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**A COGNITIVE BEHAVIOURAL INTERVENTION
FOR PROBLEMATIC SUBSTANCE USE IN
ADOLESCENCE: A PILOT STUDY**

A thesis presented in partial fulfilment of the
requirements for the degree of
Master of Arts in Psychology
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ABSTRACT

Experimentation with substance use in adolescence is common, yet there is often concern when it appears to become more than experimentation. New Zealand youth, in particular, have some of the highest rates of substance abuse in the Western world. The main goal of this study was to determine if a brief manualised integration of cognitive behavioural therapy and motivational interviewing for adolescents was effective in reducing the harm caused by problematic substance use. The aim of the intervention was to reduce current and future difficulties with AOD use for adolescents. Four individual case studies and within subject comparisons were used to measure the effectiveness of this intervention in an educational setting. A battery of psychometric measures were used, including a structured diagnostic interview. Results indicated improvements in motivation and coping skills, and some short term reduction in substance use. Research issues are discussed, including the applicability of the DSM-IV criteria for substance use disorders in adolescence, and our understanding of 'risk'. The current study highlights the need for adolescent substance use interventions to be holistic and systemic in nature to successfully reduce substance related harm. The limitations of the current study are also discussed.

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1. CHAPTER ONE: INTRODUCTION

1.1 ADOLESCENCE

Adolescence is usually referred to as the period between puberty and adulthood and is characterised by various markers. Two significant markers indicating the beginnings of adolescence have been identified as puberty and starting secondary school (McLaren, 2002). Although not completely reliable, with puberty now occurring earlier and earlier in the Western world and not all young people reaching secondary school (McLaren, 2002), it is generally accepted that these are signs that a young person has moved, or is moving into, the period known as adolescence.

Adolescence has been referred to as a period of considerable physical and psychological change (Pagliaro & Pagliaro, 1996). Changes occur in physical appearance and functioning, thinking skills, morality, and the understanding of human motivation improves or becomes more complex (McLaren, 2002). Young people spend more time with their peers and become more independent and autonomous. They spend less time with their families who have previously been the most important people in their lives (McLaren, 2002).

It has also been identified that there are various challenges or crucial stage salient tasks that must be achieved for an adolescent to successfully transition into adulthood (Cicchetti & Rogosch, 2002). Key tasks identified include, but are not limited to: coping with physical and sexual development (McLaren, 2002), including consolidation of sexual identity and dealing with issues such as sexual orientation (Pagliaro & Pagliaro, 1996); mastering more complex thinking; establishing emotional, financial (McLaren, 2002), and psychological independence (Masten & Coatsworth, 1998); developing a cohesive individual sense of identity (McLaren, 2002; Masten & Coatsworth, 1998); learning to relate differently to parents and peers (McLaren, 2002), including developing close friendships within and across gender; successful transition to secondary school; and academic achievement (Masten & Coatsworth, 1998). Understandably it has been stated that “the transition from adolescence to adulthood is

one of the most critical of normative life transitions because it typically involves "pervasive and often simultaneous contextual and social role changes" (Schulenberg, Sameroff, & Cicchetti, 2004, p.799).

Given such extensive change it is no surprise that this time of transition is a source of some anxiety and stress for the adolescent, and for their family. At a time that the adolescent is struggling to become independent, parents and social institutions are often struggling to let go of the perception of the adolescent as a child. This often increases the potential for the adolescent to experience both internal and external conflict (Cicchetti & Rogosch, 2002). In the past some of the serious problems that were exhibited by some adolescents have been generalised as the normative experience of all adolescents. Although this is not the case, and most adolescents will successfully cope with developmental demands, it is accepted that adolescence does tend to generate more turmoil than both childhood and adulthood (Cicchetti & Rogosch, 2002). Arnett (1999) has identified three features that are characteristic of this turmoil: mood disruptions, risk behaviours, and conflict with parents. It is noted that these are behaviours that are often associated with internalising and externalising disorders, and as these are heightened during adolescence it becomes increasingly difficult to differentiate between normal and abnormal adolescent behaviour. It has also been found that if, in the adolescents transition to adulthood they fail to find happiness, developmental problems will prevail. These problems include: delinquency; eating disorders; parental conflict; truancy; dropping out of school; sexual promiscuity including increased risk of pregnancy and sexually transmitted infections; and various patterns of substance use (Pagliaro & Pagliaro, 1996). The question remains which behaviours are associated with the normative struggles of adolescence and which might indicate psychopathology. There is now also an increasing length of time that a young person is considered to be an adolescent; the boundaries are being blurred by less standardised normative sequences of adulthood markers (Schulenberg, Sameroff, & Cicchetti, 2004). Longer periods of study, less full time employment at a younger age, and marriage occurring later in life, all often result in a young person spending longer living at home, or being reliant on their parents for support. This often means that an adolescent is spending more time in transition, as they haven't yet achieved some of the identified tasks of the adolescent-adulthood transition.

The experience of adolescence varies greatly, and is by no means standard. Like all experiences it has to be noted that "the transition to adulthood is embedded in a

sociocultural context, and therefore may vary in occurrence, context, and meaning by gender, socioeconomic background, culture, and historical period” (Schulenberg, Sameroff, & Cicchetti, 2004, p.801).

Where adolescence is marked as a time young people begin to engage in an exploration of what it means to be adolescent, one such sociocultural context centres on substance use. However, what behaviours constitute normal adolescent exploration, and what behaviours indicate risk of pathology?

Substance use in adolescence is common, and is often explained as being only experimentation, or, at the other extreme, the young person is labelled with a substance use disorder. Substance use in adolescence is often far more complex than what these two explanations are able to offer. Although the majority of young people will use substances, and most will not develop problems relating to this use, some will. The current study attempts to provide adolescents who are currently experiencing, or are at risk of developing problematic substance use with the information and skills needed to minimise the impact of their substance use on their lives.

1.2 A BRIEF OVERVIEW OF SUBSTANCE USE IN NEW ZEALAND

1.21 ALCOHOL

Alcohol continues to be the most frequently used substance of use in New Zealand. It is estimated that the direct cost of alcohol abuse in New Zealand is between \$341 and \$589 million, with indirect costs estimated to be in the billions (Devlin, Schuffman, & Bunt, 1997). A national survey of drug use in New Zealand was conducted in 1998 (Field & Casswell, 1999). The sample consisted of 5475 people aged 15-45 years old. Alcohol was found to be the most commonly used substance. 90% of males and 85% of females had tried alcohol, and only a very small proportion of these people had not used alcohol in the last 12 months. The 2001 National Drug Use Survey (Wilkins, Casswell, Bhatta & Pledger, 2002) involved approximately 5500 people aged 15-45 years old. Of these participants, 85% had used alcohol in the last 12 months and 42% had started drinking by the time they were 15 years old. One in three males and one in five females reported heavy drinking (for males 6 or more and for females 4 or more drinks in one sitting at least weekly). The 2003 ALAC Youth Drinking Monitor

(Kalafatelis, McMillen, & Palmer, 2003) reported that in New Zealand 66% of 14-17 year olds currently drink alcohol and 20% are currently drinking at least once a week. A recent study in New Zealand investigated the reasons why people drink (McMillen, Kalafatelis, & de Bonnaire, 2003). Common reasons for adults (aged 18 years +) drinking included increased confidence, feeling happier, and the effects of alcohol making it easier to meet and get to know people. 45% of adults claimed that they drink because they “enjoy the buzz” (p.8), and 68% claimed that it helps them to wind down and relax. 8% of adults reported that they drink to get drunk, and 7% reported that they drink to escape reality. The same study investigated the alcohol use of 12-17 year olds. Of those surveyed, 70% reported that getting hold of alcohol was not a problem and 24% reported that they could afford as much alcohol as they wanted. One in three of the 12-17 year olds reported that they made no effort to limit their drinking. 30% reported that they make no effort to try to stop themselves from drinking so much that they don’t know what they were doing or what happened while they were drinking (McMillen et al, 2003).

