Identifying Client Characteristics Associated with Alcohol and Other Drug Treatment Retention in Youth

A thesis presented in partial fulfilment of the requirements for the degree of

Master of Science

In Psychology

At Massey University, Palmerston North,
New Zealand

Anna Kate Tentori

2006

Acknowledgements

I would like to formally and most sincerely thank the following people who have contributed to the writing of this thesis. Without each and every one of you, it would not have been possible.

The National Addiction Centre, particularly Professor Doug Sellman, for allowing me to become part of the study, and also Associate Professor Chris Frampton for statistical help.

The Riccarton Rotary Club for their financial assistance in the form of a scholarship.

My supervisor, Professor Ian Evans, for taking me on unexpectedly due to unforseen circumstances.

The many young people who have participated in the Treatment Retention Study, and therefore have formed the basis of my research.

All the alcohol and other drug treatment services involved in the study, especially Odyssey House Christchurch, and in particular Jim Masters, who was endlessly patient with the continuous file searching.

Joyce Alberts who read drafts and gave me constructive comments as a result.

Joanne Yarwood for all her encouragement and help along the way.

Julia Carter for patiently enduring my frustrations and stressful episodes.

Allison Barwick, my secondary school English teacher, for the very thorough final proof reading.

Finally, a special thank you to my co-supervisor Dr. Ria Schroder for her continued guidance, patience, support, and encouragement every step of the way, as without her I would never have been able to complete this work.

Table of Contents

List of Tables

Abbreviations

ADHD	Attention-Deficit/Hyperactivity Disorder
AOD	Alcohol and Other Drugs
AUDIT	Alcohol Use Disorders Identification Test
BIS	Barratt Impulsivity Scale
CHDS	Christchurch Health and Development Study
CUDIT	Cannabis Use Disorders Identification Test
CYFS	Child Youth and Family Services
DMHDS	Dunedin Multidisciplinary Health and Development Study
DSM-IV	Diagnostic and Statistical Manual of Mental Disorders
MINI	Mini-International Neuropsychiatric Interview
PTSD	Post Traumatic Stress Disorder
TCI	Temperament and Character Inventory
YSS	Youth Specialty Service
YTRS	Youth Treatment Retention Study

Abstract

Treatment retention of youth has been identified as an important part of alcohol and other drug treatment effectiveness. However, ensuring the retention of young people in alcohol and other drug treatment is a constant challenge. It is therefore important to understand why some young people do remain in treatment while others do not. To date, however, there are very few studies on youth treatment retention and those that have been conducted are not in New Zealand settings. The present study examined client characteristics associated with the length of stay in alcohol and other drug treatment programmes. Participants were fifty two young people who had attended a range of alcohol and other drug treatment services across New Zealand. Interviews were conducted using a specifically designed questionnaire examining participant's time in treatment. Data were obtained on client characteristics, including gender, presence of psychopathology, severity and type of substance use and the source of referral. The results failed to identify specific client characteristics that reliably influence alcohol and other drug treatment retention in New Zealand day/residential or outpatient settings. This finding is consistent with much of the previous literature which has generally yielded inconclusive and inconsistent relationships between the client variables measured and staying in treatment.

Foreword

I am a 24 year old female born and breed in Canterbury. I completed a Bachelor of Science at Canterbury University after leaving school in 1999. Initially my interests lay primarily in veterinary science. However, after completing the first year psychology paper I discovered my interest in people, and their behaviour, which lead me to change the direction and focus of my study in subsequent years. At the completion of my undergraduate studies I decided to further my education by studying towards my Master of Science through Massey University.

Upon researching topics for my masters thesis I realised my interests lay in addiction and youth. Growing up in the generation that was directly affected by the lowering of the drinking age and the emergence of the increased use of "trendy" party drugs such as Methamphetamine and Ecstasy stimulated my interest in these areas. I approached the National Addiction Centre about possible research ideas involving substance use and youth. Professor Doug Sellman outlined a study the National Addiction Centre was currently undertaking and put me in touch with Doctor Ria Schroder with regard to my possible inclusion in the study.

After reading the background literature I realized that treatment retention in young people was an extremely worthwhile and important area of research and incorporated both my interests of youth and addiction. I decided to take part in the larger study and used the area of client characteristics associated with treatment retention within the larger study as the basis of my thesis.

Introduction

General Overview

Adolescent substance use and abuse is a serious problem for many of today's youth (Saddock & Saddock, 2003). The issue of substance abuse has become a major worldwide problem due to the cost in lives, money, and emotional problems (Barlow & Durand, 2002). Young people are readily exposed to substances as they live in an often drug-dependent society where alcohol can be seen to be used to relax and nicotine to deal with stress (Berk, 2001).

Experimentation with substances is a common activity of adolescents as they move into adulthood. Adolescents can be exposed to substances through the media, parents, or peers. Many youth start using substances because of peer pressure or curiosity about "adult like" behaviours (Berk, 2001). A majority of substance use occurs in a social context and is due to the adolescent's immediate subcultural lifestyle (Galanter & Kleber, 2004). Although some involvement with drugs can be expected during adolescence it should not be ignored (Berk, 2001). It is imperative to understand adolescent substance use in the context of changeable patterns of normative behaviour. Therefore, substance use needs to be distinguished from substance use disorders such as abuse or dependence (Galanter & Kleber, 2004).

