The Young Firelighter: Profile Characteristics and Recidivism Risk Factors

Esma Kurt

Graduate Diploma in Psychology,
Victoria University

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School of Social Sciences and Psychology Faculty of Arts,
Education and Human Development
Victoria University

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Abstract

Firelighting behaviour amongst children and adolescents poses a significant concern for the well-being of the young person and their wider communities. Often difficult to detect, young firelighters account for a fifth of the fires lit in Australia. The focus of this study was to explore the characteristics and profiles of young firelighters in an Australian sample and to determine the rate of recidivism and identify variables that may predict firelighting recidivism risk. The present research involved two separate parts. Study One involved the analysis of the Juvenile Fire Awareness and Intervention Program (JFAIP) database. A total of 661 cases were involved in this analysis with males accounting for 91.5%. The results suggest that there are significant associations between firelighting severity and age, gender, fire interest, receiving counselling, and level of planning prior to the firelighting incident. Fire interest decreased with age although fire curiosity was the most frequent motivation behind firelighting. Significant associations were also identified between age and motivation behind firelighting, actions following firelighting, and the ownership of firelighting episodes. Study Two used a prospective design and collected data at the time of first entry into the JFAIP program as well as at 12 month follow-up. A total of 40 young firelighters, 36 males and 4 females, who were a subgroup of the participants in the JFAIP, were involved in this study. These firelighters reported co-morbid psychopathology, and those with a diagnosis of an impulse control disorder and engaged in externalising behaviours were involved in more episodes of firelighting than their peers. At follow-up, 32 participants continued to be involved in the study, and a third of the young firelighters were found to have engaged in recidivist firelighting in the 12 month interval. The recidivist firelighters displayed heightened psychopathology and differences were identified between recidivist and non-recidivist firelighters on fire-specific variables. The only variable that significantly predicted firelighting recidivism was the Child Behaviour Checklist (CBCL) Internalising scales. Additionally, close to half of the participants reported ongoing fire interest at 12 month follow-up. The clinical implications of both studies emphasise the individuality and variation that exists amongst the profiles and characteristic of firelighters, and the prevalence of co-morbid psychopathology that

potentially act as triggers for firelighting and/or serves to maintain the behaviour. Furthermore, the rate of firelighting recidivism suggests that basic fire safety education is not sufficient for about a third of these young firelighters, and suggests that a multi-disciplinary approach to identify and appropriate treat these individuals may be most efficacious.Whilst externalising behaviours and symptoms allow for easier identification, the risk posed by young firelighters who present with internalising symptoms may go undetected. Therefore, the implementation of a valid and reliable screening tool, administered when a child enters the JFAIP program, which accurately identifies and predicts future firelighting risk and informs the appropriate treatment interventions is of paramount importance.

Declaration

“I, Esma Kurt, declare that the Doctor of Psychology (Clinical) thesis entitled The Young Firelighter: Characteristics and Recidivism Risk Factors is no more than 40,000 words in length including quotes and exclusive of tables, figures, appendices, bibliography, references and footnotes. This thesis contains no material that has been submitted previously, in whole or in part, for the award of any other academic degree or diploma. Except where otherwise indicated, this thesis is my own work”.

Signature: Date:

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Table of Contents

List of Tables

List of Appendices

Chapter One: Literature Review

1.1 Young Firelighters Behaviour

Australia's bushfire-prone landscape provides the perfect backdrop for the discussion of firelighting behaviour in young children and adolescents. With an average of 52,000 bushfires occurring annually as reported by The Australian Institute of Criminology (2008) and an estimated 50 percent of these being intentionally lit ("Australian Institute of Criminology," 2009), research into firelighting and arson is of paramount importance. The boundaries of urban versus rural living are becoming blurred as the metropolitan expands, and the bush becomes closer.

Deliberate firelighting results in high human and financial costs (Ó Ciardha & Gannon, 2012). Moreover, young firelighting behaviour poses a significant risk to the health and well-being of the young person and their communities (MacKay, et al., 2006). Young children who experiment with fire are at risk of incurring traumatic burns as they are less experienced at escaping fires or extinguishing them (MacKay, et al., 2006).

Firelighting is unusual in the sense that it is an easy crime to commit, yet difficult to detect (Hoertel, Strat, Schuster, & Limosin, 2011) and different to other delinquent acts as it does not involve direct confrontation with the victim (Raines & Foy, 1994). Only 28 percent of parents know of their child/adolescent's fire involvement (Del Bove, Caprara, Pastorelli, & Paciello, 2008) and there is an under-reporting within the media (Slavkin, 2001). Furthermore, the secretive nature of the offense hinders the identification and detection of firelighters (Doley, Fineman, Fritzon, Dolan, & McEwan, 2011).

Definition of Young Firelighting Behaviour

Firelighting is an act that differs from violent and nonviolent offences (MacKay, et al., 2006). Fire deviant behaviour includes a range of behaviours that indicate inappropriate interest and fascination with fire, which can lead to firelighting and arson (Fineman, 1995), although firelighting differs from arson (Ó Ciardha & Gannon, 2012). Arson is a

legal term used to represent criminal acts that greatly differ in degree, severity, and nature. The term firelighting refers to and includes all forms of deliberate firelighting which do not necessarily result in criminal convictions, and may be addressed by appropriate agencies, including mental health professionals (Ó Ciardha & Gannon, 2012).

In the Diagnostic and Statistical Manual of Mental Disorders- Fifth Edition (DSM-5) (APA, 2013), Pyromania is described as the deliberate and purposeful setting of fire on more than one occasion. It involves affective arousal and tension before the act, and usually accompanied with fascination, interest, curiosity, and or attraction to fire and what it involves. There is a sense of gratification, pleasure and or relief following the firelighting, whether as a participant or an observer. The firelighting does not involve monetary gains, improvement of living circumstances, or concealment of a criminal activity, is not a form of ideological expression nor an expression of anger and revenge, is not in response to hallucinations or delusions, and has not occurred as a result of impaired judgment. Finally, in order to meet criteria for a diagnosis of pyromania, the firelighting is not better accounted for by conduct disorder (CD), antisocial personality disorder, or a manic episode.

Firelighting is also a criterion for the diagnosis of CD and one of 15 antisocial behaviours listed, of which repetitive and persistent engagement in any three behaviours is required for a diagnosis (APA, 2013). The strict criterion for pyromania suggests that pyromania and CD are rarely comorbid (MacKay, et al., 2006) and that firelighting alone does not warrant a diagnosis of CD, nor does a diagnosis of CD necessarily involve firelighting. Although a link between firelighting and CD has been established, minimal research has investigated the comorbidity of pyromania with CD (MacKay, et al., 2006).

Prevalence of Young Firelighters

Firelighting is relatively rare when compared to other psychiatric diagnoses such as depression and anxiety; however, the risk of harm to self and others is devastating (Chen, Arria, & Anthony, 2003). Child and adolescent firelighters account for a large

percentage of arson related offences, and the cost and damage associated with it is extensive, yet compared to other crimes committed by this age group, rates of arson remain low (Lambie & Randell, 2011).

In Australia, arson accounts for seven percent of all crimes (Mayhew, 2003) and the cost of arson remains difficult to determine (Muller, 2008; Rollings, 2008), although estimated at around $1.35b a year in 2003 (Mayhew, 2003) and later revised to $1.62b in 2008 (Rollings, 2008). In 2005, there was close to 20,000 incidents of arson Australia-wide (Rollings, 2008). Young firelighters account for 20 percent of fires lit in Australia (Dadds & Fraser, 2006), and in Western Australia, 2.3 percent of a 1,149 referrals to the outpatient child psychiatry service were firelighters (Kosky & Silburn, 1984). A quarter of arsonists who appeared before the New South Wales Courts during 2001 to 2006 were young firelighters (Muller, 2008).

General prevalence rates for young firelighters range from 6.3 percent to as high as 30 percent (Chen, et al., 2003; Del Bove, et al., 2008; MacKay, Paglia-Boak, Henderson, Marton, & Adlaf, 2009; Martin, Bergen, Richardson, Roeger, & Allison, 2004), with these figures varying based on the definitions and measures employed to operationalise firelighting (Lambie & Randell, 2011; Mackay, Feldberg, Ward, & Marton, 2012).

Research has consistently identified that males by far outnumber females in representing young firelighters (Walsh & Lambie, 2013) by around 2 to 3 times (Chen, et al., 2003; Del Bove, et al., 2008; MacKay, et al., 2009; Martin, et al., 2004). Lifetime firelighting prevalence in the US is higher for males than females (Hoertel, et al., 2011). The gender ratio does not necessarily remain stagnant throughout childhood (Walsh & Lambie, 2013) as females tend to engage in firelighting behaviour later in adolescence (Mackay, et al., 2012; McCarty & McMahon, 2005; Walsh & Lambie, 2013).

Theories of Firelighting

Firelighting is likely to be one of many maladaptive behaviours which develops in the context of both individual psychopathology and dysfunction in the family (Lambie & Randell, 2011). Severe firelighters have a higher degree of psychopathology and

dysfunction (Lambie & Randell, 2011). There are a number of different theoretical approaches to understand firelighting.

A *psychodynamic* approach to formulate an understanding of firelighting behaviour was adopted for most fire research in this area (Mackay, et al., 2012). This approach suggested fixations in the urethral-phallic phase of development, usually involving masturbation impulses, sexual problems, enuresis and firelighting (Walsh & Lambie, 2013). In contrast, Fineman (1995) proposed the *dynamic-behavioural* model of firelighting behaviour. He explained that firelighters' dynamic historical factors predisposed them to an array of antisocial and maladaptive behaviours. The firelighter is exposed to historical environmental factors which teach and promote the acceptance of firelighting, whilst their immediate environmental circumstances promote the act of firelighting. The *theory of social learning* contends that firelighting is due to interpersonal failures that manifest themselves in expressions of aggression and control, which are deviant in nature. Thus, a direct link is identified between inadequate social skills, modeling of aggression and firelighting (Glancy, Spiers, Pitt, & Dvoskin, 2003). In recent times, the *biopsychosocial* risk model (Kolko, Kazdin, & Day, 1996) appears to be the most comprehensive framework to make sense of the complex nature of firelighting (Mackay, et al., 2012). The individual's biological, psychological and social factors are used to formulate the onset, maintenance and severity of firelighting behaviour (Mackay, et al., 2012), as well as protective factors.

Typology of Firelighters

Research investigating characteristics of firelighters, in order to classify them, began in the 1940's and mainly focused on univariate factors rather than multivariate factors to understand firelighters (Del Bove & MacKay, 2011). The motivations behind firelighting remained a key factor when determining subtypes of firelighters (Lambie & Randell, 2011). The typology of firelighters is very diverse with firelighters acknowledged as being from varied backgrounds and with varied motives. Nevertheless, research in the field has identified a number of firelighter types who have distinct characteristics, although the extent of these is unclear (Lambie & Randell, 2011).

Fineman (1995) suggests that there are two types of firelighters: the “pathological” and the “non-pathological” type. The non-pathological type is also referred to as the ‘curious’ or ‘accidental’ firelighter. The pathological firelighters consist of the ‘cry for help’ type, ‘delinquent or antisocial’ type, the ‘severely disturbed’ type, the ‘cognitively impaired’ type, the ‘sociocultural’ type, and the ‘wildland’ type (Fineman, 1995). Williams and Clements (2007) proposed additional subtypes, which consisted of, the ‘thought disordered’, ‘thrill seeker’, ‘revenge based’, ‘compulsive’, and the ‘disordered coping’ firelighters.

The ‘curious’ firelighter is frequently under the age of ten and comprises 60% of firelighters (Fineman, 1995). Although the ‘curious’ firelighter may cause severe fires, with significant damage to property and harm to self and others, the motivation and family context of this firelighter is different from the pathological firelighter. The curious firelighter has little pathology in their background and come from intact families (Fineman, 1995). Pathological firelighters account for 40% of firelighters (Fineman, 1995). The problematic background of pathological firelighters places them at risk for maladaptive and antisocial behavior. Families of pathological firelighters are predominantly dysfunctional. Often the father is absent, or emotionally absent at least. A lack of supervision and proper fire safety education is evident. Academic and vocational difficulties, as well as emotional problems, exacerbate the significant difficulties the pathological firelighter experiences at school and with peer relationships. Adult arsonists are considered a subset of pathological firelighters and they are involved in other criminal firelighting which necessitates a malicious intent accompanied with burning the property of others (Fineman, 1995).

Slavkin (2004) investigated factors which contributed to ongoing firelighting and elaborated on the profiles of firelighters. The ‘curious’ firelighters, mostly aged between 3 and 6 years, had low levels of delinquency, pathology, and few problems in socialising or emotional expression. They were likely to be more interested in fire and had early involvement in firelighting compared to other types of young firelighters. This led to greater destructiveness and damage (Slavkin, 2004). The ‘accidental’ firelighters, aged

under 11, also had low levels of delinquency and pathology, fewer problems in socialising and expressing their emotions. Nearing significance was Race as a predictor in this US study. African Americans firelighters were more likely to be accidental firelighters than Caucasian Americans (Slavkin, 2004). The ‘cry for help’ firelighter was more likely to be female, had low levels of pathology, yet displayed problems with socialising and expressing emotions, and were more likely to be Caucasian American. Similar to the findings of Fineman (1995), these firelighters may use the lighting of fires to draw attention to the familial, and or parental dysfunction, they may be experiencing. The strongest predictor of this firelighters was the level of limited sociability (Slavkin, 2004).

The ‘delinquent’ firelighter consisted of older adolescents with low levels of pathology but high levels of delinquency, and few problems of socialising and emotional expression. They tended to have a developmental trend, beginning in preadolescence and increasing in the firelighting behaviour throughout adolescence. Although they initially exhibited empathy for others, this decreased as they became older. Greater amount of behavioral dysfunction and deviance was evident within this subtype. Contrary to other research, low levels of pathology was considered the strongest predictor of the delinquent firelighter (Slavkin, 2004). The ‘severely disturbed’ firelighters were adolescents who were identified as having low levels of delinquency and high levels of pathology. In fact, the lower the level of delinquency was, the higher the level of pathology observed. The severely disturbed firelighter was likely to be Caucasian American and displayed early signs of individual psychopathology. Low levels of delinquency was the strongest predictor of this subtype (Slavkin, 2004).

Researchers have questioned the validity of the existing subtypes of “accidental”, “curious” or “unintentional” firelighters, and have suggested a multi-risk factor model should be employed to adequately assess risk and plausibly predict recidivism (Del Bove & MacKay, 2011). Recently, Del Bove and Mackay (2011) undertook the classification of firelighters based on fire-specific and general individual and environmental variables that have been associated with the severity of firelighting and recidivism. Their findings indicate that firelighters are a diverse group, consisting of

children with normal and multiple behavioural problems, and can be separated into "conventional-limited", "home-instability-moderate" and "multi-risk-persistent" firelighters. Such a classification provides a comprehensive understanding of firelighting behaviour, an elaborate model for risk assessment and highlights targeted prevention and treatment strategies (Del Bove & MacKay, 2011).

The 'conventional-limited' firelighter is least severe with few individual and environmental risk factors. Although they would have been previously classified as the curious firelighters, in the study conducted by Mackay, et al., (2011), they demonstrated the least interest in fire. Fire curiosity should be seen as a sign of severe fire involvement and behaviour rather than a passive characteristic (Del Bove & MacKay, 2011; Kolko & Kazdin, 1991; MacKay, et al., 2006). Despite not being at risk for recidivist firelighting, the conventional-limited type firelighter was found to be different to the "non-pathological", the "accidental" or the "unintentional" firelighter (Fineman, 1995) as they had been involved in more than one fire related incident, often averaging three to four involvements. The age of onset was nine, and contact with mental health professionals occurred when they were older (Del Bove & MacKay, 2011).

The 'home-instability-moderate' type firelighter has been involved in more fire related incidents, are younger when first incident occurred, around age six, have more fire interest and have more involvement with ignition sources and targets than the 'conventional-limited' firelighter. Significantly more social, attention, and externalising behaviour difficulties were identified. The most prominent characteristic was the low level of parental involvement, increased level of maternal psychopathology, high level of exposure to abuse, and a high proportion of placements in child welfare. Risk of firelighting may be the combination of inadequate parenting and dysfunctional familial processes in addition to other biological, individual and environmental factors (Del Bove & MacKay, 2011).

The 'multi-risk-persistent' type displayed the most severe firelighting characteristics. They held an extensive fire history, with an average of 17 episodes, had earliest age of onset, around five years of age, high fire curiosity, and experience with a range of

targets and ignition sources. The firelighting was often antisocially motivated, and low levels of remorse were expressed. These firelighters had clinically significant problems with attention, externalising behaviour and social skills, and had the highest risk for recidivism (Del Bove & MacKay, 2011).

The ‘home-instability-moderate’ and ‘multi-risk-persistent’ firelighters had longer involvement with fire, increased affective arousal to fire, and were likely to continue with their behaviour despite receiving punishment, unlike the ‘conventional-limited’ firelighter. They were also likely to smoke and carry their own lighters (Del Bove & MacKay, 2011). The ‘multi-risk-persistent’ firelighter typically experienced an immediate stressor prior to the firelighting incident. Moreover, 96.7 percent of ‘multi-risk-persistent’ and 94.3 percent of ‘home-instability-moderate’ firelighters had mental health contact, but 64 percent of ‘conventional-limited’ also had mental health contact, suggesting that these young children/adolescents are not the average community referred youth (Del Bove & MacKay, 2011).

There is an unanimous agreement that firelighters are a diverse group of individuals who vary in regards to their fire related behaviour. Whilst the exact characteristics of the types of firelighters are uncertain, subclassifications exist within this group of individuals (Lambie & Randell, 2011). The notion that young children are often the ‘curious’ or ‘accidental’ type, and older adolescents are the ‘pathological’ type is not accurate and overly simplistic (Del Bove & MacKay, 2011; Fineman, 1995; Sakheim & Osborn, 1999). Del Bove and Mackay’s (2011) typology is perhaps the most the comprehensive and multidimensional framework (Lambie & Randell, 2011).

Motivation behind Firelighting

Fire involvement provides different intrinsic and internal reinforcement, as well as external reinforcement in different people (MacKay, et al., 2006). When firelighters light a fire, they make a conscious decision to do so. Therefore, evaluating the thought patterns and the affect that precedes firelighting is important. Equally crucial is to understand what reinforces the firelighting behaviour. External reinforcements such as money or peer attention are easier to treat than internal-sensory reinforcements, such as

arousal when seeing flames, which may be harder to treat and overcome (Fineman, 1995). Whether they are instrumentally motivated, or show curiosity, or pathological, the motives for firelighting are similar for young firelighters and adults (Kolko & Kazdin, 1992).

Behind the act of firelighting is often the pursuit of goals. These goals are not necessarily dysfunctional, yet offending means are employed to achieve them (Ó Ciardha & Gannon, 2012). For some, firelighting is an additional antisocial act in their portfolio, whereas, for others, the firelighting is an act in itself and serves a function (Doley, et al., 2011). Fire stimulates all five senses, intensifies the emotional experience, and can help assist a child express difficult emotions that they may be experiencing (Lucier, 1995). It is important for children and adolescent who set fires to draw connections between the act of firelighting and the feelings that may precipitate the firelighting incident (Williams & Clements, 2007).

Slavkin (2000) suggests that the psychodynamic understanding of the motivation behind firelighting in youngs has instead been replaced with the examination of the individual, their environment and the interaction that occurs between them. He notes that individual instigators towards firelighting include the presence of aggression, sensation seeking, deficits in social skills, an interest in vandalism, deviance and antisocial behaviour. On the other end, individual constraints against firelighting, believed to decrease the likelihood of firelighting, include personal structures that protect from defiance, attention seeking and problem behaviour (Slavkin, 2000). Further, Slavkin (2000) categorises the environmental factors as proximal control and distal control. Proximal controls refer to factors such as limited supervision, early fire experiences, lack of parental involvement, and parental pathology and limitations. The distal control factors include peer influence and stressful external events.

Ó Ciardha and Gannon (2012) recommend conceptualising implicit theories of the etiology of firelighting as they may help to facilitate appropriate and tangible targets for assessment and treatment. Implicit theories which have been identified for adults firelighters but may also be relevant to young firelighters includes beliefs about the

world and fire which are a) dangerous world, b) normalisation of violence, c) fire is a powerful tool, d) fire is fascinating and exciting, and e) fire is controllable. These theories may also prove useful in identifying the motivation behind firelighting.

In their qualitative analysis of firelighters and their caregiver's perception of motivational factors underlying firelighting, Walsh and Lambie (2013) identified experimentation, anger, peer pressure, and fascination with fire as reported by the young firelighters, as motivations behind firelighting. Caregiver's reported family historical factors as the greatest motivation behind their child's fire involvement, whilst fascination was reported by a quarter of the parents. Upon further inquiry, parents listed anger, boredom, experimentation, and attention as other motivational factors. Besides anger, there was a lack of consistency between the motivational factors reported by the child and the caregiver (Walsh & Lambie, 2013). In only three cases out of 18, anger was the only motive, indicating that in other fire incidents, a range of motives interplay (Walsh & Lambie, 2013).

Firelighting can change from being a single incident to several incidents during episodes of emotional instability, and to chronic firelighting. Anger and revenge are common motivations behind firelighting (Saunders & Awad, 1991), as well as destabilisation, loss, and persistent parental violence (Jacobson, 1985). Motivation or intent of the young person is more important than the accessibility of matches or lighters in predicting future firelighting. Similar to guns, matches are just a trigger, not the underlying cause of firelighting. Therefore, it is crucial to focus on the motivation behind the firelighting when planning treatment, rather than focusing only on suppressing fire behaviour (Sakheim, Osborn, & Abrams, 1991).

1.2 Predisposing & Risk Factors

The risk factors for firelighting have been researched extensively and generated valuable information. Many studies have focused on the comparison of firelighters with non-firelighters in the aim to identify differences between these two groups (Kolko & Kazdin, 1991b; Kolko, Kazdin, & Meyer, 1985; Kosky & Silburn, 1984; Pollinger, Samuels, & Stadolnik, 2005; Ritvo, Shanok, & Lewis, 1983; Rogeness, et al., 1984;

Sakheim & Osborn, 1986; Sakheim, et al., 1991; Sakheim, Vigdor, Gordon, & Helprin, 1985).

Often a number of domains of risk factors have emerged which include child specific factors, early learning experiences, parenting aspects and family influences (Kolko & Kazdin, 1986; McCarty & McMahon, 2005). For the purpose of this paper, the risk factors pertaining to young firelighting will be grouped into child specific factors, fire specific factors, and parental and family factors. Child specific risk factors will examine the role of gender, age and child psychopathology. Fire specific factors will discuss fire interest and other fire related factors that have been identified. Finally, parental and family factors will examine the role parenting practices, family dysfunction and parental psychopathology has in increasing the risk of young firelighting behaviour.

Child Specific Factors

Gender

The majority of research on firelighting and arson have repeatedly and consistently identified gender as a risk factor for firelighting, with firelighters predominantly being male (Adler, Nunn, Northam, Lebnan, & Ross, 1994; Fineman, 1995; Glancy, et al., 2003; Hoertel, et al., 2011; Kolko & Kazdin, 1986; Kosky & Silburn, 1984; McCarty & McMahon, 2005; Muller, 2008). Males outnumbered females on all types and levels of firelighting. Females tend to engage in firelighting behaviour at an older age than males (McCarty & McMahon, 2005). Escalation of firelighting beyond a few incidents is less frequent in girls (MacKay, et al., 2009), although female firelighters are significantly more disturbed than males (Fineman, 1995). Gender is a significant predictor of future firelighting (Bowling, Merrick, & Omar, 2013), as males are more likely to engage in recidivist firelighting than females (Kennedy, Vale, Khan, & McAnaney, 2006).

Age

Age is a factor in firelighting behaviour (Glancy, et al., 2003) and a large portion of firelighters are preadolescent youth (McCarty & McMahon, 2005), engaging in fire behaviour before the age of 10 (Bailey, Smith, & Dolan, 2001; Jacobson, 1985). Bailey

et. al., (2001) identified that fire play occurred in 21 percent of participants under the age of 10. Firelighting is also more common than known about in preschool age children and involves more than mere curiosity (Hanson, MacKay, Atkinson, Staley, & Pignatiello, 1995). Age has also been identified as a significant predictor of recidivist firelighting (Kolko & Kazdin, 1994; Slavkin, 2001).

Gaynor (1996) suggests that there are three sequential phases of fire behaviour which account for developmental changes with age, as well as the severity of the behaviour. Young children express fire interest between the ages of three to five, by asking about fire and its physical properties. Fireplay begins around the ages of five till nine, and usually involves experimentation with matches or lighters. It is during this stage that supervised and controlled experimentations with fire will teach the child fire-safe competencies. Around the age of 10, young children have generally learnt fire-safe behaviours and are competent at engaging in safe firelighting in the company of the parents. However, for some children a few episodes of unsupervised fireplay eventuates into problematic firelighting.

Child psychopathology

A link between severity of firelighting and severity of the young persons psychopathology has been established (MacKay, et al., 2009). Marked aggressiveness and antisocial behaviours are part of the firelighter's profile (Jacobson, 1985), and increase the risk of firelighting (Kolko & Kazdin, 1992), but not necessarily the number of fires lit (Saunders & Awad, 1991).

Firelighting and antisocial behaviour

Strong associations between firelighting and a broad range of antisocial behaviours have been identified for both males and females (Becker, Stuewig, Herrera, & McCloskey, 2004; Dadds & Fraser, 2006; Hoertel, et al., 2011; Martin, et al., 2004; Saunders & Awad, 1991), although the behavioural manifestations of these vary between the genders (Dadds & Fraser, 2006; Hoertel, et al., 2011). Dadds and Fraser (2006) noted that male firelighters demonstrated hyperactivity, thrill seeking and cruelty to animals, while female firelighters scored high on internalising problems such as anxiety and

depression. Saunders and Awad (1991) identified that female firelighters had severe psychological problems, antisocial behavioral problems, non-attendance at school, and typically out of control behaviour at home, at school and in the community. A history of sexual problems was also reported ranging from promiscuity, prostitution, and uncertainty around sexual orientation. Additionally, female firelighters found it difficult to describe any specific emotion connected with the firelighting, besides a general feeling of being angry (Saunders & Awad, 1991).

Firelighting and Conduct Disorder

Firelighting is strongly associated with conduct disorder (Adler, et al., 1994; Bailey, et al., 2001; Becker, et al., 2004; Forehand, Wierson, Frame, Kemptom, & Armistead, 1991; Hoertel, et al., 2011; Kolko & Kazdin, 1986; Kolko & Kazdin, 1991; McCarty & McMahon, 2005; Repo & Virkkunen, 1997), and in some instances, represents the severity of the conduct disorder (Forehand, et al., 1991; Jacobson, 1985; Kolko, et al., 1985). Firelighters who are diagnosed as having conduct disorder are more extreme than their peers who also have conduct disorder but no history of firelighting (Kolko & Kazdin, 1991; Kolko, et al., 1985). Firelighters displayed greater aggressiveness, hyperactivity, cruelty and delinquency compared to non-firelighters (Kolko, et al., 1985). After controlling for conduct disorder, firelighters were three times more likely to be at risk of juvenile court referrals, and had a higher likelihood of being arrested for violent crimes than non-firelighters (Becker, et al., 2004). Firelighting, in children and adolescents with conduct disorder, is only one of a wide range of antisocial behaviours (Gannon & Pina, 2010). Firelighters are advanced on the antisocial trajectory and report four or more conduct disorder symptoms. Frequently, the firelighting behaviour alone is not what is problematic, rather it is the many other comorbid features of conduct disorder (Forehand, et al., 1991).

MacKay et. al., (2012) acknowledge that young firelighters share many similar clinical features with youth who have conduct disorder, however, they also propose that conduct disorder should be considered as a co-morbid condition rather than the only reason behind firelighting. They argue that attributing firelighting behaviour to be a symptom of conduct disorder has contributed to the lack of information about fire-related

preoccupation and motivation and conduct disorder, on its own, is not sufficient to explain firelighting behaviour (MacKay, et al., 2006). Nevertheless, a strong link between childhood firelighting behaviour and adolescent delinquency remains, even after comorbid diagnosis of conduct disorder is controlled for (Becker, et al., 2004), further increasing the difficulty of identifying characteristics that are unique to firelighting behaviour (Kolko & Kazdin, 1986).

Firelighting and other co-morbid psychopathology

Moore et. al., (1996) compared clinical inpatient firelighters with non-firelighters using the Minnesota Multiphasic Personality Assessment-Adolescent. Firelighters rated significantly higher on three clinical scales in contrast to non-firelighters; Psychasthenia, Schizophrenia, and Mania. They also scored higher on eight content scales. These findings are suggestive of a severe psychopathology that underlies firelighting behaviour compared to non-firelighting conduct disorder.

Firelighting has also been associated with oppositional-defiant disorder, attention-deficient hyperactive disorder (ADHD) (Becker, et al., 2004), depression (Becker, et al., 2004; Martin, et al., 2004), bipolar disorder, psychotic disorder, schizoid personality disorder (Hoertel, et al., 2011), alcohol dependence (Repo & Virkkunen, 1997), illicit drug use (Hoertel, et al., 2011; MacKay, et al., 2009; Martin, et al., 2004), heightened impulsivity (Kolko & Kazdin, 1992), and frequent engagement and involvement in risk taking behaviour (Bailey, et al., 2001; Martin, et al., 2004). Prevalence of suicidal ideation and attempts were also identified in young firelighters (Martin, et al., 2004).

McCarty and McMahon (2005) set out to identify targets for early intervention and found that child physical abuse and gender were significant risk factors for firelighting. Higher levels of impulsivity and hyperactivity, as well as oppositional, aggressive and antisocial behaviour were present in persistent firelighters (i.e. those who continued to light fires from grade four to grade six) compared to desisters (i.e. those who lit fires from birth to grade three), with the latter group being more aggressive, engaged in covert antisocial behaviour, and physically abusive (McCarty & McMahon, 2005).

Similarly, research in the area has identified that firelighters present with high levels of risk-taking behaviour and have been in contact with health and social services numerous times (Bailey, et al., 2001). They also report firelighters had significantly more emotional and somatic complaints compared to non-firelighters (Kosky & Silburn, 1984). Parents have noted that their firelighting child/adolescent, placed in residential care, had serious behavioural symptoms, whilst the adolescents self-reported more aggressive thoughts and impulses (Pollinger, et al., 2005) than firelighters who were outpatients.

Firelighting and internalising/externalising behaviours

Firelighting behaviour has been found to be directly related to internalising (depression, anxiety, and somatic complaints) and externalising symptoms (aggression and rule breaking) (Becker, et al., 2004; Bowling, et al., 2013; Root, et al., 2005), and overall more total problems on the Achenbach System of Empirically Based Assessment (ASEBA) scales (Bowling, et al., 2013). Adler et al. (1994) identified elevated Child Behaviour Checklist (CBCL) scores in firelighters, with more than 75 percent in the clinically significant range. Firelighters, compared to match-players and non-firelighters, have been found to have greater involvement in covert behaviour. Firelighters and match-players had higher scores of aggression, difficult temperament, hostility, and externalising behaviours compared to non-firelighters (Kolko & Kazdin, 1991). On child report measures, firelighters were scored as more aggressive, less assertive, and had low self-esteem compared to non-firelighters. Both match-players and firelighters had higher levels of externalising and internalising behaviour compared to non-firelighters (Kolko & Kazdin, 1991).