The National Alcohol Strategy 2000-2003 (ALAC & MOH, 2001) indicated that between 1988 and 1996 there were between 130-150 deaths each year that were from alcohol-related conditions. It was also estimated that alcohol-related conditions accounted for 3.1% of male and 1.4% of female deaths in New Zealand. This same study also found that approximately one in five people in New Zealand will meet criteria for alcohol abuse or dependence during the course of their lives. It was also estimated that there are up to 360 births per year of children who will suffer from foetal alcohol effects due to their mothers drinking during pregnancy (ALAC & MOH, 2001). In the year December 1998-1999 drivers who had been drinking contributed to 23% of fatal motor vehicle accidents and 14% of all injury motor vehicle accidents (LTSA, 2000). Given these effects, alcohol has been rated as the substance of most serious community concern by those aged 20 years and over (Wilkins, Casswell, Bhatta, & Pledger, 2002).

1.22 CANNABIS

Cannabis is the third most frequently used substance in New Zealand, following alcohol and tobacco, and is the most widely used illegal substance (Public Health Group, 1996). In a 2001 national survey (Wilkins, Casswell, Bhatta, & Pledger, 2002) it was found that 52% of 15-45 year olds reported they had tried cannabis, and 15% were described

as current users. Of the 15-17 year olds 15% reported cannabis use in the last month, and 4% reported frequent use in the last month. At 15 years old 30% of those that had tried cannabis had started using it regularly. It has also been suggested that there has been a substantial increase in cannabis use by 18 years old, with as many as 45% reporting that they had used cannabis in the last year (Public Health Group, 1996). It was also found that use was highest in the 18-24 year old age group.

Another survey of cannabis users conducted by Black and Casswell (1993) found that most users reported not having any problems due to cannabis use. However those that were frequent users reported more cannabis related problems. The most common problems were: trouble with the law (14%); memory loss (10%); financial problems (10%); loss of motivation or energy (9%); and general physical health problems (7%). Furthermore, it has been found that frequent cannabis use among 15 year olds is linked to mental health problems, particularly alcohol use and behaviours typical of Conduct Disorder: truancy; lying; stealing; and some aggressive behaviour (Public Health Group, 1996). Cannabis was rated as the substance of most serious community concern by those aged less than 20 years old (Wilkins, Casswell, Bhatta, & Pledger, 2002).

1.23 OTHER DRUGS

The National Drug Use Survey, 2001 (Wilkins, Casswell, Bhatta, & Pledger, 2002) reports that of the approximately 5500 15-45 year olds surveyed 25% reported using an illicit drug, other than cannabis, at some time in their lifetime. Results showed that 5.4% of respondents had tried ecstasy, 12% had tried stimulants, and 15% had tried hallucinogens. 2.3% were described as current users of ecstasy, and 3.5% as current users of stimulants. 18% of respondents reported that they had tried 3 or more illegal substances.

Due to the current public interest in statistics relating to amphetamine, in particular pure methamphetamine or 'P' use, a reanalysis of the results of the 2001 National Drug Survey was conducted (Wilkins et al, 2004; Wilkins et al, 2005). It was reported that 6% of those surveyed had used amphetamine type stimulants (ATS, which includes methamphetamine, pure methamphetamine, and ecstasy) in the previous year, the population equivalent of 114, 000 people; and that just over 1% of New Zealanders are frequent ATS users. It was also reported that about 3% of ATS users and that 21% of frequent 'P' users had used a needle to inject drugs in the last year (Wilkins et al, 2005).

Rates of ATS use by 18-29 year olds in the last year has been reported to be as high as one in ten, and it is believed that use by 15-19 year olds in New Zealand may be higher than in Australia (Wilkins et al, 2004), which has been reported to have the highest levels of ecstasy abuse in the world, and methamphetamine abuse rates second only to Thailand (United Nations Office on Drugs and Crime, 2003).

1.3 ADOLESCENT SUBSTANCE USE

Adolescence is a period characterised by an increase in risk taking behaviour and this often includes experimentation with alcohol and other substance use. However, the sociocultural context of this experimentation has changed over time. Young people today grow up in a world where it is seen as acceptable and normal to take a pill for headaches, high cholesterol, or weight loss. Medication is available for almost every known ailment of the human condition, and medical procedures to change our appearance are becoming common place. Advertising often encourages young people to use medication as a solution to a problem. However, it is still seen as morally and socially wrong for young people to want to experiment with altering their state of consciousness. In a society that clearly encourages the use of legal drugs, and there are illegal drugs widely available and used, adolescents must find it extremely difficult to understand the policy of 'saying no to drugs', when clearly we do not (Pagliaro & Pagliaro, 1996).

Most adolescents will experiment with alcohol at some time before they finish high school, and the majority will get drunk at least once (Steinberg & Morris, 2001). It is widely recognised that experimentation with alcohol is normal part of adolescent development, and that this does not generally result in negative consequences (Bonomo, et al., 2001). Research has found that only a small subgroup of adolescents show a strong, upward trend in their intensity of substance use, whereas most adolescent users engage only in minimal experimentation with substances (Zapert, Snow, & Tebes, 2002). A study conducted by Shedler and Block (1990) followed 101 subjects from the age of 3-18 years. A drug use assessment at the age of 18 years categorised participants as abstainers, experimenters, or frequent drug users. Consistent with expectations, frequent users were found to be "relatively insecure, unable to form healthy relationships, and emotionally distressed as children" (p.624). These characteristics

were found to precede drug use. However, contrary to expectations, abstainers were found to be “anxious, emotionally constricted, and lacking in social skills” (p.624). Both abstainers and frequent users showed poor health, yet experimenters were relatively healthy. It was found that “in the case of experimenters, drug use appears to reflect age appropriate, and developmentally understandable, experimentation” (Shedler & Block, 1990 pg. 627). So, although most young people will only experiment with substance use, a few of these young people will experience on-going negative consequences as a result of their use, and some will develop serious substance use problems (Steinberg & Morris, 2001; Zapert, Snow & Tebes, 2002).

Substance abuse is an international issue, and worldwide adolescent substance abuse has been of concern for some time now, and the concern continues to increase. New Zealand youth, in particular, have some of the highest rates of drug and alcohol abuse in the western world (Watson, 2001). So, how many young people use substances, how often, and why? And if they do use substances, as most do, how ‘at risk’ are they of their use becoming problematic?

1.31 PREVALENCE OF SUBSTANCE USE IN ADOLESCENCE

In the Drugs in New Zealand National Survey (Field & Casswell, 1999) about 17% of females and 21% of males aged 15-17 years reported smoking one or more cigarettes a day. This increases to about 33% of both males and females in the 18-19 year old age group. By 19 years old over 60% of males and almost 50% of females have tried marijuana, and of those surveyed almost 50% of males and 35% of females 18-19 years old had used marijuana in the last 12 months. Approximately 18% of males and 10% of females aged 15-17 years described themselves as current users of marijuana; this increased to 35 % of males and 18% of females in the 18-19 year old age group. The survey also showed that approximately 12% of 15-17 year old and 28% of 18-19 year old males reported use of another drug (excluding alcohol, tobacco, and marijuana). About 6% of 15-17 year old and 14% of 18-19 year old females also reported this.

In the 2001 ALAC Youth Drinking Monitor (Kalafatelis & Fryer, 2001) 79% of 14-17 year olds claimed to be current drinkers and 44% were categorised as “heavier drinkers (using ALAC’s definition of five or more glasses for risky drinking)” (pg. 22). Furthermore 42% of the 14-17 year olds claimed that they had “really started drinking” when they were under the age of 15 years. Of the current drinkers 40% claimed that

they had participated in risky drinking (five or more glasses on one occasion) at least once in the last two weeks.