For some youth experimentation and the sporadic use of substances leads to substance misuse which can increase the possibility of problem behaviours such as crime, violence, drink driving, unemployment, and failure to complete education (Ministry of Health, 2002a). Problematic substance use can be maintained by a number of biological, psychological and social influences. Some of these influences include a genetic predisposition to substance use disorders, positive reinforcement from the pleasurable experience, and being able to escape from problems such as stress (Barlow & Durand, 2002). When adolescents use substances to deal with daily stresses they can fail to learn responsible decision-making skills and alternative coping techniques. They can also show adjustment problems which can lead to problems in adulthood (Berk, 2001).

Given the problems associated with adolescent substance misuse it is important that adolescents have access to and receive treatment. Without treatment detrimental effects may occur in the young people concerned, their family, friends, and society as a whole. Treatment is needed to help substance abusing adolescents with their problematic behaviour. There is evidence that a majority of individuals in treatment programmes, whether or not they stayed for the intended time, have better outcomes than those who received no treatment (Williams & Chang, 2000). However, research has also shown that clients have an increased risk of dropping out of treatment in the first month of a planned 9 to 12-month programme (Orlando, Chan, & Morral, 2003). Reasons to explain this phenomenon are not entirely clear.

To attempt to understand more about why clients are likely to drop out of treatment, the present study was designed to identify client characteristics that may be related to treatment retention, looking at whether certain aspects of an individual are associated with staying in or dropping out of treatment. By doing so it may be possible to identify those individuals who are likely to stay in or leave treatment. This will highlight factors that should be taken into consideration when attempting to increase treatment retention for those who are at greatest risk of dropping out of treatment.

The next section provides an overview of the treatment retention literature. It begins with definitions of the key terms used in this study: substance use, abuse, dependence, and adolescence. This is followed by epidemiology data of substance use in New Zealand adolescents. The importance of retention in treatment, and definitions of how treatment retention is defined are then discussed prior to providing an extensive review of the literature on how client characteristics may be related to treatment retention. More specifically how gender, psychopathology, the referral source, and the severity of substance use may play a role in individuals adhering to or dropping out of treatment. Methodological limitations of previous studies are then discussed, and finally there is an outline of the rationale for this thesis.

Substance Abuse

The term substance is used to refer to any chemical compound that is ingested, not for medical use but to cause a rewarding mood and/or perception altering effect (Barlow & Durand, 2002). When examining substances it is important to understand that there is a difference between what is normal recreational use of substances by young people, such as having a drink with friends, and the severe substance use that is causing serious problems. Substance use, abuse, and dependence are all terms used to describe the use of substances for a pleasurable rewarding effect that alters an individual's mood and behaviour (Barlow & Durand, 2002).

Substance use refers to the moderate intake of psychoactive substances that does not cause serious problems in occupational, educational, or social functioning (Barlow & Durand, 2002). Substance abuse in the present study and much of the reviewed literature is defined by the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV) in terms of the effects of a particular substance on an individual's functioning. Substance use is considered abuse if it interferes with relationships, causes related legal problems, and disrupts work or education. Additionally, the symptoms must have never met the criteria for dependence for that particular class of substance (American Psychiatric Association, 1994).

Substance dependence is defined by the DSM-IV as a cluster of cognitive, behavioural, and physiological symptoms indicating that an individual continues to use the substance despite the problems they experience. Individuals may spend a great deal of time obtaining, using and recovering from the substance, and withdrawal and tolerance may be experienced. Tolerance is the need for increased amounts of a substance to get the same effect or experiencing a diminished effect with continued use of the same amount of the substance. Withdrawal refers to the unpleasant physiological changes individuals experience when the substance is no longer in their system. To meet a diagnosis of substance dependence an individual must meet at least three of the seven substance dependence criteria in a 12-month period (APA, 1994 provides a full description).

Adolescence

Adolescence has been described as a transitional phase in development, beginning at puberty and extending to the late teens or early twenties (Berk, 2001). It is a period of experimentation and socialization that is marked by significant biological, psychological, and social changes. However, decision making skills such as exploring multiple options and weighing up alternatives have not yet fully developed (Spooner, 1999). Defining when adolescence begins and ends is difficult, as the age of adolescence varies between cultures and time periods (Berk, 2001). Terms such as youth, young people, adolescents, and teenagers are used interchangeably to describe groups of individuals from 10 years of age through to the mid twenties. Within this age range there are different needs and risks that are associated with various developmental stages. For the purposes of this study, adolescents, young people, and youth will all be used to refer to individuals 12-24 years of age. This fits with the World Health Organization definition of young people (Ministry of Health, 2002b).

Epidemiology of Substance Use, Abuse and Dependence

New Zealand population data show that there has been an increase in substance use among youth in New Zealand from 1995-2000, with alcohol, cannabis and nicotine being the most frequently used substances (Ministry of Health, 2002a). Young people in New Zealand aged between 12 and 24 years have a higher rate of alcohol and drug use than any other age group in New Zealand. They are also at an age where they are more likely to engage in risk-taking behaviours, such as reckless driving and increased unprotected sexual activity (Ministry of Health, 2002a).

