem meant that another means of verification was needed. Every participant who produced a record of exercise sessions on a program card or diary subsequently had them signed by the gymnasium manager, at the end of the six-month period, as an acknowledgement of the individual's participation. The gymnasium manager was present at the gymnasium for eight hours per day and could provide accuracy in verifying most of these records.

The data collected from the PAQ provided a score between one and five for each participant in both the control and treatment groups, representing the stage of change they were at after their respective six-month programs. All participants were at action stage at the beginning of their programs (i.e., a score of 4). The duration of the study prevented the possibility of any participant reaching termination stage. The rating of one to five indicated the eventual level of behavioural change for all participants including not only those who progressed to maintenance stage, but also those who experienced relapse. The final rating for the treatment group was, therefore, influenced by the effectiveness of the strategies of the specialised program.

The qualitative data were collected during an individual interview at the completion of each participant's six-month program. The questions were asked orally immediately after the

administering of the PAQ. The participants replied to the questions orally. The responses were recorded in written form by the researcher. The researcher utilized an oral conversation format (Clandinin & Connelly, 1994) in an attempt to place the participant in a relaxed and non-formal setting.

Data Analysis

The ordinal nature of the dependent variable meant that analysis was conducted with non-parametric procedures. Specifically, a Mann-Whitney U test was conducted to determine the existence of any difference between the treatment and control groups. With an N = 70, and a medium to large effect size expected, after considering past literature, the power of the current study was estimated to be between 80% and 99%. The qualitative data were gathered and content analysed. Open-ended responses have been used in many psychological studies to provide additional information to quantitative data. (Russell, 1982; Tammen, 1996).

CHAPTER IV

RESULTS AND DISCUSSION

Demographic Characteristics

All of the treatment and control group participants provided data over a six-month period. There were four participants that dropped out of the control group; two left the company and could not be located, and a further two did not provide data at the end of the study period. This situation meant that 31 participants from the control group provided final data. The age of the participants in the treatment group ranged from 24 to 60 with a mean age of 40.5. The age of those in the control group ranged from 24 to 55 with a mean age of 39.1 . The proportion of males and females in both groups was similar. The control group had 71% males ($\underline{n}$ = 22) and 29% females ($\underline{n}$ = 9) and the treatment group 74% males ($\underline{n}$ = 26) and 26% females ($\underline{n}$ = 9).

Quantitative Results

After the six-month program 69% ($\underline{n}$ = 24) of participants in the treatment group progressed from action to maintenance stage, 17% ($\underline{n}$ = 6) remained at the action stage, 11% ($\underline{n}$ = 4) regressed to preparation stage, and 3% ($\underline{n}$ = 1) regressed further to contemplation stage. Following their respective six-month programs, 26% ($\underline{n}$ = 8) of the participants in the control group progressed from the action stage to the maintenance stage, 26% ($\underline{n}$ = 8) remained at the action stage, 23% ($\underline{n}$ = 7) regressed to preparation stage, 23% ($\underline{n}$ = 7) regressed to contemplation stage and 3% ($\underline{n}$ = 1) regressed to precontemplation stage.

The quantitative results support the research hypothesis. A significant difference in final stage scores was found between the treatment and control groups, $U = 272.5$, $Z = 3.72$, $p < .001$. This result indicates that the specialised fitness program, as compared to traditional facility based program, facilitated behaviour change and an increase in exercise adherence for

the corporate executives in the treatment group. The following frequency scale (Table 1) outlines the final stage scores for executives in both the treatment and control groups.

Table 1

Number of Participants in Each Stage at the End of the Program for Each Group.

Final Stage	1 Pre-contemplation	2 Contemplation	3 Preparation	4 Action	5 Maintenance
Treatment Group n	0	1	4	6	24
Control Group n	1	7	7	8	8

Qualitative Results

This section contains the themes that arose from the executives' responses to two open-ended questions. The answers to the questions were recorded by the researcher at post-program interviews.

The Reasons for Adhering

The adherers in both groups were initially asked: Why did you adhere to the program?

Table 2

Responses from the 24 Adherers in the Treatment Group to the Question: Why Did You Adhere to the Program?

Reason	Number of Responses
To maintain fitness	7
To maintain good health	7
To achieve a pre-determined goal/fitness level	7
To lose weight	5
Enjoyment	4
Commitment to the counsellor	3
Regular measurements	3
Social support	3
Commitment to the program	2
To enhance self-esteem	2
To perform better at work	2
Diversion from work	2
Realisation of progress	2
To complement my involvement in sport	2
Sense of achievement after exercise	1
Enhanced sense of control over exercise	1
Feeling of well-being when fit	1
Realisation of change of lifestyle	1
Learnt more about my reasoning for exercise	1
Spontaneity and variety of program	1
Stress reduction	1
To offset family history of disease	1
Fear of failure	1
Guilt over past non-adherence	1
To be fit for a holiday	1
There was time at work	1

Treatment Group Adherence

The responses obtained from the treatment group adherers included those that represented a "means to an end" approach to exercise and those that displayed an appreciation of more internal reasons. Some responses, however, do not completely fit these descriptions. Many responses indicated the influence of features contained within the specialised fitness program. Most of the treatment group adherers attributed their adherence to a combination of factors.

Many of the adherers in the treatment group were motivated to exercise in order to achieve a specific result, viewing their exercise as a means to an end. The majority of these people sought "to maintain fitness," to "maintain good health" and "to lose weight." Other outcomes that were targeted included "to enhance self esteem," "to perform better at work," "to complement my involvement in sport," "to offset a family history of disease," and "to be fit for a holiday." It appears that most of these reasons for adhering would have been established prior to the program beginning.

Reasons for adhering were often linked to the features provided within the treatment group program. These particular reasons included "commitment to the program or counsellor," "regular measurements," "social support," "the spontaneity and variety of the program," and "enjoyment."

Several participants stated "achieving a pre-determined goal" as a reason for adherence. In these cases, the goal setting process contained in the specialised program helped focus the efforts of these people in maintaining regular exercise. Program objectives, within a time frame, were more clearly defined through the goal setting process and individuals stated that they experienced a high degree of satisfaction when the recorded goals were achieved. The objectives set by the counsellor, in conjunction with the treatment group participants, were carefully designed to be realistic and meaningful. This approach was successful for

many of the treatment group adherers and provides strong support to the view that goal setting is a valuable component of exercise prescription (Griffin, 1998; Hoekenga, & Thompson, 1998).