The 2003 ALAC Youth Drinking Monitor (Kalafatelis, McMillen, & Palmer, 2003) was expanded to include the 12-13 year old age group, possibly a recognition that adolescents are beginning to start drinking earlier. It was reported that 66% of the 14-17 year olds surveyed were current drinkers, and 20% were drinking at least once per week. 20% of the 14-17 year old respondents had engaged in at least one episode of 'risky' drinking in the two weeks prior to the survey, and 25% were classified as 'heavier drinkers'. 28% of the 14-17 year olds reported that they had begun drinking 'more than the occasional sip' of alcohol before they were 14 years old. Results for the 12-13 year old age group were reported separately. 69% of the 12-13 year olds surveyed reported that they had tried alcohol. Of the 12-13 year olds that reported that they had consumed more than a 'full glass' of alcohol, 92% claimed that they were current drinkers (Kalafatelis, McMillen, & Palmer, 2003).

The 2001 National Drug Use Survey (Wilkins, Casswell, Bhatta, & Pledger, 2002) reported that 15% of 15-17 year olds had used cannabis in the month prior to the survey, 4% were also found to be frequent (10+ uses in past month) users. 6% of 15-17 year olds reported that they had used stimulants in the last year, 5.3% reported that they had used either amphetamines or methamphetamine.

In Britain it has been suggested that adolescent substance misuse is escalating (Swadi, 2000). In the USA researchers report that adolescent substance abuse remains "a major health and safety problem" (Monti, Colby, & O'Leary, 2001, p.1). One of the most recent national surveys of the USA, Monitoring the Future (Johnston, O'Malley, & Bachman, 1999) reported that 80% of senior high school students had consumed alcohol, and that over half of those had done so by the time they were in the 8th grade. It was also reported that 65% of senior students had tried smoking cigarettes, and 35% described themselves as current smokers. 38% of senior high school students reported that they had used marijuana in the previous 12 months. Another study conducted in the United States reported that 73.9% of high school students reported that they had engaged in binge drinking (Wechsler, Lee, Kuo, & Lee, 2000). Approximately 50% of secondary school students in the United States indicate that they have used marijuana (Van den Bree & Pickworth, 2005). These statistics support a possible increase in adolescent substance use, and indicate use from an earlier age, supporting the idea that adolescence is a broader category (12-25 years) in the Western world.

1.32 FUNCTIONALITY OF SUBSTANCE USE

So why do adolescents use substances? “It is generally accepted that the best predictor of experimentation with both illicit and licit substances by young people is being young” according to Howard (1997, p.18). However, contrary to the common perception that substance use by young people is for mindless or psychological reasons, many young people use various substances for functional reasons. Surveys conducted in both developed and developing countries cite various reasons for substance use, including boredom, curiosity, and wanting to feel good (or better) (Howard, 1997). Other functions of substance use that have been identified include: relief of hunger; taking a rebellious stance; peer/social acceptance; relief of pain; to keep awake or get to sleep; and to dream. Often, it appears that substance use is seen by young people as a solution rather than a problem (Howard, 1997).

Research has indicated that young people see substance use quite differently from how is commonly perceived. It is often suggested that adolescent substance use is all about risk-taking and rebelling against society. However, research has suggested that adolescent approaches to their substance use are very matter-of-fact and rational, and that young people often view drugs as consumer goods, and view drug use as an integral part of youth culture (Allen & Clarke, 2003). Further research found that substance users generally considered five individual-level influences when considering their substance use: the function of the substance, their own expectations about its effects, their physical or psychological state, their commitments, and any personal boundaries that they may have. Further social and contextual influences were identified, including the environment, availability, finance, friends/peers, and media (Boys et al., 1999).

Very little research has been conducted looking at the reasons for substance use by New Zealand’s young people. However, in a survey conducted by the Ministry of Youth Affairs (2003) young people identified controlling moods and establishing friendships as two of the main reasons for substance use. Research conducted through focus groups identified a wider range of reasons including: identity formation; risk taking; challenging parents; stress management; weight control; increasing self esteem; being accepted by peers; and establishing a sense of belonging (MOYA, 2003).

It appears that there are a variety of reasons for adolescent substance use, and that the possible reasons for use are socioculturally and psychologically diverse. Substances are not used just for reasons that are specific to the drug, nor are they necessarily used for pathological reasons, as is often believed. Substances are used by different people for different reasons, at different times (Thomas, Nicholson, Duncan, & White, 2002). These trends suggest that further research is necessary to establish which of these contextual factors are more likely to increase psychological 'risk'.

1.33 DEVELOPMENTAL MODELS OF ADOLESCENT SUBSTANCE USE

There are several models that have linked the transition of adolescence with the increased risk of substance use. Five of the relevant models are briefly discussed in this section.

1.33.1 The Overload Model

The overload model focuses on the period of adolescence being a time of time of numerous transitions, many of which occur simultaneously and in a short period of time. Because of this, the adolescent may struggle to cope using their usual strategies, and may become overwhelmed. This may result in the adolescent seeking alternative coping strategies, and substance use may be one of these (Damphousse & Kaplan, 1998).

1.33.2 The Developmental Mismatch Model

The developmental mismatch model suggests that health opportunities and health risks, such as substance use, depend on the developmental match of individuals and their contexts (Eccles et al, 1993; Schulenberg et al, 2001). In this model adolescent's health behaviour is affected by the match of their developmental stage and their environment. If an adolescent's need for independence and self-expression is not catered for by their current context, such as their home or school environment, the adolescent may seek alternative means to gain independence, and substance use may be one of those means. Alternatively, if an adolescent's environment is suited to their developmental needs they are more likely to take advantage of opportunities to increase their wellbeing (Schulenberg et al., 2001).

1.33.3 The Increased Heterogeneity Model

The increased heterogeneity model views developmental transitions as moderators of health risk (Schulenberg et al. 2001). This model suggests that developmental transitions increase interindividual variability in functioning and adjustment. Studies

have shown that there is an increase in diversity during adolescence, and the gap widens between those who can cope effectively with the changes that occur in adolescence and those that can not (Kazdin, 1993; Schulenberg et al., 2001).

1.33.4 The Transition Catalyst Model

According to the transition catalyst model risk taking and substance use are important in negotiating the developmental transition of adolescence (Schulenberg et al., 2001). Research supports the idea that adolescent risk taking is normal, with high prevalence rates and evidence that risk taking, including experimentation with substance use, is part of healthy personality development (Shedler & Block, 1990; Schulenberg et al., 2001). Numerous studies have suggested that adolescent risk taking can be both constructive and destructive in adolescent health and development (Schulenberg et al., 2001). This model is also supported by Erikson's (1950, 1968, cited in Schulenberg et al., 2001) psychosocial theory of life course development, for which adolescent's experiment with alternative identities, some of which may include risk taking and substance use, in their struggle to develop their own cohesive sense of identity. Failure to explore all of their possible options may result in premature identity foreclosure (Schulenberg et al., 2001). Research has also suggested that attempts to completely eliminate adolescent risk taking in adolescence may have adverse consequences for their identity formation (Schulenberg et al., 2001).

1.33.5 The Heightened Vulnerability to Chance Events Model

The heightened vulnerability to chance model is based on the premise that at certain times in the lifespan people are more vulnerable to the effects of chance encounters or events (Schulenberg et al., 2001). Specifically, young people going through the transitions of adolescence may be more open to novel experiences, and that these chance events may take on special significance. This model suggests that just as young people are more open to novel experiences due to this transition period, they are also more vulnerable to both the positive and negative consequences of the experience (Schulenberg et al., 2001).