Root et al., (2005) identified high rates of maltreatment in children with histories of firelighting. Maltreated children set more fires, had more creative and versatile ways of igniting fire, were more likely to set fires as a result of anger, or following stressors, often familial, and overall had more emotional and behavioural problems. Their likelihood of recidivist firelighting was high, and they rated in the clinically significant range for both internalising and externalising problems on the CBCL (Root, et al., 2005). The association between maltreatment and firelighting is probably an indirect

one, resulting from heightened behavioural or mood difficulties (Root, et al., 2005). Maltreatment negatively impacts on the child's developing capacity for affect regulation and distress tolerance (Root, et al., 2005). Similarly, Sakheim et al., (1985) explained that children and adolescents at risk of firelighting had weak ego and superego controls, poor planning and judgment, were less reflective and more reactive, less obsessive, and were less able to tolerate tension and anxiety.

Firelighting and social difficulties

Research with a differing perspective has described firelighters as passive and socially withdrawn individuals (Cox-Jones, Lubetsky, Fultz, & Kolko, 1990). They are socially less adjusted, experience social skills deficits, have less social competence (Kolko & Kazdin, 1991, 1992) and poor peer relations compared to non-firelighters (Bailey, et al., 2001; McCarty & McMahon, 2005). Firelighters had lower rating scores on the CBCL for social skills (Kolko, et al., 1985). Faranda et. al. (2005) ascertained that young firelighters had elevations on attentional problems, thought problems, aggressive behaviour and delinquent behaviour scales on the CBCL, and were more likely to externalise their behaviour. Associations between firelighting and both shyness and aggressiveness, and feelings of being highly rejected by peers were elicited in adolescents who self-reported recent firelighting compared to youths with no such history. Being shy in itself was not associated with firelighting behaviour, rather when it was combined with aggression. Shyness and peer rejection was also a risk factor as well as aggression and peer rejection. However, all the dynamics combined were strongly associated with firelighting behaviour (Chen, et al., 2003).

Bowling et. al., (2013) aimed to identify school related predictors of young firelighters and discovered that children and adolescents with lower academic performance, poor attitude towards school, including truancy and disobedience at school, attentional problems and ADHD, were more likely to set fires than their peers (Bowling, et al., 2013). Young firelighters who specifically set fires in schools have been found to be victims of bullying, name-calling and rejection (Sharp, Roe-Sepowitz, & Boberg, 2009).

In summary, despite an attempt to portray the profile of the 'typical' firelighter, the reality is that the young firelighter is diverse and unique, presenting with a range of maladaptive behaviours and personal psychopathology, one of which, is firelighting behaviour (Vreeland & Levin, 1980).

Fire Specific Factors

Fire Interest

Early fire interest is a risk factor for childhood firelighting (Cox-Jones, et al., 1990; Kolko & Kazdin, 1992) and children who become involved in lighting fires continue to do so on more than one occasion (Kolko & Kazdin, 1986; Kolko & Kazdin, 1989; MacKay, et al., 2006). There is an agreement amongst experts that fire interest is pivotal in understanding the onset and maintenance of fire related behaviour (MacKay, et al., 2006). Heightened fire interest is a significant predictor of both frequency and versatility of participants' fire involvement, and most probably what sustains the fire behaviour (Kolko & Kazdin, 1989b; MacKay, et al., 2006). Firelighters are more likely to show interest in fire and play with matches compared to non-firelighters (Kolko & Kazdin, 1988), and they demonstrate a greater interest, attraction, and exposure to fire than non-firelighters (Kolko & Kazdin, 1989).

Interest in fire is a risk factor for firelighting behaviour. Researchers used a fire-specific Stroop task to measure the information-processing bias for fire-related stimuli. Firelighters and clinically referred controls had slower response rates to fire related pictures than non-referred controls, indicating that these two groups are more likely to be distracted by fire images and more fire salient (Forehand, et al., 1991). Similarly, a more recent study investigated whether a fire-specific emotional Stroop task could effectively measure the bias for fire-related stimuli in adolescents. The findings indicated that young firelighters had greater fire-specific attentional bias compared to their peers with no previous firelighting history (Gallagher-Duffy, MacKay, Duffy, Sullivan-Thomas, & Peterson-Badali, 2009). Both studies raise the possibility that instruments which measure attentional bias for fire-specific stimuli may be useful in further understanding firelighting behaviour.

Other fire related factors

Available firelighting equipment and material, and a lack of fire safety skills are associated with firelighting (Cox-Jones, et al., 1990) whilst fire-specific factors (presence of childhood firelighting, total number of fires, motives for index fires) are the best predictor of firelighting recidivism (MacKay, et al., 2006). Exposure to adults who participate in fire-related activities, such as smoking and playing, is more frequently reported in firelighters, suggesting easier access to incendiary material, as well as increased involvement in fire-related activities. In addition, firelighters demonstrate a greater knowledge base of combustible material compared to non-firelighters (Kolko & Kazdin, 1989b) and their use of accelerants increased as did the number of fires they set (Pollinger, et al., 2005). Similarly, Kolko and Kazdin (1992) identified that recidivist firelighters demonstrated a greater fire material knowledge and had greater involvement in fire.

Parental and Family Factors

Family functioning has significant implications for the emergence and maintenance of antisocial behaviour in children (Kolko & Kazdin, 1986). Research has established an association between childhood firelighting and marital dysfunction, parent psychopathology and a lack of rule setting (Kazdin & Kolko, 1986; Kolko & Kazdin, 1990). Importantly, the risk of firelighting increases during times of crisis or trauma, such as divorces, moves, assault, molestation, or school expulsion (Fineman, 1995).

Family Dysfunction

Family disruptions experienced by firelighters are due to greater disturbances in individual and parental psychopathology, disruptions in the parent-child relationship, a lack of discipline and management (Kolko & Kazdin, 1990) and low socioeconomic status (Adler, et al., 1994; Glancy, et al., 2003). Firelighters reside with parents who report more dysfunction in their marital relations (Kolko & Kazdin, 1986). Parents of firelighters report less cohesion, satisfaction, and affectional expression in their relationships (Kazdin & Kolko, 1986) than parents with conduct disordered children.

Firelighters are often from separated families (Adler, et al., 1994; Kosky & Silburn, 1984), and families with previous or current welfare involvement (Kosky & Silburn, 1984). Ritvo et al., (1983) investigated the family constellation of firelighters compared to non-firelighters and established that, whilst the presence of the biological fathers at home was low for both groups, the number of biological mothers in the home was significantly lower in the firelighter group than the non-firelighter group. They also documented that firelighters experienced more placements outside of the home prior to incarceration compared to non-firelighters, and a significant number of these placements were in residential psychiatric treatment centres (Ritvo, et al., 1983). Adolescents who are placed in residential care are likely to be living with their single female parent (Pollinger, et al., 2005).

High proportions of firelighters are victims of physical abuse perpetrated by their parents and have witnessed violence in the family home, involving physical assaults between parents, and the physical abuse of their siblings (Ritvo, et al., 1983). Levels of violence reported by children are of clinical relevance (Kolko, et al., 1996); however, both parents and children downplay the severity of violence they direct at one another (Kolko, et al., 1996). Saunders and Awad (1991) investigated the records of 13 young, female firelighters who attended court and identified that their parents had a history of marital problems, separation, domestic violence against spouse and child/children, drug and or alcohol use, criminal activity, and insufficient ability to take care of their children (Saunders & Awad, 1991).

Parental Psychopathology

Increased parental psychopathology has been documented in the parents of firelighters (Kolko & Kazdin, 1986; Kolko, et al., 1993; Kolko & Kazdin, 1990; Kosky & Silburn, 1984). Mothers of firelighters reported significantly higher levels of depression than mothers of non-firelighters (Kazdin & Kolko, 1986; Kolko & Kazdin, 1986), and parental stress was a common characteristic (Dadds & Fraser, 2006). The extent to which parental psychopathology predisposes firelighting behaviour, or the precipitating and or perpetuating effect young firelighting behaviour may have on parental

psychopathology, is not well understood and highlights the need for further research in this area.

Discipline and Parenting Practices

Inadequate supervision and high levels of individual and family psychopathology may lead to problematic firelighting behaviour (Dolan, McEwan, Doley, & Fritzon, 2011). Antisocial behaviour is commonly associated with children who have decreased parental monitoring and minimal rules at home (Kazdin & Kolko, 1986), and a lack of parental supervision is a risk factor of childhood firelighting behaviour (Cox-Jones, et al., 1990).

Marital and parental dysfunction may hinder parents from serving as effective role models for their children (Kazdin & Kolko, 1986). Parents may be less involved with their child, show less affection, lack in proper monitoring of behaviour, and unintentionally promote firelighting by engaging in coercive styles of interaction (Kazdin & Kolko, 1986). Children who continued to set fires were rated by their parents as high in hostility and carelessness, and lived in families with no consistency and structure and high levels of conflict and stress. Less acceptance by the mother and greater knowledge about flammables were also reported by recidivists firelighters (Kolko & Kazdin, 1992). Parents of young firelighter's reported less acceptance of their children, were less child centered, and reported less monitoring and discipline of their children (Kolko & Kazdin, 1990).

Whilst the impact of parental and familial dysfunction can not be dismissed, the psychopathology of young firelighters differ, irrespective of the parenting they receive (Dadds & Fraser, 2006). Parental presence did not hinder fire interest and exploration of firelighting behaviour. Most fires were started when parents were home, and typically occurred in their bedrooms (Pollack-Nelson, Faranda, Porth, & Lim, 2006).

1.3 Best Practice Approaches to Firelighting

Identification, Assessment and Referral

The treatment of firelighting behaviour is understudied (Lambie & Randell, 2011). At the severe end of the spectrum, juvenile justice systems are either focused on crime control or punishment, usually involving those in most need of therapeutic intervention (Caudill, Diamond, Trulson, DeLisi, & Marquart, 2012). However, commonly, educational interventions operated by the fire services and psychosocial interventions offered by mental health professionals are employed to treat firelighting behaviour (Lambie & Randell, 2011). Firelighting intervention and treatment should not only focus on the firelighting behaviour but also take into account the underlying emotional problems the firelighter may be experiencing (Kosky & Silburn, 1984), other conduct disordered behaviours that co-present with the firelighter (Gallagher-Duffy, et al., 2009), in addition to familial factors (Webb, Sakheim, Towns-Miranda, & Wagner, 1990).

Fire departments detect firelighters more often than mental health professionals and therefore are usually the first to engage with firelighters, rather than mental health professionals (McCarty & McMahon, 2005; Webb, et al., 1990). Consequently, it is vital for both services to work collaboratively in order to implement effective and integrated treatment strategies (McCarty & McMahon, 2005; Webb, et al., 1990). When young firelighters are identified, families need to be connected with and intervention strategies need to be utilised (McCarty & McMahon, 2005). Fire services continue to remain as primary intervention providers, however there is a move towards offering shared care between the fire services and mental health services (MacKay, et al., 2009) in some communities in the United States of America, Canada, New Zealand, and Australia, in order to provide multi-faceted treatment and intervention.

Identification of young firelighters who have increased risk of recidivism and psychopathology is crucial for early intervention. It is important for early intervention programs to specifically target children who have risk factors for recidivist firelighting, and possibly harsh parenting (McCarty & McMahon, 2005). Perhaps the fire

practitioner's crucial task is to screen the firelighter and their family and determine whether a referral to mental health clinicians is necessary (Vreeland & Levin, 1980). Fire practitioners should consider four key factors during the initial contact with the young firelighter and their families. These include (1) assessing the degree and risk of recurrence of the firelighting, (2) the challenges which may present and interfere when engaging families with mental health agencies, (3) working closely with other agencies, and (4) implementing preventive interventions (Webb, et al., 1990).

Webb et al., (1990) investigated the successful identification and treatment of firelighters and families based on a pilot program. Often families failed to recognise dysfunctional factors in the home that could contribute to the firelighting behaviour. Furthermore, families did not consider nor accept the child's fire-related behaviour as an indication for the need of mental health treatment. Thus, mental health professionals frequently encounter challenges when initiating engagement with the child and family, as often the referral is made by the fire services, police or school (Raines & Foy, 1994) rather than an initiative of the parents. Furthermore, parents are likely to refer firelighters to community services rather than to mental health services (Pierce & Hardesty, 1997).

Most young firelighter evaluations in North America are conducted by fire servicemen (MacKay, et al., 2006). Therefore, when considering a mental health referral, fire practitioners require an objective criterion, to assess the need and suitability of a referral, for appropriate treatment of firelighting behaviour (Pierce & Hardesty, 1997). Pierce and Hardesty (1997) explain that CBCL scores were not used to determine a potential referral to mental health agencies, despite indications of significant psychopathology. Bowling et al. (2013) suggests that high rates of internalising, externalising and overall total problems in firelighters, irrespective of the firelighting behaviour, should be sufficient to warrant a referral to mental health professionals. Teachers and school counsellors/psychologists also play an important role in assessing and determining students who are at risk of fire involvement, and providing appropriate interventions, treatment options (Bowling, et al., 2013), and appropriate referrals options when necessary.

Firelighting behaviour is frequently hidden from mental health professionals and there is an assumption that only a small number of mental health professionals will be able to properly diagnose and treat this behaviour (Fineman, 1995). Mental health clinicians should screen for fire-related behaviour in any initial assessment, and if concerns are raised and involvement with the fire services can be established, treatment should be triaged accordingly (Root, et al., 2005). However, mental health professionals may demonstrate variability regarding their understanding of fire-related behaviours and how they address fire behaviour in their work with children. Lucier (1995) interviewed mental health professionals and reported that although they acknowledged the significance of firelighting behaviour as a problem which required addressing in treatment planning, only a third of clinicians routinely inquired about the firelighting behaviour. Clinicians were in agreement that lighting matches or lighters, and lighting other objects, such as cards or toys, met definitional criteria for firelighting behaviour, but felt that this needed to occur more than once to elicit serious concern, whereas lighting other objects on fire, warranted concern (Lucier, 1995).

Intervention Programs

Often, intervention begins when fire services are involved following a firelighting incident. Programs have been developed by fire services that focus on fire awareness and early intervention, and involve firelighters and their families. The underlying framework for some of these programs has been based on the extensive work and research undertaken in this field by the Federal Emergency Management Agency (FEMA). FEMA produced a three volume publication titled *Young Firelighter Handbook (Ages Seven and Under, Ages 8-13, and Ages 14-18)* between 1978-1988, which was later condensed into a single volume (Gaynor, 2000). The tools and programs developed by FEMA have been widely adopted and integrated in the assessment of firelighters (Dolan, et al., 2011). FEMA also provides a three level typology to refer to when assessing the firelighter's risk of recidivism, which may be 'little', 'definite' or 'extreme' (Gaynor, 2000). FEMA provides assessment interviews, training material, and program manuals, which are aimed at promoting fire safety skills, fire prevention interventions, and encouraging awareness of fire danger (Kolko, 1988).

Similarly, The Firehawk program, developed by the National Firehawk Foundation, is based on the FEMA program. The only difference between these two programs is that, The Firehawk program pairs a volunteer firefighter with the young firelighter in a long-term relationship, aimed at providing continued monitoring, for children who may be from disadvantaged or single parent families, whilst the FEMA approach does not involve any long-term relationship between the volunteer firefighter and the young firelighter (Kolko, 1988).

A local program that has been based on the FEMA model, incorporating the fire education services of the fire agencies, with the psychosocial understanding of the reasons behind firelighting behaviour provided by the mental health services, is the Victorian Juvenile Fire Intervention and Awareness Program (JFAIP) (Royal Children's Hospital, 1993). The JFAIP was established in 1986 by the Metropolitan Fire Brigade (MFB) in collaboration with the Royal Children's Hospital (RCH), and was later joined by the Country Fire Association (CFA) in 1989 (RCH, 1993). The JFAIP is a cost and time effective program.

A number of aims were addressed in the development of the JFAIP. The fundamental aim of the program was to develop an intervention designed specifically for firefighters to employ that would reduce the occurrence and frequency of firelighting behaviour in children who had a history of such behaviour (RCH, 1993). The RCH would train these firefighters, called practitioners, who would then provide the intervention to the child and their family. The program would also enable the firefighting services to develop a profile of characteristics that pertain to young firelighters. The program would be evaluated using randomised, controlled trials involving the young firelighter and and follow up would occur after 12 months. The information collected and the results of the evaluations combined would provide a valuable resource for the fire services and mental health professionals, globally (RCH, 1993).

An evaluation of the JFAIP conducted by the RCH and Professor Robert Adler in 1993 provided historical information. A total of 138 children were referred to the program and participated in a randomised, controlled trial, which involved four separate

conditions; the home-control group, home experimental, specialist-control, and specialist-experimental group. The home-control group were only provided with a fire education pamphlet, whilst the home-experimental group were visited by a fire practitioner who implemented the complete intervention. This included the fire education component, behaviour modification component via repeated and supervised firelighting, parenting information for implementing negative consequences for any future firelighting, and a graphing technique of the precipitating factors prior to the firelighting. The specialist-control group were provided with a referral to the Firelighters' Clinic at the RCH where the firelighters were offered psychological assessment and treatment. Finally, the specialist-experimental group received the same intervention as the home-experimental group. At six month follow up with 99 of the families who originally participated in the JFAIP there was a significant reduction in the frequency of firelighting behaviour. The average number of fires lit by each child had dropped from 7.1 to 1.5; only 25 percent lit any fires in the first six months, and during the 12 month follow up, only 40 percent continued to light fires. The improvement in the reduction of firelighting episodes, irrespective of what treatment intervention the young firelighter had received, indicates that fire education is an appropriate intervention provided by fire services (RCH, 1993; Adler, et al., 1994).

Currently, Australia-wide, eight other programs of this nature are being implemented by fire services (Muller & Stebbins, 2007), often as the first point of intervention. The programs are all notably similar, as to some extent they were formed based on the Victorian JFAIP program, whilst others, such as Queensland's Fight Fire Fascination (FFF) program, have had to tailor the program to meet the needs of the local community and environment (Muller & Stebbins, 2007).

The Fire Awareness and Intervention Program (FAIP) is employed by the New Zealand fire services and is similar to the JFAIP. Recently, the program was evaluated based on the perceptions of young firelighters and their families who received the services (Lambie, Seymour, & Popaduk, 2012). Young firelighters and their parents commended the practitioners' patience, and ability to engage and develop rapport as they felt this was key to the delivery of the program and its content. The review also concludes that

increasing fire danger awareness is dependent on the quality of the program and resources used, such as the use of visual aids. Participants viewed these as effective tools to discuss the dangerous consequences of inappropriate and unsafe fire use. The prompt and confidential service provided was also highly regarded by parents. Additionally, the young persons involved in the program highlighted the positive effect of having a parent present during the intervention (Lambie, et al., 2012). Parents recommended improvements in the use of resources, as occasionally a mismatch between the resources used and the development age, and the level of need of the young firelighter occurred. Parents also encouraged improvements with information sharing between appropriate agencies in order to efficiently plan and cater for the needs of the young firelighter and their family (Lambie, et al., 2012).

Dolan et al. (2011) reports that the joint initiative of the United States Fire Administration and the Office of Juvenile Justice and Delinquency Prevention have suggested that treatment programs for young firelighters should involve community service, restitution and skill building, in addition to individual and family support. Currently, programs of this nature do not exist in Australia and the evaluation of the mental health components of such programs are not available, highlighting the need for further randomised controlled trials to measure their effectiveness. Furthermore, Dolan, et al., (2011) recommends that firelighting intervention programs need to be reinforced or strengthened so that the detection and assessment of young firelighters occur promptly, as early detection and intervention may be critical in reducing the risk of recidivist firelighting, as well as any risk of potential fire-related offending in adult life.

Therapeutic Approaches

The treatment of firelighters is not straight forward and needs to address the multi-level nature of the problem (McCarty & McMahon, 2005). Developmental factors, biological factors including temperament, cultural factors, contextual factors, and social learning factors all contribute to firelighting (Gannon, Ó Ciardha, Doley, & Alleyne, 2012). Psychological vulnerabilities develop and emerge as a result of these factors and represent significant clinical features in therapy in adulthood (Gannon, et al., 2012).

Different approaches have been effective with different firelighters. For instance, educational interventions have been effective with curious type firelighters, whilst psychosocial interventions are effective with children and adolescents who display pathological fire interest and behaviour (Lambie, et al., 2012). In their review of treatment programs employed with firelighters, Fritzon, Dolan, Doley and McEwan (2011) found that often a uniform approach to treatment is adopted and that psychological interventions do not offer any improvement, in terms of preventing recidivism, compared to basic fire education. In order to have effective treatment programs, individual criminogenic factors and psychopathology need to be considered (Horley & Bowlby, 2011).

Intervention and treatment planning are heavily influenced by the theoretical understanding one has of firelighting behaviour. The theory of learning views firelighting as a maladaptive, coping strategy to deal with environment stressors and internal affective discomfort which has reinforcing properties (Swaffer, 1993). This theoretical orientation considers interventions that are aimed at altering the defective learning experience of the individual. Strategies such as social skills training focusing on problem-solving strategies, over-correction procedures in conjunction with controlled fire lighting, overt sensitisation, and behavioural approaches that incorporate appropriate reward and punishment techniques, preferably implemented with the parent, as well as the firelighter, are recommended. On the other hand, the research of Kolko & Kazdin (1990) would suggest, based on the high prevalence of parental and marital distress and familial dysfunction present in the families of firelighters, that intervention should involve the entire family (Swaffer, 1993).

Raines and Foy (1994) explain that the psychodynamic framework no longer regards firelighting as a struggle with phallic impulses, but rather categorises firelighting as an extension of a personality disorder. They recommend cognitive-behavioural approaches, and family or group therapy. Slavkin (2000) recommends that treatment and therapy should involve techniques to control or suppress firelighting, in addition to addressing individual, family and community issues which are relevant. Furthermore, caution should be used when working with children who have learning disabilities, impulse

control problems, or are pathological firelighters, as interventions aimed at reducing firelighting, may actually draw the child's attention to it, and increase the likelihood of engaging in the behaviour (Lambie & Randell, 2011).

Gannon et al., (2012) suggest that adult firelighters have different psychological vulnerabilities, and these can be classified into one of five trajectories which lead to firelighting: fire interest, antisocial cognitions, emotionally expressive/need for recognition, grievance, and multi-faceted. They recommend that treatment planning and interventions should be tailored to address the underlying psychological vulnerabilities by determining what the firelighters dominant trajectory through detailed assessments. Such recommendations can be adhered to when young firelighters are involved.

In addition to cognitive behaviour therapy, social skills training and parental training need to complement fire-specific interventions (McCarty & McMahon, 2005). Families of persistent firelighters may benefit from, and require, extended support to consistently implement effective strategies for prevention (Del Bove & MacKay, 2011). These may include addressing areas such as preventing access to fire material, adequate supervision and monitoring, and modeling appropriate fire safety behaviours. Del Bove and Mackay (2011) suggest implementing Principles of Parent Management Training (PMT) in conjunction with other treatment planning.

The high-tech digital era of today has further implications for firelighting which need to be considered in intervention planning. Thomas et al. (2012) explored firelighting behaviour on YouTube and highlighted the deviant influence this may have on young firelighting. They recommend that internet usage and parental monitoring be addressed in treatment planning, as these may provide important behavioral intervention targets when working with firelighters (Thomas, et al., 2012).

Chapter Two: Study One- Analysis of Historical JFAIP Data (2006-2012)

2.1 The JFAIP to date

The Victorian Juvenile Fire Awareness and Intervention Program (JFAIP) is delivered throughout metropolitan Melbourne by the Metropolitan Fire Brigade (MFB), while rural and urban fringe districts are overseen by the Country Fire Authority (CFA). The program is delivered by firefighters, referred to as practitioners, who are trained in the components of the program, which include home fire safety, fire education and intervention skills, and basic behaviour modification strategies (McDonald, 2009). Practitioners are also required to attend annual training meetings, which are delivered by the state-coordinator of the program, the program psychologist, experienced practitioners, and relevant external agencies. The aim of the JFAIP is to reduce firelighting behaviour in young firelighters by educating them about fire safety (McDonald, 2009).

Young firelighters can be referred to the program via a number of sources. Often parents contact the program expressing concern about their child's fire interest or firelighting. Other referrals may come via the police, courts, schools, and other agencies. The JFAIP protocol includes an initial intake interview, a family interview, and assessment of the child's fire knowledge and fire safety awareness (McDonald, 2009). The site of the program delivery is usually the residence of the young firelighters, and the intervention usually takes place within 10 days of the initial intake across, on average, two to three visits (McDonald, 2009).

The JFAIP emphasises building a trusting rapport with the young firelighters and their families, providing reassurance that the young firelighter is not in trouble, and contracting a verbal agreement with the young firelighters instigating that they will not light fires (McDonald, 2009). The program components include behavioural training and learning through fire safety education. A variety of resources are used, which include books, DVDs, and visual charts. Additionally, behaviour modification techniques, which include rewards and praise, may be used to reward young firelighters

for demonstrating fire safe behaviour. Finally, a safety audit of the home is conducted (McDonald, 2009).

The JFAIP has been reviewed twice since it was conceived. Adler et al. (1994) first reviewed the program in 1993 using a randomised, controlled trial. At the time, young firelighters who had participated in the program from March 1988 to January 1992 were involved in the study. A total of 138 children were referred to the program during that time, 97 percent were boys, average age of 8.1 years. More than half of the children lived with only one biological parent and had at least one smoker in the household, with lower socioeconomic status families highly represented in the sample. The firelighting behaviour usually began around the age of 5, and an average of 7.1 separate fire related incidents were recorded during a twelve month period for the young firelighters prior to the intervention. Extreme cases were also present, with firelighting behaviour being exhibited in some children as early as the second year of life, or the incidence of fires lit in the previous 12 months being as high as 30-50. Comorbid serious behavioural problems were evident in 80 percent of the children (RCH, 1993; Adler, et al., 1994).

Twelve month follow-up with the families indicated significant reduction in the young firelighters' frequency of firelighting behaviour. The average number of fires lit by each child had dropped to one and a half. Six month recidivism rate was 25 percent and at 12 month follow up 40 percent continued to light fires. The improvement in the reduction of firelighting behaviour was irrespective of whether the firelighter received only fire safety education or the complete treatment program, which involved behaviour modification, the enforcement of negative consequences, and graphing of the factors leading to firelighting episodes. This indicates that fire safety education is an appropriate and effective intervention provided by fire services (RCH, 1993; Adler, et al., 1994).

Subsequently, the JFAIP database was analysed by McDonald (2009) for the two year period of 2003-2005, during which 443 young firelighters had been involved in the program. Ninety one percent of the participants were males and nine percent were females, with mean age of 9.6 years. Only 37 percent of participants lived with both

biological parents, and at least one smoker was present in 68 percent of the families. Counselling was accessed by 44 percent of families, and 22 percent of young firelighters had been in contact with the police. Twenty nine percent of families had other children who also engaged in fire related behaviour, and 59 percent used lighters as the source of ignition. Most fires were lit at home (47%), mostly in the child's bedroom. A large percentage of young firelighters (84%) reported that they had not lit the fire intentionally. On average, young firelighters reported 17 firelighting incidents, with 11 of these being minor (no damage), and six major (causing damage) (McDonald, 2009).

McDonald (2009) identified significant improvement on risk factors post-intervention, compared to pre-intervention in 29 young firelighters and their families. Only nine young firelighters engaged in recidivist behaviour during the 12 month follow-up, however these incidents were typically less severe than the previous fires and may have only involved matchplay. Furthermore, parents perceived their child as less curious, more skilled, less involved with fire, had fewer complaints, and had less access to ignitions and opportunities at post-intervention. Parents also perceived that both they and their child had increased fire safety knowledge post-intervention. Young firelighters claimed they were less curious, less exposed to ignitions and models, less involved with fire and were more skilled post-intervention. Whilst these findings are encouraging, the lack of a control group makes it difficult to attribute all improvement to the JFAIP's effectiveness, but nevertheless, the program is a likely contributor (McDonald, 2009).

As reported, the JFAIP database has been investigated and analysed twice in the past (Adler, et al., 1994; McDonald, 2009), however not as detailed as the present study. Besides a substantial increase in the sample size, the present study examines the associations between firelighting behaviour and motivations, feelings following the firelighting incident and the help-seeking behaviour of young firelighters, which were previously unexplored.

Overall Aim

In the present study, the JFAIP database between the periods of 2006 to 2012 was examined to determine specific information about the young firelighters referred to the JFAIP and possible associations between different factors.

The Research Questions

There are two main research questions in the present study. These are:

1) What are the profiles and characteristics of the young firefighters participating in the JFAIP?

and

2) What associations exist between selected variables that characterize the young firelighter (i.e. demographics and child-specific, fire-specific and post-fire factors) and their firelighting behaviour?

The Objectives

There are a number of objectives of this study. In addition to describing the demographics of the firelighters in the database and selected child and fire variables, the following associations will be examined:

- age and fire interest
- age of first interest in fire and firelighting severity
- gender and age associations with firelighting severity, motivation behind firelighting, and post-fire behaviour
- fire-specific variables and firelighting severity
- child-specific variables and firelighting severity.

2.2 Method

Participants

The de-identified JFAIP database of clients who had participated in the program between January 2006 and December 2012 was provided by the MFB. A total of 903

cases were recorded in the database. Of these, fifteen cases were excluded from the final analysis as the age of the participant was below four (two cases) or above 18 (13 cases). Additionally, any participant who did not have a recorded episode of firelighting was excluded from the analysis. As a result, the total number of cases that were involved in the analysis was reduced to 661.

Material

The JFAIP database is based on the initial JFAIP Interview Form completed by the fire practitioner during the first contact with the family (See Appendix A). Practitioners are provided with annual training on the JFAIP components, how to conduct interviews and administer questionnaires. The interview consists of 41 questions in total. Parents are asked to answer questions one to 29, while questions 30 to 41 are directed at the young firelighters involved in the program. Only children over the age of 10 are asked to complete question 40 and 41.

Questions one to nine involve gathering demographic information about the young firelighters. Question 10 to 18 collects further familial and case specific informations. The relational status of the parents and their occupation is ascertained. A list of household members and their relation to young firelighters is collected, as well as details of the school they attend and their year level.

Questions 19 to 25 are fire-specific questions. The young firelighters's age of first fire interest, any sibling interest in matchplay or unsafe fire play, and any supervised fire lighting opportunities are queried. The parents/guardians are asked to rate their child's fire interest from a scale of zero to 10, with zero being no interest and 10 being extremely interested. Parents/guardians are asked whether any education regarding the dangers of matchplay and firelighting was provided to their child pre or post the fire related incident. They are then asked to identify the primary factor they believe was behind their child's firelighting, which include curiosity/interest, anger/revenge, malicious mischief, attention seeking, peer pressure, or do not know/other. Finally, the parent's initial reaction to the fire related incident is ascertained and categorised as

Dismissed as Insignificant, Felt Depressed/Hopeless, Felt Angry, Punished Child (and how), and Other to be specified.

Questions 26 to 29 gathered information regarding the young firelighters's previous involvement with other services or agencies. Any professional mental health assistance, type of service or agency, and whether it is still ongoing is queried. Previous involvement with the police or Children's Court, or being placed in an institution or foster care is also queried. The family is given the opportunity to request assistance for other non-fire related problems the young firelighters may be experiencing, and have the option of deciding who could make the appropriate referral. Question 39 collects information about the household smoke alarm, whether it is installed and working, and acts as a prompt for Fire Safety Information to be given to the household.