"Commitment to the program" and "commitment to the counsellor" were stated as reasons for adherence. This form of motivation may have originated from the desire to show the counsellor one could adhere (as much as to satisfy oneself). Kelman (1958) used the terms, identification and internalisation to describe levels of motivation. In identification, clients are said to follow a behaviour regimen to please or try to be like a counsellor or to be part of a group. Internalisation represents a higher level of motivation where the client's behaviour is performed to please oneself as much as it would be to please others. In this instance, exercise is intrinsically rewarding, and is performed by clients for their own benefit. The reported commitment of the treatment group adherers to the counsellor may have been examples of identification, as outlined by Kelman. Those who said their commitment to the program helped them adhere may be representative of internalisation. The existence of regular meetings with a counsellor for those in the treatment group provided an opportunity to develop a personal commitment to the counsellor, especially in the initial stages of the program.

"Enjoyment of the program" was cited as a reason for adherence. Some of the participants stated that the program enabled them to return to activities that had previously appealed to them, enhancing their enjoyment of the program. In most cases, the re-emergence of activities and enjoyment of the exercise was said to improve quality of life. This finding supports Wankel's (1993) view that enjoyment of exercise must be considered during the exercise prescription process. The counselling process provided to the treatment group adherers was designed to identify exercise activities that met with individual interests and needs. The enjoyment experienced by some participants helped to enhance self-efficacy for

other forms of exercise and encouraged a more positive outlook on life, as demonstrated by this response:

> Participant Number 13: The inclusion of variety and spontaneity in the program meant that I enjoyed it more and realised continual improvements. I was emotionally able to maintain adherence. I achieved relaxation through the program, and most importantly, it has given me the confidence to try different things I thought I was no longer capable of, such as competitive squash. It [the program] has been a great experience and has changed my outlook on life.

Another reason for adhering was the positive influence of "social support" received during the program. The social support strategies supplied within the counselling sessions may have prompted these people to seek out and engage the support of other people. Participants may have become more aware of the value of social support and the role it can play in helping them maintain regular exercise.

The influence of "regular measurements" of fitness parameters, taken during the counselling sessions, was cited as another cause of adherence. This was a formal component of the specialised program that complemented the goal setting process and provided important feedback to the participants.

Further responses from the treatment group adherers revealed a sense of improved mastery over exercise. These responses provided a different type of rationale for adhering to a program. These reasons imply that an increased understanding of motivation and reasoning for exercise had developed. The responses that indicate these developments included "a realisation of progress," "a sense of achievement after exercise," "an enhanced sense of control over exercise," "a feeling of well being from being fit," "learning more about my reasoning for exercise," and "a realisation of a change of lifestyle." Certainly, the person-oriented strategies Blue and Conrad (1995) recommended, and used within this specialised

program, seem to have improved the sense of personal control for these adherers. These participants were also able to identify internal characteristics or changes that helped lead to ongoing exercise adherence:

> Participant number 19: The program helped me learn about my reasoning for exercising and led to the recognition that I needed to change my lifestyle.
>
> Participant number 24: A heightened degree of self-motivation developed. Enjoyment was increased through a structured process with goals and regular monitoring.

There were other interesting responses from the group that related to the more immediate benefits of exercise. Examples of this type of response were that adherence occurred because exercise was a "diversion from work." The premise of this statement is that a diversion from work helps to re-energise the person and improve work quality. The diversion from work experienced during exercise had a positive, healthy impact. Another experiential cause for one person's adherence was that the exercise session acted as a vehicle for "stress reduction." For this person, regular exercise appears to have become a behaviour that helped him or her manage their stress.

Two individuals raised powerful emotive issues as causes for their ongoing adherence. "Fear of failure" was cited as a motivational factor for one person and "guilt over past non-adherence" was stated by the other individual. The avoidance of negative outcomes motivated these people.

One response from a participant in this group was that adherence resulted because there was "available time at work for exercise." It seems that many others in the group would disagree with this opinion, intimating that they had to struggle to make time for exercise.

Table 3

Responses from the Eight Adherers in the Control Group to the Question: Why Did You Adhere to the Program?

Reason	Number of Responses
To maintain or improve fitness	5
To lose weight	4
To complement sporting activity	3
Enjoyment	2
To look good	1
To offset family history of disease	1
To plan for retirement	1
To maintain the habit of exercise	1
To feel better during the work day	1
To experience solitude and relaxation through exercise	1

Control Group Adherence

Most of the control group adherers attributed their outcome to reasons that were result-oriented. To "improve fitness," "lose weight," and to "complement a sporting activity" were prominent reasons that would appear to indicate that these participants saw exercise as a means to an end. Other result-oriented reasons were "to look good," "to plan for a retirement lifestyle," and "to offset a family history of disease." Some other responses indicated the importance of the exercise experience in helping to maintain adherence. These reasons included "enjoyment," "experiencing solitude and relaxation through exercise," and "feeling

better during the work day." These latter responses highlight the importance of the spontaneous exercise experience in increasing and maintaining exercise adherence for some people. The benefits focused upon within this reasoning are internal and experiential as compared to the external benefits derived from the more common "means to an end" responses, such "weight loss" and "looking good."

The control group adherers did not refer to commitment as a reason for their program outcome, neither was there recognition of changed behaviour or motivation during the program. This group of people may not have required any specialised strategies to adhere. Their apparent high self-motivation may be a transferable behaviour for them. They may be highly self-motivated in most areas of their lives.

Most of the control group adherers did not believe that the content of the facility program influenced their adherence. In contrast, many of the treatment group adherers identified components of the specialised program as having a positive influence on their exercise adherence.

The Reasons for Nonadherence

The nonadherers in both groups were initially asked: Why didn't you adhere to the program?

Table 4

Responses from the 11 Nonadherers in the Treatment Group to the Question: Why Didn't You Adhere to the Program?

Reason	Number of Responses
Excessive work demands	5
Interrupted by work-travel commitments	4
A lack of time	3
Interrupted by home/family commitments	3
Lost momentum with the program	3
Stressed and distracted by personal issues	2
Laziness	1
Interrupted by injury	1
Interrupted by a job transfer	1
Interrupted by a gas/shower breakdown	1
A lack of social support	1

Treatment Group Nonadherence

The treatment group nonadherers said that their inability to adhere was linked to external factors. Reasons such as "excessive work demands," "a lack of time," and "being interrupted by work-related travel or home commitments" were typical responses. The only reasons that indicated some degree of personal responsibility were "laziness," "lost momentum with the program," and being "stressed and distracted by personal issues."