It is likely that each of these models can be useful in understanding the developmental context of adolescent drug use.

1.34 THE NEGATIVE RESULTS OF SUBSTANCE USE IN ADOLESCENCE

Although the majority of young people will only experiment with substance use, and will not experience any detrimental effects, there are the few that will suffer negative consequences as a result of their substance use. Adolescent substance use may be linked to immediate dangers, such as accidents and violence, as well as more long-term consequences. So, while substance *use* in adolescence has been found to have few long-term detrimental effects on mental health (Thomas, Nicholson, Duncan, & White, 2002), substance *abuse*, has been linked to higher prevalence rates of psychopathology (Myers, et al., 2001).

Adolescent substance misuse/abuse has been linked to an increase in risk of alcohol dependence in adulthood (Monti, Colby, & O'Leary, 2001), earlier sexual maturation and activity (Brown & Lourie, 2001) and risky sexual behaviour with an increased chance of contracting HIV (Weinberg et al., 1998), increased risk of dropping out of school, and living independently from parents or guardians prematurely (Ferguson, Horwood, & Lynskey, 1994; Monti, Colby, & O'Leary, 2001). Marijuana use has been associated with lack of motivation; greater involvement with and inability to quit other substances; psychiatric problems, including depression, schizophrenia, anxiety, suicide, conduct problems, antisocial behaviour and criminal behaviour; and a reduction in chances for participation and stability in adult roles (Van den Bree & Pickworth, 2005). For a significant subgroup drug use clusters with delinquency, early sexual behaviour, and pregnancy (Weinberg et al., 1998). Long-term effects of frequent substance use include neurobehavioral and cognitive problems, and respiratory problems in adulthood (Schiffman, 2004).

It has been estimated that each year in Australia alcohol-related injuries result in over 1600 deaths and more than 60 000 hospitalisations in males aged 15-29 years (Bonomo, et al., 2001). New Zealand research has identified associations between alcohol abuse, psychiatric morbidity (depression, anxiety, and suicidal behaviour) and early on-set sexual activity (Lynskey & Fergusson, 1993) and in 2001 there were 2618 stand-downs and 1800 suspensions from New Zealand schools that were for substance use (drugs, alcohol, and tobacco) (Drugs in Schools: Discussion Document, 2002).

Because of the possible consequences of adolescent substance use it is important to provide interventions for adolescents that are experiencing, or are at risk of, problematic

substance use. The current study utilises a programme designed to intervene with a sample of those young people that are already using substances problematically. This programme also holds promise as a targeted prevention programme for those young people at risk of problematic substance use. Research on adolescent substance use over the last decade has focused on identifying the risk and protective factors involved. The following section outlines these in more detail.

1.4 AETIOLOGY

Substance abuse is a heterogeneous phenomenon, with diverse drugs, patterns, and aetiologies. Recent research on adolescent substance use disorders has focused on risk and protective factors and multiple etiological pathways. Although adolescent drug use appears to be more a function of social and peer factors, adolescent substance abuse and dependence appears to be more related to biological and psychological processes (Weinberg et al, 1998). Pathways for young people who develop patterns of regular and problematic or harmful use appear to differ from those who merely experiment or maintain irregular use (Howard, 1997). Adolescent substance abuse appears to be a result of multiple factors that suggest biological and psychological processes also impact on sociocultural, intrapersonal, and developmental processes that are specific to adolescence.

1.4.1 RISK FACTORS

For the last twenty years, research into adolescent substance use has focused on risk and protective factors for substance use, abuse, and dependence. Generally, there has been a consensus that when there are certain factors present in a young person's life, the risk of substance use, abuse, or dependence may be increased. The following is an overview of the most commonly identified risk factors for adolescent substance use, abuse, and dependence.

- Laws, restrictions and availability

Research has shown that community norms that are favourable to drug use predict higher levels of adolescent substance use and abuse (Beyers et al., 2004). Historical studies have linked laws dictating the minimum drinking age and increases, or decreases in adolescent drinking and driving and motor vehicle accident fatalities. The

availability of alcohol and other substances is also linked to increases in use, even after controlling for the amount of money available, and individual characteristics of participants (Hawkins et al., 1992).

- Neighbourhood and community

Community disorganisation has been associated with increased problem behaviour, and is expected to raise the risk for adolescent substance use (Beyers, et al., 2004). Neighbourhoods with a high population density, high mobility, high crime rates, poverty, and poor housing are often linked with childhood conduct problems and delinquency, and are therefore hypothesised to also contribute to an increase in risk for adolescent substance use (Hawkins et al., 1992). Levels of perceived and actual community drug use and availability have been identified as significant risk factors for drug related harm (Allen & Clarke, 2003).

- Genetics

Historically, numerous studies have identified a genetic predisposition to substance abuse for children of alcoholics (Hawkins et al., 1992). Similarly, for children of parents with any psychiatric disorder substance abuse or dependence may be one of several possible outcomes through increased genetic risk (Weinberg et al., 1998). Research has also linked sensation seeking, low harm avoidance, and impulsivity to substance use (Shedler & Block, 1990). In the past, Zuckerman (1987, cited in Hawkins et al, 1992) has suggested that sensation seeking may have a biological basis.

- Psychopathology and Psychology

Various psychological features have been identified as increasing the risk for adolescent substance use and abuse. Some have a biological basis, such as executive cognitive dysfunction, or disorders of behavioural self regulation i.e. difficulty with planning, attention, abstract reasoning, foresight, judgement, self-monitoring, and motor-control (Giancola et al., 1996). Other cognitive and temperament features may also underlie the more obvious risk factors (Weinberg et al., 1998).

Psychological disorders such as conduct disorder and depression have been identified as increasing the risk of adolescent substance abuse (Pagliaro & Pagliaro, 1996; Weinberg et al., 1998), as has childhood problem behaviour (Hawkins et al., 1992).

Personal attitudes that are favourable to drug use (Allen & Clarke, 2003; Beyers et al., 2004), tolerance of deviance, alienation, and rebelliousness (Beyers et al., 2004; Hawkins et al., 1992) have all been identified as increasing the risk of adolescent substance abuse.

- Family Factors

Historically numerous studies have identified parental or family attitudes and substance use as being significant factors in an adolescents substance use patterns (Hawkins et al., 1992). Parental psychopathology, as noted earlier, is also a risk factor, not only due to genetic vulnerability, but also because of the parenting style, family stress, and possibility of child victimisation (Weinberg et al., 1998).

Other parent and family factors identified as impacting on adolescent substance abuse include: poor or inconsistent discipline, and family management; the quality of the parent child relationship; low bonding to family; and parental conflict and breakdown in relationship, or single parent families (Allen & Clarke, 2003; Hawkins et al., 1992). Parent-adolescent conflict has also been identified as a significant risk factor for drug related harm (Allen & Clarke, 2003).

- School

School failure (Allen & Clarke, 2003) and low school bonding (Beyers et al., 2004) have been identified as risk factors for adolescent substance use. Historically poor school and academic performance, and a low commitment to education (Hawkins et al., 1992) have also been identified as risk factors.

- Peer substance use

Historically, peer use of substances has been indicated as the strongest predictor of substance use among adolescents (Hawkins et al., 1992). However, more recently peers have been found to be less significant in predicting substance use and abuse (Weinberg et al, 1998). It is still agreed, however, that interaction with peers who use substances enable an adolescent to observe, learn, reinforce attitudes favourable to substance use, and have easier access to substances (Beyers at al., 2004).

- Previous Substance Use

Use of alcohol and/or other drugs at an early age has consistently been linked to a higher risk of developing problem use later in life (Allen & Clarke, 2003; Bonomo et al., 2001; Hawkins et al., 1992). Studies have also indicated that there is a sequential pattern to adolescent substance use, where adolescents progress from use of one substance to another. Research shows that adolescents who have tried marijuana have most likely previously used alcohol and/or cigarettes, and those who have tried harder drugs have generally previously used marijuana (Zapert, Snow, & Tebes, 2002).