Statistics from the New Zealand Youth Health Status Report (2002) show 79% of 14-17 year olds and 90% of 18–24 year olds currently drink alcohol, with 42% beginning to drink before the age of 15 years. Statistics also show that there has been an increase in the frequency of drunkenness among young people from 1998-2000. (Wilkins, Casswell, Bhatta, & Pledger, 2002). Approximately 10%-15% of young people have tried cannabis before the age of 15 years (Ministry of Health, 2002a). The Dunedin Multidisciplinary Health and Development study (DMHDS) is a prospective epidemiological study of over 1000 children born during a one year

period in the lower South Island. This study found that by 18 years of age, 43% of the 930 adolescents still involved in the study had used cannabis at least once in a 12 month period (Ministry of Health, 2002a).

With the high prevalence rates of substance use among young people in New Zealand, rates of substance abuse and dependence are also increasing (Ministry of Health, 2002a). The DMHDS found 10% of youth met criteria for alcohol dependence at 18 years of age, and 5% met criteria for cannabis dependence (Feehan, McGee, Raja, & Williams, 1994). The Christchurch Health and Development study (CHDS), a longitudinal study of 1025 individuals, found that over the period of 16–18 years of age, 24% of the sample met criteria for any substance use disorder. More specifically, 19% met criteria for alcohol abuse/dependence, 12% for cannabis abuse/dependence, and 4% met criteria for other substance abuse/dependence (Horwood & Fergusson, 1998).

Approaches to Alcohol and Other Drugs Treatment in New Zealand

Given such increases in the use of substances and the dependence and abuse rates, it is important that treatment be available for adolescents. In New Zealand, alcohol and other drug treatment services consist of outpatient, day, or residential programmes, all of which are funded in part by the District Health Board's within each region. Some services are delivered by trust organisations under contract to the Ministry of Health, and non government organisations funded by outside sources including District Health Boards. Some AOD treatment services utilize an abstinence based approach while others work within a harm minimization model. Programmes designed specifically for Māori incorporate treatment within a Kaupapa Māori education programme.

Outpatient services provide individual, group, and family counselling sessions to young people. Clients turn up to set appointments either at the treatment service or at a convenient place for the client. Day programmes require the young person to attend for a set number of days and hours each week, similar to being at school. They do not reside at the service but are supervised there during the day and return to their place

of living in evenings and weekends. Clients attend educational lessons, have group and individual sessions, and go on outings to engage in a range of extra curricular activities. Residential treatment programmes, in contrast, require clients to reside at the service. This is to provide a safe, structured, and controlled environment for the individuals involved. The programmes entail both individual and group sessions and the length of treatment ranges from three months onwards.

Traditionally, young people with less severe problems attend outpatient services. Young people with severe AOD problems and an unstable living situation attend residential treatment services. Day programmes are aimed at young people who have severe problems but have a living situation that supports and encourages their attendance.

Treatment Retention

Retention of clients in treatment is an issue in many health related services, including substance abuse treatment (Stark, 1992). Research has shown that most individuals drop out of AOD treatment early on, rather than later, with the majority leaving during the first month (Baekeland & Lundwall, 1975; Orlando, Chan, & Morral, 2003; Stark, 1992). This is concerning professionally, as treatment retention appears to be extremely important to treatment effectiveness, with previous literature indicating that adult and adolescent individuals who stayed in treatment longer were more likely to have favourable outcomes (Hser, Grella, Hubbard, Hsieh, Fletcher, Brown, & Anglin, 2001; Hubbard, Craddock, Flynn, Anderson, & Etheridge, 1997).

However, early drop outs from substance abuse treatment are very common, especially among young people, potentially resulting in individuals not receiving the full benefits of treatment and increasing the likelihood of relapse. Drop out rates in the adult literature range from 19% to 63% for inpatient other drug studies, 17% to 74% for inpatient alcohol treatment, with over 70% being the norm for outpatient, other drug studies, and alcohol outpatient rates also often exceeding 70% (Wickizer, Maynard, Atherly, Fredrick, Koepsell, Krupskt, & Stark, 1994). Although not as much work has been done on adolescent populations, similar rates have also been

found. Hser et al. (2001) examined Drug Abuse Treatment Outcome Studies for Adolescents (DATOS-A), and found 73% of adolescents in outpatient and 41% in residential programmes stayed less than three months in treatment programmes where the recommended time was 3 to 12-months. These rates are additionally concerning when individuals who leave treatment prematurely may not only create more problems for themselves, their family and community but may also create concern and frustration for clinicians, and increased costs for treatment organizations (Stark, 1992).

Transtheoretical Model

An important question that then emerges is why some individuals remain in treatment and others do not? Despite extensive explorations reported in the adult literature and to a much lesser extent in the adolescent literature, the answer to this question is still elusive. However, a useful model for understanding the process of treatment retention and attrition is the transtheoretical model of behaviour change (Prochaska & DiClemente, 1986). In an area with little theoretical grounding the transtheoretical model provides an important basis of factors to consider in relation to treatment dropout. This model consists of four stages of change: precontemplation, contemplation, action, and maintenance, which all involve various change processes.