Questions 30 to 38 is directed at the young firelighters. The presence of any cigarette smokers in the home is ascertained. The young firelighters is questioned about the number of firelighting episodes they have been involved in total, how many fires they have lit in the last 12 months, and when the last incident occurred. Additional information such as where the fire was lit, what was used, how this was obtained, and young firelighter's knowledge of where these items are kept at home is ascertained. Details surrounding the firelighting episode, such as whether it was planned, were they trying to destroy property or hurt someone, and whether they were encouraged or influenced to light the fire is collected from the child. The young firelighter's feeling following the firelighting and their reactions were explored. Question 40 and 41 are intended for young firelighters aged 10 and above who have had firelighting episodes in the last 12 months. The young firelighter is asked to rate their fire interest on a scale from zero, being no interest, to 10, extremely interested. Finally, information regarding other firelighting episodes and the young firelighter's feelings before each of these, are gathered. Furthermore, the interview form provides ample space for fire practitioners to make relevant and important notes about the case.

Procedure

The de-identified database was converted from a Microsoft Access file to a Statistical Packages for Social Sciences (SPSS) dataset for analysis. Any missing data in the dataset was a result of incomplete information collected at the time of interview or failure of the MFB to input the information into the database.

2.3 Results

A total of 661 cases were involved in the analysis. The mean age of the firelighters was 10.97 years (*SD=3.61*) and the mean number of fires lit was 6.8 (*SD=21.24*), although the median number of fires lit was two. The mean age young firelighters first displayed fire interest was 8.24 years (*SD=3.*64), and the mean rating of child's fire interest (rated between 0 to10, with 10 being high interest) as rated by parents was 5.34 (*SD=2.68*). Refer to Table 1 for minimum and maximum values, as well as other descriptive information.

Table 1: Descriptives of age, total number of fires, age of first fire interest and rating of fire interest.

Variable	*N*	*Min*	*Max*	*Median*	*Mode*	*Mean*	*SD*
Age	661	4	18	11.00	13	10.97	3.61
Total Number of Fires	661	1	350	2.00	1	6.8	21.24
Age of first fire interest	268	0	17	8.00	5	8.24	3.64
Parent rating of child's interest in fire	632	0	10	5.00	5	4.78	2.61

Pearson's correlation was used to examine whether there was a relationship between child's fire interest as rated by the parent and severity of firelighting. There was a small, positive correlation between the two variables, $r = .19$, $n = 632$, $p < .001$, suggesting that increased fire interest is associated with increased severity of firelighting.

Pearson's correlation was also used to examine whether there was a relationship between child's age and their fire interest. There was a small, negative correlation between the variables, $r = -.21$, $n = 632$, $p < .001$, indicating that fire interest decreases with age.

Table 2 summarises the frequencies and percentages of demographic information, as well as the referral sources. Firelighters were predominantly males (91.5%) with females only accounting for a small proportion. Firelighters were mainly in the age group of 13-15 years (28.7%), and the prevalence of ages 10-12 and 7-9 were equally high. Divorced, single and separated families outnumber married and de facto families, accounting for 44.5% of the families. CFA cases were close to double that of the MFB, representing 64.3% of the total number of firelighters. The main source of referral to the program was via parent's self-investigation (26.8%).

Frequently, firelighters were involved in two to five incidents of firelighting (40.1%), and single incident firelighting occurred in 36% of cases. The lighting of fires more frequently declined, with only 12.9% of young firelighters lighting between 6 to 10 fires, 6.8% lighting between 11 and 20 fires, and 4.2% lighting more than 20 fires. For the purpose of further analysis, firelighting severity was categorised as single, mild (2-5), moderate (6-10), high (11-20), and severe (21+).

Table 2: Frequencies and percentages of demographic information including referral sources.

Demographic Information	*Frequency (N=661)*	*Percentage%*
Gender		
Males	605	91.5
Females	56	8.5
Age		
4-6	87	13.2
7-9	156	23.6
10-12	159	24.1
13-15	190	28.7
16-18	69	10.4
Parent Relationship Status		
Married or De Facto	290	43.9
Divorced, Single or Separated	294	44.5
Region		
MFB	236	35.7
CFA	425	64.3
Referral to the Program via		
Self-Investigation	117	26.8
OIC Fire Call	104	15.7
Police	89	13.5
DHS-Mental Health Service	37	5.6
DHS- Child Protection	26	3.9
Family Pediatrician	4	.6
School	56	8.5
Other Agency	112	16.9
Youth Justice	52	7.9

Cross-tabulations of gender with total number of fires were calculated and are presented in Table 3. Single firelighting occurred in 58.9% of female firelighters, and their involvement in subsequent firelighting decreased. No female firelighter was amongst the severe category. Male firelighting mainly occurred in the mild category (41.2%), followed by single incidents which accounted for 33.9% of male firelighting. Chi-square test for independence identified a significant association between gender and severity of firelighting, $\chi^2(4, n=661)=15.22, p=.004$.

Table 3: Cross-tabulation of percentages of gender with firelighting severity.

	Firelighting Severity				
Gender	***Single***	***Mild***	***Moderate***	***High***	***Severe***
	1	***2-5***	***6-10***	***11-20***	***21+***
Gender					
Male	33.9	41.2	13.2	7.1	4.6
Female	58.9	28.6	8.9	3.6	0

Percentages of age groups and the severity of firelighting elicits interesting figures which have been presented in Table 4. Of all age groups, 16 to18 year olds had the highest prevalence of single firelighting (50.7%), however, they account for only 14.7% of single episode firelighting. The age group of 13-15 year olds account for high proportions of high (44.4%) and severe (46.4%) of firelighting. Chi-square test of independence indicated a significant association between age and severity of firelighting, $\chi^2(16, n=661)=30.79, p=.014$.

Table 4: Cross-tabulation of percentages of age with firelighting severity.

Age Category	*Firelighting Severity*				
	Single	***Mild***	***Moderate***	***High***	***Severe***
	1	***2-5***	***6-10***	***11-20***	***21+***
4-6 (*n=87*)					
% within Age Group	36.8	49.4	9.2	4.6	0.0
% within Total Fires	13.4	16.2	9.4	8.9	0.0
7-9 (*n=156*)					
% within Age Group	36.5	41.7	14.1	5.1	2.6
% within Total Fires	23.9	24.5	25.9	17.8	14.3
10-12 (*n=159*)					
% within Age Group	27.7	44.7	15.1	6.9	5.7
% within Total Fires	18.5	26.8	28.2	24.4	32.1
13-15 (*n=190*)					
% within Age Group	36.8	34.2	11.6	10.5	6.8
% within Total Fires	29.4	24.5	25.9	44.4	46.4
16-18 (*n=69*)					
% within Age Group	50.7	30.4	13.0	2.9	2.9
% within Total Fires	14.7	7.9	10.6	4.4	7.1

Information regarding the likely locations of firelighting, source of ignitions, and premeditation was collected and the frequencies and percentages are summarised in Table 5. A large proportion, 29.5%, of fires occurred inside the young firelighter's home, followed by their garden or yard (17.9%). The main source of ignition was lighters (64.9%). When queried whether the firelighting incident was planned in advance, 66.3% participants reported that no prior planning had been involved in the firelighting. Over a quarter, 26.2%, of firelighters also had a sibling that engaged in unsafe fire behaviour.

Table 5: Summary of frequencies and percentage of fire specific variables.

Fire specific variables	*Frequency (N=661)*	*Percentage%*
Where fire occurred		
Inside Home	195	29.5
Garden/yard	118	17.9
School	83	12.6
Parklands	44	6.7
Neighborhood	56	8.5
Abandoned Property	16	2.4
Garage/Shed	31	4.7
Friend’s House	20	3.0
Other	54	8.2
Ignition source		
Lighter	429	64.9
Matches	158	23.9
Stove	30	4.5
Other	30	4.5
Fire planned in advance		
Yes	150	22.7
No	438	66.3
Don’t Know	43	6.5
Other children involved in firelighting		
Yes	173	26.2
No	488	73.8
Smokers in the home		
Yes	456	69.0
No	205	31.0

Chi-square test for independence indicated a significant association between total number of fires and premeditation of firelighting, $\chi^2(8, n=631)=29.47$, $p=.000$. No significant association was identified between source of ignition and premeditation of firelighting, $\chi^2(2, n=631)=1.78$, $p=.41$. Similarly, no significant association was identified for the presence of smokers within the home and severity of firelighting, $\chi^2(4, n=661)=2.01$, $p=.73$

The frequencies and percentages of child specific factors which include young firelighters who accessed counselling, had prior involvement with the courts, and placements outside of the home were computed. Table 6 provides the percentages of child specific factors and their representation in the number of total fires.

Table 6: Cross-tabulation of percentage of Child Specific factors with total number of fires.

Child specific factors	***Percentages***				
	Total number of fires				
	Single	***Mild***	***Moderate***	***High***	***Severe***
	1	***2-5***	***6-10***	***11-20***	***21+***
Received Counselling					
Yes	44.5	61.9	65.9	75.6	60.7
No	55.5	38.1	34.1	24.4	39.3
Still receiving Counselling					
Yes	30.7	46.8	44.7	55.6	39.3
No	69.3	53.2	55.3	44.4	60.7
Involvement with Courts					
Yes	31.9	31.7	34.1	35.6	28.6
No	68.1	68.3	65.9	64.4	71.4
Placement outside of home					
Yes	12.6	16.6	18.8	22.2	28.6
No	87.4	83.4	31.2	77.8	71.4

Counselling was received in the past or currently by 57% of firelighters and 41% continued to see a counsellor, whilst 43% had not accessed any form of counselling. Close to a third, 32.2%, of young firelighters had some involvement with the courts, although the majority (67.8%) had no involvement. A small number, 16.3% of firelighters had placements outside of the home, either in foster care or institutions, compared to 83.7% who had not had any placements outside of the home.

As displayed in Table 6, the percentage of young firelighters accessing counselling increases as the total number of fires increases, although this is not consistent with the severe group. Nevertheless, chi-square test of independence identified a significant association between total number of fires and received counselling, $\chi^2(4, n=661)=26.88$, $p=.00$, and still receiving counselling, $\chi^2(4, n=661)=18.63$, $p=.001$. No significant association between firelighting severity and involvements with the courts was identified using chi-square test of independence, $\chi^2(4, n=661)=.58$, $p=.97$. Similarly, no association was highlighted with firelighting severity and placements outside of the home, $\chi^2(4, n=661)=7.03$, $p=.13$.

The motivation behind acts of firelighting was ascertained from the young firelighters and frequencies were calculated. Curiosity and interest in fire was by far the most commonly reported motivation behind firelighting, accounting for 45.9%. Peer pressure has been reported as a motivation for firelighting in 13.9% of cases. The remaining possible motivations were all below 10%. Only 0.8% of participants reported that their firelighting was a result of an accident. Refer to Table 7 for a summary of frequencies and percentages.

Table 7: Frequency of various motivations behind firelighting (self- report).

Motivations behind Fire	*Frequency (N=661)*	*Percentage%*
Curiosity/Interest	327	49.5
Peer Pressure	92	13.9
Anger/Revenge	59	8.9
Don’t Know	54	8.2
Other	35	5.3
Attention Seeking	30	4.5
Boredom	30	4.5
Malicious Mischief	29	4.4
Accident	5	0.8

Table 8 contains a summary of cross-tabulations calculated for motivations behind firelighting with age, gender, and severity of firelighting. As displayed in Table 8, by far the leading motivation behind firelighting was curiosity and interest, across both genders, all age groups, and severity of firelighting. Chi-square test for independence was performed on these variables, however the assumptions were violated for variables gender and firelighting severity. A significant association was identified between motivation behind firelighting and age, $\chi^2(24, n=607)=84.37, p=.000$.

Table 8: Cross-tabulation of percentages for motivation behind firelighting with gender, age, and total number of fires.

Motivation	*Percentage %*											
	Gender		*Age*					*Total number of fires*				
	Male	*Female*	*4-6*	*7-9*	*10-12*	*13-15*	*16-18*	*1*	*2-5*	*6-10*	*11-20*	*21+*
Curiosity/Interest	54.9	43.1	71.3	68.8	53.4	44.9	25.0	51.4	52.6	57.7	58.1	68.0
Peer Pressure	14.9	17.6	3.8	11.3	17.1	20.5	18.8	21.6	14.2	6.4	9.3	8.0
Anger/Revenge	9.0	17.6	8.8	8.5	8.2	10.8	14.1	6.3	9.1	17.9	16.3	8.0
Malicious Mischief	4.9	3.9	3.8	2.8	3.4	5.1	12.5	3.8	5.1	7.7	4.7	0
Attention Seeking	5.0	3.9	11.3	4.3	4.8	2..3	6.3	3.4	5.5	6.4	4.7	8.0
Boredom	5.0	3.9	0	2.1	6.8	6.8	7.8	4.8	6.3	2.6	2.3	4.0
Accident/Other	6.3	9.8	1.3	2.1	6.2	9.7	15.6	8.7	7.1	1.3	4.7	4.0

Post-fire behaviour of the child and the parent's reaction to firelighting was examined and frequencies and percentages were calculated and are presented in Table 9 as a function of gender and age. An alarming 69.0% of young firelighters reported that they did not seek help following the firelighting, 19.2% reported they did seek help, whilst 3.5% responded "Don't Know". Close to half the participants, 45.1% reported they stayed to watch the fire, 43.9% did not stay and watch, whilst three percent responded they did not know. More than half the participants, 52.8% voluntarily admitted to lighting the fire, 22.8% lied about their involvement in the fire, and 16.3% did neither, as reported by the parents.

Table 9: Cross-tabulation of Post-fire Behaviour with gender and age.

Post-fire behaviour	***Percentage***						
	Gender		***Age***				
	Male	***Female***	***4-6***	***7-9***	***10-12***	***13-15***	***16-18***
Watched Fire							
No	48.6	56.9	48.0	46.5	54.0	42.4	66.7
Yes	51.4	43.1	52.0	53.5	46.0	57.6	33.3
Sought Help							
No	78.4	76.5	68.8	81.0	73.6	82.4	83.3
Yes	21.6	23.5	31.2	19.0	26.4	17.6	16.7
Ownership of fire							
Voluntarily admitted	57.5	56.6	58.8	52.7	51.4	59.7	75.0
Lied	25.2	20.8	21.3	22.3	31.9	27.3	11.7
Neither	17.3	22.6	20.0	25.0	16.7	13.1	13.3

Cross-tabulations were conducted for post-fire behaviour and variables age and gender. Male firelighters had a higher percentage of watching fire (51.4%), but did not differ from females when it came to seeking help or voluntarily admitting their firelighting. Males lied 25.2% of the time, whereas 22.6% of females opted to neither admit nor lie about their firelighting. Chi-square test of independence did not find any significant association with post-fire behaviour and gender.

Age comparisons indicated that the age group of 16 to 18 years were least likely to stay and watch the fire (66.7%), least likely to seek help (16.7%), but more often voluntarily admitted their firelighting than any other age group (75%). Young firelighters in the age group of 7 to 9 ranked highest in staying to watch the fire (53.5%), and 10 to 12 year olds lied most about their firelighting (31.9%).

Chi-square test of independence was used to examine whether there was an association between age and post-fire variables. Significant associations were identified between staying to watch the fire and age, $\chi^2(4, n=588)=12.19$, $p=.02$, and ownership of fire and age, $\chi^2(8, n=608)=20.77$, $p=.01$. No significant association was found between seeking help and age, $\chi^2(4, n=583)=9.04$, $p=.06$.

Table 10: Frequencies and percentages of Post-fire Feelings of child, and reactions of parents.

Post-fire feelings	***Frequency (N=661)***	***Percentage%***
Feelings after fire reported by child		
Happy	42	6.4
Sad	45	6.8
Frightened	83	12.6
Scared	104	15.7
Panic	115	17.4
No feelings	175	26.5
Other	31	4.7
Parents reaction to Firelighting		
Dismissed	14	2.1
Felt distressed/Helpless	163	24.7
Felt angry	208	31.5
Punished child	91	13.8
Tried to explain	47	7.1
Other	82	12.4
Don’t Know	56	8.5

Table 10 summarises the frequencies and percentages post-fire feelings experienced by the young firelighters, as well as the reactions of parents. The experience of “no feelings” was reported by 26.5% of young firelighters, followed by 17.4% reporting they experienced panic. The most common reaction experienced by parents in response to their child’s firelighting was “anger”, accounting for 31.5% of cases. A quarter of parents, 24.7%, reported feeling distress and helpless in response to the child’s firelighting.

2.4 Discussion

The aim of the present study was to examine the characteristics and profiles of young firelighters who participated in the Victorian JFAIP and to explore any associations with their firelighting behaviour. Kolko et al. (1985) proposes that a gap exists in the profiling of community firelighters as the bulk of research investigating the characteristics of firelighters have compared firelighters with non-firelighters, who are often clinically admitted psychiatric samples with severe psychopathology and disturbance. The present study is important in that it provides a profile of the “community” firelighter, using a significant sample size of over 600 young firelighters, and describes factors that are associated with firelighting. The profile of the young firelighter, as captured by the JFAIP database, provides interesting points for discussion and a conceptualisation of the local young firelighter and their firelighting behaviour.

Young firelighters within the JFAIP were predominantly male. This finding is consistent with the bulk of research which identify the male gender as a risk factor for firelighting (Adler, et al., 1994; Fineman, 1995; Glancy, et al., 2003; Hoertel, et al., 2011; Kolko & Kazdin, 1986; Kosky & Silburn, 1984; McCarty & McMahon, 2005; McDonald, 2009; Muller, 2008), and for recidivist firelighting (Kennedy, et al., 2006). There has been no increase in the number of female firelighters who have been involved in the program since McDonald’s (2009) study, and females remain significantly low compared to males.

The average age of firelighters has risen over the years. In this study, the average age of firelighters was just under 11 years. Previously, the ages of firelighters who participated in the program were younger. Adler et al. (1994) noted that the average age in his sample was eight years, and McDonald's (2009) study of the database indicated that the average age of firelighters was nine years. Gaynor (1996) proposes that children display fire interest between the ages of three and five, fireplay between the ages of five and nine, and by the age of 10 usually acquire fire safety skills and competencies. However, for some young children, a few instances of unsupervised fireplay manifests into firelighting behaviour. Therefore, a possible explanation as to why the age of firelighters is on the rise, may be that young firelighters are displaying persistent fire interest and related behaviour beyond the age appropriate developmental stages, and concerned parents are seeking the services of the JFAIP.

Previous research has identified that young firelighters are predominantly from single parent families (Adler, et al., 1994; Kolko & Kazdin, 1986; Kosky & Silburn, 1984; McDonald, 2009). Just over half of the young firelighters in the program were from divorced, single or separated families, in line with previous research. To what extent and how changes in the family structure affect firelighting is unclear and raises a number of questions. The process of divorce or separation is potentially a precipitating factor in firelighting behaviour, but additionally it may also affect the degree and level of monitoring and supervision parents provide, and impact firelighting in this sense. Lack of proper supervision and discipline are risk factors for firelighting behavior (Cox-Jones, et al., 1990; Dolan, et al., 2011; Kazdin & Kolko, 1986). Parenting programs address areas such as discipline and monitoring of children (McDonald, 2009), and the provision of referral options to such programs during the JFAIP intervention may be beneficial for the parent. This may be extremely valuable given that over a quarter of firelighters in the present sample were found to also have siblings who engage in unsafe firelighting, consistent with findings of McDonald (2009).

The majority of referrals to the program were by parents via self-investigation. This suggests that parents are aware and concerned about their child's firelighting behaviour, and to a certain degree, it demonstrates commitment and involvement on behalf of the

parent, to both investigate appropriate intervention options and to take part in the program. Of concern though, are the young firelighters who are typically part of dysfunctional families (Kolko & Kazdin, 1990) with high levels of parental psychopathology (Kolko & Kazdin, 1986; Kolko, et al., 1993; Kolko & Kazdin, 1990; Kosky & Silburn, 1984), and are at risk for severe firelighting and recidivism. It is possible that, within the dysfunction of the family and the individual problems of their parents, a lack of knowledge and understanding may be present, regarding the young firelighter's fire behaviour, and services that can be accessed. This raises the question as to whether those young firelighters most at risk are not referred to the program, and may go undetected.

Also of interest is the extremely low number of referrals made to the program by paediatricians. Routinely, paediatricians are the first point of referral, by general practitioners, when there are concerns surrounding child development and behaviour. Given that firelighting behaviour can occur at a young age, as well as the likelihood that firelighters have co-morbid psychopathology (Becker, et., 2004; Forehand, et al., 1991; Kolko & Kazdin, 1992; Martin, et al., 2004; Pollinger, et al., 2005; Vreeland & Levin, 1980), paediatricians are likely to encounter firelighters at an early age, although they may remain unaware of such behaviour unless they probe specifically. Working closely and collaboratively with paediatricians may prove to be relevant in the early detection and appropriate intervention and treatment planning of young firelighters.

Close to half the firelighters in the program were from the rural and urban fringe-based CFA, consistent with the findings of McDonald (2009); however, this finding should be interpreted with some caution. The ratio of the population that falls under the region of the MFB and the CFA is unclear and currently not available to the public. C. Barber from the CFA (personal communications, 25th March, 2014) estimates that based on 2011 Australian Bureau of Statistics, 57% percent of the Victoria's population falls within the CFA regions. This provides an explanation of the higher frequency of CFA JFAIP cases. Furthermore, the expanse of urban living into former rural regions denotes that there a densely populated suburbs and developments within the CFA region, in which young and growing families are establishing homes.

Multiple firelighting was common amongst the young firelighters. Although a large proportion engaged in a single episode of firelighting, consistent with previous research, young firelighters have a tendency to light more than one fire (Kolko & Kazdin, 1986; Kolko & Kazdin, 1989; MacKay, et al., 2006). The mean number of fires lit by the current sample of firelighters is less than what was reported by Adler et al. (1994) and McDonald (2009). While it is difficult to explain this decline without further investigation, one wonders whether the tragic events of Black Saturday in Victoria in 2009 and the subsequent increase in fire safety campaigns, may have created an increased fire safety awareness within the community. This may lead to referrals to the JFAIP at an earlier point in the history of a child's firelighting behaviour.

A significant association was identified between gender and severity of firelighting. Males tended to engage in multiple firelighting, more so than females. The female firelighter's trajectory has been described as different from that of males, as the escalation of firelighting beyond a few incidents is less frequent in females than in males (MacKay, et al., 2009). The female firelighters in the program appear to adopt a similar path, with the majority involved in only single firelighting episodes, and the frequency of subsequent episodes decreasing substantially.

A significant association was identified with age and firelighting severity. Firelighting severity initially increased as firelighters became older, and later declined. This fits in with Gaynor's (1996) theory that children go through sequential stages of fire behaviour, after which they acquire age appropriate and fire-safe behaviours. Jacobsen (1985b) notions that there are two distinct age groups, eight years and 13 years being the average, during which children experience peaks in their fire related behaviour, in different ways. Similar to Gaynor (1996), Jacobsen (1985b) supposes that younger children fail to learn fire competency skills, whilst older children lose their fire skills after acquiring them, and adopt a profile that is more typical of antisocial behaviour rather than just firelighting. What this suggests is that with age, young firelighters may acquire a variety of antisocial and conduct disordered behaviours, compared to their younger peers, and engage in these, therefore possibly demonstrating a reduction in

their firelighting behaviour, but not necessarily of their antisocial and conduct disordered behaviour.

The majority of firelighting incidents were not planned. This finding is in line with McDonald's (2009) study, though the figure in that study was higher. Lighters are the main source of ignition, and although a significant association was identified with the source of ignition and fire severity, surprisingly no association was found between source of ignition and planning of a fire in advance. Perhaps the convenience and ease of using lighters makes them the ignition agent of choice for both planned and spontaneous fires. Accessing lighters would not be difficult as two thirds of firelighters reported living with at least one smoker, consistent with the findings of McDonald (2009) and Adler et al. (1994). McDonald (2009) suggests that safe storage of lighters and other ignition sources has been found to be an effective intervention strategies for preventing firelighting which parents may be unaware of, and an emphasis should be placed on this in intervention programs.

Perhaps understandably, single firelighters had the lowest frequency for accessing counselling. It appears that as firelighting severity increased, so did the frequency for accessing counselling. It is unclear whether counselling was accessed to address the firelighting behaviour, or for other co-morbid psychopathology, which may act as perpetuating factors in the maintenance of firelighting. This highlights the importance of a thorough assessment of firelighters which goes beyond their firelighting behaviour and involvement, to incorporate biopsychosocial factors that may predispose them to firelighting, as well as factors (including psychopathology) that may trigger and maintain the behaviour. Furthermore, close to a third of young firelighters had been involved with the courts for fire related charges and theft, and a smaller number had placements outside of the home, typically in foster care, residential care, or institutions.

A variety of motivations precipitate firelighting, of which fire curiosity and interest are one (Lambie & Randell, 2013). A significant association was identified between age and motivation. Curiosity as a motive decreased with age, whereas the motivations of peer pressure, anger and revenge, malicious mischief, and boredom increased with age,

suggesting that older firelighters have different motivations for firelighting, and possibly adopt a more antisocial profile than younger firelighters (Jacobson, 1985b). Likewise, Kolko & Kazdin (1994) reported a significant association with age and revenge as a motivation, which was reported more often in older firelighters. Interestingly, attention seeking was reported more frequently for the youngest and oldest age groups, and accidents were rarely the excuse to firelighting. Furthermore, a significant relationship was established between fire interest and firelighting severity, consistent with the theory that fire interest is a risk for ongoing firelighting (Cox-Jones, et al., 1990; Kolko & Kazdin, 1989b, 1992; MacKay, et al., 2006). Within the present database of firelighters, curiosity and interest in fire was by far the main motivation behind firelighting, regardless of gender and age. But, as the age of firelighters increased, the less curiosity was reported as a motivation compared to younger age groups. Fire safety education offered by the JFAIP does not explicitly focus on fire interest and curiosity, though post-intervention results indicate a decrease in fire interest and curiosity as reported by the young firelighter and their parents (McDonald, 2009). This suggests that increasing fire awareness and appropriate fire safety behaviours may be an initial step towards addressing young firelighter's fire interest and curiosity, however, may not adequately treat a deeper underlying psychopathology that potentially exists.

Young firelighters reported a tendency to watch the fire they had lit. A significant association was identified with age and staying to watch the fire. The older age group reported less interest in staying to watch the fire than younger peers. This may be a consequence of the decreased fire interest that eventuates with older age. An equally plausible explanation may be the belief older firelighters have about their firelighting behaviour. Perhaps they assume they are more in control of their firelighting and therefore, do not stay to watch the fire they lit, feeling assured it will extinguish on its own. Alternatively, a lack of responsibility combined with antisocial behaviours and cognitions may warrant them heedless of the consequences of their actions. Such speculations draw attention to the need for further research which explores the cognitions associated with firelighting behaviour and the impact they have on firelighting behaviour.

The lack of help seeking behaviour of the young firelighters represented within this study is particularly concerning. Over two thirds of young firelighters, both males and females, and across all age groups, did not seek help following their firelighting incident. The probable explanation of this is the fear of consequent punishment and perhaps the desire to evade responsibility and ownership. Yet the implications of this are frightening, especially for younger firelighters who have limited experience in extinguishing fire and escaping it, and are at increased risk of burn trauma (Mackay, et al., 2006).

Limitations

The present study was limited in that it was a retrospective analysis of the database, making it difficult to develop a richer and deeper contextual understanding of young firelighters and their firelighting behaviour. Additionally, the lack of a randomised, controlled sample or pre and post-intervention comparisons, did not allow for any evaluation of the JFAIP nor any changes in firelighting behaviour following intervention. Moreover, the quality of the questions asked and the impact of the interviewers' style and characteristics were not measured and accounted for. This may have been reflected by the substantial amount of data missing that was observed and excluded from the analysis. However, a strength of the database was its size and diversity across age and firelighting severity.

Future Recommendations

Future research should investigate the cognitions that are associated with firelighting behaviour (Mackay, et al., 2006), as limited details of thoughts and affects surrounding their experience of firelighting are available. Future research exploring the developmental differences that occur with changes in age, and their association with firelighting is of equal importance. Such information would provide valuable leads in understanding the diversity that exist amongst firelighters, and inform the direction treatment and intervention programs should take. Research on historical trends in the JFAIP database over time would also be of interest but would potentially be influenced

by factors such as publicity in the community about the JFAIP and related referral patterns, as well as local and national publicity about fire deaths and fire safety.

Conclusion

In general, the findings of the database analysis are consistent with previous research. Firelighters are predominantly males from different age groups, who often live with a single parent, and engage in multiple firelighting episodes. The most common motivation behind firelighting is fire curiosity and interest, which decreases with age. Firelighting severity initially increased with the child's age, and later declined. The significant association between age and aspects of firelighting behaviour suggest that treatment and intervention should take this into consideration. Early identification of firelighters is crucial in preventing persistent and problematic firelighting in future years.

Chapter 3: Study Two - Recidivist Firelighting Behaviour

3.1 Overview of the Literature

Firelighting behaviour in young children and adolescents poses a significant risk to the health and well-being of the individual and their community. The literature suggests that young persons who become involved in firelighting often continue to do so on more than one occasion (Kolko & Kazdin, 1988; MacKay, et al., 2006). The definition of firelighting recidivism, for the purpose of the present study, involves matchplay and firelighting that has occurred in the 12 month period after the child has completed the Juvenile Fire Awareness and Intervention Program (JFAIP). Matchplay is considered minor recidivism whereas, firelighting is considered major recidivism (Kolko & Kazdin, 1988).

Prevalence

There is a high rate of recidivism in firelighting behaviour in children, and evidence suggests that these children are also at risk for other offences (MacKay, et al., 2006). Studies investigating firelighting recidivism rates report varying results (Kolko & Kazdin, 1992). Hanson et al. (1994) determined that 95% of the firelighters were recidivist. Stewart and Culver (1982) found a 23% rate of recidivism at 12 months follow-up, and Mackay, at al., (2006) reported 26% firelighting recidivism rate after a brief intervention (MacKay, et al., 2006). Del Bove, et al. (2008) established that 15% of adolescents had firelighting recidivism between 2-6 years after intervention. Following their ten-year follow-up, Lambie, et al. (2013), identified that although recidivist firelighting was only 2%, general offending behavior was as high as 59%. In terms of Australian prevalence rates, McDonald (2009) reported a 31% recidivism rate and Adler et al. (1994) reported a 40% recidivism rate following fire education intervention at one year follow-up.

Research Investigating Recidivist Firelighting

Research investigating the characteristics and profiles of young firelighters who engage in recidivist firelighting is scarce and has mainly been conducted outside of Australia. One notable exception is the work by McDonald who investigated firelighting recidivism data in Victoria published in 2009. The research followed the prospective recidivism risks of 29 young firelighters who had completed the Juvenile Fire Awareness and Intervention Program (JFAIP) via the Metropolitan Fire Brigade (MFB) and the Country Fire Authority (CFA). Significant differences were identified between recidivist and non-recidivist firelighters. Recidivist firelighters reported increased fire curiosity, perceived that they experienced more discipline and supervision, and demonstrated less fire safety skills than non-recidivists. Parents of recidivist firelighters perceived less positive behaviours from their children, more negative behaviours, and reported frequently punishing their child. Recidivists firelighters were more exposed to adult models with a fire fascination, were more aggressive and destroyed property, and had an earlier onset and greater history of firelighting. All in all, fire-related history, including the early onset of fire interest, was the most significant predictor of recidivist firelighting. McDonald's (2009) findings are similar and consistent with the findings of Kolko and Kazdin (1989) who reported that recidivist firelighters showed increased involvement and curiosity in previous and current fire-related activities, were more exposed to family members and peers who were involved in fire-related behaviour, and had more concerns from adults regarding their firelighting behaviour.