Longitudinal research, including studies conducted in New Zealand, has also supported the theory of a developmental pathway of substance abuse (Allen & Clarke, 2003).

1.42 PROTECTIVE FACTORS

Protective factors mediate or moderate the effects of exposure to risk (Allen & Clarke, 2003; Hawkins et al., 1992). It is not yet clear whether protective factors are simply the opposite of identified risk factors, or whether they are distinct independent factors (Hawkins et al., 1992). Historical research has identified numerous protective factors, some of which appear to be merely the opposite extreme, or absence of specific risk factors, and some of which appear to 'stand alone' as protective factors. Identified protective factors include: strong attachment to parents; commitment to schooling; outstanding performance at school; regular involvement in church activities; and belief in the generalised expectations, norms, and values of society (Hawkins et al., 1992).

More recently individual factors that have been identified include: intelligence; problem solving ability; positive self-esteem; affect regulation (Weinberg et al., 1998); religiosity; and social or refusal skills (Beyers et al., 2004). Community and environmental factors that protect against adolescent substance abuse include supportive family relationships, more opportunities and recognition for prosocial involvement in community and school (Beyers et al., 2004), and positive role models (Weinberg et al., 1998).

Identified above are numerous risk and protective factors for adolescent substance use. Most young people have at least some of the risk factors listed above present in their lives. It is, of course, of some concern when numerous risk factors and very few protective factors are present in a young person's life. This puts a young person at risk of not just substance use, but of possible substance abuse and dependence. The current study identifies risk and protective factors that are present in the lives of the young people that participate in this programme. It is anticipated that the study participants will have many risk factors and few protective factors. One of the aims of the current study is to improve the participant's skills, such as problem solving, which is an identified protective factor. This study seeks to increase these protective factors to reduce the risk of developing a substance disorder. So, if adolescent substance use disorders are the issue of concern, how are they defined? The following section will address the issues of diagnosis.

1.5 DIAGNOSTIC ISSUES

1.51 DEFINITIONS

Traditionally substance ‘abuse’ has been defined as use of substances that increases risk of harmful and hazardous consequences, and substance ‘dependence’ has been defined as a pattern of compulsive seeking and using of substances despite the presence of severe personal negative consequences (Winters, 2001). Adolescent substance abuse and dependence is not so clearly defined. Definitions have ranged from the common perspective that any use of substances in adolescence constitutes abuse (Jenson, Howard, & Yaffe, 1998), possibly based on a legal perspective, or the belief that any use in adolescence is ‘abuse’ of a developing body and personality (Winters, 2001), to defining abuse in terms of how it affects development (Jenson et al., 1998). It has been indicated that there is a lack of precision in and agreement on the definition of substance abuse and dependence in adolescents (Jenson et al. 1998). As discussed previously adolescent substance use has a heterogeneous quality that is not as present in adult populations. However, given the lack of clear definitions, clinicians often have no option but to use adult definitions of substance use disorders, such as the criterion for abuse and dependence in the DSM-IV (American Psychiatric Association, 2000).

1.52 DSM-IV: DIAGNOSING ABUSE AND DEPENDENCE

The current ‘gold standard’ (Deas, Roberts, & Grindlinger, 2005) for diagnosis of substance use disorders is the DSM-IV (APA, 2000). The DSM-IV classifications of disorders enable psychiatrists, clinicians, and researchers to have comparable terms. The DSM-IV is the most commonly used diagnostic tool, although its use is generally supported through training and research.

The DSM-IV (APA, 2000) defines Substance Abuse as “a maladaptive pattern of substance use leading to clinically significant impairment or distress” (p.199) characterised by one or more of the following symptoms occurring within a 12 month period: recurrent substance use resulting a failure to fulfil major role obligations; recurrent use in situations that are physically hazardous; recurrent substance-related legal problems; and continued substance use despite persistent or recurring social or interpersonal problems caused, or made worse by the effects of the substance.

Substance Dependence is also defined as above but is characterised by three or more of the following symptoms occurring in the same 12 month period: tolerance; withdrawal; substance use occurring in larger amounts or over longer periods of time than intended; a persistent desire or unsuccessful attempts to control use; a great deal of time spent obtaining, using, or recovering from use; giving up or reducing time spent on important social, occupational, or recreational activities because of use; and continued substance use despite knowledge that use has caused or is exacerbating a physical or psychological problem. Substance Dependence can occur with or without physiological dependence (APA, 2000).

1.53 DSM-IV DIAGNOSES AND THEIR APPLICATION TO ADOLESCENTS

The DSM-IV criteria for substance use disorders were developed based on clinical experience, research and observations of adult populations (Deas, Roberts, & Grindlinger, 2005; Martin & Winter, 1998). Measures have been developed to assess adolescent substance use, without using DSM-IV criteria (Harrison, Fulkerson, & Beebe, 1998; Deas et al., 2005); however, the DSM-IV still remains the standard tool for classifying adolescent substance users. There are, however, concerns about the DSM-IV, particularly when used with children and adolescents, in its failure to take into consideration the effect of etiologic factors, experience, developmental history, and context on the young persons functioning (Jensen & Hoagwood, 1997). Similarly, there are criticisms of the ability of the DSM-IV criteria to be used to accurately diagnose substance use disorders in the adolescent population.

Research conducted by Deas, Roberts, and Grindlinger (2005) suggests that the DSM-IV criteria may not be sensitive enough to differentiate between abuse and dependence symptoms in adolescents, and more importantly, reported extremely low sensitivity in differentiating between abuse, and no diagnosis. This low sensitivity could result in adolescents with early onset symptoms of abuse being undiagnosed, which could result in their exclusion or withdrawal from much needed services and interventions.

Further research has posed questions about the sequencing of abuse and dependence symptoms. Because substance abuse is considered to be a lesser category than substance dependence, abuse symptoms are expected to precede dependence symptoms. There are several arguments surrounding these assumptions in relation to the diagnosis of adolescent substance use disorders. Firstly, a study that looked at the sequencing of symptom onset found that in some adolescents alcohol dependence symptoms preceded some alcohol abuse symptoms (Martin & Winter, 1998). Similarly, further research has

identified what have been referred to as ‘diagnostic orphans’, young people who may exhibit 1 or 2 dependence symptoms and no abuse symptoms, therefore they do not qualify for either diagnosis (Deas et al., 2005). Alternatively, research has indicated that the substance dependence diagnostic criterion of tolerance, which also indicates physiological dependence, is highly prevalent in adolescent substance users (Deas et al., 2005; Martin & Winter, 1998). It is likely that this is normal developmental phenomena, rather than an indication of a high prevalence of substance dependence. This is also supported by the low prevalence of further dependence related symptoms, such as withdrawal (Martin & Winters, 1995).

There is some support for the use of the DSM-IV in diagnosing adolescent substance use disorders (Deas et al., 2005; Martin & Winters, 1995). However, there are also many concerns and some suggestion that due to the heterogeneity among adolescent substance users the DSM-IV does not clearly distinguish among the various levels of problems that adolescents may be experiencing (Martin & Winters, 1995). In a large epidemiological study conducted by Harrison et al (1998) the DSM-IV diagnostic criteria were not found to be the most appropriate framework for identifying substance abusing and dependent adolescents, and the authors suggested an alternative diagnostic classification based on a continuum of problem severity.