According to the theory, precontemplation is a beginning stage where individuals are either unwilling or unable to acknowledge they have a problem and do not want to change their behaviour. When an individual begins to look at their addictive behaviour as problematic and realize that they may need to change, they enter the contemplation stage. During this stage individuals examine the pros and cons of their behaviour; they decide they have a problem and whether they want to take action to address the problem or whether they are happy the way they are. They also become more conscious of themselves and the nature of their problems and assess how they feel about themselves with respect to problem behviours; for example, "Will I like myself better as a non drinker?" People often move from the precontemplation to the contemplation stage because of developmental or environmental changes if their external circumstances have changed (Prochaska & DiClemente, 1986).

If an individual decides that they need to do something about their problem they move into the action stage. Prochaska and DiClemente posit that it is important that an individual believe in themselves and have the autonomy to change. Individuals need to realise that their own efforts play an important role in succeeding in difficult situations. They also need to be able to avoid or deal with stimuli that bring about problem behaviours, for example, removing alcohol from the house to avoid being tempted to drink it. The last stage is the maintenance stage which builds on all the previous processes. Individuals need to assess alternatives they have for coping with conditions that might cause them to relapse. They need a sense that they are becoming more of the kind of person they want to be (Prochaska & DiClemente, 1986).

It has been proposed that early drop outs are related to individuals being in the early stages of the process of change (Prochaska & DiClemente, 1986). According to this model youth will stay in treatment if they think they need help with their use and the associated problems, if they are ready to change their lifestyle, and feel that they are strong enough to succeed in treatment. However, the road to changing an addictive lifestyle is long and frustrating. Throughout treatment people move through stages in a circular rather than a linear nature, often relapsing and moving in and out of the stages (Prochaska & DiClemente, 1986). Therefore, in an attempt to better understand treatment retention it is useful to consider this model when examining factors that may be associated with retention.

Factors relating to Treatment Retention

In addition to the variable of being ready to change, Stark (1992) has suggested many other factors that may be related to individuals leaving treatment prematurely. These factors include client characteristics such as gender differences, age, type of substance use, social factors, psychopathology, legal pressure, client motivation, expectations, and perceptions of the treatment. Other non-client related factors such as the type of treatment programme and clinician variables have also been considered as factors impacting on retention of clients in treatment programmes.

Stark (1992) who has provided the most comprehensive review to date of factors associated with retention in alcohol and other drug treatment has largely focused on adult populations. Conclusions on youth populations are difficult to draw as there are relatively few studies conducted in this area. The importance of differentiating between adult and adolescent populations has long been stressed in the literature, as it has been recognised that adolescents who misuse substances may differ from adult populations. Therefore, the client characteristics that predict treatment retention may be different in a number of areas such as source of referral to the programme, age, substance use severity, and social/environmental factors between the populations (Friedman & Glickman, 1987). For example, an adolescent who does not view their substance use as a problem and has been mandated to treatment is likely to be more resistant to staying than an adult who voluntarily seeks treatment to improve the quality of their life.

Defining Treatment Retention

From the literature to date there appear to be two aspects of treatment retention that have been discussed: (a) treatment completion, and (b) time spent in treatment. Treatment completion definitions vary across studies. Some specify a certain amount of time or sessions for completion (e.g. Blood & Cornwall, 1994), and in other studies completion criteria reflect the achievement of set goals (e.g. Feigelman, 1987). Therefore definitions of individuals who do not complete treatment differ across treatment modalities and studies. For example, clients in inpatient settings must leave the treatment setting and not return to be considered a non completer, while outpatient clients may simply fail to turn up for their scheduled sessions (Wickizer et al., 1994).

Length of time spent in treatment as a measure of retention is predominantly defined as the number of sessions attended for outpatient settings. Residential settings refer to the number of days, weeks or months in treatment from admission to discharge. These differences make comparison between service modalities difficult. For the purpose of the present study, treatment retention was operationalised as the time in a treatment program as opposed to treatment completion. This is largely because the

majority of New Zealand AOD services do not have a specified time for completing a programme. The indefinite time to complete a programme could be a problem in relation to retention. If an individual is told they "have to stay in treatment until they are better" rather than given a time frame for their treatment, they may be more likely to judge that they are better and make an early departure

Treatment Engagement

It is important to understand that the time spent in a treatment programme does not necessarily reflect engagement in a programme. Engagement is also an important part of treatment. It has been shown that clients who are actively involved in treatment and commit themselves early on in the programme have a better chance of completion (Simpson & Joe, 1993). An engaged client is defined as an individual who bonds with therapists, endorses treatment goals and participates fully (Broome, Joe, & Simpson, 2001). For adolescents, treatment retention has been linked to treatment readiness, a motivational attribute (Melnick, De Leon, Hawke, Jainchill, & Kressel, 1997). Treatment readiness is a concept related to the transtheoretical model mentioned previously. The degree of treatment readiness an individual experiences reflects which state of change they are in. For example, an individual with very little treatment readiness would most likely be in the precontemplation stage (Callaghan, Hathaway, Cunningham, Vettese, Wyatt, & Taylor, 2005).