Even though some participants in this group used "a lack of time" as a reason, the number of people stating this reason was lower than the levels reported in previous exercise adherence research. The program strategies provided within the specialised program identified the time available for exercise for each participant. Subsequently, the people in the treatment group may have been able to identify and manage their time availability more effectively.

Many of the individuals in this group stated they were satisfied with the program despite their eventual nonadherence. In these cases, relapse was said to have occurred as a result of a particular event or influence as shown by the following responses:

> Participant number 4: Work or personal issues would disrupt the program and this would set in train a relapse.
>
> Participant number 7: The biggest single motivational influence was the personal commitment made to the counsellor. When travelling, the lack of routine meant that there were limited chances to exercise. I don't expect to exercise when travelling.

Because this sub-group responded with many negative external factors, CFPs may require the inclusion of features aimed at increasing the level of internal locus of control, in order to minimise subsequent relapses. Future research that includes the measurement of locus of control and its effect on exercise adherence should prove fruitful.

Others reasons for nonadherence stated among this group were "an interruption due to injury," "a lack of social support," and a "two week gas breakdown across the State of Victoria." During the time of the study, a major gas pipeline to Melbourne was damaged, leaving the city without gas supply for two weeks. The gas breakdown led to hot water restrictions in the on-site facility change rooms.

Table 5

Responses from the 23 Nonadherers in the Control Group to the Question: Why Didn't You Adhere to the Program?

Reason	Number of Responses
A lack of time	14
Excessive work demands	9
Interrupted by taking a holiday	5
Interrupted by illness	5
Interrupted by a job transfer	5
Interrupted by home/family commitments	4
A loss of momentum with the program	4
Interrupted by work related travel	3
Interrupted by injury	3
A lack of variety within the program	3
A lack of social support	2
A lack of parking	1
A lack of locker availability	1
Interrupted by moving house	1
Interrupted by a gas/shower breakdown	1
Social pressure to adhere	1
A lack of results	1
Didn't want to exercise with work colleagues	1
Laziness	1
Interrupted by stress from personal issues	1

Control Group Nonadherence

The dominant reason for nonadherence given by those in the control group was a "lack of time" for exercise. This finding falls in line with the results gathered in past research and lends support to the contention by Shepherd (1988) and others that "a lack of time" is the most common reason for not adhering to exercise. The proportion of control group nonadherers who attributed their outcome to a lack of time was much greater than that of the treatment group nonadherers, by a ratio of 2.2:1.

Two typical responses from control group nonadherers follow:

> Participant number 36: I didn't adhere to the program because of time constraints. There is a need to fit exercise around appointments and other people's time commitments.
>
> Participant number 41: Time was limited, and I broke from the program for a short period.

Comparatively, the large number of nonadherers in the control group attributing their failure to adhere to "a lack of time" may be directly related to program content. The facility-based fitness program may not have been as effective in helping participants identify the opportunities for exercise within their busy schedule. Conversely, the specialised fitness program may have been more successful in revealing the time available for exercise.

The other prominent reason for nonadherence across the control group was "excessive work demands." Nine of the control group nonadherers said that an excessive workload contributed to their failure to complete the exercise program. These people indicated that an excessive workload limited their time available for exercise, linking two of the main reasons for nonadherence.

The time constraints within the weekly routine of these executives, coupled with their constant heavy work commitments, led to an ongoing struggle to fit regular exercise into their

personal and work related schedules. This outcome may indicate that there is an absence of strategies to combat these trends within the traditional on-site program.

Many other reasons were given for nonadherence, even though personal responsibility was scarcely acknowledged. Two responses, "laziness" and "didn't want to exercise with work colleagues" were the exceptions. Like the treatment group nonadherers, this group attributed nearly all of their reasoning to external factors. The reasons included personal time issues such as "interruptions caused by taking a holiday" and "interrupted by home/family commitments," "program impeded due to the onset of illness and injury," workplace influences such as "interrupted by a job transfer" and "interrupted by work-related travel" and program factors such as "a loss of momentum with the program" and "a lack of variety with the program."

In some individual cases, the access to the fitness facility was interrupted, and it was claimed that this factor led to a relapse. Examples included "a lack of parking at head office," "no locker availability," and "the gas supply breakdown". These reasons imply a heavy reliance, by these people, on using the on-site facility to maintain regular involvement in exercise.

"Illness and injury" were stated as reasons for nonadherence. The typical response was that these events stopped the routine of exercising and caused a decline in fitness levels. The lack of relapse prevention strategies in the control groups' program would have jeopardised program maintenance as a consequence of illness and/or injury. Control group program design may not have allowed for the maintenance of exercise and a faster return to the normal program after illness or injury.

"A loss of momentum with the program" was a prominent cause for relapse by executives in the control group. Interruptions through illness, injury, travel, workload, boredom with the program, and dissatisfaction with results are just some of the factors that

can break the momentum referred to in this instance. There may be many reasons for this type of response. The responses indicate that the control group programs were lacking adequate features, such as relapse prevention strategies, social support strategies, selection of activities based on enjoyment, travel programs, and regular goal setting and monitoring by an instructor.

The "time taken to fulfil home and family commitments" was said to impede exercise adherence. For example, the time available to exercise after work was often challenged by a desire to spend that time at home with the family. This problem may have been addressed by advising the participants to be less rigid with their program duration and to allow themselves some flexibility regarding the duration of exercise sessions. For example, to exercise for a shorter duration after work, would still provide worthwhile benefits while also allowing time for home and family commitments. To include exercise options specifically for the weekends and holidays would have also enabled participants to maintain regular exercise during "family time."