1.54 PREVALENCE OF SUBSTANCE USE DISORDERS IN ADOLESCENCE

Much of the research that has been conducted on the prevalence of adolescent substance use has focused only on use, and the prevalence rates of substance use disorders in adolescence have not been widely reported. This may be due to on-going issues around the definitions of substance use in adolescence, with many believing that any use in adolescence constitutes abuse (Jensen, Howard & Yaffe, 1998). The research that has been conducted on the prevalence of substance use disorders in adolescence has generally focused on alcohol and cannabis use disorders, or results have often been presented in groupings of ‘adolescent substance use disorders’, without further elaboration on specific substances of use. The following is a brief review of some of the literature available regarding the prevalence of adolescent substance use disorders.

In New Zealand the Christchurch and Dunedin longitudinal birth cohort studies are recognised for their huge contribution to the literature on prevalence of psychiatric disorders in New Zealand youth. Some of this research has estimated at 15 years old 25% of young people will have met the criteria for at least one DSM-III-R disorder with

an estimated prevalence of between 5.2% and 7.7% for substance use disorders (Fergusson, Horwood, & Lynskey, 1993). Later research has suggested that of the two-thirds of young people in New Zealand that try cannabis, nearly 10% will develop cannabis dependence (Fergusson, Horwood, & Swain-Campbell, 2003).

International literature estimates higher prevalence rates, with Costello et al (2003) reporting 36.7% of young people meeting the criteria for one or more DSM-IV diagnoses at the age of 16 years. 12.2% of young people were predicted to have had a substance use disorder by this age (Costello et al., 2003). High school surveys estimated that of those that reported substance use in the previous year 13.8% of the 9th graders (13yrs) and 22.7% of the 12th graders (16yrs) met criteria for abuse, and that 8.2% of the 9th graders (13yrs) and 10.5% of the 12th graders (16yrs) met criteria for dependence (Gilvarry, 2000). It has also been suggested that studies such as this would largely underestimate the prevalence of substance use disorders due to the exclusion of adolescents at high risk for substance use through educational failure and homelessness. Alcohol and/or illicit drug abuse disorders have been reported in up to 71% of homeless youth (Gilvarry, 2000). Other community samples have estimated the lifetime prevalence of alcohol abuse or dependence to range from 5.3-32.4% for 15-17 year olds, with lifetime prevalence of drug abuse or dependence estimated to be in the range of 3.3-9.8% for the same age group (Gilvarry, 2000). Further research has estimated that 6% of 14-18 year olds met criteria for alcohol abuse or dependence and it has been estimated that there is a 9.7% prevalence of lifetime alcohol abuse or dependence, and 6.2% prevalence of illicit drug abuse or dependence in 15-18 year old US youth (Young et al., 2002).

1.55 COMORBIDITY OF SUBSTANCE USE DISORDERS AND OTHER DSM-IV DIAGNOSES

The term co morbidity has generally been accepted as meaning “the presence of more than one disorder in a person in a defined period of time” (Wittchen & Essau, 1993, p.61). Those with co morbid disorders generally utilize more services, have increased risk of suicide and self-harm, and are expected to have a worsened clinical course and outcomes (Gilvarry, 2000). Adolescent substance abuse and dependence are commonly associated with co-occurring mental disorders. It has been reported that of a community sample of non-treatment seeking adolescents 7% met the criteria for a DSM-III-R diagnosis of a substance use disorder. Of those that received a substance

use disorder diagnosis 90% also met criteria for another DSM-III-R diagnosis (Monti, Colby, & O'Leary, 2001). In a more recent study, adolescents with an alcohol use disorder were found to have rates 10 times higher for disruptive behavior disorders, three times higher for mood disorders and twice as high for anxiety disorders, compared with alcohol abstainers in the sample (Colby et al., 2004).

New Zealand literature has indicated that substance use disorders and disruptive behavior disorders often occur together, with a strong association between conduct disorder and substance use disorders, and a slightly weaker association between attention deficit hyperactivity disorder and substance use disorders (Fergusson, Horwood, & Lynskey, 1993). International literature also indicates strong correlations between substance use disorders and disruptive disorders (Gilvarry, 2000). Research involving adolescents entering treatment for substance use problems has reported rates of co morbid psychiatric disorders as high 82% for DSM-IV axis one disorders, and 74% for two or more co-existing psychiatric disorders (Shane, Jasiukaitis, & Green, 2003).

It therefore appears that substance use disorders are often complicated by numerous other factors, and this may be even more so if they occur during adolescence. For this reason it is of the utmost importance that a comprehensive assessment be conducted when any young person is receiving treatment for substance use. The following section provides a brief overview of the recommendations in the literature regarding assessment of adolescent substance use disorders.

1.6 ASSESSMENT

As outlined above, adolescent substance use is a complex set of behaviours, with a range of severity, aetiology, consequences, and presentation. Subsequently, the assessment of adolescent substance use must adequately address the complexity of this behaviour. The literature regarding assessment of adolescent substance use recommends areas that must be covered when conducting a comprehensive assessment of an adolescent with identified problematic substance use. Areas that are consistently identified include: substance use severity, significance, function, history, and consequences of use; psychopathology/co morbidity; current functioning in all areas, in particular social, academic, and vocational; family environment, functioning and

support; risk and protective factors/strengths and weaknesses; and physical health (Meyers et al., 1999; Spooner et al., 1996; Swadi, 2000; Weinberg et al., 1998; Winters, 2001; Winters & Stinchfield, 1995). Other areas are recommended including: motivation or readiness to change (Spooner et al., 1996; Swadi, 2000; Winters, 2001); trauma and adverse life events, including victimisation and loss (Meyers et al., 1999; Spooner et al., 1996; Swadi, 2000); sexual behaviour (Meyers et al., 1999); community and neighbourhood (Winters, 2001); and use of recreation/leisure time (Spooner et al., 1996). To obtain this information it is recommended that clinicians utilise a variety of assessment methods. The clinical interview is described as the “cornerstone” of the assessment process by Meyers and colleagues (1999). Use of a standardised semi-structured interview is recommended as it is reported that this increases opportunities for clinical observation, can improve the quality and reliability of diagnoses, and is more likely to provide a comprehensive clinical evaluation (Meyers et al., 1999). It is also recommended that additional information is gathered through adolescent self-report measures and assessment tools with demonstrated psychometric properties. This information can also be supported through further sources such as parents or guardians, archival records, and biological measures such as urinalysis (Meyers et al., 1999).

It is important to note that historically a lot of the measures used for adolescent substance use assessment have been adapted versions of adult measures, many of which have not been sufficiently researched in their application to adolescents (Deas et al., 2005). It has also been noted that there is some overlap between symptoms exhibited by adolescents and adults, and in some cases adolescents may present with many of the classic symptoms of adult substance abuse or dependence. However, it is also quite possible that an adolescent with problematic substance use could present with symptoms that have little or no resemblance to the traditional adult symptoms of a substance use disorder (Leccese & Waldron, 1994). It is for this reason that adolescent specific assessment tools are necessary. In more recent times assessment tools specifically for use with adolescents have been developed, and there is now an increased availability of sound and proven self-report assessment instruments that are able to objectively, efficiently, and meaningfully document the information that is needed (Winters & Stinchfield, 1995).

The current study utilises a structured clinical interview, the Adolescent Diagnostic Interview (Winters & Henley, 1993) that has been specifically designed for use with adolescents. Further information is gathered through self-report questionnaires, all of

which have either been designed specifically for use with adolescents, or research has supported their use with adolescents. The assessment tools used are described in more detail in the method section.

Comprehensive assessment is necessary to determine firstly, whether treatment is needed, and secondly the type of treatment that would be most beneficial for the adolescent (Meyers et al, 1999; Spooner et al, 1996; Swadi, 2000). Currently there is a growing interest in what treatments are effective in treating adolescent substance use disorders. The following section reviews the current literature on the treatment of adolescent substance use disorders.