Kolko and Kazdin (1992) conducted research comparing fire setters and non-fire setters, aged six to thirteen, over a 12-month period. Children who continued to set fires resided in homes with heightened family discord, high levels of conflict and stress, disruption, rejection, and little structure or discipline. Recidivist firelighters reported feeling less accepted by their mothers, greater knowledge of inflammables and more fire involvement compared to non-recidivists. They were also more attracted to fire, had engaged in more fire-related activities, had more peer/adult models with fire interests, and received more complaints about their fire activity by members of their community than non-recidivist firelighters. These children were rated as being high in hostility and

carelessness by their parents. Parents also rated these children highly in hostility, carelessness and antisocial behaviour and low in school performance. The parents also reported that these children had higher participation in social activities, heightened by an interest and attraction to fire. (Kolko & Kazdin, 1992). In summary, variables associated with firelighting are also associated with recidivist firelighting. Firelighting risk includes cognitive-behavioural aspects that are specific to the young firelighter and involves attraction to fire, heightened anger arousal, general impulsivity, and limited social competence variables. Early exposure to fire may increase the possibility of curiosity, attraction, and possession of materials which may lead to further fire-lighting behaviour (Kolko & Kazdin, 1992).

Kolko and Kazdin (1994) conducted a two year follow-up study investigating the characteristics of children and their fire setting incidents, predictors of recidivism, and a comparison of the severity and intensity of multiple versus single episodes of fire setting episodes. They reported that motives of fun and curiosity, access to fire lighting incendiaries, and a lack of parental consequence and child remorse were identified as common characteristics amongst young recidivist firelighters (Kolko & Kazdin, 1994). Young firelighters reported that they were involved in multiple firelighting incidents, usually on their own, and primarily involved the burning of paper and garbage in residential locations (Kolko & Kazdin, 1994).

In another investigation by Kolko, et al. (2001), 268 children were recruited via the school system as well as outpatient psychiatric clinics and predictions were made about the course of fire related behaviour these groups of children would engage in over a two year period. At the onset of the study 13% of non-patients and 26% of patients who were non firelighters, engaged in firelighting behaviour during the two year follow-up. On the other hand, 50% of non-patients and 59 % of child patients became recidivist firelighters (Kolko, et al., 2001). A large number of children continued to engage in matchplay and firelighting, with the patient group engaging in an average of three to four incidents of fire related behaviour at a two year follow-up (Kolko, et al., 2001). Involvement in firelighting at the initial assessment phase was found to be a significant predictor of future firelighting behaviour. Additionally, the level of covert antisocial

behaviour, involving lying, destructiveness, carelessness and secrecy that the young firelighter was involved in, also contributed to the model. Predictor variables included matchplay and fire setting, and other measures of psychosocial functioning. Involvement in matchplay initially contributed to the prediction of follow-up firelighting behaviour whereas, parental or familial variables did not contribute to the model, suggesting that child fire-specific variables should be focused on when predicting the course of future, late or recidivist firelighters. (Kolko, et al., 2001).

In their 10 year follow up of young firelighters who had participated in the New Zealand Fire Awareness and Intervention Program, Lambie, et al., (2013) established that firelighters were at risk of committing a variety of offenses in the future. A history of family violence and firelighting were used as predictor variables. Although the rate of arson was only 2%, overall rate of offending was high, with 59% of young firelighters reportedly re-offending. A history of firelighting increased the risk of future fire involvement, whilst family violence increased the risk of severe offending. Environmental and individual variables play a significant role in firelighting, and a link between firelighting and serious antisocial behaviour was identified. Living with both parents was found to be a protective factor that decreased the risk and probability of future offending behaviour (Lambie, et al., 2013).

In their review of firelighting literature, Lambie and Randell (2011) summarised the factors associated with fire setting and recidivism identified in research such as gender, family dysfunction, abuse, individual characteristics, anger, hostility and aggression, fire setting history, interest in fire, fire incident variables, antisocial nature of fire setting, and developmental factors. They explained that except for the fire specific factors, other risk factors are also indicative of general child and adolescent psychopathology. This makes it difficult to assess whether they are risk factors specifically for fire setting or other co-morbid conditions such as conduct disorder (Lambie & Randell, 2011).

Childhood interest in fire reported by the family has been found to be the single most robust predictor of firelighting recidivism (Kennedy, et., 2006; Kolko, et al., 2006; Kolko & Kazdin, 1989; Kolko & Kazdin, 1994). Interest in fire plays a far more

significant role than antisocial behaviour and is a predictive factor in the determination of the severity and persistence of involvement in firelighting (MacKay, et al., 2006). Additionally, previous fire involvement has been identified as one of the strongest predictors of firelighting recidivism (Doley, et al., 2011; Kennedy, et al., 2006; Kolko, et al., 2001; Kolko & Kazdin, 1992; Kolko & Kazdin, 1994).

Various research projects have identified a range of predictor variables of recidivism in firelighting behaviour. Kolko and Kazdin (1992) found that the most robust predictor of recidivism was parent report of their child's hostility and carelessness. MacKay et. al., (2006) regarded fire-specific factors, such as history of firelighting, the total number of fires set, and the motive for fire setting, as the best predictors of firelighting recidivism. Gallagher-Duffy et al., (2009) identified greater fire-specific attentional bias amongst adolescents who were self-reported firelighters than those who were not. Research exploring characteristics associated with recidivism identified a long history of firelighting and matchplay, a heightened curiosity, interest and attraction to fire, and elevated externalising behavior in recidivists (Kolko, Herschell & Scharf, 2006). Additionally, Kennedy et al., (2006) state that recidivist firelighters are frequently males, older in age, with a heightened interest in fire and fire-related activities. They may exhibit more covert antisocial behaviour, poorer social skills, and higher levels of family dysfunction, compared to non-recidivist firelighters. Kolko & Kazdin (1994) found a significant relationship between age and continued firelighting, with older children indicating a higher likelihood of future firelighting. Doley, et al. (2011) identified prolonged interest in fire, previous history of firelighting, substance use and younger age to be risk factors for firelighting recidivism in adults. Other factors such as emotions that immediately precede firelighting and follow after setting a fire, solitary firelighting, and the motivations behind firelighting or the lack of them are areas that require further exploration.

Sakheim, et al., (1991) identified ten variables which they propose are promising indicators of predicting young firelighters most at risk for recidivist firelighting. These were intense feelings of resentment and anger directed towards their mother stemming from unmet emotional needs, rage at adults for perceived insults and humiliation,

excitement and sexual arousal experienced when watching fire, fire preoccupation, poor judgment, planning and competence in social situations, impulsivity with poor self-control, inadequate superego development with a lack of remorse and guilt, cruelty to children and or animals, and co-morbid conduct disorder. They also reported that preoccupation with fire is significantly greater in recidivist firelighters than the curious type firelighter.

Sakheim and Osborn (1999) deduce that there a number of variables which reliably and accurately predict and differentiate between high risk and low risk firelighters. They list some of these as fire arousal, history of fire play, cruelty to animals or people, poor social judgement, and a lack of empathy.

Importance of a screening tool

As mentioned previously, McDonald (2009) has revealed that within a year of completing the Victorian Juvenile Fire Awareness and Intervention Program (JFAIP), a third of young firelighters continued to set fires. Currently, there is no Australian screening tool for fire services to employ in order to predict future recidivism in young firelighters. The present study is the first step towards the development and implementation of a screening tool to be used by fire services so as to improve the identification of young firelighters who may be at risk of continuing to light fires, and to direct them towards an intervention process. The second step in the development of a screening tool, which is beyond the scope of this thesis, is to consider the predictive validity of the items on the questionnaires in terms of who were recidivists and who were not. The relative predictive contributions of the different items on the questionnaires would be better understood from such an analysis and a draft screening tool developed. A Receiver Operating Characteristic (ROC) Curve analysis would allow the determination of a hypothesised cut-off score for the draft screening tool. The sensitivity and specificity of the draft screening tool could be determined by a prospective study of a new sample of firelighters. As firefighters may be the first professionals that firelighters come into contact with, it is important that fire services are equipped to identify high risk firelighters and direct them to appropriate services for

intervention and treatment. This may assist in effectively managing their behaviour, their risk for continued firelighting and the potential risk they pose to themselves and others. Identifying predictor variables of firelighting recidivism behaviour is invaluable for both fire services and mental health professionals. However, the lack of a screening tool incorporating the predictor variables of recidivism is a significant gap in the research.

The Child and Family Risk Survey (Moynihan & Flesher, 1998) developed based on previous research, is one particular screening tool that is being used in the United States and United Kingdom to predict recidivism. However, the predictive validity of this tool has yet to be assessed in an Australian context. The assumption is that a screening tool such as the Child and Family Risk Survey will help determine the intervention and treatment fire setters will receive. The 'curious' fire setter will be offered fire safety education whereas, the 'pathological' firelighter will be referred to appropriate mental health professionals (Moynihan & Flesher, 1998). A collaborative and multi-agency approach incorporating both fire education and psychosocial needs is vital in addressing the treatment needs of firelighters (Lambie & Randell, 2011).

Anecdotal reports from local fire services indicate that they are overwhelmed by the large number of children and adolescents who participate in the JFAIP, yet whose fire setting behaviour suggests a deeper problem that cannot be addressed by the program. Therefore, a multidisciplinary approach is encouraged whereby referral of juveniles with elevated risk factors to appropriate mental health resources by firefighters is advocated.

Research Questions

There are a number of research questions this study aims to address. To effectively answer these questions, the study has been divided into two parts. Part A will include all young firelighters who participated in the research whereas Part B will focus on the young firelighters who engaged in recidivist firelighting or matchplay.

Part A of this study explores the following questions:

1. Is there a relationship between the number of firelighting episodes and the age of the firelighter and their fire interest?
2. To what extent does this group of firelighters display co-existing DMS-5 categories of disorders, a history of troubled behaviour, and internalising and externalising behaviours?
3. Does a relationship exist between the rating of parents on fire specific variables and the firelighting behaviour of young firelighters within this sample?

The questions pertaining to Part B include:

1. How many of the participants in the above sample continued to engage in recidivist firelighting and matchplay, and how is their profile different, if at all, from the overall sample?
2. What variables are likely to predict recidivism firelighting and matchplay? How can these be conceptualised to form a tool for assessment and identification of recidivism?
3. Is there a difference in ratings on fire specific variables of non-recidivist firelighters compared to recidivist firelighters?

Aims

The aim of this research was multi-dimensional. The aim of part A was to explore the degree of psychopathology that may exist in a sample of young Australian firelighters. The aim of Part B was to determine the rate of recidivist firelighting within the sample and to identify predictor variables of recidivism. The term 'recidivism' refers to repeat criminal offending and as such is not ideal, however for the purpose of clarity and brevity, this term has been used and should be considered to mean 'reported acts of firelighting'. Furthermore, the current usage of the term recidivism is consistent with the literature (Del Bove & McKay, 2011; Fritzon, et al., 2011; Kolko & Kazdin, 1994; Lambie, et al., 2013). Furthermore, the extent of internalising, externalising and other

co-morbid psychopathology in firelighters was examined as were the, differences between recidivists and non-recidivists.

Hypotheses

Multiple hypothesis exist for this study.

- Hypothesis 1: The age of the young firelighter would have a significant relationship with the total number of firelighting episodes they engage in, as well as their overall fire interest.
- Hypothesis 2: Young firelighters who had co-morbid psychopathology would engage in more firelighting episodes than their peers who did not present with co-morbid psychopathology.
- Hypothesis 3: There would be a significant relationship between parents' rating of their child's fire specific variables and the total number of past fires.
- Hypothesis 4: It is predicted that at least one quarter of young firelighters would engage in recidivist firelighting.
- Hypothesis 5: The best predictors of firelighting in young firelighters would be past history of multiple firelighting, externalising and total problem behaviours reported by parents.
- Hypothesis 6: Recidivist firelighters would have higher ratings on fire-specific variables than non-recidivist firelighters.

3.2 Method

Participants

The participants involved in the current study were recruited subsequent to their referral to the JFAIP, and consequently, were also a part of the database study (Study One). A total of 42 families consented to take part in the research and returned data upon their entry into the program (stage 1). Data on recidivism was collected 12 months later (stage two) from 34 families. Two cases were excluded from the analysis, as the young person had no firelighting history and were not directly involved in the fire incident to which the JFAIP referral was made. (They were bystanders to the firelighting

behaviour). As a result, a total of 40 participants (M=36, F=4) were involved in Stage One of the study, and 32 (M=29, F=3) participants were involved in Stage Two.

Methodology

The current study used a prospective design as information was collected from participants and their families between 2011 and 2013 in two stages; (1) at the outset (information from the parent/guardian, child/adolescent and a teacher collected in conjunction with their participation in the JFAIP), and (2) twelve months later (information from the parent/guardian and a mental health professional subsequent to their completion of the JFAIP). A prospective design allowed a determination to be made as to whether the young firelighter continued to engage in firelighting behaviour within the 12 month period of completing the JFAIP intervention. It also allowed the exploration of any mental health services that had been accessed during this time to address the young firelighters fire behaviour, and the outcome of this involvement.

Recruitment for the present study was conducted during the normal referral process to the JFAIP. In order to participate in the program, a referral call is made to the program coordinator. The program coordinator then assigns a firefighter practitioner to the case and the practitioner subsequently schedules a time to visit the young firelighter with their parent/guardian. For the present study, participants were told of the research during the initial call with the program coordinator. The specific process by which participants were able to provide consent and participate in the study is outlined below:

Stage One

During the initial call, the program coordinator provided an outline of the study to the parent/guardian and invited the parent/guardian to receive additional information about the study. The program coordinator read from a script developed by the researcher to ensure information provided to potential participants was accurate and consistent (refer to Appendix B). Parents/guardians were advised that their participation in the study was voluntary and their refusal to participate would not be communicated to the researchers

and would not disadvantage them in any way, nor affect their child's participation in the program or their relationship with the program. If the parent/guardian expressed no interest in the study, the JFAIP intervention operated as per the usual protocol.

A package of information was posted to the parents/guardians who expressed interest in the study or were interested in obtaining additional information. The package included detailed information about the study (refer to Appendix C), consent forms (refer to Appendix D), questionnaires for the parent/guardian to complete (refer to Appendix E, F, G and H), a copy of the questions the young firelighter would be asked by the firefighter practitioner (refer to Appendix I), and a copy of the questionnaire that would be sent to the young firelighter's teacher.

Parents/guardians who choose to participate in Stage One of the study, were asked to complete; the Brief Agency Contact History (refer to Appendix E), the Family Risk Survey and the Child Risk Survey (Moynihan & Flesher, 1998) (refer to Appendix F), the Firelighting Risk Interview (Kolko & Kazdin, 1989) (refer to Appendix G), the and the Child Behaviour Checklist (Achenback, 1991) (refer to Appendix H) in their own time.

The Brief Agency Contact History was developed by the researchers for the purposes of the present study. The questionnaire queried whether the family had any contact with mental health services and/or other relevant agencies for the child's firelighting behaviour in the past. Information obtained from this measure was descriptive and contributed to a greater understanding of the young person and their history of firelighting behaviour and the types of services that had been sought to address and treat firelighting behaviour in the past.

The Family Risk Survey (FRS) is a screening tool developed for the fire services to determine whether young firelighters have a high/low risk for firelighting recidivism. The Family Risk Survey comprised 7 items to assess the parent/guardian's perception of the young firelighter's fire curiosity, behaviours related to impulsivity, other antisocial behaviours, and the history of firelighting behaviour.

The Firelighting Risk Interview (FRI) comprised 41 items to assess the fire related variables that present the greatest risk for firelighting behaviour. The FRI was based on the model set out by the United States Federal Emergency Management Agency for classifying children at risk of firelighting (Kolko & Kazdin, 1989). For the present study, seven sub-scales were investigated based on their demonstrated association with recidivism. This questionnaire yielded quantitative data scored on Likert scales and, allowed researchers to determine whether fire related variables could predict continued firelighting. The FRI has demonstrated internal consistency, test-retest reliability and can reliably assess dimensions of the model (Kolko & Kazdin, 1989).

The Achenbach System of Empirically Based Assessment (ASEBA) comprised two parts; one to be completed by the parent/guardian (explained here); and the other to be completed by a teacher (explained below). The Child Behaviour Checklist (CBCL) is a report obtained from a parent/guardian to assess a child/adolescents' competencies and emotional and behavioural problems. The measure comprised two components: the first comprised 13 items that assessed the child's competencies. The second component comprised 113 items that assessed the child's behavioural and emotional problems. These problems include internalising problems (anxiety, depression, withdrawn, and somatic complaints), externalising problems (rule breaking and aggressive behaviour), and total problems, which include the internalising and externalising scales as well as other problems (social, thought, and attentional problems) and behavioural and emotional disorder symptoms (Conduct disorder, Oppositional Defiant disorder, Attention Deficit Hyperactive disorder, Anxiety disorder, and Mood disorders). The scores obtained were computed and ratings on a number of scales were provided. Children were rated as being within Normal, At Risk, or Clinically Significant ranges. For the purpose of this study, and due to small sample size, the At Risk and Clinically Significant ranges were combined. The information collected from this tool was used to determine whether any behavioural or emotional factors were predictors of continued firelighting behaviour.

The previous questionnaires were returned directly to the researcher using reply paid envelopes. The contact details (phone and email) of the researcher were provided to all parents/guardians so that they could contact her if they required assistance in completing the questionnaires. This was to ensure that parents/guardians with literacy difficulties or those who were simply confused by the procedures were still able to participate. Upon receiving completed questionnaires, the parents/guardians were sent a $10 gift voucher to recompense them for their time and effort.

If the parent/guardian provided consent for the young firelighter to participate in the study, the Child Risk Survey (CRS) (Kolko & Kazdin, 1989b), (refer to Appendix I) was administered by the firefighter practitioner during the first program visit. The parents/guardians were provided with a copy of the survey in their package of information.

The CRS is a screening tool developed for the fire services to determine whether young firelighters have a high/low risk for firelighting recidivism. The survey comprised of 14 items to determine the child/adolescent's perception of family dynamics, behaviour in general, history of firelighting, most recent fire incident, and interest in fire. The CRS has acceptable internal validity and test-retest reliability (Kolko & Kazdin, 1989b)

The present study did not interfere with the normal process of the program. The JFAIP required the parent/guardian to be present for the interaction between the young firelighter and the firefighter practitioner. Therefore, the parent/guardian was present when the firefighter practitioner administered the CRS screening tool.

Parents/guardians were also asked to provide consent for the researchers to collect information from the young firelighter's teacher (refer to Appendix J). An information sheet (refer to Appendix K) was sent to the teacher explaining that the child/adolescent was participating in a university study (i.e. there was no mention of fire, or of the young person's participation in the JFAIP), and that the information they provided was confidential and would not be communicated to the parent. The letter also asked the teacher not to discuss the study with the young person or parent/guardian.

This was to avoid unnecessary bias of the information they provided, and to protect the child/ family from any stigmatisation that may have occurred should their involvement with the JFAIP have become known at the school. The teacher was also provided with a copy of the parent/guardian's consent to contact.

Teachers were asked to complete the Teacher Report Form (TRF) of the ASEBA measures (Achenbach, 1991) (refer to Appendix L). The TRF is similar to the CBCL parent form. The measure comprised two sections; the first section comprised 14 items that assessed the child's adaptive functioning. The second component comprised 113 items that assessed the child's behavioural and emotional problems. (As mentioned above, the parents/guardians were given a copy of the TRF in the package of information provided to them so they were aware of exactly what the teacher was being asked about their child).

Teachers returned the form directly to the student researcher using a reply paid envelope. If the parent/guardian did not consent to the teacher being contacted, the child's other data were still included in the research. If the researcher did not receive the completed report, they would follow up with the teacher and remind them to return it.. The first method of contact was a phone call, the second, was a letter. The information obtained from this form was collected in order to determine whether behavioural and emotional factors demonstrated at school can predict continued firelighting. However the data will not be analysed here as it was considered beyond the scope of the present study.

Stage Two (Follow up in twelve months)

The purpose of Stage Two was to obtain follow up data relating to the young person's firelighting behaviour in the 12 month period following completion of the JFAIP intervention. Of particular interest was the data relating to recidivist firelighting. Additionally, information pertaining to mental health services the child and adolescent may have received during the 12 month period following the JFAIP intervention was

collected. This information was used to inform the researchers of the types of services parents/guardians were accessing following the JFAIP intervention.

Parents/guardians who participated in Stage One of the research, were sent another package of information at a point in time at least 12 months after their participation in Stage One.
The package included detailed information about the second stage of the study (refer to Appendix M), a consent form (refer to Appendix N), questionnaires for the parent/ guardian to complete (refer to Appendix O and P) and a copy of the questionnaire that would be sent to the child/adolescent's mental health professional (refer to Appendix U).

For Stage Two of the study, parents/guardians were asked to complete the Fire History Screen (Kolko & Kazdin, 1988) (refer to Appendix O, explained below). If the child/ adolescent had received mental health services in the 12 months since completing the JFAIP intervention, the parent/guardian was asked to complete the Questionnaire of Mental Health Services (refer to Appendix P). These questionnaires were returned directly to the researcher using a reply paid envelope. Upon receiving the returned questionnaires, the parent/guardian was sent a $20 gift voucher to recompense them for their time and effort.

The Fire History Screen is a measure of the child/adolescent's firelighting recidivism. The questionnaire comprised 13 items in two components; (1) firelighting and (2) matchplay. Based on the information obtained in this measure, the child/adolescent's firelighting recidivism was categorised into major recidivism (i.e. firelighting) or minor recidivism (i.e. matchplay) for the purposes of the statistical analyses. This information allowed researchers to determine whether the young firelighter continued to light fires, and to determine the severity of the recidivist behaviour. The Fire History Screen has been recommended as a useful measure (Dadds & Fraser, 2006).

The Questionnaire of Mental Health Services was developed by the researchers for the purposes of the present study. The questionnaire collected information about any contact

the young firelighter had with a counselling or mental health agency within 12 months of completing the JFAIP intervention, and is comprised of 11 items to assess the type(s) of services that the young firelighter had received specifically for their firelighting behaviour. The purpose of this measure was to obtain descriptive and evaluative information from the parent/guardian about the type of service their child/adolescent received. This information was used to illustrate the types of services that exist in Victoria for firelighting behaviour.

If the young firelighter received mental health services between stage 1 and stage 2 of this study, consent was sought from the parent/guardian to contact the young firelighter's mental health professional with a request for them to complete a questionnaire. The parent/guardian was provided with a copy of the questions the mental health professional would receive, in the parent package that was sent out. If parents/guardians consented for mental health professionals to be contacted, the consent form obtained from them (refer to Appendix R), an information sheet explaining the research (refer Appendix S), and the Questionnaire for Counsellor or Mental Health Professionals (refer to Appendix T) was sent to the mental health professional. The mental health professional was provided with a reply paid envelope and questionnaires were returned directly to the student researcher.

The Questionnaire for Counsellor or Mental Health Professional was developed by the researchers however, any data collected is beyond the scope of the present study. The questionnaire comprised 12 items and asks the mental health professional for information relating to the type of intervention, treatment and strategy used to deal with the young firelighter's fire behaviour. The purpose of this measure was to obtain informative and descriptive information about the types of services delivered and the specific therapeutic interventions and treatments that were used to address the firelighting behaviour.

3.3 Results

The results section will be presented in two sections. Part A will incorporate the entire sample in the analysis, and Part B will focus on recidivist firelighters only. Each part will address the research questions set out earlier in the study.

As stated above, full data was collected for a total of 40 participants (M=36, F=4). Descriptive information for the sample was obtained and summarised in Table 11.

Table 11: Descriptive statistic for age and number of past fires reported by parents and the firelighter (N=40).

	N	*Min*	*Max*	*Mean*	*Median*	*Mode*	*SD*
Age	40	5	17	11.35	12.00	13	3.36
Number of past fires reported by parent	40	1	8	4.18	4.00	6	1.88
Number of past fires reported by firelighter	37	1	12	3.35	4.00	1	2.38

Descriptive data further breaking the sample down for gender, age, and number of past fires are displayed in Table 12. Notably, the participants were predominantly males (90%). Cross-tabulations were calculated for gender with number of past fires. Males engaged in single and multiple firelighting, with majority (47.2%) engaging in 2 to 5 firelighting episodes. All female firelighters engaged in 2 to 5 firelighting episodes. No further analysis based on gender was conducted due to the low number of female firelighters.

Table 12: Frequencies for gender, age, and number of past fires (reported by parents).

Demographic Variables	*Frequency (N=40)*	*Percent %*
Gender		
Male	36	90
Female	4	10
Age		
5-7	7	17.5
8-10	7	17.5
11-13	15	37.5
14-16	9	22.5
17-19	2	5.0
Number of Past Fires		
1	3	7.5
2-5	21	52.5
6-10	16	40.0

The age group between 11-13 and 14-16 accounted for 60% of the sample when combined. More than half the participants engaged in 2 to 5 episodes of firelighting (52.5%), and only three participants had only engaged in just one firelighting episode (7.5%).

The relationship between age, number of past fires and fire interest was the first research question explored. Table 13 presents the cross-tabulation for age and number of past fires.

Table 13: Cross-tabulation of age with number of past fires (reported by parents).

Age of firelighting	*Total Number of Past Fires*		
	1	*2-5 episodes*	*6-10 episodes*
5-7 years (n=7)			
% within Total Fires	0%	19.0%	18.8%
% within Age	0%	57.1%	42.9
8-10 years (n=7)			
% within Total Fires	33.3%	23.8%	6.3%
% within Age	14.3%	71.4%	14.3%
11-13 years (n=15)			
% within Total Fires	0%	38.1%	43.8%
% within Age	0%	53.3%	46.7%
14-16 years (n=9)			
% within Total Fires	66.7%	14.3%	25.0%
% within Age	22.2%	33.3%	44.4%
17-19 years (n=2)			
% within Total Fires	0%	4.8%	6.3%
% within Age	0%	50.0%	50.0%

The age groups of 8-10 and 14-16 year olds were the only ones who engaged in both single and multiple firelighting. Single firelighting occurred most in the 14-16 year olds category, and 11 to 13 year olds showed higher involvement in multiple firelighting.

Spearman's correlation was used to determine whether there was a significant relationship between the total number of past fires and the child's age, however, no significant relationship was identified ($r_s = -.05$, $n=40$, $p=.76$).

The second analysis explored the extent of co-existing DSM-5 categories of disorders, a history of troubled behaviour, and internalising and externalising behaviours which existed within this sample of firelighters. To address this research questions, frequencies regarding child behaviour specific variables collected from the Family Risk Survey (FRS) were examined. Parents reported that less than one third of the participants, 30%,

had a diagnosis an impulse control disorder, whilst 67.5% had no reported diagnosis. The most common diagnosis was Attention-Deficit Hyperactive Disorder (ADHD), with 12.5% of participants being diagnosed with ADHD alone, and a further 7.5% had an ADHD diagnosis as well as an Axis I or Intellectual Disability (ID). Autism and Apserger's Disorder combined accounted for 7.5% of the population. None of the participants involved in the research reported as diagnosis of Oppositional Defiant Disorder (ODD) or Conduct Disorder (CD). Table 14 summarises the frequencies discussed.

Furthermore, a quarter of the participants were involved in trouble outside of school. Shoplifting was reported for 42.5% of firelighters, and more than half of the participants reported hurting others (19/33 when data was known).

Frequencies of Child Behaviour Checklist (CBCL) ratings were also computed and recorded in Table 14. For Internalising problems, 60% of participants were rated in the Normal range and 37.5% were classified as being in the At Risk and Above range. More than half the participants were rated as being in the At Risk and Above range for Externalising problems (55%), and also for overall Total Problems (57.5%).

Table 14: Frequencies of Child Behaviour Specific variables reported by parents on the FRS, and CBCL variables.

Child Behaviour Specific & CBCL Variables	*Frequency (N=40)*	*Percent %*
Diagnosis of Impulse Control Disorder (*n=39*)		
Yes	12	30.0
No	27	67.5
Type of Impulse Control Disorder (*n=39*)		
None	27	67.5
ADHD	5	12.5
Asperger's	1	2.5
Autism	2	5.0
ADHD & Other Axis I	2	5.0
ADHD & ID	1	2.5
Trouble out of school (*n=40*)		
Yes	10	25.0
No	30	75.0
Stealing & Shoplifting (*n=40*)		
Yes	17	42.5
No	17	42.5
Don't Know	6	15.0
Hurts Others (*n=36*)		
Yes	19	47.5
No	14	35.0
Don't Know	3	7.5
CBCL- Internalising (*n=39*)		
Normal	24	60.0
At Risk and Above	15	37.5
CBCL- Externalising (*n=39*)		
Normal	17	42.5
At Risk and Above	22	55.0
CBCL- Total Problems (*n=39*)		
Normal	16	40.0
At Risk and Above	23	57.5

ADHD: Attention-Deficit Hyperactive Disorder; Axis I Disorder: Disorders with acute symptoms which require treatment; ID: Intellectual Disability.

Independent Samples T-tests were used to compare the mean number of past fires lit by firelighters (reported by the parents) who had a diagnosis of an impulse control disorder compared to those who did not, and the results are presented in Table 15. There was a significant difference in the mean number of past fires for participants who had an impulse control disorder diagnosis, who had previously lit more fires compared to those without an impulse control disorder diagnosis. The magnitude of the difference in the means (*mean difference = 1.72, 95% CI = .47 - 2.96*) was small to medium (*eta squared = .43*).

Table 15: Independent Samples T-test comparing mean number of past fires (reported by parents) for diagnosis of Impulse Control Disorder and CBCL variables.

	Number of Past Fires				
Child Specific Variables	***Mean (N=39)***	***SD***	***t***	***p***	***95% CI***
Diagnosis of Impulse Control Disorder					
Yes	5.42	1.73	2.87**	0.01	[.47 - 2.96]
No	3.70	1.71			
CBCL- Internalising					
Normal	3.41	1.75	0.74	0.46	[.89 - 1.83]
At Risk or Above	4.47	2.17			
CBCL- Externalising					
Normal	3.41	1.81	2.34*	0.03	[.18 - 2.54]
At Risk or Above	4.77	1.80			
CBCL- Total					
Normal	3.94	1.73	0.66	0.52	[.86 - 1.64]
At Risk or Above	4.35	2.04			

* Significant at p<0.05.

** Significant at p<0.01

Table 15 also displays the results of independent sample T-tests comparing the mean number of past fires for firelighters who were rated as being in the At Risk or Above range for CBCL Internalising, Externalising and Total Problems, compared to those children/adolescents who were within the normal range. The only significant difference was found in the number of past fires between participants who were rated as within the Normal range for externalising problems in the CBCL measure compared to those who were rated in the At Risk or Above range with the latter reporting a history of lighting more fires. The magnitude of the difference in the means (*mean difference= 1.36, 95% CI= .18 - 2.54*) was small to medium (*eta squared= .36*).

Parents were asked to list the services the young firelighter had been involved with to address their firelighting behaviour as well as any other behavioural problems. Two thirds of firelighters, 65%, had accessed services to address their firelighting behaviour. Table 16 summarises the types of services that were accessed and the frequency of each. In total, mental health services were accessed by 32.5% of the participants within the study.

Table 16: Frequency and percentage of types of services accessed.

Types of Services	*Frequency (N=40)*	*Percentage (%)*
Psychiatrist/Psychologist	5	12.5
Counsellor/Family Therapist	5	12.5
Social Worker	3	7.5
School Guidance Officer	4	10.0
JFAIP	2	5.0
Police	2	5.0
Justice Worker	2	5.0
Multiple Mental Health Services	3	7.5
None	14	35.0

The next research question addressed whether a relationship existed between the rating of parents on fire specific variables on the Firelighting Risk Interview (FRI) and the previous firelighting behaviour of young firelighters within this sample. A Pearson's correlation was employed to determine whether there was a significant relationship

between the young firelighters' scores on fire specific variables as rated by their parents/ caregivers, and the total number of past fires as reported by parents. The results are presented in Table 17.