Two interesting reasons for nonadherence in the control group were "social pressure to adhere" and "didn't want to workout with work colleagues." These reasons reveal the influence of interaction and relationships between people in an exercise environment. Some people feel pressured by others to exercise and dislike this pressure. In a work environment, pressure would typically be produced through regular reminders and phone calls from colleagues. This pressure may have been compounded by the regular encouragement from program instructors. Individuals may stop going to the gym because of social pressure, and unfortunately, a complete relapse from all exercise can occur. Some people may not want to mix with work colleagues in an exercise environment. Other people may have social physique anxiety and may feel embarrassed in exercise clothes, or presenting themselves differently in front of others. They may not want to have others watch them as they are exercising, or they

may not want to reveal their level of physical fitness. For example, some executives will feel comfortable exercising next to junior staff, others will not. This consideration is important for all CFPs, and warrants serious attention in programming for all individuals, and specifically for executive personnel. It may be that exercise options away from the on-site program need to be available for these people. If the provision of exercise options away from the work environment helps to enhance exercise adherence, these executives may eventually feel more confident about their physicality and may consider exercising at the on-site facility in the future. Another form of social pressure was observed with one participant who struggled to avoid pressure from work peers who were encouraging her to miss her exercise schedule and have lunch with them.

> Participant number 42: There was social pressure to go to lunch with my colleagues rather than exercise.

The remedy in this situation could be to ask the colleagues if they could meet regularly at another time or on another day, so that her time for exercise can be preserved and the others are made aware of her exercise commitment and can plan future lunches accordingly.

Program Features that Influenced Outcome

After being asked why they did or did not adhere to their program, all participants from both groups were asked to nominate the program features that influenced their program outcome.

Table 6

Responses from the 24 Adherers in the Treatment Group to the Question: What Program Features Influenced the Outcome?

Influential Feature	Number of Responses
Goal setting	21
Program adjustments	17
Social support strategies	15
Provision of a home report	14
Regular measurements	12
Use of an exercise diary	11
Relapse prevention strategies	9
Travel exercise program	7
Home exercise program	2
Overall structure of the program	2
Positive reinforcement and encouragement from counsellor	1
Access to the on-site gymnasium	1

Program Features that Influenced the Treatment Group Adherers

Those who adhered to the treatment group program, in combination, nominated thirteen different program features as being influential to their outcome. Most of the features, included as a part of the specialised program, were acknowledged as being influential. These executives displayed considerable certainty in identifying the influential features of their programs. They were also aware of the importance of the personal delivery of these features within the counselling sessions and their subsequent effectiveness.

Nearly all of the treatment group adherers (n = 24) identified goal setting as an influential program feature. Goal setting was seen as a means of providing a time frame for progress. This feature was judged to be important in establishing a realistic vision for the individual concerning one's fitness levels and other important outcomes. Goals would typically be based on anticipated improvements in exercise sessions and fitness parameters. Wankel (1993), however, described a broader focus for goal setting within exercise prescription by stating that non-health related goals, such as developing social relationships, releasing competitive drive, and developing recreational skills may also be important in facilitating continual adherence. Some of these non-health related goals were set for some of the executives in this group, and contributed to the effectiveness of their goal setting process and program outcome.

There was strong acknowledgement of the influence of regular program adjustments. The effectiveness of initial instruction and periodic ongoing adjustments to individuals' programs were deemed important. That adjustments could be made every two months was seen as a big advantage, giving the program a degree of continuity and variety it may have otherwise lacked.

The majority (n = 15) of treatment group adherers acknowledged the positive influence of the social support strategies. This program feature is designed to enhance relationship fostering, a process contained in the transtheoretical model. The following response illustrates the value of social support as an integral part of the exercise experience:

> Participant number 23: The support of my exercise partner [wife] and the enjoyment of walking with her regularly were most influential in having me adhere. It also gave us valuable time together.

Many treatment group adherers (n = 14) considered the provision of a home progress report a beneficial component of the program. Executives in this group said that the reports provided a

timely reminder of their involvement in the program as well as helping them remain focused on their progress and goals while they were away from the work environment. Another feature that acted as a force for sustaining progress was the exercise diary. Eleven executives in this group identified the diary as being influential to their successful outcome, stating that it enhanced their sense of accomplishment and subsequently increased their commitment to the exercise program. The regular measurements were judged to have provided a valuable and tangible tracking of progress and formed an important part of sustaining the overall goal setting process. The measurements related to each individual's percentage body fat, weight, and tape measurements of the arm, waist, hip and thigh circumferences.

Relapse prevention strategies were identified as being effective by nine of the executives in this group. These strategies were viewed as helping to offset injury and other potential causes of program interruption. The following two examples highlight an appreciation of the relapse prevention strategies:

> Participant number 11: The advised massage and shoe selection helped me maintain regularity.
>
> Participant number 9: The suggested program adjustments helped in the management of my achilles tendon injury which enabled me to improve my results in the longer term as well as preventing a break in the program.

The travel exercise program was also considered an important program feature by seven adherers in this group, showing that specialised exercise programs that are tailored for executives who travel interstate or overseas can help to maintain exercise adherence. For the majority of adherers in this group, a combination of program features created what some individuals called a "support process" that ultimately led to their successful outcome:

> Participant number 22: The whole process placed more focus on what I was doing. This has been the best six months of exercising I have had in the past four years.

Participant number 25: The commitment to the meeting, the diarising of sessions and the home reports were important. The home report was an effective way to bring a reminder of the program to you while being away from the work environment.

Participant number 24: A heightened degree of self-motivation developed. Enjoyment was increased through a structured process, with goals and regular monitoring.

Participant number 15: The diary was a trigger to doing it [exercise], the reports and goal setting were important and the travel program was useful.

Participant number 10: Recording the exercise on a daily basis and having measurements taken in the counselling sessions were the most motivating factors.

Even though this group of adherers identified a large range of influential program features, there were some features that were not seen as being as important to the final outcome. These included the use of email as a means of communication with the counsellor, the home exercise program, and the access to the on-site gymnasium. The email facility was only used by two executives to adjust their appointment times for counselling sessions. The lack of use of email for program support may indicate several factors. The executives concerned may not have been confident in operating email, they may have disassociated the exercise program from email use, or they may have forgotten about this option once they were in their office environments. The home exercise program may not have been required by some of these adherers, or it may not have been as appealing as other activity options at work or at other venues. Access to the on-site gymnasium was only reported by one executive as being influential to the program outcome. This result may infer that access to a workplace fitness facility is not necessarily required to produce ongoing exercise adherence among corporate executives. It may also mean that the more specific features in the specialised program may overshadow the importance of having access to the fitness facility.