1.7 TREATMENT

1.71 TREATMENT OF SUBSTANCE USE AND ABUSE – AN OVERVIEW

With substance use in adolescence often being viewed as a normative behaviour, an often asked question is whether or not treatment is necessary, or even worthwhile. Is it not possible that an adolescent will just grow out of the habit of using substances? There have been several reasons identified for early intervention with adolescent substance users (Swadi, 2000). Firstly although most adolescents will grow out of it, some will become substance-dependent adults. Also substance misuse can spread throughout peer groups through association and peer influence. Substance use in adolescence is associated with an increase in co morbidity, and psychosocial and health risks. It has also been suggested that substance misuse is possibly more likely to be treated successfully in adolescence than in adulthood and the associated value of treating substance misuse successfully in adolescents should result in a reduction on the demand for adult substance misuse services (Swadi, 2000). However, despite adolescent substance misuse being a concern, and the reasons for successful interventions being outlined above, research into treatment is still relatively scarce. Research into effective treatments for adult substance abusers is relatively widespread. From the adult literature it appears that there is good evidence for the effectiveness of motivational enhancement therapy (MET), cognitive behavioural therapy (CBT), and 12-step facilitation (Crome, 1999).

Spooner, Mattick, Howard, & Noffs (1996) conducted a review of research literature on adolescent substance use. This review revealed a limited amount of material, and found

that there was a lack of research evaluating adolescent treatment programmes in a systematic manner. Adult treatment outcome research was included in their review because of the lack of adolescent specific research. They found that the most common treatment approaches in the literature were behaviour therapy, skills training, family therapy, and Alcoholics Anonymous/Narcotics Anonymous. Positive treatment results were obtained in all of the reviewed studies. The Spooner et al (1996) review found reliable and notable evidence that the addition of social skills training and cognitive restructuring techniques (especially in combination) to alcohol treatment programmes helped reduce participant alcohol consumption in the short and long term. Family therapy was also found to be an effective intervention with selected clients in drug-treatment programmes, when this was delivered by adequately trained therapists. The review concluded that effective treatment strategies for adolescents appear to be family therapy, skills training, and CBT (Spooner et al., 1996).

In another review of adolescent substance abuse treatment outcome research Weinberg, Rahdert, Collier and Glantz (1998) found that family-oriented therapies had received the most attention over the prior 10 years. Their review found support for the superiority of family therapy over other modalities of treatment, and the addition of family therapy was found to enhance the effectiveness of other approaches. They found that patient centred approaches had been less researched, but that adolescent peer group therapy, and cognitive behavioural approaches such as rehearsal, social contracting, problem solving, coping skills training, and relapse prevention techniques show promise for at least the first few months after finishing treatment (Weinberg et al., 1998).

A review of clinical trials over the previous 25 years conducted by Kaminer (2001) again noted the lack of adolescent focused research compared to adult focused research. Kaminer (2001) also concluded that little is known about the effectiveness of various treatments for adolescent substance use disorders. The review did however note some promising approaches which include: family therapies, including MST; functional family therapy; motivational interviewing; the community reinforcement approach; the 12-step approach; CBT; and contingency management reinforcement. More recent evidence has also suggested promise when using a combination of these therapies based on integrative models (Kaminer, 2001).

A more recent review of secondary prevention interventions for adolescent substance users was conducted by Elliot, Orr, Watson and Jackson (2005). This review identified

interventions effective in reducing drug use as: behaviour therapy; culturally sensitive counselling in residential settings; family therapy; Minnesota 12-step programs; residential care; and general treatment programs. Austin, Macgowan and Wagner (2005) reviewed family based interventions for adolescent substance use and found that Multidimensional Family Therapy and Brief Strategic Family Therapy demonstrate efficacy in treating adolescents with multiple problems including substance use problems. Also Family Behaviour Therapy and Functional Family Therapy were associated with large reductions in substance use at post-treatment, Multidimensional Family Therapy was associated with reductions in substance use at post, 6, and 12 month follow-up, and Multisystemic Therapy and Family Behaviour Therapy was successful in minimising treatment drop-out. This review identified that treatment for adolescent substance use is characterised by high rates of treatment drop-out and post-treatment relapse to use and also noted that although treatment for adolescent substance use problems has been shown to be effective, there is still insufficient evidence to draw conclusions about what intervention works for whom, and under what conditions (Austin, Macgowan, & Wagner, 2005). Further empirical studies have shown family-based therapy can produce engagement and retention of drug users and their families; reduction or elimination of drug use; decreased involvement in delinquent activities; improvement in multiple domains of psychosocial functioning such as school grades, school attendance, and family functioning; and increased quality of parenting behaviour (Hogue, Liddle, Dauber, & Samuolis, 2004). There is also evidence that these gains were maintained at follow-up, and that family-based approaches are cost-effective in comparison to treatment as usual. Further support for family interventions, specifically multisystemic therapy (MST) has been indicated by Curtis, Ronan, Reid and Harris (2002). Research conducted in the New Zealand context found empirical support for the long-term efficacy of MST in treating serious anti-social behaviour in adolescents, along with a variety of co-occurring problems such as substance abuse, sexual offending, and severe emotional disturbance. MST was found to reduce long term rates of substance use and substance related arrests (Curtis et al, 2002). It has also been noted that another highly regarded treatment approach for adolescent drug abuse is CBT (Hogue et al, 2004).

1.72 FRAMEWORKS FOR PREVENTION AND INTERVENTION

Interventions for adolescent substance use disorders presumably have some basis in underlying theories about their aetiology. The treatment of adult disorders has typically been based on the disease model; however this has not been supported in the treatment of adolescent substance use disorders (Palmer & Liddle, 1992). The following are four conceptual frameworks commonly used to explain adolescent substance abuse and dependence.

Social Learning Theory: Social learning theory was proposed by Bandura (1977, cited in Palmer & Liddle, 1992), and suggests that behaviour is learning through modelling and reinforcement. It is proposed that substance use is a socially learned and purposeful behaviour (Palmer & Liddle, 1992). Prevention and intervention techniques based on this model help adolescents develop skills to make them less vulnerable to influences that may promote substance use or abuse, and suggests strengthening young peoples bonds with pro-social influences (Hawkins, et al., 1992).

Problem Behaviour Theory: Jessor & Jessor (1977, cited in Palmer & Liddle, 1992) suggest that adolescent substance use is one of a cluster of behaviours that make up a syndrome of problem behaviour. This theory suggests that substance use is a functional behaviour, aimed at achieving a goal. It is postulated that to deter substance use adolescents must learn alternative ways to accomplish their goals. Interventions may consist of generic social and coping skills, domain specific skills and knowledge, and/or looking at attitudes and expectations about drug use (Palmer & Liddle, 1992).

Social Stress Theory: The social stress theory is based on Albee's (1982, cited in Palmer & Liddle, 1992) concept of psychopathology. This theory suggests that risk of substance use is a function of stress levels, and the extent that protective factors such as positive attachments and coping skills are present. It also considers broader social variables that affect behaviour. Substance abuse is seen as the result of the interactions between the individual, significant others, and the social system, over the long term. Interventions would therefore target the individual and other ecological variables (Palmer & Liddle, 1992).

Family Systems Theory: Numerous familial aetiological factors for adolescent substance use have been identified. Family models attempt to address these factors, and tend to be more treatment than prevention oriented. Family models generally target

factors that have been identified in the aetiology literature, such as parenting, parent-child relationship, and family management practices (Palmer & Liddle, 1992).

It has been suggested that these theories underlie most of the interventions available for adolescent substance use disorders (Palmer & Liddle, 1992). Cognitive-behavioural interventions, for example, are based on social learning theory. The underlying theory and components of the two treatments of interest to this study, cognitive behavioural therapy and motivational interviewing, are described in more detail below.