Broome et al. (2001) hypothesized a motivational model showing the relationship between treatment readiness, pre treatment risk factors such as social support, conduct disorder, family and peer deviance, legal status, school problems, and treatment engagement. This model suggests that an adolescent's environmental characteristics and personal experience help form their treatment readiness. It is the treatment readiness that then relates to treatment engagement. A high readiness for treatment is related to more therapeutic involvement in residential and outpatient settings. In this model of treatment engagement it is only through treatment readiness that an individual's pre treatment risk factors are connected to engagement in a programme. Although engagement in a treatment programme is important, it is beyond the scope of the present study and has not been measured.

Gender and Treatment Retention

Traditionally, males begin drinking at a younger age than females, are more likely to drink heavily, and have more problems related to alcohol (Fergusson, Horwood, & Lynskey, 1995). Also a greater number of males tend to use illicit drugs, use them at a younger age, and be more likely to use drugs to help with their problems than females (Spooner, 1999). More recently, however, a divergence between male and female patterns of alcohol use and misuse has been noted. The New Zealand Youth Health Status Report (2002) found that between 1995 and 2000 the volume of drinking in young females had increased, as had the frequency of drunkenness. Between 1990 and 1998 the proportion of young women using cannabis had also increased from 20% to 27% (Ministry of Health, 2002a).

This is alarming when previous studies on adolescent alcohol and other drug treatment programmes have had an overwhelming representation of males over females. There is a definite lack of females in AOD treatment programmes when statistics show an increase in their use. The small number of females in treatment programmes may provide some answers as to why a majority of studies results are inconclusive. The very few recent studies on adolescent treatment retention reflects research falling behind current needs or patterns of use of young people in treatment.

Research examining gender differences in youth treatment retention has produced conflicting and inconclusive results. Findings from a study by Feigelman (1987), for example, suggested that gender is not associated with treatment retention in youth. This study focused on youth aged 12-19 years, predominantly male with multiple drug problems in a day care setting. The correlational research showed no significant gender differences with 14% of males and 12% of females completing treatment. Completion of treatment in this study was defined as graduating, when staff members judged that clients had met goals.

More recently a study by Vourakis (2005) examined client characteristics of completers and non completers in a residential treatment program combining inpatient and outpatient aftercare. The random sample of 91 adolescents had been admitted over a six-year period. Analysis of the results showed only a marginal difference between genders, with females being more likely to complete treatment.

In contrast to some previous studies, the study by Blood and Cornwall (1994) concluded that males were more likely to complete treatment than females, in particular males with more problematic use of alcohol and recurrent use of drugs other than cannabis, alcohol and tobacco. Of the 134 youth involved in their study 70% were male and ranged in age from 13-20 years. All participants involved were in a residential or intensive day treatment program. The pre treatment measures that predicted completion in this study, such as current alcohol and drug use history, were found to be more useful for males than females. This may be because the client variables that were measured were not significantly relevant for females and the number of females in the study was too small to identify trends. Beckman and Bardsley (1986) proposed that treatment variables such as modality and the provision of special services are more important for retaining adult female clients than pre treatment variables. Focusing on treatment variables rather than client variables may be more relevant for adolescent females.

The Blood and Cornwall (1994) study may have produced different results from the previous studies because of the differences in time spent in treatment. Adolescents in Feigelman's (1987) study stayed an average of 14-18 months, compared with Blood and Cornwall's study in which participants stayed an average of 16 weeks. The studies also included different treatment modalities and types of drug use. In Feigelman's study the participants used more drugs other than alcohol and cannabis than were used by participants in Blood and Cornwall's study.

Another study concluding that male clients remain in treatment longer than female clients examined court referred youth in a therapeutic community. This study by Pompi and Resnick (1987) included 1472 adolescents aged between 13-35 years (mean 18.5 years), all participants were specifically court referred youth and young adults. Participants in this study were different from previous studies where there

were very few or no court referred participants. Therefore, because the participants were mandated to be in treatment, other variables such as some clients having higher motivation to complete treatment to avoid being sent to a correctional facility, may have lead to these findings rather than a specific gender difference.

Overall, from the research to date, it cannot be concluded whether males or females are more likely to complete treatment programmes. An explanation for the inconsistent relationship between the direct effects of gender and treatment retention may be the predominantly large number of male clients which makes interpreting the results difficult. As mentioned earlier, variables associated with treatment retention may be different for males and females. Client characteristics may not be as important as programme characteristics when examining treatment retention in females. The previous studies all focused on day or residential treatment programmes. Research into outpatient programmes may lead to different conclusions as there may be more female clients involved in outpatient settings.

Psychopathology and Treatment Retention

Clinicians and researchers in the United States have noted that the co-morbidity of substance use and psychiatric disorders is common (Wise, Cuffe, & Fischer, 2001). New Zealand data have indicated that many young people in alcohol and drug treatment programmes also present with mental health issues. These are primarily conduct disorder, depression, and anxiety disorders (Horwood & Fergusson, 1998). The Christchurch Health and Development Study (CHDS) found that of the 246 participants presenting with a substance use disorder, 28% had a co morbid anxiety disorder, 35% a co morbid mood disorder, and 18% had co morbid conduct disorder (Horwood & Fergusson, 1998). The Dunedin Multidisciplinary Health and Development Study (DMHDS) found slightly higher rates. Of the 340 18 years olds who presented with alcohol or cannabis dependence, 45% had a co morbid mood disorder, 40% a co morbid anxiety disorder, and 31% had co morbid conduct disorder (Feehan et al., 1994).