A theme that pervaded through many of the responses from this group was the importance of the personalised approach from the counsellor. Although most of the independent program features were well recognised, the personal delivery of these strategies during the counselling sessions added a powerful component to the specialised program. Some executives were mindful of this influence:

> Participant number 16: The personalised follow-ups were very meaningful. The goal setting, home report, and travel program were helpful but my personal commitment to the counsellor was increased during the program.

Wankel (1993) previously highlighted the importance of the client-counsellor relationship, stating that good communication between the program leader and participant, and the demonstration of genuine interest in each participant are important to the success of any exercise program. More recently, Petitpas (1999) claimed that the success of exercise programming is definitely influenced by the nature and quality of the counselling provided to the client. The findings of this study support the claim that the client-counsellor relationship is a major component of exercise prescription and can positively influence exercise adherence.

Table 7

Responses from the Eight Adherers in the Control Group to the Question: What Program Features Influenced the Outcome?

Influential Feature	Number of Responses
Access to the on-site gymnasium	5
Goal setting	4
Program adjustments	3
Recording exercise sessions on the program card	3
The variety of activities	2
Social support	2
The variety of equipment and facilities at the gym	2
Monitoring of progress through regular measurements	1

Program Features that Influenced the Control Group Adherers

In contrast to the treatment group adherer's responses to this question, the control group adherers identified program features that were not dependent on personal contact with an instructor or the development of any ongoing counselling relationship with an instructor. Even though there was an opportunity to engage in regular contact with the instructors, the most influential program features for this group were non-personal and included access to the on-site facility, the variety of activities at the gymnasium and the variety of equipment and facilities at the gymnasium. Half of the group nominated goal setting as being influential to their outcome. Only one of these executives, however, opted for the follow-up fitness evaluation and developed his goals in liaison with the on-site instructors. The other three people established program goals by themselves. Even though social support and keeping a record of exercise on a gymnasium program card were seen as influential by some, they were not formal components of the program. The only features that included definite personal

monitoring from instructors were the program adjustments and the option of a three-monthly fitness assessment and measurement. Some of these respondents offered the following criticisms of the limited role the gymnasium program had played in helping them adhere.

> Participant number 30: The content of the gymnasium program didn't have any influence on my involvement. I was influenced by my involvement in sports.
>
> Participant number 35: I didn't ask for or receive any advice through the gymnasium program at work. Having a goal to run the marathon was the reason I adhered along with a mind set from my youth to maintain an ideal weight.

Even though the data collected from this group indicated an absence of regular personal contact and influence from an instructor, some respondents expressed their appreciation of social support from other sources.

> Participant number 30: The social interaction provided through my involvement in sport … was a reason for my adherence.
>
> Participant number 31: Exchanging ideas with a social set in the gymnasium was beneficial and helped with my adherence.

The responses generally exposed a high level of self-motivation by the adherers in the control group. Many in this group may well have adhered to regular exercise irrespective of the program that was set for them.

Table 8

Responses from the 11 Nonadherers in the Treatment Group to the Question: What Program Features Influenced the Outcome?

Influential Feature	Number of Responses
None	8
Lack of social support	1
Lack of monitoring	1
Program made me feel guilty	1

Program Features that Influenced the Treatment Group Nonadherers

The great majority of treatment group nonadherers stated that there were no program features that were directly responsible for their failure to adhere. Many of these people expressed satisfaction with at least a part of the program but were still unable to adhere, as indicated in these responses:

> Participant number 8: When I was travelling overseas I found it hard [to exercise] because I was away from the gymnasium and a regular workday.
>
> Participant number 1: Social support strategies were helpful, and with another frame of mind the other features would have been more effective. I gave exercise a lower priority, and I was trying to find excuses for not doing it.
>
> Participant number 3: Initially I was doing well because of the program features, but this didn't last. I believe I needed to be monitored more closely.
>
> Participant number 5: The diary and report sheet were cues to action. The recognition of achievement was a positive reinforcement and helped motivate me. The program

adjustments also helped me maintain some regularity, but ultimately I could not maintain regularity with my exercise.

Only three treatment group nonadherers gave program related reasons for their nonadherence to exercise. The other respondents indicated that they were more likely to accept their non-adherence as a behavioural response that needed to be modified.

For one individual the substantive reason for nonadherence was based upon a progressive sense of thoroughness of the program and the subsequent guilt experienced as a result of not adhering to what was seen as a thoroughly organised and well-administered program.

Participant number 2: The whole process kept focus on what I should be doing. In this way it made me feel guilty because I wasn't regular.

This reason is not unlike the one offered by the control group participant who reported being made to feel uncomfortable by the social pressure to adhere. In both cases, the approaches taken to monitoring and support resulted in a "turned off" response. The sense of guilt for this individual may come from a type of social pressure, stemming from a perception of failing to please the counsellor. This response could be an example of identification, as referred to by Kelman (1958), which is where a person follows a behaviour regimen to please or be like a counsellor or to be part of a group. When relapse occurred for this participant, a sense of guilt was felt during and after the counselling appointments. To address this problem, the counselling in the specialised format may have needed to be less demanding and more flexible in relation to the expected exercise regime, so that the perceived expectations and anxiety of this person could be reduced. Counsellors may need to be aware of the likelihood of this reaction from some people, and be ready to adjust their approach accordingly.

Table 9

Responses from the 23 Nonadherers in the Control Group to the Question: What Program Features Influenced the Outcome?

Influential Feature	Number of Responses
None	8
A lack of good instruction	5
No prompting from the gym staff	4
A lack of convenient access to the facility	4
A lack of program variety	3
A lack of social support	1
Insufficient operating hours of the on-site gymnasium	1
The gymnasium was too crowded	1

Program Features that Influenced the Control Group Nonadherers

The majority of control group nonadherers stated that at least one or more program features were influential or a direct cause for their failure to adhere. Reasons offered were based on practical elements of the on-site facility such as, "lack of convenient access," "insufficient hours of operation," and "the gymnasium was too crowded." Additional reasons were focused on the inadequacies of the program content, such as, "lack of good instruction," "no prompting from gym staff," "lack of program variety," and "lack of social support." Specific examples offered by participants were:

> Participant number 37: There was no parking at certain times, no locker availability, I didn't want to work-out with my work colleagues, the gym was over-crowded at

times, and some instructors did not appear to have appropriate knowledge and didn't offer enough attention.

Participant number 51: There were no tangible, visible results so my motivation gradually dropped. I felt the program didn't offer enough detailed analysis and advice.