Table 17: Pearson's Correlation between number of past fires (as reported by parents) and Fire Specific variables.

Fire Specific Variables	*Pearson's r*	*p-value*
Total Curiosity	0.62**	0.00
Total Knowledge	0.01	0.94
Total Fire Skill	0.04	0.80
Total Complaints	0.60**	0.00
Total Exposure	-0.17	0.31
Total Involvement	0.73**	0.00
Total Experience	0.33*	0.04
Parent Rating of Fire Curiosity	0.51**	0.00

* Correlation significant at $p<0.05$.

** Correlation significant at $p<0.01$

There were significant correlations between the number of past fires and Total Curiosity, Total Complaints, Total Involvement, and parents rating of Fire Curiosity. A moderate correlation was also identified between number of past fires and Total Experience.

The next question investigated involved determining the number of participants who continued to engage in recidivist firelighting and matchplay. It was also aimed to explore whether the profile of the recidivist firelighters was different, if at all, from the participants who did not continue to light fires.

From the sample of 32 participants for whom follow-up data was variable, 11 firelighters engaged in recidivist firelighting and or matchplay. Six had engaged in only

recidivist firelighting, with three also indicating ongoing fire interest, three engaged in only recidivist matchplay, and two demonstrated both firelighting and matchplay, as well as ongoing fire interest. Additionally, another three firelighters also reported ongoing interest in fire but they did not engage in recidivist firelighting or matchplay, and therefore were excluded from being classified as recidivist.

The descriptive statistics for recidivist firelighters did not appear to vary much from the overall sample. Mean age, mean number of fires reported by parents increased, and mean number of fires reported by the firelighter all increased marginally. Recidivist firelighters were predominantly male, although the females accounted for more than a quarter of the sample. The most common age group was 11 to 13 year olds, and overall almost three quarters of recidivists had engaged in 6-10 episodes of firelighting. Table 18 summarises the frequencies and percentages of demographic variables.

Table 18: Frequencies of gender, age, and number of past fires (reported by parents) of Recidivist Firelighters.

Demographic Variables	*Frequency (N=11)*	*Percent %*
Gender		
Males	8	72.7
Females	3	27.3
Age		
5-7	2	18.2
8-10	1	9.1
11-13	5	45.5
14-16	2	18.2
17-19	1	9.1
Number of Past Fires		
1	0	0
2-5	3	27.3
6-10	8	72.7

The behaviour of the recidivist firelighters displayed increased psychopathology. Overall, a diagnosis of an impulse control disorder was reported for 45.5% of this

sample. Three cases were diagnosed with ADHD, of which one also had a co-morbid Axis I disorder, and the other was diagnosed with an Intellectual Disability (ID). One case was diagnosed with Autism. Problematic behaviour was also higher in this subgroup. Trouble outside of school was reported in 27.3%, shoplifting and stealing was prevalent in 45.5%, and hurting others was reported in 63.6%. Similarly, the CBCL scales were further elevated in the recidivist firelighter profile. Close to two thirds, 63.6% were rated as being At Risk and Above for CBCL Internalising scale, and 72.7% were rated as being At Risk and Above for both CBCL Externalising and Total Problem scales.

During the 12 month period, 81.8% (9/11) of recidivist firelighters reported that they had accessed the services of a mental health professional. Of these, 66.7% (6/9) indicated that firelighting behaviour had been specifically addressed by the mental health professional.

The fifth question explored what variables were likely to predict recidivist firelighting and matchplay. The variables Recidivist Firelighting and Recidivist Matchplay were extracted from the Fire History Screen (FHS). At 12 month follow-up, parents were asked to indicate whether their child/adolescent had been involved in any firelighting incident or had engaged in matchplay during the last 12 months. If parents answered yes to either of these questions, this was considered as a yes for Recidivist Firelighting and or Recidivist Matchplay. These variables were then combined to form the variable Any Recidivism was generated. This variable included recidivist firelighters who engaged in recidivist firelighting, recidivist matchplay or both. Finally, parents were asked to indicate whether their child/adolescent had displayed ongoing fire interest in the past 12 months. Any firelighter who had continued to display fire interest was included in the variable Ongoing Fire Interest.

Individual odds ratio analyses were performed to assess the impact of the Child Risk Survey (CRS) variables and the CBCL variables upon the categories of Recidivist Firelighting, Recidivist Matchplay, Any Recidivism, and Ongoing Fire Interest. The results obtained have been presented in Table 19.

Table 19 : Summary of odds ratio analysis for Recidivist Burn, Recidivist Matchplay, Any Recidivism, and ongoing fire interest with CRS and CBCL variables.

CRS & CBCL Variables	*Recidivist Firelighting*				*Recidivist Matchplay*				*Any Recidivism*				*Ongoing Fire Interest*			
	Y	***N***	***OR***	***95% CI***	***Y***	***N***	***OR***	***95% CI***	***Y***	***N***	***OR***	***95% CI***	***Y***	***N***	***OR***	***95% CI***
Liked Looking at Fire																
Yes	5	3	5.00	[.91, 27.47]	2	9	1.33	[.19, 9.47]	5	6	2.08	[.46, 9.51]	7	4	35.00**	[3.32, 368.57]
No	6	18			3	18			6	15			1	20		
Contact with Father																
Yes (ref)	2	13			3	12			4	11			2	13		
No	5	9	3.61	[.57, 22.90]	2	12	.67	[.09, 4.73]	6	8	2.06	[.43, 9.80]	5	9	3.61	[.57, 22.90]
Too much	1	1	6.50	[.28, 151.12]	0	2	----	----------	1	1	2.75	[.14, 55.17]	1	1	6.50	[.28, 151.12]
Fire was Intended																
Yes	4	15	.60	[.12, 3.01]	1	18	.13	[.01, 1.29]	5	14	2.40	[.54, 10.69]	6	13	2.54	[.42, 15.21]
No	4	9			4	9			6	7			2	11		
Relations with Mother																
Gets on well	5	18			5	18			8	15			5	18		
Does not get along	3	6	1.80	[.33, 9.89]	0	9	----	----------	3	6	.94	[.18, 4.79]	3	6	1.80	[.33, 9.89]
Arguing with Mother																
Occasionally	7	21			4	24			10	18			6	22		
Always	1	3	1.00	[.09, 11.24]	1	3	2.00	[.16, 24.33]	1	3	.60	[.16, 24.33]	2	2	3.67	[.42, 31.37]
Problems in family																
Yes	2	10	.56	[.09, 3.49]	3	9	2.83	[.40, 20.18]	4	8	1.08	[.23, 5.06]	3	9	.93	[.18, 4.90]
No	5	14			2	17			6	13			5	14		
Obeys																
Yes	6	13			2	17			7	12			5	14		
No	2	11	.39	[.07, 2.36]	3	10	.39	[.06, 2.76]	4	9	.76	[.17, 3.42]	3	10	.84	[.16, 4.35]

CRS & CBCL Variables	*Recidivist Firelighting*				*Recidivist Matchplay*				*Any Recidivism*				*Ongoing Fire Interest*			
	Y	***N***	***OR***	***95% CI***	***Y***	***N***	***OR***	***95% CI***	***Y***	***N***	***OR***	***95% CI***	***Y***	***N***	***OR***	***95% CI***
Lies																
Yes	4	9	.60	[.12, 3.01]	1	12	.31	[.03, 3.18]	4	9	.76	[.17, 3.42]	5	8	3.33	[.63, 17.60]
No	4	15			4	15			7	12			3	16		
Total number of Fire																
Single	1	11			3	9			3	9			2	10		
Multiple	6	12	5.50	[.57, 53.22]	2	16	.38	[.05, 2.68]	7	11	1.91	[.38, 9.59]	4	14	1.43	[.22, 9.38]
Action after fire																
Sought Help (ref)	4	11			2	13			5	10			3	12		
Stayed & Watched	4	3	3.67	[.56, 24.13]	2	5	2.60	[.28, 23.81]	5	2	5.00	[.70, 35.50]	4	3	5.33	[.75, 37.86]
Other	0	9	----	----------	1	8	.81	[.06, 10.48]	1	8	.25	[.02, 2.59]	1	8	.50	[.04, 5.70]
CBCL- Internalising																
Normal (ref)	2	17			2	17			4	15			3	16		
At Risk and Above	6	6	8.50*	[1.34, 54.13]	3	9	2.83	[.40, 20.18]	7	5	5.25*	[1.07, 25.79]	5	7	3.81	[.71, 20.53]
CBCL- Externalising																
Normal (ref)	0	14			3	11			3	11			2	12		
At Risk and Above	8	9	----	----------	2	15	.49	[.07, 3.44]	8	9	3.26	[.66, 16.03]	6	11	3.27	[.54, 19.75]
CBCL-Total Problems																
Normal (ref)	1	11			2	10			3	11			2	10		
At Risk or Above	7	12	6.42	[.68, 60.84]	3	16	.94	[.13, 6.63]	8	9	2.18	[.44, 10.73]	6	13	2.31	[.38, 13.96]

* Significant level at p<.05

** Significant level at p<.01

--- Insufficient data to complete analysis.

The CBCL Internalising variable was identified as a significant predictor for Recidivist Firelighting, indicating that children and adolescents who were rated as being in the At Risk and Above range for Internalising problems were more likely to be involved in recidivist fire burning incidents. Furthermore, the CBCL Internalising variable was a also a significant predictor for Any Recidivism *(OR=5.25, p=0.04, 95% CI=1.07-25.79)*, indicating that children and adolescents who were rated as being in the At Risk and Above range for Internalising problems were more likely to be involved in any type of recidivism.

The variable 'Liked looking at Fire' was a significant predictor variable for Ongoing Fire Interest, indicating that children who liked looking at fires were more likely to continue to remain interested in fire. No variables which significantly increased the likelihood of recidivist matchplay were identified.

The final question investigated whether there was a difference in ratings on Fire Specific variables of non-recidivist firelighters compared to recidivist firelighters. A series of independent samples T-tests were conducted to analyse the differences in the means scores for Fire Specific variables on the FRI between firelighters who had engaged in Recidivist Firelighting and Recidivist Matchplay. These were then combined and further T-tests were conducted for Any Recidivism. Table 20 summarises the results that were obtained.

Table 20: Independent Sample T-tests comparing mean scores for FRI Fire Specific Variables and number of past fires (as reported by parents) of Recidivist Firelighting, Recidivist Matchplay and Any Recidivism (R) with Non-Recidivist (N).

Fire Specific Variables		*Recidivist Firelighting*					*Recidivist Matchplay*					*Any Recidivism*				
		M	***SD***	***t***	***p***	***95% CI***	***M***	***SD***	***t***	***p***	***95%CI***	***M***	***SD***	***t***	***p***	***95% CI***
Number of Past Fires	R N	6.00 3.46	1.07 1.82	4.80**	0.00	[1.44, 3.64]	4.00 4.11	2.00 2.03	0.11	0.91	[-2.32, 2.54]	5.27 3.48	1.85 1.81	2.63*	0.02	[-.37, 3.22]
Total Curiosity	R N	19.38 14.00	3.96 5.80	2.93**	0.01	[1.52, 9.23]	14.20 15.56	6.30 5.85	0.45	0.67	[-6.29, 9.00]	17.27 14.33	5.48 5.89	1.40	0.17	[1.41, 7.28]
Total Knowledge	R N	16.73 17.63	3.69 4.22	0.56	0.56	[-2.49, 4.24]	18.20 17.26	3.35 4.21	0.55	0.60	[3.13, 5.02]	16.82 17.71	3.57 4.34	0.63	0.54	[2.06, 3.85]
Total Fire Skill	R N	12.50 14.00	4.24 4.08	0.87	0.40	[-2.26, 5.26]	15.20 13.31	3.27 4.23	1.13	0.30	[2.10, 5.88]	13.09 13.90	4.11 4.18	0.52	0.61	[2.42, 4.04]
Total Complaints	R N	7.63 5.83	1.77 2.26	2.31*	0.04	[.14, 3.44]	4.80 6.56	1.79 2.26	1.93	0.10	[-.42, 3.93]	6.64 6.10	2.38 2.23	0.62	0.54	[1.27, 2.35]
Total Exposure	R N	19.88 22.50	5.36 6.30	1.15	0.27	[-2.29, 7.54]	19.00 22.37	6.12 6.07	1.13	0.30	[4.06, 10.80]	19.18 23.24	5.33 6.14	1.94	0.07	[-.27, 8.38]
Total Involvement	R N	10.50 6.04	0.93 2.60	7.03**	0.00	[3.16, 5.76]	7.00 7.23	3.08 3.06	0.15	0.88	[-3.51, 3.97]	9.00 6.20	2.78 2.71	2.70**	0.01	[-.64, 4.96]
Total Experience	R N	3.13 2.00	0.84 1.24	2.86**	0.01	[.30, 1.95]	1.40 2.46	1.34 1.17	1.65	0.16	[-.57, 2.69]	2.45 2.20	1.44 1.15	0.50	0.62	[.81, 1.32]

- R: Recidivist
- N: Non-recidivist

* Significant level at p< .05

* * Significant level at p< .01

A number of significant differences were observed for mean scores on Fire Specific variables and number of past fires for firelighters who had engaged in Recidivist Firelighting and those who had not. The differences in the means scores were identified for the variables Total Curiosity, Total Complaints, Total Involvement, and Total Experience, as well as number of past fires. Furthermore, significant differences in the mean number of past fires (as reported by parents) and Total Involvement scores was identified between firelighters who had engaged in Any Recidivism compared to non-recidivist.

Table 21: Independent Samples T-test comparing mean scores for Fire Specific variables and number of past fires (as reported by parents) and Ongoing Fire Interest.

Fire Specific Variables	*Ongoing Fire Interest*				
	M	***SD***	***t***	***p***	***95% CI***
Number of Past fires	5.25 3.71	1.04 2.10	2.74**	0.01	[.38, 2.70]
Total Curiosity	19.50 13.96	3.46 5.86	3.24**	0.01	[1.98, 9.10]
Total Knowledge	18.00 17.21	4.04 4.13	0.48	0.64	[2.81, 4.39]
Total Fire Skill	15.00 13.13	5.13 3.70	0.95	0.37	[2.54, 6.28]
Total Complaints	7.50 5.88	2.00 2.23	1.93	0.08	[.19, 3.44]
Total Exposure	20.25 22.38	4.27 6.60	-1.05	0.31	[-2.11, 6.36]
Total Involvement	9.13 6.52	2.23 3.00	2.59*	0.02	[.47, 4.73]
Total Experience	2.30 2.26	1.06 1.32	0.25	0.81	[.88, 1.11]

* Significant level at p< .05

* * Significant at level p< .01

Finally, Table 21 presents the findings for independent samples T-tests which were conducted to see whether there were any significant differences in the mean scores of Fire Specific variables and Ongoing Fire Interest. A significant difference in the mean number of past fires, Total Curiosity scores, and Total Involvement scores was identified between firelighters who reported ongoing fire interest and those who did not report ongoing fire interest.

3.4 Discussion

The initial purpose of this study was to explore the degree of psychopathology that existed in a sample of young firelighters who were involved in the Victorian Juvenile Fire Awareness and Intervention Program (JFAIP). The second aim was to determine the prevalence of any recidivist firelighting, identify predictor variables of recidivism and to highlight potential differences that may exist between young firelighters who have not engaged in recidivist firelighting and those who have. The present study was also designed to provide Australian data into firelighting recidivism rates, which have to date, been limited.

The participants in the present study were a subgroup of firelighters who were involved the JFAIP. Therefore, as anticipated, the sample for this study very much resembled the JFAIP database analysis presented in Study A. Perhaps the most notable difference between the two sets of data related to episodes of firelighting behaviour. Perusal of the means from both studies suggests that overall firelighting prevalence was higher in the entire JFAIP database. However, further examination of the data reveals that although the overall prevalence may be higher for the entire database, the subsample examined for the present study had, on average, lit more fires per head (a mode of one fire for the JFAIP database compared to six for this study). This implies that the sample of young firelighters within this study may have a higher prevalence of firelighting episodes. This is further supported by the fact that only a small number of firelighters in the present study were involved in a single episode of firelighting compared to the overall database where, at least a third of firelighters had only a single firelighting episode.

Consistent with previous research, firelighters in this study were predominantly males (Adler, et al., 1994; Glancy, et al., 2003; Kolko & Kazdin, 1986; McDonald, 2009; Muller, 2008). The prevalence of female firelighters was similar to that of Adler, et al., (1994) and McDonald (2009). A difference noted between males and females was that females who were involved in this study had all engaged in multiple firelighting episodes. Also surprising, was that three of the four female firelighters studied in this sample engaged in recidivist firelighting. Previous research has shown that this is uncommon as escalation of firelighting beyond a few incidents occurs less frequent in females than in males (MacKay, et al., 2009). Due to the small sample size and low prevalence of female firelighters both within this study and other research, it is difficult to understand the firelighting trajectory of female firelighters and provide valid comparisons.

The first research question this study set out to address was whether there was a relationship between the age of firelighters and the number of firelighting episodes and the fire interest they had shown. The hypothesis that the age of the young firelighter would have a significant relationship with the total number of firelighting episodes was not supported. Given the varied pattern of firelighting episodes within the age groups displayed in this sample, the lack of support for the hypothesis is not surprising. For instance, in the current study, the oldest and the youngest firelighters only engaged in multiple firelighting episodes, yet they still accounted for the least amongst the age groups. However, a significant relationship was identified between the age of firelighters and their fire interest and curiosity as rated by their parents. As the firelighter's age increased, their fire curiosity and interest decreased.

The extent of psychopathology and co-morbid diagnosis, with disorders in the Diagnostic and Statistical Manual of Mental Disorders-Fifth Edition (DSM-5) (APA, 2013), within the firelighter sample was investigated. Based on parent reports, a third of the firelighters had a diagnosis of an impulse control disorder involving Attention-Deficit Hyperactivity Disorder (ADHD). This is consistent with the findings of Becker et al. (2004) who reported an association between firelighting behaviour and ADHD. Similarly, heightened impulsivity (Kolko & Kazdin, 1992; McCarty & McMahon,

2005) and hyperactivity (McCarty & McMahon, 2005) have been identified as risk factors for firelighting. A quarter of firelighters in this study who were diagnosed with an impulse control disorder had a diagnosis of Autism or Asperger's, now referred to as Autism Spectrum disorders (ASD) in the DSM-5 (APA, 2013). Children who are identified as being on the autism spectrum engage in repetitive and restrictive patterns of behaviour, interest, and activities which may provide some explanation for their firelighting behaviour. They also display deficits in social interactions and communications. Social skill deficits (Kolko & Kazdin, 1991, 1992) and poor peer relationships (Bailey, et al., 2001; McCarty & McMahon, 2005) have been identified as potential risk factors for firelighting behaviour. The lack of detailed data does not allow for a qualitative understanding of the way in which firelighting behaviour presents itself within young children and adolescents diagnosed with these specific disorders. Nor does it shed light upon whether the firelighting is due to the manifestation of these disorders, or independent of it. Such information would be essential when planning for treatment as it would allow identification of the maintaining factors of the firelighting, and provide appropriate direction and interventions for treatment.

The behaviour of the firelighters within this study as measured using the parent report of the CBCL indicated increased conduct related problems. Stealing and shoplifting were reported in half of the firelighters whereas, aggression toward people was reported in more than half. These particular behaviours comprise two of the four categories prevalent in Conduct Disorder (CD), and firelighting is one of 15 behaviours that have been specified. The diagnostic criteria for CD dictates that the young person displays a repetitive and persistent pattern of behaviour that violates the basic rights of others and societal norms and, is manifested by at least three out of 15 behaviours (APA, 2013). When considering this, a large number of these young firelighters may in fact, meet diagnostic criteria for CD and yet, a diagnosis of CD was not reported by any of the parents/caregivers. This is unusual given that firelighting is significantly associated with CD (Adler, et al., 1994; Bailey, et al., 2001; Becker, et al., 2004; Forehand, et al., 1991; Hoertel, et al., 2011; Kolko & Kazdin, 1986; Kolko & Kazdin, 1991; McCarty & McMahon, 2005; Repo & Virkkunen, 1997). A possible explanation may be the limited number of firelighters who engaged the services of a psychologist or psychiatrist who

would be able to make such diagnosis. Two thirds of the families involved in the research had utilised services to address their child's firelighting behaviour, but only one fifth took place with a psychologist or psychiatrist. This may be due to a lack of understanding of the services and treatment psychologists and psychiatrists provide, or an assumption that they may not be able to properly diagnose or treat firelighting behaviour (Fineman, 1995). Furthermore it may be related to the demographics as not all families can afford psychological services for what can be described as "bad behaviour" and therefore there may be high levels of undiagnosed CD amongst the sample.

More than half of the firelighters were rated as being in the At Risk and Above range for the Child Behaviour Checklist (CBCL) Externalising and Total problem scales. This is consistent with research that proposes firelighting behaviour is related to externalising symptoms, such as rule breaking and aggressive behaviour, (Becker, et al., 2004; Bowling, et al., 2013), and overall total problems (Bowling, et al., 2013). Overall total problem incorporates CD, Oppositional Defiant Disorder (ODD), ADHD, anxiety, mood disorder, thought disorders, attentional disorders and social problems. Although teachers were asked to complete the Teacher Report Form (TRF) component of the CBCL where permission was granted, there were not enough TRFs completed to warrant statistical investigation. Ideally, it would have been valuable to compare both forms and see whether there were any similarities or major discrepancies present. Kolko and Kazdin (1993) investigated the correspondence amongst the child, parent and teacher forms of the CBCL. They identified significant but low correlations between the three, and caution that there may be over-reporting of symptoms and behaviours by parents. Future research should incorporate both the TRF and the child form or Youth Self-Report Form to provide various profiles of the young firelighter.

It was further hypothesised that young firelighters who have co-morbid psychopathology would engage in increased firelighting episodes compared to their peers who do not present with co-morbid psychopathology. This hypothesis was only partially supported however, as young firelighters who had a diagnosis of an impulse control disorder and those who were rated as being At Risk and Above for externalising

problems on the CBCL, showed significantly higher firelighting episodes than their peers, who had no diagnosis and were rated within the Normal range on the CBCL Externalising scale. This suggests that an association exists between firelighting severity and rule breaking, aggression and a diagnosis of an impulse control disorder. However, no relationship with increased firelighting episodes was found for young firelighters who rated in the At Risk and Above ranges for CBCL Internalising and Total Problems scales compared to their peers who were within the Normal range.

The Fire Risk Interview (FRI) assessed the level of risk firelighters posed based on fire specific variables. It was hypothesised that there would be a significant relationship between fire specific variables and the number of past fires. This hypothesis was partially supported. Significant relationships were identified between the number of past fires and Total Curiosity, Total Complaints, Total Involvement and Total Experience scores provided by the parent/guardians. This is consistent with previous research that highlighted an association and an increased risk between firelighting and fire-specific variables (Kolko & Kazdin, 1989, 1989b, 1992; MacKay, et al., 2006). Furthermore, a significant relationship was established between the number of firelighting episodes and the firelighter's interest and curiosity as rated by their parent/guardian separately. This contrasts with Total Knowledge, Total Fire Skill and Total Exposure where no significant relationship was found with number of firelighting episodes.

The second part of this study focused on a subgroup of participants who had engaged in recidivist firelighting. The overall sample decreased due to a 20% attrition rate during the second stage of data collection. This rate was less than that reported by Adler, et al., (1994) but similar to that of McDonald (2009). Adler, et al., (1994) commented that those families who had ceased to participate at 12 month follow-up may have been the most vulnerable families. This would be the case in the present study, as a number of these families were difficult to engage with at the onset of the study. A few could not be located and their contact numbers were no longer connected.

The hypothesis that at least a quarter of firelighters would engage in recidivist firelighting and or matchplay was supported. In fact, just over a third of young

firelighters continued to engage in recidivist fire behaviour. This is consistent with the bulk of research that has reported recidivism rates of more than a quarter (Adler, et al., 1994; Hanson, et al., 1994; MacKay, et al., 2006; McDonald, 2009) although variations exist (Kolko & Kazdin, 1992) and a number of studies have reported lower rates of recidivism (Del Bove, et al., 2008; Lambie, et al., 2013; Stewart & Culver, 1982). Ongoing fire interest was reported in just under half of the recidivist firelighters, and three firelighters reported ongoing fire interest without actively engaging in firelighting and matchplay. Overall, three of the 11 recidivists were involved in only minor recidivism (matchplay) whilst eight were involved in major recidivism (firelighting). In addition, although this subgroup did not differ much from the overall sample in terms of age and number of fires, the gender ratio was altered. All but one of the female participants from the larger sample was involved in recidivist firelighting, contrary to the view that female firelighting does not escalate beyond a few episodes (MacKay, et al., 2006). This may be an indication of the severity of psychopathology that may exist with the female firelighters within this sample. This notion is supported by the work of Fineman (1995) who distinguished between the male and female firelighter and argued that female firelighters were more disturbed than males. This may be the case with entire subgroup as increased psychopathology was identified on all child behaviour specific and CBCL variables.

Close to half of the recidivist firelighters had a diagnosis of an impulse control disorder, which included a combination of ADHD with other co-morbid conditions, as well as Autism. The prevalence of behaviours associated with conduct disorder was also of interest in the group of recidivists, with trouble outside of school and stealing/ shoplifting only slightly elevated, but hurting people substantially higher. Furthermore, the prevalence of an At Risk and Above rating for all of the CBCL scales was substantially higher within the recidivist firelighter subgroup, consistent with the findings of Adler et al. (1994). The heightened psychopathology may be an indication of the severity of firelighting, as such a link has been established in previous research (MacKay, et al., 2009). Nevertheless, it is important to be wary of over-reporting by parents especially in the absence of other information.

Encouragingly, during the 12 month follow-up period 81% of the recidivist firelighters had engaged with a mental health professional with more than half addressing their firelighting. A lack of qualitative data hinders any conceptualisation about the firelighters' involvement with mental health professionals, and whether or not this was instigated as a result of the firelighting or other stressors in the young person's life. Likewise, there is a lack of information about any adverse events or lifestyle changes which may have occurred during the 12 month period. Such factors may act as precipitators for ongoing fire involvement or any further disturbance in psychopathology, and the possibility of interactions between complex sets of circumstances, leaves gaps in the overall profile and understanding of the recidivist firelighter.

The Child Risk Survey (CRS) (Moynihan & Flesher, 1998) is currently used as a screening tool in the United States however, is yet to be validated based on an Australian sample. This study incorporated the CRS and was intended to assess which variables may be useful in predicting recidivism. Unfortunately, no variables from the CRS indicated increased risks of recidivism. A possible explanation for this is the small sample size involved in the second stage of this study. However, the CRS variable "Liked looking at Fire" was a significant predictor of ongoing fire interest displayed by the young firelighter during the 12 month follow-up.

The hypothesis that Externalising and Total problem scales on the CBCL would predict increased risk of recidivism was also not supported. Again, this may be due to the limited sample size and the equally high ratings of externalising and total problems both within the recidivist firelighters and the non-recidivist firelighters. Rather unexpectedly, the only variable that significantly predicted increased risk of recidivist firelighting and any recidivism was the CBCL Internalising variable. This contrasts with the data collected during Stage One, where there was no significant association with CBCL Internalising variable and firelighting severity. In fact, the percentage of firelighters who rated in the At Risk and Above range for the CBCL Internalising scale, nearly doubled amongst the recidivist firelighters when data was collected at the 12 month follow-up stage. This suggests that the current sample of recidivist firelighters may have

heightened problems with mood, affect, anxiety and somatic complaints, and are likely to internalise their emotions. This finding challenges what is known about young firelighters and promotes a shift in perspective as to how we may view firelighters. The finding fits with the theories of Cox-Jones, et al., (1990) who described young firelighters as passive and socially withdrawn individuals, and Chen, et al., (2003) who identified associations between firelighting, shyness and aggression, and feelings of being rejected by peers amongst firelighters. Perhaps the preconceptions fire practitioners and mental health workers have of young firelighters involving externalising behaviour, limits the identification of those who may be the most troubled and in greater need of assistance, but go undetected as they internalise their issues.

Differences between recidivist firelighters and non-recidivist firelighters were further explored based on the scores they received on the FRI. It was hypothesised that recidivist firelighters would have higher ratings on the FRI fire specific variables compared to their non-recidivist peers. This hypothesis was partially supported. Recidivist firelighters scored higher on Total Curiosity, Total Complaints, Total Involvement and Total Experience. The variable 'Any Recidivism' scored higher on Total Involvement. These findings indicate that recidivist firelighters were more curious about fire and fire related topics, their parents received more complaints about their fire behaviour and behaviour in general, they had more involvement with fire which the parent had observed and were informed about, and more past experience with fire, compared to non-recidivist firelighters. The implication of these findings is that parents rating on the FRI fire specific variables may be useful in comparing recidivist firelighters and non-recidivist firelighters, and could be a potential screening tool. In addition, there was a significant difference in the number of past fires reported by parents for Recidivist Firelighting and Any Recidivism. Recidivist Matchplay scores did not significantly differ on any fire specific variables, suggesting that young firelighters who engage in recidivist matchplay did not differ on the rating they received on the FRI by their parents compared to non-recidivists.

Finally, it was hypothesised that firelighters with continuous fire interest would be rated higher on fire specific variables and number of past fires. A significant difference was

found between the mean number of past fires, Total Curiosity and Total Involvement scores of firelighters who continued to display ongoing fire interest compared to their peers who did not display ongoing fire interest. These firelighters displayed more curiosity about fire and fire related topics, and had more fire involvement which their parents had observed or were informed about compared to firelighter who did not report ongoing fire interest at follow-up. The firelighters who demonstrated ongoing fire interest at follow-up did not engage in any recidivist firelighting and matchplay, but their ongoing fire interest and curiosity is nevertheless concerning, as fire interest has been previously identified as a significant predictor variable of recidivist firelighting (Kennedy, et al., 2006; Kolko, et al., 2006; Kolko & Kazdin, 1989; Kolko & Kazdin, 1994). The persistent interest and curiosity with fire should be addressed by mental health professionals as it may be an underlying feature of co-morbid psychopathology.

Limitations

The present study has a number of limitations. The sample of participants involved was limited to firelighters and families who were involved in the JFAIP, which inadvertently restricted the sample size, and did not account for the impact various interviewers' style and characteristics may have had on data collection. Furthermore, during the second stage of data collection, parents/guardians were not provided with the opportunity to explain any familial or personal changes the young firelighter may have encountered, during the 12 month period, which may have contributed to the maintenance of firelighting behaviour. This shortcoming has been noted by Lambie and Randell (2011) who note that research on recidivism fails to investigate factors during the interval which may have influenced the outcome. Also, apart from a few questions in the CRS that queried relationship qualities with siblings and parents and the existence of any problems in the home, the study did not evaluate any parental psychopathology or family dysfunction and their implications on the firelighting behaviour of the young child/adolescent. Finally, this study did not consider young firelighters smoking. Mackay et al., (2009) note that the use of tobacco between the firelighting groups is significantly different. Only two percent of non-firelighters smoked whereas, 19 percent of frequent firelighters smoked on a daily basis. Smoking regularly means that there is

also a frequent source of fire ignition available, hence reducing adolescent smoking may have an impact on firelighting (Mackay, et al., 2009).