1.73 COGNITIVE BEHAVIOURAL THERAPY

Cognitive behavioural therapy is based on the idea that to understand an individual's motivation to use or abuse alcohol or other substances an understanding of their behaviour, patterns, perceptions, and cognitions must be established (Kadden, 1994). Cognitive behavioural therapy (CBT) is based on the principles of social learning theory (Bandura, 1986 cited in Monti et al, 1989). Cognitive behavioural theory views substance use as a maladaptive coping skill that is acquired the same way as any other learned behaviour, through imitation of role models, positive reinforcement, and/or positive expectations (Monti et al., 1989). Common CBT approaches are structured and focus on identifying the cognitive and environmental factors that are controlling the problem behaviour, then developing and rehearsing the skills required to achieve change. Cognitive techniques such as challenging negative thinking are used alongside behavioural work including behavioural experiments, and increasing mastery of new skills (Wanigaratne et al., 2005). All CBT programmes tend to use some form of coping skills training to improve cognitive and behavioural coping skills. Generally CBT programmes will use a standard set of techniques to teach coping skills including identifying specific situations where difficulty in coping occurs. Instruction, modelling, role-plays and behavioural rehearsal are then used to develop more effective ways of coping (Morgenstern & Longabaugh, 2000).

As described earlier CBT has been identified as having promise in working with adolescent substance users, and a series of reviews has suggested that cognitive behavioural strategies have the most evidence of efficacy for outcomes in alcohol treatment (Miller & Brown, 1997). Further evidence has identified that cognitive behavioural approaches have demonstrated efficacy in reducing adolescent substance use, and also co morbid psychiatric problems. Hogue and colleagues (2004) found that manualised CBT was effective in reducing marijuana use, externalising symptoms, and

internalising symptoms at post treatment, and up to one year later. It has also been stated that interventions that focus on cognitive and behavioural coping skills training may reduce relapse (Catalano et al., 1990) and tend to be more effective (Crome, 1999).

1.74 MOTIVATIONAL INTERVIEWING

Miller and Rollnick (1991, 2002) developed Motivational Interviewing (MI), which has been described as the most influential and widely used brief intervention (O'Leary Tevyaw & Monti, 2004). The term 'motivational interviewing' can be used to describe both a therapist style and specific techniques to facilitate therapy. There are five main techniques used in MI: having an empathic, non-judgemental stance; listening reflectively; developing discrepancy; rolling with resistance and avoiding argument; and supporting self-efficacy for change (Miller & Rollnick 1991, 2002). Although MI was originally developed for therapists working with addiction it is now also being used to address other behaviours, such as: HIV and risky sexual behaviour; eating disorders; smoking; sexual offending; gambling; and medication compliance.

The aim of MI is to move individuals through the stages of change described in Prochaska and DiClemente's (1982) transtheoretical model of change. The transtheoretical model of change describes five stages that individuals move through in relation to changing their behaviour: pre-contemplation; contemplation; preparation/determination; action; maintenance; and (although not always) relapse. The aim of MI is to move individuals who are in the pre-contemplative or contemplative stages, into the preparation and action stages. In MI based interventions the therapist, rather than taking the position of the expert, takes the position of a collaborative partner. Therapists will then use specific skills, such as open questions, listening, summarising ideas, reflecting, and providing affirmation. This aims to help the client identify their own problems with substance use, label these problems, and feel like they are able to change (Wanigaratne et al., 2005). Because the MI style and interventions are based on acceptance, understanding and increasing motivation to change, they hold promise as a treatment for adolescent substance misuse (O'Leary Tevyaw & Monti, 2004).

There is increasing evidence supporting the use of motivational enhancement interventions for reducing alcohol use and alcohol-related problems among adolescents and young adults (O'Leary Tevyaw & Monti, 2004) and another recent report states that there is a substantial evidence base for the efficacy of MI, particularly with problem and

risky drinking, cannabis use, and heroin dependence (Wanigaratne et al., 2005). Further, it has been suggested that MI may be particularly appropriate for targeted prevention or intervention programmes for young people who are engaging in risky behaviours (Baer & Peterson, 2002). Studies have also identified that brief interventions for adolescents and young adults that include MI techniques may reduce risk behaviour, and may improve engagement, retention, and treatment outcomes (Baer & Peterson, 2002).

1.75 COMBINING CBT AND MI

As discussed previously it has been demonstrated that the addition of cognitive behavioural techniques to treatment programmes can help reduce alcohol consumption (Spooner et al, 1996), and that interventions that focus on cognitive and behavioural coping skills training may be more effective (Crome, 1999) and reduce relapse (Catalano et al, 1990). It is also noted above those using MI techniques as part of an intervention for adolescent substance abuse may reduce risk behaviour, and improve engagement, retention, and treatment outcomes (Baer & Peterson, 2002). Kaminer (2001) suggested that combining effective therapeutic models using integrative models of treatment may also be a promising approach to the treatment of adolescent substance use disorders. Initial support for the integration of CBT and MI has been demonstrated by Dennis and colleagues (2002; 2004), in the treatment of adolescents with cannabis use disorders.

1.76 MANUALISED TREATMENT

Treatment manuals have been described as being a revolution in psychotherapy research (Godley et al., 2001). Research manuals generally provide detailed descriptions of treatment delivery. It has been stated that research projects that do not follow a treatment manual are very limited in terms of assessing treatment efficacy (Chambless & Hollon, 1998). Research has shown that when existing substance abuse treatments, such as CBT and MI, are manualised and delivered with the rigorous standards of a research study they can be just as, if not more effective than other research based treatments (Godley et al., 2001).

Cognitive Behavioural Therapy (CBT) and Motivational Interviewing (MI) are both techniques that are widely supported as being effective when working with adult substance abusers/dependents. Research as indicated above has also suggested that

these two approaches show promise when working with adolescents that are also experiencing symptoms of substance abuse or dependence. The current study uses a combination of cognitive behavioural and motivational interviewing techniques, adapted for use with adolescents in a New Zealand context, in the form of a manualised intervention.

1.8 THE PRESENT STUDY

It was the purpose of the current study to explore the effectiveness of a brief manualised integration of cognitive behavioural therapy and motivational interviewing (Vilke & Ronan, 2002) for adolescents at risk of, or currently experiencing difficulties with, problematic AOD use. The intervention was modified specifically for use with New Zealand adolescents and is adapted from Carroll's (1998) and Monti, Abrams, Kadden, and Cooney's (1989) cognitive behavioural interventions for treating cocaine (Carroll, 1998) and alcohol (Monti et al., 1989) addiction in adults. The present study is one of two pilot studies to assess this intervention, and was designed as part of a larger scale study.

The intervention consists of eight sessions that utilise both cognitive-behavioural and motivational interviewing strategies. As described in the previous section CBT and MI are both promising interventions in the treatment of adolescent substance use disorders. There is also preliminary support for interventions using an integration of the two models of treatment (Dennis et al, 2000; Dennis et al, 2004). The manual (Vilke & Ronan, 2002) enables flexibility in duration to be extended to nine or ten sessions to suit individual need. Strategies include skills for coping with cravings, functional analysis of substance use, problem solving, and understanding seemingly irrelevant decisions.

The aim of the intervention is to reduce current and/or future difficulties with AOD use for adolescents. Individual case studies and within subject comparisons are used to measure the effectiveness of this intervention in an educational setting. The current study will provide detailed information about the results of treatment for four young people, and contribute towards determining the effectiveness of this intervention for substance use/abuse for adolescent populations.

It was hypothesised that upon completing the programme participants would have reduced their substance use, and consequently substance use related problems. It was also anticipated that this reduction in use would continue over a 12 month period. It was also anticipated that participants would move through the stages of change during treatment, from pre-contemplation or contemplation, to action. It was also anticipated that benefits for the participants would be that beliefs about the perceived benefits of alcohol and drug use would change, and that their skills for coping with high risk situations would be increased.