Participant number 43: I found the program tedious at times and the combined demands of work and children at home limited my ability to exercise regularly.

Participant number 52: There wasn't a lot of motivational support from within the gym. There was a lack of realistic objectives being set by the instructors.

Participant number 53: I felt the program lacked good instruction, there was no prompting, the operating hours were restrictive and there was a lack of social support.

Social pressure to adhere was again noted by one of the control group nonadherers. In this person's case, a high frequency exercise routine became uninteresting and the continual encouragement from peers to maintain the routine was ultimately de-motivating.

Participant number 38: I got sick of the high frequency and routine of the program and the social pressure to exercise may have also been de-motivating at this time.

The control group nonadherers identified a range of program features that contributed to their nonadherence. This finding is supported by Bungum, Orsak, and Chng (1997) who found that nonadherers were more likely to perceive barriers to program participation. The belief that the program needed to be altered, rather than a modification of their behaviour, seemed to be pervasive among the control group nonadherers.

A perceived program inadequacy for the control group was the lack of guidance for exercise opportunities outside of the on-site facility. Many of the treatment group participants were encouraged to exercise away from the facility through the use of travel and home exercise programs. The control group program, however, did not provide for this sort of support and guidance. Bungum et al. (1997) reported that 16% of respondents in a worksite

wellness program stated that they preferred to exercise at a place other than the on-site program. There may be a multitude of reasons for this preference. These individuals may not enjoy particular components of the on-site program; they may be uncomfortable exercising in front of work colleagues, or they might find it difficult or inconvenient to get to the on-site facility at a time that suits them. It seems that there will always be some on-site program attendees who will want to have the option to exercise away from the work environment. The control group program made no allowances for this factor, and as a result, participants who might have otherwise committed to an exercise routine, at a time and place of their choice, were turned off the facility-based program. They had no other plan for their exercise and subsequently relapsed.

CHAPTER V

CRITIQUE AND CONCLUSIONS

Conclusions

Both the quantitative and qualitative findings of this study provided strong evidence regarding the effectiveness of specialised exercise programming for corporate executives. The key conclusion derived from the quantitative results is that specialised exercise programming for executives is more likely to enhance exercise adherence over a six-month period, as compared to the traditional facility-based exercise program. The outcome of the quantitative data supported the research hypothesis.

The quantitative results of this study support the use of the transtheoretical stages of change model in designing exercise interventions in a CFP setting and in adopting the PAQ instrument as a measure of behavioural change and exercise adherence. For example, any CFP should be designed with stages of change assessment built in at the beginning and at some later pre-determined time to establish whether the program was effective in moving people toward more permanent and healthy changes in their lives. The use of the model provided a worthwhile conceptual base for the design and implementation of the specialised program and helped to avoid the inadequacies of self-reported attendance data, a design weakness often referred to in the literature. The results obtained in this study could be compared with other studies that have used the transtheoretical model in their design and the PAQ as a measurement instrument. These results support the findings of recent studies (Marcus et al., 1997; Long et al., 1996) that revealed the value of adapting the transtheoretical model to an exercise-counselling format.

The success of the specialised program revealed the value of using multiple strategies in exercise programming, as has been recommended in the literature (Stoffelmayr et al., 1992; Blue & Conrad, 1995). Qualitative findings demonstrated that adherers

acknowledged the positive influence of multiple program features and that the combination of these program features led to longer-term adherence.

The results of this study indicate that specialised fitness programming for executives within a CFP increases the likelihood of exercise adherence and longer-term involvement of management. The active involvement of management in a CFP is reported to enhance the viability of the CFP. It can be concluded that the provision of a specialised fitness program for executives within a CFP will help to enhance the viability of the CFP.

The quantitative results of the study support the contention that traditional facility-based CFPs do not sustain a high exercise adherence rate among executive personnel. The low exercise adherence level recorded by the control group in this study highlights the need to alter exercise programming within traditional facility-based CFPs so that increased exercise adherence rates and improved program effectiveness can be achieved.

The qualitative data revealed the importance of the client-counsellor relationship in constructing and maintaining a successful ongoing exercise program. The responses from the participants who received regular counselling, as a part of their specialised program, confirmed this influence. Individuals reported a sense of commitment to the counsellor and an appreciation of the positive influence that resulted from regular scheduled meetings with the counsellor. The results of this study support the claim that the client-counsellor relationship is central to the success of exercise prescription and counselling (Griffin, 1998; Petitpas, 1999). It is also evident that the specialised program used in this study provided an opportunity to establish an effective client-counsellor relationship.

This study demonstrated the combined influence of the specialised program content and the service delivery from the counsellor. An undeniable part of the counsellor's input is determined by personality. Some of the recent literature on effective exercise counselling (Griffin 1998; Petitpas, 1999) outlines the value of disclosing part of yourself in order to

obtain trust and form a working alliance with the client. It may be concluded that the delivery of counselling, including the counsellor's personality, may be regarded as a part of the overall program.

The specialised program was found to enhance participants' control over their exercise programs. The counselling process often contributed to the development of a sense of responsibility for the program. The multiple strategies used in the specialised program such as, goal setting, regular program adjustments, social support, and relapse prevention are features that were mutually agreed upon by the participant and counsellor. This process creates a greater sense of control for the participant, an offering that was noticeably absent in the traditional exercise-programming model.

The specialised program provided an opportunity for the participants to become more aware of the internal and spontaneous benefits of regular exercise. These people were not as result driven in their focus, but were happy to enjoy exercise "in the moment" and recognise the influence it had on their quality of life, both at work and away from work. The counselling process offered them an opportunity to reflect upon and discuss these benefits. More monitoring provided more feedback regarding the improvements they were making through the exercise program. There was also a common tendency for these people to become progressively more knowledgeable regarding the program features and the value they offered. It can be concluded that a specialised exercise program for executives will help the participant develop a better understanding of program features and a broader appreciation of the benefits derived from the program.

The control group participants that adhered to their program did not seem to require personal interaction with their program instructors. They were focussed on attaining a tangible result from their program and were mostly self-motivated in completing these tasks. Many of the nonadherers in the control group were critical of the lack of personal support

they received from their program. It can be concluded that the traditional facility-based program does not provide adequate personal support to participants and that this type of program will function best only for those who are self-motivated.

It is worth considering that the differences in "reasons for adherence" between the treatment group and the control group may reflect both demand characteristics and actual differences. It is impossible to determine which of these characteristics contribute to exercise adherence.