Future Recommendations

In conjunction to the development of a screening tool, it is recommended that future research exploring firelighting recidivism places emphasis upon understanding why some firelighters continue to engage in firelighting whilst others disengage, especially following an intervention. This may require qualitative information exploring post-intervention lifestyle changes that may have an impact on the young persons' psychopathology. Interviews with mental health professionals who work with young firelighters may provide valuable insight into their understanding on precipitating and perpetuating factors involved in firelighting.Further research is required to better understand the internalising firelighter, their motivations behind firelighting and how they differ, in terms of profile and characteristic, from the antisocial and conduct disorder firelighter. A deeper understanding of this will improve the identification and assessment of firelighters at risk, and inform proper referral and treatment planning.

Conclusions

The findings of this study provide an overview of a sample of firelighters and the degree of psychopathology that is present within these young children and adolescents. Moreover, the study provides firelighting recidivism rates based on an Australian sample which contributes to the limited information available in this area. It also identifies the differences between recidivist and non-recidivist firelighters which overall, appear to be heightened psychopathology within the recidivist group. Finally, this study provides an initial step towards the development of a screening tool which can reliably and accurately screen and predict those young firelighters most at risk of recidivist fire behaviour, and be used to make informed decisions regarding referrals and treatment planning (Sakheim, et al., 1985). Although it was anticipated that the CRS would be able to provide predictor variables that could potentially be used in the development of a screening tool, it is evident that further investigation with a larger sample size is required in order to assess the validity and reliability of this tool.

Nevertheless, the CBCL scales have provided some useful leads, and the FRI has demonstrated that its variables are likely to discriminate between firelighters that are at low risk or high risk of recidivism. Hence, any future screening could consider including the FRI and CBCL scales as routine assessment tools. The CBCL or the Strengths and Difficulties Questionnaire (SDQ) are reliable screening tools (Lambie & Randell, 2011) of assessing general difficulties and problem behaviour, which can be a good starting point.

Chapter Four: Summary and Conclusion

4.1 Summary

This paper set out to explore the characteristics and profiles of young firelighters, and aimed to identify the prevalence of co-morbid psychopathology amongst young firelighter. Also of interest was the identification of firelighting recidivism rates, as well as the investigation of significant predictor variables that would accurately predict recidivist firelighting, based on an Australian sample. Though there is a substantial pool of research exploring the characteristics and typology of firelighters, this has mainly been limited to clinically admitted (Lambie & Randell, 2011) and international samples. Therefore, the findings of this study contribute to the limited information that exists to date on Australian firelighters.

Despite commonalities, the broad profiles and characteristics of young firelighters remain diverse. Young firelighters, who are predominantly males, frequently present with co-morbid psychopathology and report a range of motivations for their firelighting. The most commonly reported motivation is fire interest and curiosity. Study One identified a significant positive relationship between parents' rating of the child/ adolescent's fire curiosity and the severity of firelighting. Young firelighters who display heightened fire interest and curiosity are likely to engage in more firelighting episodes than their peers with less fire interest. However, fire interest decreased with age, as supported by the significant negative relationship identified between age and fire interest. The age of the young firelighter was significantly associated with a number of variables. Firelighting severity initially increased with age, but later decreased. Age was associated with motivation. Curiosity and interest were frequently reported as the motivation behind firelighting across all age groups. However, motivations such as anger and revenge, malicious mischief, peer pressure and boredom increased in frequency with the age of the young firelighters. Furthermore, older firelighters were less likely to stay and watch the fire they had lit, and were more likely to take ownership of the fire and admit their involvement. A significant association was identified with a lack of premeditation and severity of firelighting, indicating that often

the fires were not planned in advance, suggestive of spontaneity and impulsivity. Finally, firelighters who displayed increased severity in their firelighting behaviour were more likely to have received counselling, and were still engaged in counselling. These findings indicate that there are particular differences that exist between the firelighting behaviours of young children and adolescents from various age groups, which may determine the trajectory of firelighting behaviour and the severity, as well as inform the identification process of young firelighters and their intervention/treatment planning.

Study Two identified that co-morbid psychopathology played a significant role in the number of episodes of firelighting the young person reported. A third of the young firelighters who had a diagnosis of an impulse control disorder, and engaged in more firelighting episodes than their peers who did not have a diagnosis of an impulse control disorder. More than half of the firelighters were rated in the At Risk and Above range for externalising and total problems on the Child Behaviour Checklist (CBCL). Firelighters who rated in the At Risk and Above range for externalising problems also engaged in more episodes of firelighting than their peers. Further exploration would shed light on to the extent firelighting behaviour is a manifestation of the underlying co-morbid psychopathology or whether the psychopathology maintains the firelighting behaviour. Differences were also identified variables of the Firelighting Risk Interview (FRI) and number of firelighting episodes. Firelighters who were rated higher in curiosity, had more complaints about their fire behaviour, had more involvement with fire, more early experiences with fire, and were rated as being more interested in fire by their parents had engaged in more episodes of firelighting than their peers who had scored lower on all these variables.

Furthermore, Study Two investigated recidivism rates and potential variables that would predict future fire involvement. Of the subgroup, one third of firelighters continued to engage in recidivist firelighting. This rate is consistent with other research (Adler, et al., 1994; Hanson, et al., 1994; MacKay, et al., 2006; McDonald, 2009). Recidivist firelighters displayed higher psychopathology on the CBCL scales, and close to half had a diagnosis of an impulse control disorder. The only significant predictor variable of

recidivist firelighting identified was the CBCL Internalising scale. This signifies that although firelighting indicates a severe behavioural problem, underlying it may be the experience of distress, depression, feelings of alienation, and problems with thoughts (Moore, et al., 1996). The variable 'liked looking at fire' was identified as a predictor variable of ongoing fire interest. Finally, recidivist firelighters and firelighters who displayed ongoing fire interest, were rated higher on the FRI variables compared to non-recidivists.

4.2 Clinical Implications

The findings of this paper have important clinical implications for the identification and intervention of young firelighters. Young firelighters often present with a variety of co-morbid psychopathology. Although young people with impulse control disorders and those who are at risk for externalising behaviours are likely to have more episodes of firelighting behaviour, the findings indicate that recidivist firelighting is more likely to occur by those firelighters who are at risk of internalising behaviour. This finding challenges what is known about young firelighters and highlights the need for clinicians to adopt a new perspective and approach when assessing firelighting behaviour. When focusing on young firelighters who display overt externalising behaviours, clinicians may overlook those who are internalising their difficulties. It is difficult to identify whether internalising behaviours, when undetected and or unaddressed, are a precursor for future externalising behaviours. Therefore questioning fire interest and behaviour must become a standard practice in clinical assessments, regardless of how young people present.

4.3 Conclusion

There are many similar characteristics which make up the profile of young firelighters, but nevertheless, they remain diverse and unique. Their motivations for firelighting differ, and variations exist amongst genders and across all ages, which are influenced by familial, environmental and psychosocial factors. Fire interest and curiosity have been identified as significant predictors of recidivist fire behaviour, and this casts doubt on

the notion that some firelighters are curious whereas others are pathological, as fire curiosity and interest appears to be a salient feature of firelighting. The reason why some firelighters continue to engage in recidivist firelighting while others do not is unclear. What is apparent though, is their need for specialised intervention and treatment beyond that offered by the fire services.

This paper illustrates the need and importance of collecting information from a variety of sources during the initial assessment, and ensuring that this is as detailed and comprehensive as it can be. Multiple perspectives should be used when establishing possible predictor variables of recidivism (Kennedy, et al., 2006). Young firelighter self-reports of their firelighting incidents and structured interviews may assist in determining recidivism (Kolko & Kazdin, 1994). Rich, detailed descriptions of thoughts and feelings preceding firelighting (Fineman, 1995) and precipitating life events would provide valuable insight. Also crucial is a thorough assessment of fire history when trying to predict the possibility of firelighting recidivism, and individualised treatment plans to address the relevant issues and needs of the young firelighter (Kennedy, et al., 2006). Fire services are overwhelmed by the large number of referrals to the JFAIP. There is an indication that the firelighting behaviour is the result of deeper problems that cannot be effectively addressed by the program, as fire practitioners lack the specialised training required. Therefore, identifying recidivist firelighters with co-morbid psychopathology will ensure appropriate referrals to mental health professionals can be made for intervention and treatment (Webbs, et al.,1990). However, this will require a multidisciplinary approach. The lack of an appropriate and reliable screening tool makes this difficult. For this reason, it is imperative that a reliable screening tool is constructed which incorporates the biopsychosocial framework and fire specific variables.

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Appendices

APPENDIX A: JFAIP Interview Form

Case Number:	

This form is to be used at all cases. Its purpose is to provide relevant details regarding "active" cases, information for possible future reference, evaluation and statistics. This document form has four sections.

Yellow section – (questions 1 to 41) to gain an understanding of the family situation and status of the child within the family.

Blue section – (questions 42 to 46) if a request for psychological support or an offer of counselling or therapy, this section only will be copied and sent to the appropriate Child Adolescent and Family Psychiatry Service. Where no request for psychological support is sought this section will be retained by the Practitioner for their own information.

Yellow and Blue sections form the interview. ***Bold*** *questions may be asked of the parent/guardian/carer (dependent on the young person's age and maturity).*

Grey section – suggested resources the practitioner may use during the interventions that would be suitable to the young person.

Green section – to be completed by the practitioner at the completion of each intervention

ALL SECTIONS ARE TO BE COMPLETED AND FORWARDED TO JFAIP OFFICE FOR FILING.

Confidentiality Agreement

All information obtained in the Juvenile Fire Awareness and Intervention Program is treated as **private** and **confidential**. It will not be disclosed to any person, organisation or Government department without the consent of the participating young person's parent/guardian/carer unless disclosure is required by law or is necessary to protect a person's safety or welfare, subject to the following:

(a) Statistical data that does not identify any individual may be published from time to time; and

(b) The young person's status in the program may be disclosed to the person or organisation that made the referral. The wording of the disclosure will be limited to either: "participating in the program"; "completed the program"; or "did not complete the program".

JFAIP Parent/Guardian/Carer Declaration.	
I have read and understood the "confidentiality agreement" above. Name: ..... [Parent/Guardian/Carer]	
Signed:	Date:..... /..... /.....

JFAIP INTERVIEW FORM

Case Number:		Practitioner:	
Interview Date:			

Questions 1 to 30 (BOLDED QUESTIONS) may be asked of the parent/guardian/carer (dependant on the young persons age and maturity).

1. **Young person's First Name**..... **Preferred Name**.....

2. **Young person's Surname**..... 3. ☐ **Male** ☐ **Female**

4. **Young person's Age**..... 5. **Date of birth** ...../...../.....

6. **Address**.....

7. **Suburb**..... 8. **Postcode**.....

9. **Telephone (H)**..... **(W)**..... **(M)**.....

10. **This interview was conducted in the presence of:**
☐ **Mother** ☐ **Father** ☐ **Carer/Guardian** ☐ **Other**.....

11. **Name(s), age and relationship of any other member of the household:**

Full Name	Relationship (i.e. mother, father etc.)	Age (optional for adults)	This home	Other home

12. **Home E-mail Address** (please print): .....
A home e-mail allows the JFAIP Office to send program evaluation and other follow up correspondence.

13 **Adults' relationship to young person:**
☐ **Natural mother and father** ☐ **Natural mother only**
☐ **Natural father only** ☐ **Adopted/Foster Parents**
☐ **Carer**

14(a) **Mother's / Father's Marital Status: only applicable if living with birth parent(s)**
☐ **Married or De Facto Relationship**
☐ **Divorced, Separated, Single or Widowed**

14(b) **Occupation(s) of caring adults?** .....

15. **School Attending**..... 16. **Grade/Year**.....

17. **MFB / CFA***
* - strike out whichever is not applicable

Zone / Region**.....
** - enter Zone or Region number.

18. Referred From:

☐ O.I.C – Fire Call ☐ Police
☐ DHS – Mental Health Services ☐ DHS-Child Protection
☐ Family Doctor/Paediatrician ☐ School
☐ Self Investigation
☐ Other Agency (specify).....

19. How old was the young person when they first showed any interest in playing with or lighting fires?

3 4 5 6 7 8 9 10 11 12 Other .....

20. Have any of your other children played with matches or lit an unsafe fire?

☐ Yes ☐ No

21. Do you ever provide the young person with the opportunity to light fires under supervision? (Eg: BBQ, stove or heater)

☐ Yes ☐ No

22. Rate the young person's interest in fire? (0 being no interest and 10 extremely interested)

0 1 2 3 4 5 6 7 8 9 10

23. Have someone ever tried to explain the dangers of playing with matches/lighters or lighting fires?

Pre fire incident ☐ Yes ☐ No
Post fire incident ☐ Yes ☐ No

24. What primary motivating factor affected the young person's actions? (tick primary factor only)

☐ Curiosity/Interest
☐ Anger/Revenge
☐ Malicious Mischief
☐ Attention Seeking
☐ Peer Pressure
☐ Don't Know
☐ Other (specify).....

25. How did you <u>first</u> react? (tick only one)

☐ Dismissed as insignificant
☐ Felt distressed/helpless
☐ Felt angry
☐ Punished child, How.....
☐ Other (specify).....

26(a) Has *the young person* ever received help or therapy from a professional eg. psychologist, psychiatrist, school counsellor or social worker?

☐ Yes ☐ No

26(b) Is *the young person* still receiving help or therapy?

☐ Yes ☐ No

26(c) IF YES: What services/agencies are involved?

1.....
2.....
3.....
4.....

27. **Sometimes the *young person* has other problems as well as firelighting. Would you like to seek further help for *the young person's* behaviour(s)?**
☐ **Yes** ☐ **No**

If Yes, who will make this referral?
☐ **Parents** ☐ **Practitioner** ☐ **JFAIP Office** ☐ **Other (specify)**.....

28. **Has *the young person* ever been in trouble with the Police or Children's Court?**
☐ **Yes** ☐ **No**
IF YES: for what reason .....

29. **Has *the young person* been placed in an institution or in foster care?**
☐ **Yes** ☐ **No**

30. Does anyone in the house smoke?
☐ Yes ☐ No

31. How many fires have you lit in total? (details in question 41)
Total .....

32. How many fires have you lit in the last 12 months?
Total .....

33. When was the last incident? (details in question 42)
☐ 0-1 weeks ☐ 1-2 weeks ☐ 2-4 weeks
☐ 4-8 weeks ☐ Over 8 Weeks

34. Where did this happen? (specific area to be recorded ie. Bedroom, lounge room, playground etc)
.....

35. What was used?
☐ Matches ☐ Lighter ☐ Other (specify).....

36. How did you get it?
☐ Found ☐ Bought ☐ Went out of the way to get
☐ Other (specify).....

37(a) Do you know where matches/cigarette lighters are kept in the home?
☐ Yes ☐ No

37(b) If yes, where?.....

Note: Ensure all matches and lighters are kept out of the reach of all children.

38. Tick the appropriate response to the following:

Did you plan the fire?
☐ Yes ☐ No ☐ Don't know

Were you trying to destroy property or hurt someone?
☐ Yes ☐ No ☐ Don't know

Did anyone encouraged or talk you into starting the fire?
☐ Yes ☐ No ☐ Don't know

How did you feel after the fire?

☐ Happy ☐ Sad ☐ Frightened
☐ Scared ☐ Panic ☐ No Feelings

Did you stay to watch the fire?

☐ Yes ☐ No ☐ Don't know

Did you try to get help?

☐ Yes ☐ No ☐ Don't know

After the fire did *the young person*:

☐ **Admit they lit the fire**
☐ **Lie about the fire**
☐ **Neither, Admit nor Lie**

39(a) Smoke Alarm information:

Installed ☐ Yes ☐ No
Tested ☐ Working ☐ Not Working

39(b) Fire Safety Information left:

☐ Yes ☐ No

COMMENTS:

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CHILDHOOD FIRELIGHTERS STUDY - QUESTIONS FOR YOUNG PERSON

*PRACTITIONER INSTRUCTIONS: the following questions should only be completed **by the young person** who has been lighting fires in the last 12 months, who is aged **10 years or older**.*

40. Rate your interest in fire? (0 being no interest and 10 extremely interested)

0 1 2 3 4 5 6 7 8 9 10

41.

How were you feeling before each fire?		
Incident	Nature of Fire	Your feelings
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		

APPENDIX B: Research Script for JFAIP Fire Practitioners

INFORMATION FOR JUVENILE FIRE AWARENESS AND INTERVENTION PROGRAM PRACTITIONERS

Victoria University in collaboration with the Juvenile Fire Awareness and Intervention Program are conducting a study entitled *Improving Risk Prediction in Children and Adolescents with a History of Firesetting Behaviour.* I, Esma Kurt, am the student researcher and will conduct the project as part of a Master of Clinical Psychology degree at Victoria University under the supervision of Professor Dorothy Bruck and Dr Michelle Ball from the School of Social Sciences and Psychology at the university.

What is the Research?

Preliminary data has revealed that within one year of completing the Juvenile Fire Awareness and Intervention Program, 30% of Victorian children and adolescents have continued to set fires. This statistic may suggest that for these children and adolescents, their firesetting behaviour may comprise a pathological component that may be more effectively managed by mental health services rather than fire safety education. The purpose of the present study is to address this disturbing rate of recidivism and to investigate the potential role of psychopathology in firesetting behaviour.

This study will investigate firesetting behaviour in children and adolescents who are participating in the Juvenile Fire Awareness and Intervention Program. The purposes of the study are;

1. To develop an understanding of the factors that may predict whether a child/adolescent will continue to set fires
2. To investigate the role of counselling/mental health services in dealing with child/adolescent firesetters

What Will Be Done?

In order to develop an understanding of the factors that may predict whether a child/adolescent will continue to set fires, we will test a screening tool, namely, *The Child and Family Risk Survey* (see attached). Screening tools, similar to the Child and Family Risk Surveys are being used by the fire services in the United States and the United Kingdom to determine whether children and adolescents present high risk for continued firesetting. These tools comprise two components; (1) questions to be asked of the child/adolescent by the firefighter and (2) questions for the parent/guardian to complete which are scored and totalled. Based on the combined scores, firefighters are able to make

recommendations for those children/adolescents who present high risk for recidivism to seek psychological assessment, as their firesetting behaviour may be a product of psychological disturbance. Please be aware, that for the purposes of the present study, the screening tool will NOT be scored and NO recommendations will be made. It is important that we do not make any recommendations until the screening tool has been tested for an Australian population.

I have studied some screening tools that are used internationally and after some consideration and comparison of three different screening tools (the Oregon Juvenile with Fire Screening Tool, the Pennsylvania Juvenile Firesetter Assessment Tool and the Child and Family Risk Surveys), I have decided to test the Child and Family Risk Surveys for my research. Unlike the Oregon and the Pennsylvania screening tools that require practitioners to develop questions from suggested ideas, the Child and Family Risk Surveys require practitioners to read directly from prescribed questions! Furthermore, the Child and Family Risk Surveys are much shorter, and easier to score.

Why Are We Conducting The Research?

The long term goal of the study is to develop and implement a screening tool for Australian fire services. As firefighters, you are often the first professionals with whom young firesetters come in contact, so it is important that you have an active role in the intervention process. You may have been in contact with a young person whose firesetting may clearly reflect a deeper problem, such as a psychological disturbance, so it is important that such children and adolescents are directed to the appropriate resources. A screening tool will allow us to identify children/adolescents who are high risk firesetters and who may need mental health services.

What Is Your Role As A Practitioner?

The role of the firefighter practitioner in the present study is simply to ask the young person the questions from the Child Risk Survey during the first visit. As mentioned above, this will be simple and will require you to read directly from the questionnaire. You are not required to ask the parent questions from the Family Risk Survey - the parent/guardian will be asked to complete it in their own time. The questionnaire should take no longer than ten minutes to complete and is additional to the normal questions asked of the young person during the program. Please note that aside from 14 questions you will ask the child/adolescent from the screening tool, the study will not interfere with the normal process of the program and the program will operate as usual. Information and instructions have been included in this form.

Who Will Participate?

We are looking at children and adolescents who will participate in the Juvenile Fire Awareness and Intervention Program aged 6 – 17 years. The study will be explained to parents by Murray Talbot at the initial/referral phone call, and parents who are interested in obtaining information about the study will be sent a package of information. It is anticipated that this package will arrive prior to the first visit.

Included in their package of information is:

- Detailed information about the study and consent forms
- A questionnaire for the parent to complete about the young person
- A copy of the questions that you, the practitioner will ask in the first visit
- A copy of the questions that a teacher will be asked to complete about the young person

You will be given spare copies of these packages to bring on your visits: these copies can be given to parents who may have misplaced their copies or for parents who have more than one child that have been referred to the program and are willing to participate.

I have included my contact details in their package of information so that parents can contact me with any questions or concerns they may have about their participation in the study. Their information package also explains that practitioners are not available to answer all questions relating to the study. Should a parent/guardian ask you a question that you cannot answer confidently, you are welcome to contact me, or direct them to contact me.

INSTRUCTIONS TO PRACTITIONERS

The study will not interfere with the normal process of the Juvenile Fire Awareness and Intervention Program. At some stage of the first visit, you will need to ask the child/adolescent the questions from the screening tool. It is up to you when to do this, but it should be done after you complete your normal case documentation.

1. Complete the normal documentation (i.e. the JFAIP yellow and blue forms)
2. Ask the parent if they have read the information about the study, and if they would like to participate in the research.
3. If they have not read the material, but express intention to do so, you can ask them either; (1) to read the material during the JFAIP interview, or (2) in between visits.
4. If the parent has agreed to participate, you must get them to sign the 'Parent/Guardian

Declaration' (i.e. the box at the top of your copy of the *Child Risk Survey*). **It is important that you explain the JFAIP confidentiality agreement to them**. Information collected from the young person for the purposes of the research is covered by the program confidentiality agreement, so please repeat this to the parent/guardian and young person (if appropriate to do so).

5. Only once this has been signed can you proceed with the Child Risk Survey. Please be aware that the survey requires you to have developed a rapport with the child/adolescent, therefore, you must be comfortable with the young person, and them with you, before you begin.

6. When asking the questions, you must read the questions directly off the sheet. You must read all answer options provided in the survey to the young person and you must provide only ONE answer from the options on the sheet. You may notice that Question Two, for example, asks how well the young person gets along with his/her siblings. For young persons with more than one sibling, you will still need to obtain one response only. Therefore, GENERALLY, how well does the young person get along with his/her siblings?

7. Please keep the completed Child Risk Survey with the young person's case documents and return to the JFAIP office as soon as possible.

8. For parents who are participating in the research, remind them to return their completed questionnaires to me in the reply paid envelope provided to them, or to you, during a visit. In the latter case, the completed questionnaires must be sealed in the reply paid envelope and retained with the young person's case documents and returned to the JFAIP office as soon as possible. This sealed envelope must not be opened under any circumstances.

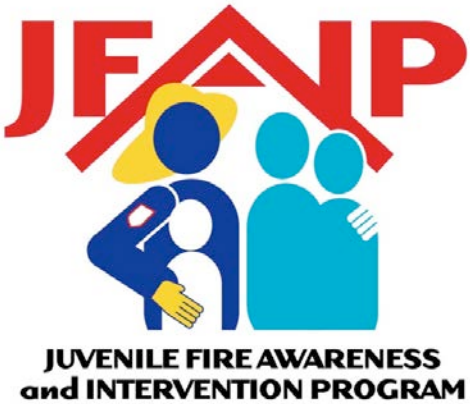
9. You will notice a space has been provided on the screening tool that will ask you to comment on whether the parent/guardian as expressed an interest in completing the research (but who may not have done so during your visit). It is very important that you determine this, so we know who to follow up with.

If you have any questions or concerns about the project, please do not hesitate to contact me on 0403 533 514 or at esma.kurt@live.vu.edu.au. Your cooperation is much appreciated.

Kind Regards,

Esma Kurt

APPENDIX C: Letter and Information to Parent/Guardian- Part A



VICTORIA UNIVERSITY | A NEW SCHOOL OF THOUGHT

Dear Parent/Guardian,

You have received this package because you have expressed interest in obtaining information about a research study being conducted by the Juvenile Fire Awareness and Intervention Program in collaboration with Victoria University.

Please read the enclosed information: if you choose to participate in the study, it is important that you understand this information.

For your participation, you will receive a $10 Target Gift Voucher.

Thank you for your interest. We hope that you choose to participate in the study.

Kind Regards,

Esma Kurt
Student Researcher
Victoria University

Murray Talbot
Senior Station Officer
Community Education

INFORMATION TO PARENTS OF CHILDREN/ ADOLESCENTS INVOLVED IN RESEARCH

YOU ARE INVITED TO PARTICIPATE

You are invited to participate in a research study entitled *Improving Risk Prediction in Children and Adolescents with a History of Firesetting Behaviour.* This study is being conducted by Victoria University in collaboration with the Juvenile Fire Awareness and Intervention Program (Metropolitan Fire Brigade and the Country Fire Authority) by Professor Dorothy Bruck and Dr Michelle Ball from the School of Social Sciences and Psychology at the university. The student researcher, Esma Kurt, will conduct the study as part of a Master of Clinical Psychology degree at Victoria University.

PROJECT EXPLANATION

This study will investigate firesetting behaviour in children and adolescents who are participating in the Juvenile Fire Awareness and Intervention Program. The purposes of the study are;

1. To develop an understanding of the factors that may predict whether a child or adolescent will continue to set fires
2. To investigate the role of counselling and mental health services in dealing with young firesetters

There are two parts to this study; one will be conducted now (Part A), and the other in twelve months time (Part B). The different parts represent when information will be collected and who will provide this information. You may choose to participate in all, or part of this study. We will only ask for you to consent to Part A of the study now. If you choose to participate, you will receive another package of information in twelve months time. Your consent to Part B will be asked then.

In Part A, we will ask you to provide information about your child and we will ask you to consent to your child being asked some additional questions to those asked as a normal part of the Juvenile Fire Awareness and Intervention Program. We will also ask for you to nominate a teacher that has recent

knowledge of your child and consent to us asking them to provide some information about your child's behaviour at school. The information we obtain will allow us to determine whether there are any factors that can predict whether a child or adolescent who has completed the Juvenile Fire Awareness and Intervention Program will continue to set fires.

In Part B, we will ask you to provide information about your child's firesetting behaviour within twelve months of completing the Juvenile Fire Awareness and Intervention Program. This information will simply allow us to determine whether your child has continued to set fires. If a mental health professional has become involved for the child's firesetting since completing the program, we will ask you to consent to us sending a questionnaire to your child's mental health professional asking them to provide some information about the types of services they provided to the child. This information will help us to understand what mental health services exist for children and adolescents and their firesetting behaviour.

As a parent, we ask you to consider discussing the study with your child to the extent to which you think they should know and will understand. We understand that you know your child best, therefore this is a matter for your judgement. Included in this package is a document to help you with this, however, if you need further assistance with making this decision, you can contact the student researcher at esma.kurt@live.vu.edu.au or on 0403 533 514.

WHAT WILL MY CHILD AND I BE ASKED TO DO?

In this package of information you have been sent, you will find several documents. The documents have been colour coded for your convenience and relate to this part of the study only.

PART A: What Will My Child and I Be Asked to Do Now?

1. The white documents are information and consent forms. If you choose to participate in the study it is important that you understand this information. If you consent to participate, and/or you consent for us to contact your child's teacher, you must sign the consent forms.

2. The yellow document provides some information about the study that you may discuss with your child if you decide to do so. This is a guide only.

3. The blue documents are to be completed by you, the parent or guardian. These questions will ask about your child's fire behaviour, behaviour in general and the family's past involvement with counselling or mental

health services (if any). These documents can be completed at your convenience and returned directly to the student researcher in the reply paid envelope, or can be given to the firefighter practitioner during a Juvenile Fire Awareness and Intervention Program visit. When we receive your returned questionnaires, we will send you a $10 Target gift voucher in the mail for your time and effort.

4. The cream document is a copy of what the firefighter practitioner will ask your child in the first Juvenile Fire Awareness and Intervention Program visit (only if you have given consent). The questions will ask about your family, your child's fire incident, and their involvement and interest in fire. The firefighter practitioner will read exactly from this form.

5. The green document is a copy of what will be sent to the teacher (only if you have given consent). These questions ask about your child's behaviour in the classroom; there will be no mention of fire in these questions. The teacher will be told that your child is participating in a university study, but will not be told that the study is fire related. It is also important to understand that the teacher will not be told about your child's involvement in the Juvenile Fire Awareness and Intervention Program. The teacher will be advised not to disclose information they provide for the research to you, your child or anyone outside the research team.

PART B: What Will My Child and I Be Asked To Do In Twelve Months Time?

If you choose to participate now, you will receive an information package about Part B in twelve months time. Your child will not participate in Part B. For Part B, you will be asked to complete one questionnaire. The questionnaire will comprise two sections; questions that will ask about (1) your child's fire behaviour since completing the Juvenile Fire Awareness and Intervention Program and (2) the counselling or mental health services your child may have received in the past twelve months since completing the program. You will only be required to answer the questions in the section(s) that are applicable to your child. When we receive your returned questionnaires, we will send you a $20 Target Gift Voucher in the mail for your time and effort.

If you consent, and if your child has received counselling/mental health services in the past twelve months since completing the Juvenile Fire Awareness and Intervention Program, we will send your child's counsellor or mental health professional one questionnaire that will ask about the services your child received.

It is important that you understand that your participation in this study is voluntary. If you do not wish to take part in the study you are under no obligation to do so. Also, if you decide to take part but later change your mind, *you are free to withdraw from the study at any time*. Your decision to take part or not to take part, or to take part and then withdraw, will not affect your relationship with the Juvenile Fire Awareness and Intervention Program, Victoria University or the agencies that may be providing services to your child.

WHAT WILL I GAIN FROM PARTICIPATING?

Your participation in the study will contribute to our understanding of young firesetters. If we can find ways to predict whether children and adolescents will continue to set fires we can develop and improve education, intervention and treatment programs to prevent them from harming themselves and others in the future.

Your contribution to the study will allow us to determine what mental health services are available to children and adolescents for their firesetting behaviour so that we can improve the quality of and access to these services in the future. To thank you and your child for your valuable contributions, we will send you a $10 Target gift voucher in the mail when we receive your returned questionnaires for Part A and a $20 Target gift voucher in the mail when we receive your returned questionnaires for Part B in twelve months time.

HOW WILL THE INFORMATION I GIVE BE USED

The information provided by you, your child, a teacher and mental health professional will only be identifiable and available to the student researcher, Esma Kurt and supervising researchers, Professor Dorothy Bruck and Dr Michelle Ball. All identifiable information relating to the study will be destroyed according to departmental procedures; after the minimum period of seven years after publication of the results. Only group data will be available to the Juvenile Fire Awareness and Intervention Program and findings of the study that are published will not identify individual participants. Please note that the information that is obtained for the purposes of the study will only be used in the context of this study, and not for any future behavioural study.

WHAT ARE THE POTENTIAL RISKS OF PARTICIPATING?

You may be concerned that the information you provide as part of this research will become more widely known. It is important that you understand that the information you provide to the firefighter practitioner relating to the study is

subject to the confidentiality agreement of the Juvenile Fire Awareness and Intervention Program. This agreement will be explained to you by the firefighter practitioner. However, please be assured that the information you provide in your questionnaires and the information that is provided by the teacher and mental health professional will remain completely confidential.

You may worry that your child's school may find out about their firesetting through their teacher completing our questionnaire. This will not happen because there will be no reference to the Juvenile Fire Awareness and Intervention Program, Metropolitan Fire Brigade, Country Fire Authority or firesetting in the teacher's questionnaire. Also, we will ask that you and the teacher do not discuss the study with each other. We will also ask the teacher not to discuss the study with your child.