Limited research has focused on the relationship between psychopathology and treatment retention in substance abusing adolescent populations. The few studies that have been conducted have produced inconsistent results. Some researchers suggest psychopathology causes individuals to leave treatment early (e.g. Blood & Cornwall, 1994; Feigelman, 1987), while others (e.g. Pagnin, de Queiroz, & Saggese, 2005) have indicated that a diagnosis of depression or anxiety helps individuals stay in treatment. Exactly how psychopathology affects treatment retention is not well known (Levin, Evans, Vosbury, Horton, Brooks, & Ng, 2004). The majority of the research in this area has been carried out with adult populations, or has focused specifically on the co-morbidity of psychopathology and substance use in adolescents rather than focusing on treatment retention (Wise et al., 2001). Differences or inconsistencies in the literature may also be due to the different psychopathologies being examined.

The adult literature has indicated that individuals with Axis 1 Diagnoses such as depression, anxiety, and attention-deficit/hyperactivity disorder (ADHD), are less likely to complete treatment than those without an Axis 1 diagnosis (Haller, Miles, & Dawson, 2002). Levin et al. (2004) also provided evidence of the role of psychopathology in treatment retention in an adult population. Overall, individuals with a diagnosis of adult ADHD, anxiety disorder, or depression were less likely (16%) to complete treatment than those with no diagnosis (29%). The prevalence of psychopathology in this study was assessed using the Structured Clinical Interview for DSM-IV Axis I and II disorders.

More specifically, individuals with ADHD were more likely to drop out of treatment than individuals with other Axis 1 or no Axis 1 diagnosis. However, the difference between individuals with ADHD and no Axis 1 diagnosis was not statistically significant. This may have been due to the small sample size because no one with ADHD graduated from the treatment program. Adults diagnosed with depression or anxiety in the study were less likely to drop out of treatment in the early stages than those with no Axis I diagnoses, but were significantly more likely to leave further on in treatment than individuals with no Axis I disorder. This study was carried out with 135 individuals over 20 years of age, predominantly male, who were cocaine abusers in a long–term residential treatment setting (Levin et al., 2004).

Consistent with the adult literature, Feigelman (1987) provided support for the role of psychopathology in dropping out of treatment programmes in an adolescent population. This study examined client characteristics of multiple drug abusers 12-15 years of age in a day treatment programme. Feigelman's research indicated that young people with a diagnosis of depression by a psychiatrist at intake were more likely to leave treatment before completing the programme. Six percent of depressed adolescents in this study completed the programme as opposed to twenty one percent who did not have a diagnosis of depression. To participate in this programme, families were expected to invest a lot of time and effort. They had to attend weekly therapy sessions, abstain from using drugs, look after their own child and others on the weekends, and have sufficient economic resources. The demands put on families meant the pool of participants would be biased because only adolescents with families who were able or willing to put in the time could attend. These results on their own cannot necessarily be generalized to other treatment programmes other than intensive day-care treatment (Feigelman, 1987).

A study by Wise, Cuffe, and Fischer (2001) of 91 adolescents has provided further evidence for disorders other than depression influencing retention within a residential treatment programme for substance abuse. Their results indicated that adolescents with disruptive disorders, conduct disorder and especially ADHD are more likely to leave a treatment programme before completion. However, contrary to Feigelman's findings having a diagnosis of depression did not increase or decrease the likelihood of an individual completing treatment. Successful participation in treatment was determined by staff when all the client's goals had been met (Wise et al., 2001).

Contradicting research on adult populations and the previous studies, Blood and Cornwall (1994) concluded that clients with psychopathology are more likely to stay in treatment programmes. As mentioned previously, these authors examined the characteristics of 132 young clients who were consecutive admissions to a substance abuse treatment facility as either inpatients or an intensive day-treatment programme (Blood & Cornwall, 1994). The presence of psychopathology, particularly anxiety and depression, was found to predict treatment completion in males. Interestingly, such findings were not replicated for females, but as discussed previously this may have been the result of the small number of female participants in the study.

Additional evidence for psychopathology as a predictor of treatment completion comes from work by Pagnin, de Queiroz, and Saggese (2005). Their study involved one hundred and four adolescents ranging from 12-18years of age who were participating in a day treatment program. Every participant completed the Youth Self–Report/11-18 (YSR), as did their primary caregiver. The Youth Self Report/11-18 is used to measure externalizing and internalizing behavioural problems (Blood & Cornwall, 1994). Results indicated that adolescents who had a better initial adherence, attended more often and stayed in treatment longer had more self reported internalizing symptoms of anxiety and depression. This may have been because the youth experienced symptom relief through their treatment and this aided their retention in treatment (Pagnin et al., 2005).