Implications of the Study

The findings of the study indicate a need for a specialised approach to fitness programming for executive personnel, rather than a "one program suits all" approach. The positive influence of features within the specialised program, such as regular goal setting, program adjustments and the travel program clearly imply a need to provide a more specific form of programming to ensure a higher participation rate among executives.

One limitation of the specialised program used in this study was the time consumption and labour intensive elements of the program. The time and effort required to schedule and conduct counselling sessions for all of the treatment group participants was considerable. This outcome implies the need for future program managers to make use of improved communication technologies, and in particular, the email in order to handle these commitments efficiently. It also implies that corporations should hire an increased number of fitness professional staff to be able to fulfil these duties. A cost-benefit analysis of the implementation of a specialised program would be a worthwhile preliminary exercise.

If corporate organisations are prepared to make large financial commitments to CFPs, regular evaluation of such programs is essential. The results of this study imply a need for widespread evaluation and change for many CFPs. The findings suggest that the monitoring and other features provided within the specialised program should become central features of

any future CFP. Program managers should also be responsible for ongoing evaluation of programming initiatives and the subsequent exercise adherence outcomes for participants.

The low level of adherence to the traditional facility-based fitness program in this study implies that some other existing on-site corporate fitness programs, based on a similar content, would expect low adherence rates for executives. High adherence to the programs among executive personnel is undoubtedly a corporate goal. This study implies that the traditional methods of programming for some CFPs may not be effective in producing high exercise adherence levels for corporate executives.

A popular alternative form of corporate fitness programming is the provision of subsidised memberships to external gymnasium facilities. The effectiveness and value of such programs may also be questionable, because many of these programs are based on the services and features that exist in traditional on-site programs. Even though this approach offers flexibility and convenience for the individual, the content of the programs may lack some of the valuable features that existed in the specialised program. Corporate organisations may need to re-evaluate the effectiveness of subsidised gymnasium memberships for their executives.

This study also sheds light on behavioural change in association with exercise adherence. Many previous studies in this domain have used fitness measures, such as oxygen uptake testing, as measures of adherence. The measure of adherence in this study was based on a measure of behavioural change in accordance with an established PAQ. Treatment intervention was developed in accordance with a behavioural change theory, namely, the transtheoretical model. To assess exercise adherence, a measurement of behavioural change was used in preference to the measurement of fitness parameters or the use of self-reported attendance records. The successful application of the transtheoretical model in this study implies that future exercise adherence researchers can utilize this model with confidence.

In future research, there are also other methods of measurement that could be used. For example, electronic scanning of fitness facility cards, accelerometers and observer records could be employed as additional methods of measurement.

Adherence levels for CFPs may be further enhanced by using a suitable instruction protocol through the email. Even though the use of email in this study was virtually non-existent, there is an enormous opportunity for CFPs to modify and improve the normal operations and promotion of their programs through the use of this technology. Email is a tool that enables the program instructors to be in regular contact with large numbers of participants. Regular newsletters, fitness assessment reports, and fitness program updates, could be efficiently sent to single or multiple recipients by email. Communication can be maintained with people at the office, at home, or with those who are travelling. This type of change in programming will require a shift in thinking and action in relation to program design and delivery, however, the implementation of the necessary technology is currently taking place on a broad scale.

The introduction and maintenance of specialised programming in future CFPs will require the skill of adequately trained professionals. This prospect implies that universities offering undergraduate courses in physical education and fitness instruction should include appropriate content in exercise psychology and counselling training to ensure that graduates are educated in the basics of multi-model exercise counselling and have an initial awareness of the skills required to deliver such a service. A knowledge in and application of various technologies in the gymnasium setting could also be covered at this level of education. Facility management should provide gymnasium instructors with mandatory training update courses in exercise counselling and the use of technological tools that can increase the effectiveness of specialised fitness programs. The refinement of the exercise counsellor's skill

in a CFP setting could be further enhanced by regular meetings with other counsellors (a form of collegial supervision) in order to exchange feedback regarding specific issues of concern.

To implement a specialised fitness program for executives, the people responsible for the co-ordination of program funding need to understand the rationale for adopting a specialised program. In most corporate organisations, human resource managers would be responsible for CFP co-ordination. Human resource managers need to understand the value of specialised fitness programs both for their organisation and for executive personnel. This study implies that human resource managers need to be better informed about the effectiveness of specialised fitness programs for executives. It may be worthwhile for universities and corporate organisations to include this component in the formal training of human resources students and staff.

There is a current challenge for the managements of many corporate organisations to identify and implement an effective executive fitness program. The results of this study may help guide and add impetus to the future development of effective CFPs.

Recommendations for Further Study

It would be worthwhile exploring the effectiveness of a specialised program on exercise adherence for other segments of the community, such as, the elderly, children, women in the home setting, blue-collar workers, university students, and disabled people. Additionally, the protocol for the program in this study could be examined in other existing fitness settings, such as commercial and public sector programs.

The emergence of the Internet and email has improved communication technology in the workplace. An investigation into the use of these technologies in the CFP setting is recommended. An undertaking of this nature may identify the most effective means of using these technologies to increase in program participation.

Many of the nonadherers in this study cited external factors as reasons for their failure to adhere to regular exercise. Future CFPs may require the inclusion of features aimed at increasing the participants' internal locus of control, in order to minimise relapses. In this regard, future research that includes the measurement of locus of control and its effect on exercise adherence should prove fruitful.

Finally, the effectiveness of the specialised fitness program for corporate executives should be examined on a larger scale. A study with a similar design to this study could be conducted using a larger sample of executives. There may also be some worth in combining executives from multiple CFPs in this sample. A larger scale study of this type will help to identify the strengths and weaknesses of the transtheoretical model in its application to research design, measures, and interventions and will further advance an understanding of the specialised fitness program and its worth in a CFP setting.

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APPENDIX A

PHYSICAL ACTIVITY QUESTIONNAIRE

PHYSICAL ACTIVITY QUESTIONNAIRE

NAME: _____

Please read the entire form and then choose the number that best describes your current level of physical activity or your interest in physical activity.

Note: Regular exercise is defined as any activity that raises your heart rate and respiration for a period of 20 minutes or longer, 3 or more times per week.