You may also be concerned that your child may become upset during the study. It is not expected that the study will provoke any feelings in your child beyond those they may experience as part of the Juvenile Fire Awareness and Intervention Program. Please be aware that the firefighter practitioners have been specially trained for the Juvenile Fire Awareness and Intervention Program and are trained in dealing with these feelings.

Should you or your child become distressed as a result of the study, please contact Professor Gerard Kennedy, psychologist and senior lecturer at Victoria University on 9919 2481, or the student researcher, Esma Kurt.

HOW WILL THIS PROJECT BE CONDUCTED?

The project will be conducted using questionnaires. Information will be collected now, and again in twelve months time. All the information relating to the study will be sent to you in the post. If you choose to participate in the study, you will receive another package of information in twelve months time. As a parent or guardian, you are asked to consent to your child taking part in this study, however, the extent to which you discuss this with your child is up to you and your knowledge of how much you think your child should know and will understand.

WHO IS CONDUCTING THE STUDY?

The Juvenile Fire Awareness and Intervention Program
Murray Talbot: jfaipoffice@mfb.vic.gov.au

Victoria University
Professor Dorothy Bruck: dorothy.bruck@vu.edu.au
Dr. Michelle Ball: michelle.ball@vu.edu.au
Esma Kurt: esma.kurt@live.vu.edu.au

If you have any questions or concerns about your participation, please contact the student researcher, Esma Kurt, at the above email, or on 0403 533 514.
Please be aware that firefighter practitioners may not be able to answer all the questions you may have about the study so it is important that you direct your questions and concerns to the student researcher.

This study has been approved by the Victoria University Human Research Ethics Committee (VUHREC). If you have any concerns or complaints about the conduct of this project, please contact: Ethics and Biosafety Coordinator, Victoria University Human Research Ethics Committee, Victoria University, PO Box 14428, Melbourne, VIC, 8001 Phone (03) 9919 4148

APPENDIX D: Consent Form for Part A

ID: _____

CONSENT FORM FOR PARENTS AND CHILDREN/ ADOLESCENTS INVOLVED IN RESEARCH PART A

INFORMATION TO PARTICIPANTS:

You are invited to participate in a study entitled *Improving Risk Prediction in Children and Adolescents with a History of Firesetting Behaviour.* This study is being conducted by Victoria University in collaboration with the Juvenile Fire Awareness and Intervention Program (Metropolitan Fire Brigade and the Country Fire Authority) by Professor Dorothy Bruck and Dr Michelle Ball from the School of Social Sciences and Psychology at the university. The student researcher, Esma Kurt, will conduct the study as part of a Doctor of Philosophy (PhD) degree at Victoria University.

This study will investigate firesetting behaviour in children and adolescents who are participating in the Juvenile Fire Awareness and Intervention Program. The purpose of the study is to develop an understanding of the factors that may predict whether a child/adolescent will continue to set fires. The study will also investigate the role of counselling and mental health services in dealing with child/adolescent firesetters.

CERTIFICATION BY PARENT

I, _____ (name of parent/guardian)of_____ (suburb of parent/guardian) certify that I am at least 18 years old* and that I am voluntarily giving my consent for _____ (name of child/adolescent) to participate in the study *Improving Risk Prediction in Children and Adolescents with a History of Firesetting Behaviour* being conducted at Victoria University by Professor Dorothy Bruck and Dr Michelle Ball and Esma Kurt.

I certify that the objectives of the study, together with any risks and safeguards associated with the procedures listed hereunder to be carried out in the research, have been fully explained to me by the document, 'Information to Parents of Children/Adolescents Involved in Research' and that any additional questions have been answered by Murray Talbot (Juvenile Fire Awareness and Intervention Program coordinator) or Esma Kurt (student researcher), and that I freely consent to participation involving the below mentioned procedures:

- I understand that my child will be asked questions from one questionnaire by a firefighter practitioner in the first Juvenile Fire Awareness and Intervention Program visit.

- I understand that my participation in Part A means that I will be invited to participate in Part B of the study. I understand that I will be sent another package in twelve months time that will include the relevant information for Part B. I am aware that my participation in Part B is voluntary and that my consent to participate in Part B will be asked in twelve months time. In order to help this happen, I am happy to provide *at least two* contact details:

  1. My Contact Number (e.g. home or mobile): _____
  2. My Email Address: _____
  3. Other Contact Number (e.g. family/friend):

     _____

- I understand that the researchers may contact me to obtain the address where my gift vouchers will be sent.

- I also understand that I have been asked to consider discussing the study with my child to the extent to which I feel they should know and will understand.

I certify that I have had the opportunity to have any questions answered by contacting the student researcher, Esma Kurt, on 0403 533 514, or, at esma.kurt@live.vu.edu.au, and I understand that I can withdraw from this study at any time and that this withdrawal will not jeopardise me, or my child in any way. I have been informed that the information I provide will be kept confidential.

Signed (Parent/Guardian):
Date:

Any queries about your participation in this project may be directed to the researchers.
Professor Dorothy Bruck: dorothy.bruck@vu.edu.au
Dr. Michelle Ball: michelle.ball@vu.edu.au
Esma Kurt: esma.kurt@live.vu.edu.au

If you have any queries or complaints about the way you have been treated, you may contact the Ethics & Biosafety Coordinator, Victoria University Human Research Ethics Committee, Victoria University, PO Box 14428, Melbourne, VIC, 8001, Phone (03) 9919 4148.

APPENDIX E: Brief Agency Contact Questionnaire

ID: _____

TO BE COMPLETED BY THE PARENT/GUARDIAN

The following questions relate to the child/adolescent who participating in the Juvenile Fire Awareness and Intervention Program. Please circle or tick the response that is most applicable to the child/adolescent.

Although it may seem that some questions have been repeated, it is important that you answer all items.

It should take no longer than 25 minutes to complete.

Name of Child/Adolescent: _____

Your Name: _____

Your Relationship to the Child/Adolescent: _____

Date: _____

The following asks about any contact you or your family may have had with any counselling or mental health agency providing help for your child/adolescent's fire related activities. (Please be aware that we will NOT approach any agency based on this information). Please tick all that apply and provide responses in the boxes to the best of your recollection. Additional comments welcome.

Note: You may have received help for more than one of your children and their fire-related activities. Therefore, your responses for each child may vary. We have included two forms for your convenience; you may fill out one form per child, or just use the one form, making the differences for each child clear.

Agency	*Who first suggested this service? (e.g. teacher, doctor, mother)*	*How many sessions were attended by the child/adolescent in total?*	*How old was this child/adolescent at the time of first attending the service? (Age, Grade, Year)*
Psychologist			
Psychiatrist			
Counsellor			
Family Therapist			
Child/ Adolescent Therapist			
Social Worker			
School Guidance Officer			

This copy has been included if you require more space for your responses, or would like to provide information if you have sought help for more than one of your children for their fire related activities.

Agency	*Who first suggested this service? (e.g. teacher, doctor, mother)*	*How many sessions were attended by the child/adolescent in total?*	*How old was this child/adolescent at the time of first attending the service? (Age, Grade, Year)*
Psychologist			
Psychiatrist			
Counsellor			
Family Therapist			
Child/ Adolescent Therapist			
Social Worker			
School Guidance Officer			

APPENDIX F: Family Risk Survey

1. If you had to describe his/her curiosity about fire, would you say it was absent, mild, moderate or extreme?
    - Absent _____
    - Mild _____
    - Moderate _____
    - Extreme _____

2. Has he/she been diagnosed with any impulse control conditions, such as Attention Deficit Disorder (ADD) or Attention Deficit Disorder with Hyperactivity (ADHD)?
    - Yes _____ _____(Diagnosis)
    - No _____

3. Has he/she been in trouble outside of school for non fire related behaviour?
    - Yes _____ _____ (What?)
    - No _____

4. Has he/she ever stolen or shoplifted?
    - Yes _____
    - No _____
    - Don't Know/Not Applicable _____

5. Has he/she ever beat up or hurt others?
    - Yes _____
    - No _____
    - Don't Know/Not Applicable _____

6. Besides this fireplay or firesetting incident, how many other times has he/she played with fire, including matches or lighters, or set something on fire?
    - 1 (Current) _____
    - 2 (Current + 1) _____
    - 4 (Current + 2 to 4) _____
    - 6 (Current + 5) _____

7. Is there an impulsive (sudden urge) quality to his/her firesetting or fireplay?
    - Yes _____
    - No _____
    - Don't Know/Not Applicable _____

APPENDIX G: Fire Risk Interview

Curiosity About Fire

	Not At All		Somewhat		Very Much
How curious is he/she about fire?	1	2	3	4	5
How much does he/she want to play with fire?	1	2	3	4	5
How much does he/she think that fire is special or magical?	1	2	3	4	5
How much does he/she get excited or fascinated when fires or fire related topics are mentioned in everyday conversation?	1	2	3	4	5
How much does he/she like to talk about fire?	1	2	3	4	5
How much does he/she want to visit exhibits or watch movies about fires, or to actually watch a real fire?	1	2	3	4	5
How much does he/she read and attempt to learn about fire and its uses?	1	2	3	4	5

Knowledge of Fire Safety

	Not At All		Somewhat		Very Much
To what extent does your child understand his/her own behaviour in general?	1	2	3	4	5
To what extent does he/she know different facts about fires or fire fighters?	1	2	3	4	5
To what extent does he/she understand why playing with fire is dangerous?	1	2	3	4	5
To what extent does he/she know what things will burn and what things won't?	1	2	3	4	5
To what extent does he/she know how to use matches or lighters correctly?	1	2	3	4	5

Fire Skill/Competence

	Not At All		Somewhat		Very Much
To what extent does he/she know what to do if something catches on fire suddenly?	1	2	3	4	5
To what extent has he/she been taught to use matches or lighters correctly?	1	2	3	4	5
To what extent does he/she play safely when alone or with others?	1	2	3	4	5
To what extent is he/she able to light a fire and put it out correctly?	1	2	3	4	5
To what extent is he/she allowed to use matches or lighters at home?	1	2	3	4	5

Complaints/Concern About Fire Behaviour

	Not At All		Somewhat		Very Much
How often do you receive complaints about his/her behaviour, in general, from others in the community?	1	2	3	4	5
To what extent do you receive complaints about his/her play with fire from others in the community?	1	2	3	4	5
How often do you worry about him/her playing with fire when he/she is left unattended?	1	2	3	4	5

Exposure to Peer/Family Models

	Not At All		Available/Not Easy To Get To		Available or Easy To Get To
How available are matches, lighters or other fire starting materials at his/her school or in his/her friends' homes?	1	2	3	4	5
How available are matches, lighters, or other fire starting materials in or around your home?	1	2	3	4	5

	Not All The Time	Some Of The Time		Almost Always	
How often is he/she in the presence of friends who smoke anywhere outside the home (e.g., school, friends' homes)?	1	2	3	4	5
How often is there a cigarette or pipe smoking in your home?	1	2	3	4	5

	None	One	Two	Three	Four or More
How many times have other family members been burned or hurt because of a fire in the last year?	1	2	3	4	5
How many people who live at home including yourself, smoke cigarettes or pipes?	1	2	3	4	5
How many family members have an interest or fascination with fire?	1	2	3	4	5

	None	One	Two	Three or Four	Five
How many family members has he/she observed playing with matches or lighting fires in the last year?	1	2	3	4	5
How many other persons in your neighbourhood have been burned or hurt because of a fire in the last year?	1	2	3	4	5
How many times has he/she ever been burned or hurt because of a fire in the last year?	1	2	3	4	5
How many times have other family members been burned or hurt because of a fire in the last year?	1	2	3	4	5
How many of his/her friends smoke or experiment with smoking?	1	2	3	4	5
How many fires have there been in your neighbourhood in the last year?	1	2	3	4	5

Involvement in Fire Related Activities

	None	One	Two	Three	Four or More
How many times has your child ever hidden matches, lighters, or other fire starting materials?	1	2	3	4	5
How many times has your child left burn marks on things in your home?	1	2	3	4	5
How many times has anyone, like school officials, the police, or your neighbours, told someone in your family about your child's playing with fire?	1	2	3	4	5

Early Experiences with Fire

	No	Yes
Were there any smokers living in your home more than one year ago?	0	1
Did any members of your family play with matches or lighters, or light fires more than one year ago?	0	1
Was your child exposed to any neighbourhood fires or to other people who played with fire more than one year ago?	0	1
More than one year ago, did your child ever play with matches/lighters or fire?	0	1
Did your child ever show any special interest in fire more than one year ago?	0	1

APPENDIX H: CHild Behaviour Checklist- Parent Form

Please print # CHILD BEHAVIOR CHECKLIST FOR AGES 6-18

For office use only ID #

CHILD'S FULL NAME First Middle Last

CHILD'S GENDER ☐ Boy ☐ Girl

CHILD'S AGE

CHILD'S ETHNIC GROUP OR RACE

TODAY'S DATE Mo._____ Date _____ Yr. _____

CHILD'S BIRTHDATE Mo._____ Date _____ Yr. _____

GRADE IN SCHOOL _____

NOT ATTENDING SCHOOL ☐

Please fill out this form to reflect *your* view of the child's behavior even if other people might not agree. Feel free to print additional comments beside each item and in the space provided on page 2. ***Be sure to answer all items.***

PARENTS' USUAL TYPE OF WORK, even if not working now. *(Please be specific — for example, auto mechanic, high school teacher, homemaker, laborer, lathe operator, shoe salesman, army sergeant.)*

FATHER'S TYPE OF WORK _____

MOTHER'S TYPE OF WORK _____

THIS FORM FILLED OUT BY: (print your full name)

_____

Your gender: ☐ Male ☐ Female

Your relation to the child:

☐ Biological Parent ☐ Step Parent ☐ Grandparent

☐ Adoptive Parent ☐ Foster Parent ☐ Other (specify)_____

I. Please list the sports your child most likes to take part in. For example: swimming, baseball, skating, skate boarding, bike riding, fishing, etc.

☐ None

	Compared to others of the same age, about how much time does he/she spend in each?				Compared to others of the same age, how well does he/she do each one?			
	Less Than Average	Average	More Than Average	Don't Know	Below Average	Average	Above Average	Don't Know
a. _____	☐	☐	☐	☐	☐	☐	☐	☐
b. _____	☐	☐	☐	☐	☐	☐	☐	☐
c. _____	☐	☐	☐	☐	☐	☐	☐	☐

II. Please list your child's favorite hobbies, activities, and games, other than sports. For example: stamps, dolls, books, piano, crafts, cars, computers, singing, etc. (Do ***not*** include listening to radio or TV.)

☐ None

	Compared to others of the same age, about how much time does he/she spend in each?				Compared to others of the same age, how well does he/she do each one?			
	Less Than Average	Average	More Than Average	Don't Know	Below Average	Average	Above Average	Don't Know
a. _____	☐	☐	☐	☐	☐	☐	☐	☐
b. _____	☐	☐	☐	☐	☐	☐	☐	☐
c. _____	☐	☐	☐	☐	☐	☐	☐	☐

III. Please list any organizations, clubs, teams, or groups your child belongs to.

☐ None

	Compared to others of the same age, how active is he/she in each?			
	Less Active	Average	More Active	Don't Know
a. _____	☐	☐	☐	☐
b. _____	☐	☐	☐	☐
c. _____	☐	☐	☐	☐

IV. Please list any jobs or chores your child has. For example: paper route, babysitting, making bed, working in store, etc. (Include both paid and unpaid jobs and chores.)

☐ None

	Compared to others of the same age, how well does he/she carry them out?			
	Below Average	Average	Above Average	Don't Know
a. _____	☐	☐	☐	☐
b. _____	☐	☐	☐	☐
c. _____	☐	☐	☐	☐

Be sure you answered all items. Then see other side.

Please print. Be sure to answer all items.

V. 1. About how many close friends does your child have? (Do *not* include brothers & sisters)

❒ None ❒ 1 ❒ 2 or 3 ❒ 4 or more

2. About how many times a week does your child do things with any friends outside of regular school hours? (Do *not* include brothers & sisters)

❒ Less than 1 ❒ 1 or 2 ❒ 3 or more

VI. Compared to others of his/her age, how well does your child:

	Worse	Average	Better	
a. Get along with his/her brothers & sisters?	❒	❒	❒	❒ Has no brothers or sisters
b. Get along with other kids?	❒	❒	❒	
c. Behave with his/her parents?	❒	❒	❒	
d. Play and work alone?	❒	❒	❒	

VII. 1. Performance in academic subjects. ❒ Does not attend school because _____

_____

Check a box for each subject that child takes	Failing	Below Average	Average	Above Average
a. Reading, English, or Language Arts	❒	❒	❒	❒
b. History or Social Studies	❒	❒	❒	❒
c. Arithmetic or Math	❒	❒	❒	❒
d. Science	❒	❒	❒	❒
e. _____	❒	❒	❒	❒
f. _____	❒	❒	❒	❒
g. _____	❒	❒	❒	❒

Other academic subjects–for example: computer courses, foreign language, business. Do ***not*** include gym, shop, driver's ed., or other nonacademic subjects.

2. Does your child receive special education or remedial services or attend a special class or special school?

❒ No ❒ Yes—kind of services, class, or school:

3. Has your child repeated any grades? ❒ No ❒ Yes—grades and reasons:

4. Has your child had any academic or other problems in school? ❒ No ❒ Yes—please describe:

When did these problems start?_____

Have these problems ended? ❒ No ❒ Yes–when?

Does your child have any illness or disability (either physical or mental)? ❒ No ❒ Yes—please describe:

What concerns you most about your child?

Please describe the best things about your child.

Be sure you answered all items.

Please print. Be sure to answer all items.

Below is a list of items that describe children and youths. For each item that describes your child ***now or within the past 6 months***, please circle the ***2*** if the item is ***very true or often true*** of your child. Circle the ***1*** if the item is ***somewhat or sometimes true*** of your child. If the item is ***not true*** of your child, circle the ***0***. Please answer all items as well as you can, even if some do not seem to apply to your child.

0 = Not True (as far as you know) **1 = Somewhat or Sometimes True** **2 = Very True or Often True**

0 1 2 1. Acts too young for his/her age
0 1 2 2. Drinks alcohol without parents' approval (describe):_____
_____
0 1 2 3. Argues a lot
0 1 2 4. Fails to finish things he/she starts
0 1 2 5. There is very little he/she enjoys
0 1 2 6. Bowel movements outside toilet
0 1 2 7. Bragging, boasting
0 1 2 8. Can't concentrate, can't pay attention for long
0 1 2 9. Can't get his/her mind off certain thoughts; obsessions (describe): _____
_____
0 1 2 10. Can't sit still, restless, or hyperactive
0 1 2 11. Clings to adults or too dependent
0 1 2 12. Complains of loneliness
0 1 2 13. Confused or seems to be in a fog
0 1 2 14. Cries a lot
0 1 2 15. Cruel to animals
0 1 2 16. Cruelty, bullying, or meanness to others
0 1 2 17. Daydreams or gets lost in his/her thoughts
0 1 2 18. Deliberately harms self or attempts suicide
0 1 2 19. Demands a lot of attention
0 1 2 20. Destroys his/her own things
0 1 2 21. Destroys things belonging to his/her family or others
0 1 2 22. Disobedient at home
0 1 2 23. Disobedient at school
0 1 2 24. Doesn't eat well
0 1 2 25. Doesn't get along with other kids
0 1 2 26. Doesn't seem to feel guilty after misbehaving
0 1 2 27. Easily jealous
0 1 2 28. Breaks rules at home, school, or elsewhere
0 1 2 29. Fears certain animals, situations, or places, other than school (describe): _____
_____
0 1 2 30. Fears going to school
0 1 2 31. Fears he/she might think or do something bad
0 1 2 32. Feels he/she has to be perfect
0 1 2 33. Feels or complains that no one loves him/her
0 1 2 34. Feels others are out to get him/her
0 1 2 35. Feels worthless or inferior
0 1 2 36. Gets hurt a lot, accident-prone
0 1 2 37. Gets in many fights
0 1 2 38. Gets teased a lot
0 1 2 39. Hangs around with others who get in trouble
0 1 2 40. Hears sound or voices that aren't there (describe): _____
_____
0 1 2 41. Impulsive or acts without thinking
0 1 2 42. Would rather be alone than with others
0 1 2 43. Lying or cheating
0 1 2 44. Bites fingernails
0 1 2 45. Nervous, highstrung, or tense
0 1 2 46. Nervous movements or twitching (describe): ____
_____
_____
0 1 2 47. Nightmares
0 1 2 48. Not liked by other kids
0 1 2 49. Constipated, doesn't move bowels
0 1 2 50. Too fearful or anxious
0 1 2 51. Feels dizzy or lightheaded
0 1 2 52. Feels too guilty
0 1 2 53. Overeating
0 1 2 54. Overtired without good reason
0 1 2 55. Overweight
56. Physical problems ***without known medical cause:***
0 1 2 a. Aches or pains (***not*** stomach or headaches)
0 1 2 b. Headaches
0 1 2 c. Nausea, feels sick
0 1 2 d. Problems with eyes (***not*** if corrected by glasses) (describe): _____
0 1 2 e. Rashes or other skin problems
0 1 2 f. Stomachaches
0 1 2 g. Vomiting, throwing up
0 1 2 h. Other (describe): _____
_____

 Be sure you answered all items. Then see other side.

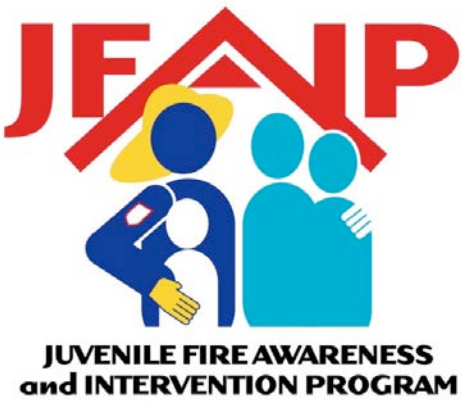
Please print. Be sure to answer all items.

0 = Not True (as far as you know) 1 = Somewhat or Sometimes True 2 = Very True or Often True

0 1 2 57. Physically attacks people
0 1 2 58. Picks nose, skin, or other parts of body (describe): _____
_____
0 1 2 59. Plays with own sex parts in public
0 1 2 60. Plays with own sex parts too much
0 1 2 61. Poor school work
0 1 2 62. Poorly coordinated or clumsy
0 1 2 63. Prefers being with older kids
0 1 2 64. Prefers being with younger kids
0 1 2 65. Refuses to talk
0 1 2 66. Repeats certain acts over and over; compulsions (describe): _____
_____
0 1 2 67. Runs away from home
0 1 2 68. Screams a lot
0 1 2 69. Secretive, keeps things to self
0 1 2 70. Sees things that aren't there (describe): _____
_____
_____
0 1 2 71. Self-conscious or easily embarrassed
0 1 2 72. Sets fires
0 1 2 73. Sexual problems (describe): _____
_____
_____
0 1 2 74. Showing off or clowning
0 1 2 75. Too shy or timid
0 1 2 76. Sleeps less than most kids
0 1 2 77. Sleeps more than most kids during day and/or night (describe): _____
_____
0 1 2 78. Inattentive or easily distracted
0 1 2 79. Speech problem (describe): _____
_____
0 1 2 80. Stares blankly
0 1 2 81. Steals at home
0 1 2 82. Steals outside the home
0 1 2 83. Stores up too many things he/she doesn't need (describe): _____
_____
_____
0 1 2 84. Strange behavior (describe): _____
_____
0 1 2 85. Strange ideas (describe): _____
_____
0 1 2 86. Stubborn, sullen, or irritable
0 1 2 87. Sudden changes in mood or feelings
0 1 2 88. Sulks a lot
0 1 2 89. Suspicious
0 1 2 90. Swearing or obscene language
0 1 2 91. Talks about killing self
0 1 2 92. Talks or walks in sleep (describe): _____
_____
0 1 2 93. Talks too much
0 1 2 94. Teases a lot
0 1 2 95. Temper tantrums or hot temper
0 1 2 96. Thinks about sex too much
0 1 2 97. Threatens people
0 1 2 98. Thumb-sucking
0 1 2 99. Smokes, chews, or sniffs tobacco
0 1 2 100. Trouble sleeping (describe): _____
_____
0 1 2 101. Truancy, skips school
0 1 2 102. Underactive, slow moving, or lacks energy
0 1 2 103. Unhappy, sad, or depressed
0 1 2 104. Unusually loud
0 1 2 105. Uses drugs for nonmedical purposes (***don't*** include alcohol or tobacco) (describe): _____
_____
_____
0 1 2 106. Vandalism
0 1 2 107. Wets self during the day
0 1 2 108. Wets the bed
0 1 2 109. Whining
0 1 2 110. Wishes to be of opposite sex
0 1 2 111. Withdrawn, doesn't get involved with others
0 1 2 112. Worries
113. Please write in any problems your child has that were not listed above:
0 1 2 _____
0 1 2 _____
0 1 2 _____

Please be sure you answered all items.

APPENDIX I: Letter of Appreciation



VICTORIA UNIVERSITY | A NEW SCHOOL OF THOUGHT

Dear ,

Thank you for your contribution to the research study being conducted by Victoria University in collaboration with the Juvenile Fire Awareness and Intervention Program.

Enclosed is a $10 Coles-Myer Gift Vouchers to thank you for your involvement.

Kind Regards,

Esma Kurt
Student Researcher
Victoria University

APPENDIX J: Child Risk Survey

TO BE COMPLETED BY THE FIREFIGHTER PRACTITIONER

CHILD RISK SURVEY

PRACTITIONER INSTRUCTIONS: *You must obtain the consent of the parent/ guardian before asking the child/adolescent the following questions. Please ensure that the parent/guardian signs below.*

Improving Risk Prediction in Child and Adolescents with a History of Firesetting Behaviour **Parent/Guardian Declaration**
I have read and understood the *Information for Parents of Children/Adolescents Involved in Research* and have signed the form *Consent Form for Parents of Children/Adolescents Involved in Research.* I have also understood the Confidentiality Agreement of the Juvenile Fire Awareness and Intervention Program and I understand that the agreement extends to the information my child, or I provide to the firefighter practitioner for the purposes of the study. I therefore provide consent for the firefighter practitioner to ask my child the questions contained in this booklet. Name of Parent/Guardian: _____

Signed: _____	Date: _____

Name of Practitioner: _____

Determine the Level of Understanding (For Children Under 7)

PRACTITIONER INSTRUCTIONS: *It is often difficult to determine if a young child really understands you. There may be an age barrier, a language barrier, a learning problem, or sub normal intelligence. It is fruitless to go through an entire interview unless you are first assured that the child has enough understanding to complete the interview.*

Based on your interaction with the child so far, does the child have an adequate understanding?

Practitioner's Notes and Comments:

_____
_____
_____
_____

If you are satisfied that the child has adequate understanding, proceed with the interview.

PRACTITIONER INSTRUCTIONS: *Once you have developed a rapport with the child/adolescent, please ask the following questions. You must read directly from this sheet to the child/adolescent. You must read all answer options provided in the survey to the child/adolescent and you must provide only ONE answer from the options on the sheet.*

1. Do you have brothers or sisters?
    - o Yes _____
    - o No _____ If no, skip to Question 3

2. How well do you get along with them?
    - o Always get along _____
    - o Usually get along _____
    - o Sometimes get along _____
    - o Don't get along very often _____
    - o Never get along _____

3. How well do you get along with your mother?
    - o Always get along _____
    - o Usually get along _____
    - o Sometimes get along _____
    - o Don't get along very often _____
    - o Never get along _____

4. Do you fight or argue with your mother?
    - o Never _____
    - o Rarely _____
    - o Sometimes _____
    - o Usually _____
    - o Always _____

5. Do you see your father as much as you'd like?
    - o Yes _____
    - o No _____
    - o Too Much _____

6. When you are asked to do something, do you usually do it?
    - o Yes _____
    - o No _____

7. Do you lie a lot?
    - o Yes _____
    - o No _____

8. What happens at home when you get in trouble?
    - o Grounded _____
    - o Talked/Lectured _____
    - o Physical punishment _____
    - o Sought outside help _____
    - o Other/Nothing _____
    - o Yelled at _____

9. Has there been an ongoing big problem in your life or in your family?
    - o Yes _____ _____ (What?)
    - o No _____

10. Besides this fireplay or firesetting incident, how many other times have you played with fire, including matches or lighters, or set something on fire?
    - o 1 (Current) _____
    - o 2 (Current + 1) _____
    - o 4 (Current +2 to 4) _____
    - o 6 (Current + 5) _____

11. What did you do after the fire started?
    - o Put it out _____
    - o Called for help _____
    - o Ran away _____
    - o Didn't try to run _____
    - o Panicked _____
    - o Tried to extinguish _____
    - o Other _____
    - o Stayed and watched_____

12. Did you intend to play with fire or set the fire, that is, did you play with or set the fire on purpose?
    - o Yes _____
    - o No _____

13. Where did you set the fire?

    _____

14. Do you like to look at fire for long periods of time?
    - o Yes _____
    - o No _____

* Original questions appear in Fineman *(1996), Comprehensive Fire Risk Assessment,* Published in the Colorado

PRACTITIONER INSTRUCTIONS

It is important the researchers are aware of the parents/guardians who have expressed an interest in completing the questionnaires for the study. Please determine whether the parent/guardian seeks to complete the questionnaires and make a note of this below. This information will direct researchers to follow up with the parents/guardians who have not yet returned their questionnaires.

_____

_____

_____

_____

Please ensure that you have obtained demographic information. The information below will have already been obtained in the Juvenile Fire Awareness and Intervention Program documentation (yellow and blue forms). Please complete this form after the visit, by transferring information from the yellow and blue forms.

Incident #: _____ Incident Date: ___/___/___Incident Location: _____

Incident Description:_____

_____

_____

_____

_____

_____

_____

Child's Last Name: _____First Name: _____

D.O.B. ____/____/____ Child's Address: _____

_____Home Phone: _____

School Child Attends: _____ Grade: _____

Interviewer's Name: _____

APPENDIX K: Certification to contact the Teacher

ID: _____

CERTIFICATION BY PARENT/GUARDIAN TO CONTACT TEACHER

I, _____ (name of parent/ guardian), certify that I am at least 18 years old and that I am voluntarily giving my consent for _____ (name of teacher) at _____ (name of school) to share information about my child/adolescent _____ (name of child/adolescent) with the researchers, Esma Kurt, Professor Dorothy Bruck and Dr Michelle Ball from Victoria University.

I certify that the objectives of the study, together with any risks and safeguards associated with the procedures listed hereunder to be carried out in the research, have been fully explained to me by Esma Kurt, and that I freely consent to participation involving the below mentioned procedures:

I understand that the student researcher, Esma Kurt, will contact the above teacher and ask them to complete the ASEBA Child Behaviour Checklist Questionnaire (Teacher Report Form) about my child's behaviour at school.

I have been informed that the information that this teacher provides will be kept confidential and that I cannot request the information provided by this teacher. I have also been informed the teacher will be advised not to disclose the information they provide to anyone outside the research team, and will be advised not to discuss the information they provide about my child with neither myself nor my child.

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

Signed (Parent/Guardian):

Date:

Please note that a copy of this form will be sent to the teacher.

APPENDIX L: Information for Teachers involved in Research

INFORMATION FOR TEACHERS INVOLVED IN RESEARCH

To

My name is Esma Kurt and I am conducting a study as part of a Masters of Clinical Psychology degree at Victoria University under the supervision of Professor Dorothy Bruck and Doctor Michelle Ball from the School of Social Sciences and Psychology at Victoria University.

I have been in contact with the family of _____ (name of child/adolescent), of Grade/Year _____, and they have given consent (attached) for me to contact you to complete the Teacher Report Form of the Achenbach System of Empirically Based Assessment, otherwise known as the Child Behaviour Checklist.