Interestingly, the adolescent studies that found a diagnosis of depression or anxiety as a possible predictor, used youth self reports to assess psychopathology as opposed to clinical interviews. Youth self reports have been shown to be psychometrically sound with satisfactory psychometric properties (Hope, Adams, Reynolds, Powers, Perez, & Kelly, 1999). However, it has been found that adolescents are less honest about substance use after treatment (Williams & Chang, 2000). The studies producing significant results all used youth self reports. The difference between clinical interviews and self reports may account for the inconsistent results.

Studies on the effect of psychopathology on adolescent treatment retention have produced mixed results. This may be due to the different treatment modalities and the degree of substance use and psychopathology experienced. Studies by Blood and Cornwall (1994), and Pagnin et al. (2005) found that internalizing behaviours may be associated with retaining clients in treatment. These findings suggest that clients may alleviate their psychopathological symptoms through substance use treatment; although this requires more investigation. On the other hand, as clients with externalizing problems such as ADHD appear more likely to leave treatment, it seems necessary that a tailored treatment plan for young people who present with co-morbid substance use and ADHD and conduct disorder be considered (Wise et al., 2001). Given the large number of clients in substance abuse treatment with co morbid psychopathology it is important to explore the role of psychopathology on treatment retention further.

The Referral Source and Treatment Retention

The method of referral to a treatment programme is a variable that may help predict treatment retention of youth. Referrals to a treatment programme occur through the courts, individual self referral, from general practitioners, mental health services, and other social agencies. Research to date on the effect of the source of referral on treatment retention in the USA has been contradictory. There is no conclusive evidence whether mandated individuals are more likely to stay in treatment than non mandated individuals.

A few studies have provided evidence that youth who self-refer to treatment programmes are more likely to succeed than those mandated to participate. A retrospective study by Feigelman (1987) as described earlier, examined client characteristics of 184 clients in a day patient service. Results from this study showed 26% self referred patients completed treatment compared to 13% of court referred and 1% of referrals from social agencies. However, the results were just short of being statistically significant and so should only be interpreted as a trend.

On the other hand, contradictory findings have been reported by Pompi and Resnick (1987). These authors examined the retention of young people and young adults in a therapeutic community who were primarily referred by the courts. The 1472 participants in the study included all admissions to treatment at the Abraxas Foundation over a 10-month time frame. Abraxas is a long-term intensive treatment modality, based on a therapeutic community model. Ninety seven percent of these participants had come to treatment under a court order, the majority were male, and ages ranged from 13-35 years. Treatment retention at Abraxas was compared to that of nine other therapeutic communities. The other therapeutic communities consisted of residents not under direct court order and were primarily adult populations.

Results showed that retention was higher for Abraxas than for the nine other comparison programmes in the first month of treatment. The early stages of treatment are seen as the most difficult time for individuals with over 50% of individuals leaving treatment in the first month (Stark, 1992). Therefore in this study, court pressure can be seen as acting as an effective external force on retention, as the

majority of Abraxas clients were court referred, and the few clients at Abraxas who were not court referred left earlier than those who had been referred by the courts.

Pompi and Resnick (1987) concluded that court pressure has the potential to be a factor influencing the retention of individuals in therapeutic communities, especially at the beginning of treatment. Mandated clients are aware of the severe consequences of leaving treatment such as being transferred to a more restrictive environment which is not a contingency for self referred clients. Therefore self referrals may lack the motivation to accept life in a therapeutic community. These findings also raise the issue of individuals knowing how to work the system. Do court referred clients attend treatment for the specified time and not cause any trouble because they know it will get them back out into their community sooner? Are these clients actually engaging in treatment and using it to deal with their problems or are they using it to avoid harsher penalties and reverting to their old ways? Self referred clients are not facing the immediate possibility of legal problems if they do not attend treatment. However, this is not to say they do not recognise this as a possibility to be avoided in the future.

An interesting caveat is that the Abraxas sample predominantly comprised younger people compared to the other comparison programmes. To some extent this may have masked the impact of court referrals on retention. Differences seen in the time spent in treatment would have probably been more extreme if all the programmes were matched more closely in age (Pompi & Resnick, 1987). Perhaps one reason for age being associated with treatment drop out is due to adolescent's defiance towards authoritative figures. Being told what to do and when to do it may mean they are less likely to persevere in an authoritian structured programme for very long (Pompi & Resnick, 1987).

It has been shown that adult individuals are more likely to remain in treatment if they feel they have a serious problem, are confident that they can make changes, and that the changes will be beneficial (Stark, 1992). With this in mind, there has been a research emphasis on external pressure that has lead to the potential role of internal motivation being overlooked. The interesting issue of internal motivation relates back to the transtheoretical model of behaviour change described earlier. Individuals who are not willing to admit that they have a problem and do not want help are more likely

to drop out of treatment (Callaghan, Hathaway, Cunningham, Vettese, Wyatt, & Taylor, 2005).

Bromme et al. (2001), who presented a motivational model referred to earlier, have shown that there is a negative association between legal status and treatment readiness. This would suggest that external motivation from the legal system can lead to individuals enrolling in treatment without sufficient motivation to enter on their own (Bromme et al., 2001). The external pressure experienced by these individuals may be greater than their internal motivation, so they will complete treatment to avoid the consequences even if they do not want to admit they have a problem. However, it is also possible, but as yet untested, that the external court referral may provide an opportunity to increase an individual's internal motivation, leading to a shift from pre-contemplation to the contemplation stage.