1. I currently do not exercise, and I do not intend to start exercising in the next 6 months.

2. I currently do not exercise, but I am thinking about starting to exercise in the next 6 months.

3. I currently exercise some, but not regularly.

4. I currently exercise regularly, but I have only begun doing so within the last 6 months.

5. I currently exercise regularly, and have done so for longer than 6 months.

APPENDIX B

RECRUITMENT LETTER

15th April, 1998.

Dear Sir / Madam,

Between May and November 1998, I will be conducting a study for a Masters of Applied Science degree at Victoria University of Technology. The study is planned to take place at the Coles Myer Fitness Centre and would require the participation of executive personnel. The general aim of the study will be to examine the effectiveness of a specialised fitness program in increasing exercise adherence of corporate executives.

Participants will be randomly divided into a control group and treatment group. Those in the control group would be provided with an initial fitness assessment, a fitness program to be used in the company fitness centre and the option of quarterly re-assessment consultations. Those in the treatment group would receive an initial fitness assessment, a fitness program for use at the company fitness centre and other components of a specialised program. Part of the specialised programming includes attendance at a private 15-20 minute assessment consultation at the beginning and after two and four months of following the program. Participants in both groups will be asked to initial their program cards or training diaries and have a third party do the same after each exercise session. All participants will be required to complete a short physical activity questionnaire after six months of following their respective programs. The only potential risk that exists for participants is the normal physical risk of injury that usually applies when exercise is undertaken.

If you have commenced a fitness program at the company fitness centre in the past six months or are intending to commence soon, you are eligible to take part in this study. Personal confidentiality is assured and the study design has passed Victoria University of Technology ethical guidelines.

The study will help improve the understanding of exercise adherence in the corporate environment and will ultimately help to improve the quality of programming within corporate fitness programs.

To achieve significant results it is important that an adequate number of executive personnel take part in the study. If you are willing to participate in the study, please read and sign the following consent form and return it to Alan Veitch, Fitness Centre Manager, B2. I am happy to provide further details regarding the study and may be contacted on 9866 4911.

Yours sincerely,

Craig Knox.

(Researcher)

APPENDIX C

PARTICIPANT CONSENT FORM

Participant Consent Form

I _____ (Print Name)

of _____(Address)

certify that I voluntarily give my consent to participate in the experiment entitled:
The Effect of Specialised Programming on the Exercise Adherence of Corporate Executives, being conducted at Victoria University of Technology by: Mr Craig Knox, Dr Vance Tammen (Supervisor) and Professor Terry Seedsman (Co-Supervisor).

I certify that the objectives of the experiment, together with any risks to me associated with the procedures listed hereunder to be carried out in the experiment, have been fully explained to me by Mr Craig Knox and that I freely consent to participation involving the use on me of these procedures.

Procedures:

The procedures used will be fitness assessment, and exercise prescription for all participants and the provision of a further three counselling sessions that will contain elements of the specialised program for those participants in the treatment group. All participants will be required to answer the physical activity questionnaire (PAQ) at the completion of the six-month program and return it to the Fitness Centre Manager via the company internal mail system.

I certify that I have had the opportunity to have any questions answered and that I understand that I can withdraw from this experiment at any time and that this withdrawal will not jeopardise me in any way.

I have been informed that the information I provide will be kept confidential.

Signed: _____

Witness other than the experimenter: Date: _____

_____

Any queries about your participation in this project may be directed to the researcher (Mr Craig Knox, ph: 9866 4911). 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 (9688 4710).

APPENDIX D

HOME EXERCISE PROGRAM

HOME EXERCISE PROGRAM:

(Weight) (Repetitions)

Arm Circles
Twisting
Side Bends
Half Squats

Dumbell Front Raises

Dumbell Clean & Press

Abdominal Curls

Abdominal Bent Legs to Side

Double Leg Side Raises

Push Ups

Dumbell Reverse Flys

Dumbell Seated Shoulder Press

Dumbell Lunges

Dumbell Curls

Jogging on Spot

Dumbell Tricep Push Up

Dumbell Step Ups

Chest Stretch
Shoulder Stretch
Seated Hamstring Stretch
Quadricep Stretch
Lateral Back Stretch

APPENDIX E

TRAVEL EXERCISE PROGRAM

TRAVEL EXERCISE PROGRAM:

(Weight) (Reps)

Arm Circling
Twisting
Chest Stretch
Shoulder Stretch
Seated Hamstring Stretch
Quadricep Stretch

Treadmill

Dumbell Curls

Bench Press

Lat Pulldown to Rear

Leg Extension

Shoulder Press

Pec Deck

Abdominal Curls

Bike

Chest Stretch
Shoulder Stretch
Seated Hamstring Stretch
Quadricep Stretch

APPENDIX F

EXAMPLE OF HOME REPORT SHEET

Name:

Exercise Adherence Study at Coles Myer Ltd with Craig Knox.

Third Consultation Report

Regular Program:

2 x Gym sessions per week. (lunch times)
3 x morning Walks (30 minutes) per week.
1 x Tennis sessions.

Program Adjustments:

To add dumbell lateral raises and front raises to gym routine.
To include stretches before and after tennis sessions.

Goals By February.

(1) To have lifted the frequency of running.
(2) To have included the dumbell exercises as a part of regular sessions.

Social Support:

Guys at the gym.
Walking with wife.
Tennis partners

Relapse Prevention:

To avoid injury through good warm ups and cooldowns.
To keep an extra set of exercise gear in the gym locker.

APPENDIX G

COUNSELLING PROTOCOL

COUNSELLING PROTOCOL

1. Discuss and agree upon the most suitable type of program accounting for the type, intensity and duration of exercise, the venue, the time of day, the number of sessions per week and how enjoyable the exercise is.

2. Discuss and set realistic goals that relate to factors that are important to the participant. Increase the participant's sense of self-control.

3. Be sure to praise the participant for their current activity.

4. Review and make ongoing recommendations regarding the program.

5. Record relevant measurements that will provide worthwhile feedback to the participant. Eg: Fitness measures, number of sessions in a set period of time.

6. Encourage the participant to enlist the ongoing support of family and friends.

7. Provide the home and travel exercise programs, explaining the convenience that each can provide.

8. Inform the person that email may be used as a means of communication with the consultants once per month.

9. Have the participant anticipate any possible barriers or interruptions to their program and prepare them to deal with these potential causes of relapse.

10. If the participant has relapsed, encourage them to not feel guilty but to restart the activity immediately.