I acknowledge your busy work schedule, however I would be grateful if you could complete the report for me within one week, and return to me in the reply paid envelope provided. The report will take at least ten minutes.

The information you provide for the purposes of the study will be kept confidential. Under no circumstances will this information be shared with the child/adolescent or the parent/guardian. I ask that you do not discuss the study or disclose the information you provide about the child/adolescent to the parent/guardian and/or the child/adolescent to minimize the risk of bias on the information you provide. Also, I ask that you do not disclose the information you provide about participants to anyone outside the research team. Furthermore, findings of the study that are published will be group data and will not identify you, the child/adolescent or the parent/guardian.

You may be familiar with the Teacher Report Form, however, if you have any questions or concerns about the measure, or your participation in the study, I may be contacted on 0403 533 514 or at esma.kurt@live.vu.edu.au.

Your participation would be much appreciated.

Kind Regards,

Esma Kurt

This study has been approved by the Human Research Ethics Committee, Victoria University, PO Box 14428, Melbourne, VIC, 8001 Phone (03) 9919 4148.

APPENDIX M: Child Behaviour Checklist- Teacher Report Form

TEACHER'S REPORT FORM FOR AGES 6-18

For office use only ID #

Your answers will be used to compare the pupil with other pupils whose teachers have completed similar forms. The information from this form will also be used for comparison with other information about this pupil. Please answer as well as you can, even if you lack full information. Scores on individual items will be combined to identify general patterns of behavior. Feel free to print additional comments beside each item and in the spaces provided on page 2. ***Please print, and answer all items.***

PUPIL'S FULL NAME First Middle Last

PUPIL'S GENDER ☐ Boy ☐ Girl | PUPIL'S AGE | PUPIL'S ETHNIC GROUP OR RACE

TODAY'S DATE Mo._____ Date_____ Yr._____

PUPIL'S BIRTHDATE (if known) Mo._____ Date_____ Yr._____

GRADE IN SCHOOL _____

NAME AND ADDRESS OF SCHOOL _____

PARENTS' USUAL TYPE OF WORK, even if not working now *(Please be specific — for example, auto mechanic, high school teacher, homemaker, laborer, lathe operator, shoe salesman, army sergeant.)*

FATHER'S TYPE OF WORK _____

MOTHER'S TYPE OF WORK _____

THIS FORM FILLED OUT BY: (*print your full name*) _____

Your gender: ☐ Male ☐ Female

Your role at the school:

☐ Classroom Teacher ☐ Counselor

☐ Special Educator ☐ Administrator

☐ Teacher's Aide ☐ Other (specify):

I. For how many months have you known this pupil? _____ months

II. How well do you know him/her? 1. ☐ Not Well 2. ☐ Moderately Well 3. ☐ Very Well

III. How much time does he/she spend in your class or service per week?

IV. What kind of class or service is it? (Please be specific, e.g., regular 5th grade, 7th grade math, learning disability, counseling, etc.)

V. Has he/she ever been referred for special class placement, services, or tutoring?

☐ Don't Know 0. ☐ No 1. ☐ Yes — what kind and when?

VI. Has he/she repeated any grades? ☐ Don't Know 0. ☐ No 1. ☐ Yes — grades and reasons:

VII. Current academic performance — list academic subjects and check box that indicates pupil's performance for each subject:

Academic subject	1. Far below grade	2. Somewhat below grade	3. At grade level	4. Somewhat above grade	5. Far above grade
1. _____	☐	☐	☐	☐	☐
2. _____	☐	☐	☐	☐	☐
3. _____	☐	☐	☐	☐	☐
4. _____	☐	☐	☐	☐	☐
5. _____	☐	☐	☐	☐	☐
6. _____	☐	☐	☐	☐	☐

Be sure you answered all items. Then see other side.

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Please print. Be sure to answer all items.

VIII. Compared to typical pupils of the same age:	1. Much less	2. Somewhat less	3. Slightly less	4. About average	5. Slightly more	6. Somewhat more	7. Much more
1. How hard is he/she working?	❒	❒	❒	❒	❒	❒	❒
2. How appropriately is he/she behaving?	❒	❒	❒	❒	❒	❒	❒
3. How much is he/she learning?	❒	❒	❒	❒	❒	❒	❒
4. How happy is he/she?	❒	❒	❒	❒	❒	❒	❒

IX. Most recent achievement test scores (optional):

Name of test	Subject	Date	Percentile or grade level obtained

X. IQ, readiness, or aptitude tests (optional):

Name of test	Date	IQ or equivalent scores

Does this pupil have any illness or disability (either physical or mental)? ❒ No ❒ Yes— please describe:

What concerns you most about this pupil?

Please describe the best things about this pupil:

Please feel free to write any comments about this pupil's work, behavior, or potential, using extra pages if necessary.

Please print. Be sure to answer all items.

Below is a list of items that describe pupils. For each item that describes the pupil ***now or within the past 2 months,*** please circle the ***2*** if the item is ***very true or often true*** of the pupil. Circle the ***1*** if the item is ***somewhat or sometimes true*** of the pupil. If the item is ***not true*** of the pupil, circle the ***0***. Please answer all items as well as you can, even if some do not seem to apply to this pupil.

0 = Not True (as far as you know) **1 = Somewhat or Sometimes True** **2 = Very True or Often True**

0 1 2 1. Acts too young for his/her age
0 1 2 2. Hums or makes other odd noises in class
0 1 2 3. Argues a lot
0 1 2 4. Fails to finish things he/she starts
0 1 2 5. There is very little that he/she enjoys
0 1 2 6. Defiant, talks back to staff
0 1 2 7. Bragging, boasting
0 1 2 8. Can't concentrate, can't pay attention for long
0 1 2 9. Can't get his/her mind off certain thoughts; obsessions (describe): _____
_____
0 1 2 10. Can't sit still, restless, or hyperactive
0 1 2 11. Clings to adults or too dependent
0 1 2 12. Complains of loneliness
0 1 2 13. Confused or seems to be in a fog
0 1 2 14. Cries a lot
0 1 2 15. Fidgets
0 1 2 16. Cruelty, bullying, or meanness to others
0 1 2 17. Daydreams or gets lost in his/her thoughts
0 1 2 18. Deliberately harms self or attempts suicide
0 1 2 19. Demands a lot of attention
0 1 2 20. Destroys his/her own things
0 1 2 21. Destroys property belonging to others
0 1 2 22. Difficulty following directions
0 1 2 23. Disobedient at school
0 1 2 24. Disturbs other pupils
0 1 2 25. Doesn't get along with other pupils
0 1 2 26. Doesn't seem to feel guilty after misbehaving
0 1 2 27. Easily jealous
0 1 2 28. Breaks school rules
0 1 2 29. Fears certain animals, situations, or places other than school (describe):_____
_____
0 1 2 30. Fears going to school
0 1 2 31. Fears he/she might think or do something bad
0 1 2 32. Feels he/she has to be perfect
0 1 2 33. Feels or complains that no one loves him/her
0 1 2 34. Feels others are out to get him/her
0 1 2 35. Feels worthless or inferior
0 1 2 36. Gets hurt a lot, accident-prone
0 1 2 37. Gets in many fights
0 1 2 38. Gets teased a lot
0 1 2 39. Hangs around with others who get in trouble
0 1 2 40. Hears sounds or voices that aren't there (describe):_____
_____
0 1 2 41. Impulsive or acts without thinking
0 1 2 42. Would rather be alone than with others
0 1 2 43. Lying or cheating
0 1 2 44. Bites fingernails
0 1 2 45. Nervous, high-strung, or tense
0 1 2 46. Nervous movements or twitching (describe): _____
_____
0 1 2 47. Overconforms to rules
0 1 2 48. Not liked by other pupils
0 1 2 49. Has difficulty learning
0 1 2 50. Too fearful or anxious
0 1 2 51. Feels dizzy or lightheaded
0 1 2 52. Feels too guilty
0 1 2 53. Talks out of turn
0 1 2 54. Overtired without good reason
0 1 2 55. Overweight
56. Physical problems ***without known medical cause:***
0 1 2 a. Aches or pains (***not*** stomach or headaches)
0 1 2 b. Headaches
0 1 2 c. Nausea, feels sick
0 1 2 d. Eye problems (***not*** if corrected by glasses) (describe):_____
_____
0 1 2 e. Rashes or other skin problems
0 1 2 f. Stomachaches
0 1 2 g. Vomiting, throwing up
0 1 2 h. Other (describe):_____
_____
_____

 Be sure you answered all items. Then see other side.

Please print. Be sure to answer all items.

0 = Not True (as far as you know) 1 = Somewhat or Sometimes True 2 = Very True or Often True

0 1 2 57. Physically attacks people
0 1 2 58. Picks nose, skin, or other parts of body (describe):_____
_____
0 1 2 59. Sleeps in class
0 1 2 60. Apathetic or unmotivated
0 1 2 61. Poor school work
0 1 2 62. Poorly coordinated or clumsy
0 1 2 63. Prefers being with older children or youths
0 1 2 64. Prefers being with younger children
0 1 2 65. Refuses to talk
0 1 2 66. Repeats certain acts over and over; compulsions (describe):_____
_____
0 1 2 67. Disrupts class discipline
0 1 2 68. Screams a lot
0 1 2 69. Secretive, keeps things to self
0 1 2 70. Sees things that aren't there (describe):
_____
_____
0 1 2 71. Self-conscious or easily embarrassed
0 1 2 72. Messy work
0 1 2 73. Behaves irresponsibly (describe):_____
_____
_____
0 1 2 74. Showing off or clowning
0 1 2 75. Too shy or timid
0 1 2 76. Explosive and unpredictable behavior
0 1 2 77. Demands must be met immediately, easily frustrated
0 1 2 78. Inattentive or easily distracted
0 1 2 79. Speech problem (describe):_____
_____
0 1 2 80. Stares blankly
0 1 2 81. Feels hurt when criticized
0 1 2 82. Steals
0 1 2 83. Stores up too many things he/she doesn't need (describe):_____
_____
_____
0 1 2 84. Strange behavior (describe):_____
_____
0 1 2 85. Strange ideas (describe):_____
_____
0 1 2 86. Stubborn, sullen, or irritable
0 1 2 87. Sudden changes in mood or feelings
0 1 2 88. Sulks a lot
0 1 2 89. Suspicious
0 1 2 90. Swearing or obscene language
0 1 2 91. Talks about killing self
0 1 2 92. Underachieving, not working up to potential
0 1 2 93. Talks too much
0 1 2 94. Teases a lot
0 1 2 95. Temper tantrums or hot temper
0 1 2 96. Seems preoccupied with sex
0 1 2 97. Threatens people
0 1 2 98. Tardy to school or class
0 1 2 99. Smokes, chews, or sniffs tobacco
0 1 2 100. Fails to carry out assigned tasks
0 1 2 101. Truancy or unexplained absence
0 1 2 102. Underactive, slow moving, or lacks energy
0 1 2 103. Unhappy, sad, or depressed
0 1 2 104. Unusually loud
0 1 2 105. Uses alcohol or drugs for nonmedical purposes (***don't*** include tobacco) (describe):_____
_____
0 1 2 106. Overly anxious to please
0 1 2 107. Dislikes school
0 1 2 108. Is afraid of making mistakes
0 1 2 109. Whining
0 1 2 110. Unclean personal appearance
0 1 2 111. Withdrawn, doesn't get involved with others
0 1 2 112. Worries
113. Please write in any problems the pupil has that were not listed above.
0 1 2 _____
0 1 2 _____
0 1 2 _____

Please be sure you answered all items.

APPENDIX N: Letter and Information to Parent/Guardian- Part B

Dear Parent/Guardian,

As you may remember, your child/adolescent completed the Juvenile Fire Awareness and Intervention Program within the last year and you both participated in the research study being conducted by the Juvenile Fire Awareness and Intervention Program, in collaboration with Victoria University. The enclosed information relates to completing your part in the study.

Please read the enclosed information: if you choose to complete your part in the study, it is important that you understand this information. For your participation, you will receive another $20 Target Gift Voucher.

Thank you for your participation so far. We hope that you choose to complete our study.

Kind Regards,

Esma Kurt
Student Researcher
Victoria University

Murray Talbot
Senior Station Officer
Community Education

INFORMATION TO PARENTS OF CHILDREN/ ADOLESCENTS INVOLVED IN RESEARCH

YOU ARE INVITED TO PARTICIPATE

You are invited to complete your part in the study, *Improving Risk Prediction in Children and Adolescents with a History of Firesetting Behaviour.* As you may recall, this study is being conducted by Victoria University in collaboration with the Juvenile Fire Awareness and Intervention Program (Metropolitan Fire Brigade and the Country Fire Authority) by Professor Dorothy Bruck and Dr Michelle Ball from the School of Social Sciences and Psychology at the university. The student researcher, Esma Kurt, will conduct the study as part of a Master of Clinical Psychology degree at Victoria University.

PROJECT EXPLANATION

This study will investigate firesetting behaviour in children and adolescents who are participating in the Juvenile Fire Awareness and Intervention Program. The purposes of the study are;

1. To develop an understanding of the factors that may predict whether a child or adolescent will continue to set fires.
2. To investigate the role of counselling and mental health services in dealing with young firesetters.

There are two parts to this study; A and B. You and your child completed Part A twelve months ago. You will now be asked to complete Part B. This is the second and final part of the study.

In Part A, we asked you to provide information about your child. We also asked your child for information, and we may have obtained information from your child's teacher. In Part B, we will ask you to provide information about your child's firesetting behaviour within twelve months of completing the Juvenile Fire Awareness and Intervention Program. This information will simply allow us to determine whether your child has continued to set fires. If a mental health professional has become involved for the child's firesetting since completing the program, we will ask for you to consent to us sending a questionnaire to your child's mental health professional asking them to provide some information about the types of services they provided to the child. This information will help

us to understand what mental health services exist for children and adolescents and their firesetting behaviour.

WHAT WILL I BE ASKED TO DO?

In this package of information you have been sent, you will find several documents. The documents have been colour coded for your convenience and relate to Part B of the study only.

1. The white documents are information and consent forms. If you choose to participate in the study it is important that you understand this information. If you and your child consent to use contacting your child's mental health professional, you and your child must sign the consent form.

2. The blue documents are to be completed by you. Your questionnaire will comprise two sections; questions that will ask about (1) your child's fire behaviour since completing the Juvenile Fire Awareness and Intervention Program and (2) the counselling or mental health services your child may have received in the past twelve months since completing the program. You will only be required to answer the questions in the section(s) that are applicable to your child. On receiving returned questionnaires, you will be sent a $20 Target gift voucher for your time and effort.

3. If you consent, and if your child has received counselling/mental health services in the past twelve months since completing the Juvenile Fire Awareness and Intervention Program, your child's counsellor or mental health professional will be asked to complete a questionnaire. The pink document is a copy of what will be sent to the child's mental health professional. These questions ask about the services and treatment your child has received in the past twelve months. The mental health professional will be advised not to disclose the information to anyone outside the research team.

It is important that you understand that your participation in this study is voluntary. If you do not wish to take part in the study, you are under no obligation to do so. Also, if you decide to take part, but later change your mind, you are free to withdraw from the study at any time. Your decision to take part or not to take part, or to take part and then withdraw, will not affect your relationship with the Juvenile Fire Awareness and Intervention Program, Victoria University or the agencies that may be providing services to the child/ adolescent.

WHAT WILL I GAIN FROM PARTICIPATING?

Your participation in the study will contribute to our understanding of young firesetters. If we can find ways to predict whether children and adolescents will continue to set fires we can develop and improve education, intervention and treatment programs to prevent them from harming themselves and others in the future. Your contribution to the study will allow us to determine what mental health services are available to children and adolescents for their firesetting behaviour so that we can improve the quality of and access to these services in the future. To thank you for your valuable contribution, you will have received a $10 Target gift voucher for Part A in the mail twelve months ago, and will receive a $20 Target gift voucher for your participation in Part Two, the final part of the study in the mail when we receive your returned questionnaire.

HOW WILL THE INFORMATION I GIVE BE USED

The information provided by you, your child, a teacher and mental health professional will only be identifiable and available to the student researcher, Esma Kurt and supervising researchers, Professor Dorothy Bruck and Dr Michelle Ball. All identifiable information relating to the study will be destroyed according to departmental procedures; after the minimum period of seven years after publication of the results. Only group data will be available to the Juvenile Fire Awareness and Intervention Program and findings of the study that are published will not identify individual participants. Please note that the information that is obtained for the purposes of the study will only be used in the context of this study, and not for any future behavioural study.

WHAT ARE THE POTENTIAL RISKS OF PARTICIPATING?

You may be concerned that the information you provide as part of this research will become more widely known. Please be assured that every effort will be taken to ensure that the information you provide will remain completely confidential. Your child may be concerned about the involvement of their mental health professional in the research. We ask that you consider discussing this with your child to the extent to which you think they should know and will understand. This is a matter for your judgement. Should you or your child become distressed as a result of the study, please contact Professor Gerard

Kennedy, psychologist and senior lecturer at Victoria University on 9919 2481, or the student researcher, Esma Kurt.

HOW WILL THIS PROJECT BE CONDUCTED?

The project will be conducted using questionnaires. This is the final part of the study. You will not be contacted again to provide information for the purposes of the research.

WHO IS CONDUCTING THE STUDY?

The Juvenile Fire Awareness and Intervention Program
Murray Talbot: jfaipoffice@mfb.vic.gov.au

Victoria University
Professor Dorothy Bruck: dorothy.bruck@vu.edu.au
Dr. Michelle Ball: michelle.ball@vu.edu.au
Esma Kurt: esma.kurt@live.vu.edu.au

If you have any questions or concerns about your participation, please contact the student researcher, Esma Kurt, at the above email, or on 0403 533 514.

This study has been approved by the Victoria University Human Research Ethics Committee (VUHREC).
If you have any concerns or complaints about the conduct of this project, please contact: Ethics and Biosafety Coordinator, Victoria University Human Research Ethics Committee, Victoria University, PO Box 14428, Melbourne, VIC, 8001 Phone (03) 9919 4148.

APPENDIX O: Consent Form for Part B

ID: _____

CONSENT FORM FOR PARTICIPANTS INVOLVED IN RESEARCH

INFORMATION TO PARTICIPANTS:

We would like to invite you to complete your part in the study conducted by the Juvenile Fire Awareness and Intervention Program (The Metropolitan Fire Brigade and The Country Fire Authority) in collaboration with Victoria University. The student researcher, Esma Kurt, is conducting the project as part of a Doctorate in Clinical Psychology degree at Victoria University under the supervision of Professor Dorothy Bruck and Dr Michelle Ball from the School of Social Sciences and Psychology at the university. This study is investigating firesetting behaviour in children and adolescents who have been referred to the Juvenile Fire Awareness and Intervention Program. The purpose of the study is to develop an understanding of the factors that may predict whether a child/ adolescent will continue to set fires. The study is also investigating the role of the mental health services in dealing with child/adolescent firesetters.

CERTIFICATION OF PARTICIPATION

I, _____ (name of parent/guardian)

of _____(suburb of parent/guardian) certify that I am at least 18 years old* and that I am voluntarily giving my consent to participate in the study *Improving Risk Prediction in Children and Adolescents with a History of Firesetting Behaviour* being conducted at Victoria University by Esma Kurt, Professor Dorothy Bruck and Dr Michelle Ball.

I certify that the objectives of the study, together with any risks and safeguards associated with the procedures listed hereunder to be carried out in the research, have been fully explained to me by the document, 'Information to Participants Involved in Research', and that I free consent to participation involving the below mentioned procedures:

Please turn over.

Please tick the box below to participate in Part C. Your Consent means you agree to the conditions that apply to that part.

Part C ☐

- I give consent for the student researcher, Esma Kurt, to send a questionnaire to_____ (name of child/adolescent's counsellor or mental health professional).

Note: If you consent to Part C, you must also sign the 'Certification by Parent/Guardian about Contact with Counsellors or Mental Health Professional' as this will be forwarded to the counsellor or mental health professional.

I certify that I have had the opportunity to have any questions answered by contacting the student researcher, Esma Kurt, on 0403 533 514, or at esma.kurt@live.vu.edu.au, and I understand that I can withdraw from this study at any time and withdrawal will not jeopardise me in any way.

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

Signed:

Date:

Any queries about your participation in this project may be directed to the researcher Professor Dorothy Bruck, 9919 2336.
If you have any queries or complaints about the way you have been treated, you may contact the Ethics and Biosafety Coordinator, Victoria University Human Research Ethics Committee, Victoria University, PO Box 14428, Melbourne, VIC, 8001,
Phone (03) 9919 4148.

APPENDIX P: Fire History Screen

ID: _____

TO BE COMPLETED BY THE PARENT/ GUARDIAN

The following questions relate to the child/adolescent who has completed the Juvenile Fire Awareness and Intervention Program.

Please circle the response that is most applicable to the child/ adolescent, or answer in the space provided.

It should take no longer than 25 minutes to complete.

Name of Child/Adolescent: _____

Your Name: _____

Your Relationship to the Child/Adolescent: _____

Date: _____

Please answer each question as best you can about the child/adolescent who participated in the Juvenile Fire and Awareness Program in 2010 – 2012. This information is necessary for us to learn about the factors that may predict whether a child/adolescent with a history of firesetting behaviour will continue to set fires.

Firesetting

1. Based on the LAST 12 MONTHS, would you say that your child has been interested in fire – that is, did he/she seem to like fire or be attracted to fire?

   Yes No

2. In the LAST 12 MONTHS, how many times did your child burn something like paper, clothes, furniture, walls or the house, or set something on fire, without permission from an adult (excluding the incident for which the child/adolescent was referred to the Juvenile Fire and Awareness Program)?

   _____

   _____

   _____

   What did your child burn or set on fire in the most recent incident?

   _____

   _____

   _____

3. (a) Were fire fighters called to the most recent incident?

   Yes No

   (b) Did an investigator write up a report about the most recent fire?

   Yes No

4. (If applicable) What else was burned the other times, beginning with the next most recent incident?

   _____

   _____

5. What was the most serious damage caused by any of these incidents?

   _____

   _____

6. (a) Were the fire fighters called to the incident that caused the most damage?

   Yes No

   (b) Did an investigator write up a report about the fire that caused the most damage?

   Yes No

Matchplay

7. Did your child ever just play with matches, lighters, or the stove, without burning anything else, IN THE LAST 12 MONTHS?

   Yes No

8. How about how often do you think he/she did this?

   _____

   _____

   _____

9. In that time period, was your child seen with any matches or lighters, or where they in his/her possession (i.e. like in his/her room)?

   Yes No

10. About how often do you think he/she did this?

    _____

    _____

    _____

11. In that time period, did your child talk about fire?

    Yes No

12. About how often do you think he/she did this?

    _____

    _____

    _____

APPENDIX Q: Questionnaire of Mental Health Services

NOTE TO PARENT/GUARDIAN: *The following questions are only applicable if the child/adolescent has received counselling or mental health services in the past twelve months since completing the Juvenile Fire Awareness and Intervention Program. If this does not apply to the child/adolescent, please disregard.*

The following asks about any contact the child/adolescent has had with a counselling or mental health agency in the past twelve months since completing the Juvenile Fire Awareness and Intervention Program. Please circle the correct response or answer in the space provided. Additional comments welcome.

Please be aware that we will NOT approach any agency based on this information. Your answers are confidential and will not influence the services you or the child/adolescent will receive.

1. Has the child/adolescent received any services from services from a counsellor or mental health agency in the LAST 12 MONTHS?

   Yes No

   If so, what type of professional provided this service (i.e. social worker, psychologist)?

   _____

   _____

   _____

2. When did the child/adolescent first receive this service (i.e. approximate date of the first visit)?

   _____

   _____

   _____

3. How many sessions has the child/adolescent participated in during the LAST 12 MONTHS?

   _____

   _____

   _____

4. How often did or does the child/adolescent receive this service (i.e. weekly. fortnightly, monthly)?

   _____

   _____

   _____

5. What was the child/adolescent's main presenting problem when contact with this service began?

   _____

   _____

   _____

   _____

   _____

6. Please outline the nature of the service the child/adolescent received or currently receives.

   _____

   _____

   _____

   _____

   _____

   _____

7. Who attended or attends the sessions with the child/adolescent?

   Mother

   Father

   Parents

   Family

   Other: _____

8. How much do you agree with the following statement:

   "The child/adolescent was engaged during the sessions"

   Strongly Disagree *Disagree* *Agree* *Strongly Agree*

Comments (Optional)

_____

_____

_____

_____

_____

9. What was or is this child/adolescent's diagnosis?
   - None ___
   - I Don't Know ___
   - Conduct Disorder ___
   - Oppositional Disorder ___
   - Attention Deficit Hyperactivity Disorder ___
   - Asperger's Syndrome ___
   - Autism ___
   - Other (please specify)

     _____

10. This child/adolescent has demonstrated firesetting behaviour. Was or is this behaviour addressed by the services through the provision of an intervention or therapy that specifically deals with firesetting?

    Yes *No*

    (a) If no, please outline the reasons why you believe the service did not address this behaviour.

_____

_____

_____

_____

_____

    (b) If yes, how was the firesetting behaviour addressed by the service?

_____

_____

_____

_____

_____

If yes, how much do you agree with the following statement:

"This therapy/treatment for firesetting was effective for the child/ adolescent"

Strongly Disagree *Disagree* *Agree* *Strongly Agree*

Please state the reason for your choice.

_____

_____

_____

_____

_____

11. Overall, I am happy with the service the child/adolescent has received or is still receiving.

Yes *No*

(a) If yes, what has been the most helpful aspect of the services?

_____

_____

_____

_____

_____

_____

_____

_____

(b) If no, how do you think the service could be improved?

_____

_____

_____

_____

_____

_____

_____

_____

APPENDIX R: Letter of Appreciation

JUVENILE FIRE AWARENESS and INTERVENTION PROGRAM

VICTORIA UNIVERSITY

A NEW SCHOOL OF THOUGHT

Dear Parent/Guardian,

Thank you for completing your participation in the research study being conducted by Victoria University in collaboration with the Juvenile Fire Awareness and Intervention Program.

Enclosed is a $20 Target Gift Voucher to thank you for your contribution.

Kind Regards,

Esma Kurt
Student Researcher
Victoria University

APPENDIX S: Consent to Contact Mental Health Professionals

ID: _____

CERTIFICATION BY PARENT/GUARDIAN TO CONTACT COUNSELLOR OR MENTAL HEALTH PROFESSIONAL

I, _____(name of parent/guardian) certify that I am at least 18 years old and that I am voluntarily giving my consent for _____(name of counsellor/mental health professional) of _____(name of organisation) to share information about_____ (name of child/adolescent) with the researchers, Esma Kurt, Professor Dorothy Bruck and Dr Michelle Ball from Victoria University.

I certify that the objectives of the study, together with any risks and safeguards associated with the procedures listed hereunder to be carried out in the research, have been fully explained to me by Esma Kurt, and that I freely consent to participation involving the below mentioned procedures:

I understand that the student researcher, Esma Kurt, will contact this professional and will ask them to complete a questionnaire about the services my child has received from them in the past twelve months.

I certify that I have had the opportunity to read through the above and have had my questions answered. I understand that I can withdraw from this study at any time and that this withdrawal will not jeopardise me in any way. I have been informed that the information that this professional provides will be kept confidential.

Signed (Parent/Guardian):

Date:

Please note that a copy of this form will be sent to the counsellor or mental health professional.

APPENDIX T: Information for Mental Health Professionals involved in Research.

INFORMATION FOR MENTAL HEALTH PROFESSIONALS INVOLVED IN RESEARCH

To

My name is Esma Kurt and I am conducting a study as part of a Master of Clinical Psychology degree at Victoria University under the supervision of Professor Dorothy Bruck and Doctor Michelle Ball from the School of Social Sciences and Psychology at Victoria University.

I have been in contact with the family of _____ (name of child/adolescent), and they have given consent (attached) for me to approach you about completing a questionnaire about the services the child/ adolescent received from you.

I acknowledge your busy work schedule, however I would be grateful if you could complete the survey for me within one week, and return to me in the reply paid envelope provided. It should take no longer than twenty minutes to complete.

The information you provide for the purposes of the study will be kept confidential. Under no circumstances with this information be shared with the child/adolescent or the parent/guardian. Furthermore, findings of the study that are published will be group data and will not identify you, the child/adolescent or the parent/guardian.

I ask that you do not disclose the information you provide about participants to anyone outside the research team. We have asked the parent/guardian to consider discussing the study with their child/adolescent to the extent to which they feel their child/adolescent should know and will understand. We feel that this is a matter for their judgement, therefore we ask you not to discuss the study in the presence of the child/adolescent.

If you have any questions or concerns about your participation in the study, I may be contacted on 0403 533 514 or at esma.kurt@live.vu.edu.au.
Your participation would be much appreciated.

Kind Regards,

Esma Kurt

This study has been approved by the Human Research Ethics Committee, Victoria University, PO Box 14428, Melbourne, VIC, 8001 Phone (03) 9919 4148.

APPENDIX U: Questionnaire for Mental Health Professional

ID: _____ **Date:** _____

QUESTIONNAIRE FOR COUNSELLOR OR MENTAL HEALTH PROFESSIONAL

The questions below relate to _____ (name of child/adolescent) and the services he/she received from you within the past twelve months. Please circle the correct response or answer in the space provided. Additional comments welcome.

1. When did this child/adolescent first receive services from you or your agency? (i.e. the date of the first visit)

   _____

   For how many sessions did you, or another professional in your agency, see this child/adolescent?

   _____

2. Did or does the child/adolescent attend scheduled appointments? (Please circle)

   Yes No

   Who attended or attends appointments with the child/adolescent?

   _____

   _____

3. How much do you agree with the following statement:

   "The child/adolescent was engaged during the sessions"

   StronglyDisagree *Disagree* *Agree* *Strongly Agree*

   Comments (Optional)

   _____

   _____

   _____

   _____

4. Is this child/adolescent still in your care? (Please circle)

   Yes No

   (a) If no, why is this the case? (i.e. therapy complete, child/adolescent has terminated services)

   _____

   _____

   _____

   _____

5. What was the child/adolescent's presenting problem when they first had contact with you or your agency?

   _____

   _____

   _____

   _____

   _____

   _____

   _____

6. What was or is this child/adolescent's treatment? (Please outline)

   _____

   _____

   _____

   _____

   _____

   _____

   _____

7. What was or is this child/adolescent's diagnosis?

   - None ___
   - Conduct Disorder ___
   - Oppositional Disorder ___
   - Attention Deficit Hyperactivity Disorder ___
   - Asperger's Syndrome ___
   - Autism ___
   - Other (please specify)

     _____

8. This child has demonstrated firesetting behaviour. Was this behaviour specifically addressed by your services by an intervention or therapy? (Please circle)

   Yes No

   (a) Please outline the reasons for your choice.

   _____

   _____

   _____

   _____

   _____

   _____

   _____

   (b) If yes, how was the firesetting behaviour addressed by your services (i.e. what approach was taken, how did the intervention proceed, was the child/adolescent given homework tasks)?

   _____

   _____

   _____

   _____

   _____

   _____

   _____

   _____

9. What were or are your recommendations for this child/adolescent?

   _____

   _____

   _____

   _____

   _____

   _____

10. Are you aware of any other service(s) that have been involved with the child/adolescent?

    Yes No

    (a) If yes, what are the service(s)? (Please note: This is for information purposes only. These services will NOT be approached)

    _____

    _____

    _____

    _____

11. Additional comments (i.e. behavioural observations)

    _____

    _____

    _____

    _____

    _____

    _____

    _____

    _____

    _____

    _____

    _____