From studies to date it cannot be ascertained whether court mandated or self referred individuals are more likely to drop out of treatment. There is evidence that court referred clients may stay in treatment longer, especially adolescents, but this relationship needs to be explored further. Depending on the individual it may be that motivation and readiness for treatment may work with external forces to determine treatment retention (Melnick, De Leon, Hawke, Jainchill, & Kressel, 1997).

Severity of Substance Use and Treatment Retention

Multiple studies on adult substance use and treatment have provided substantial evidence that individuals who use more drugs are less likely to stay in treatment (Stark, 1992). Substance use prior to treatment rather than substance use history has been shown as a predictor of leaving treatment early. This may be due to an inability of the individual to fully participate in treatment because of the impairment the substance is causing, such as problems with relationships between clients, and relationships between staff and clients (Stark, 1992).

From the adolescent literature, Battjes, Gordon, O'Grady, and Kinlock (2004) studied 173 participants, aged between 14 and 18 years of age who had been in adolescent outpatient substance abuse treatment. Clients were involved in a moderate-intensity group-based treatment model over an 18-month period. Factors related to the amount of time spent in treatment such as demographic characteristics, deviant behaviour and treatment processes were examined. Substance use involvement and consequences of substance use were studied to determine if there was a relationship between substance use and length of time in treatment. Results showed that youth who had problems solely with alcohol and cannabis left treatment earlier than young people who were using other substances. The types of other substances referred to in this study were not identified, except for stating that other substances did not include nicotine.

The study by Battjes et al. (2004) was limited because the population used had a low severity of substance use. A majority of the participants reported very few negative consequences of alcohol and or drug use (Battjes et al., 2004). These findings may suggest that if individuals experience very few negative consequences from their drug use they are more likely to drop out of treatment. Therefore, it may be the case that the negative consequences experienced by people with a high severity of drug use may decrease in treatment, reinforcing the individual to stay. Their everyday functioning may be more impaired thereby increasing their motivation to participate in treatment.

The Blood and Cornwall (1994) study provided similar findings to those reported by Battjes et al. (2004). This research looked at pretreatment variables that could predict completion and drop out from substance abuse treatments. The 132 young people included in the study were in a residential or intensive day patient treatment facility for substance abuse. The majority of participants were male (70%) and had recently used alcohol (90%) and cannabis (83%), with 61% using hallucinogens and 30% cocaine. They suggested that males whose most recent use was of other drugs such as hallucinogens and cocaine, as opposed to cannabis or alcohol, were more likely to complete treatment than males who reported less other drug use. The findings of this study also showed that males with less frequent use of alcohol and cannabis were more likely to complete treatment. There are some suggestions that multiple drug use may predict drop out from treatment programmes for females but the results are not

clear because of the small female sample in this study.

Similar trends to the previous adolescent studies were seen in a study by McKellar, Kelly, Harris, and Moos (2005). They also looked at variables that may increase the risk of individuals leaving treatment early, and suggested that individuals who report more frequent drug use or have fewer symptoms of alcohol dependence are more likely to drop out of treatment. This again may be because they have encountered fewer negative consequences from their drug use like the participants in the Battjes et al. (2004) study, and therefore do not consider that they need treatment. This study comprised 3649 male clients involved in an evaluation of treatment effectiveness from residential settings. They had all been medically detoxified and were involved in individual and group therapy.

Interesting results were published by Rush as far back as 1979. In this study Rush analysed data from The Pennsylvania Uniform Data Collection System (UDCS) over an 18-month period. This was to identify client characteristics associated with treatment outcomes. The UDCS evaluates all treatment facilities in Pennsylvania. There were 4738 drug treatment clients included in the study, of which 62 percent were classed as youth under 18 years of age, and 38 percent were young adults 18 or 19 years of age. Both age groups differed in their drug use historys and drug use patterns. A larger number of the young adults reported opiates as their primary abuse problem compared to the youth group. The youth group had earlier drug onset ages and more problems with multiple use. The majority of the clients were in outpatient drug-free programmes and the two age groups received treatment in different treatment environments.

Findings from this study indicated that youth non opiate and opiate abusers in residential therapeutic communities were more likely to drop out of treatment than individuals with only alcohol and multiple-abuse problems. Non opiates referred to barbiturates, amphetamines, cannabis and tranquilisers. Young adults in residential therapeutic communities also showed that the best predictor for staying in treatment was not being involved in opiate abuse when they enrolled in the treatment programme. This was not the case for youth and young adults in outpatient settings. Youth who were non opiate abusers were more likely to complete treatment than

opiate and multiple drug abusers. Results indicated that substance use is a predictor variable that is related to certain types of clients and the programme that they are involved in, and is not relevant to all clients in substance abuse treatment programmes. This indicates that there may be complex interrelationships among many variables (Rush, 1979).

Substance use is a difficult area to obtain reliable results because of the difficulty in obtaining information on the quality and quantity of drugs used by clients (Rush, 1979). There does, however, seem to be a pattern emerging that the more frequently substances are used the more likely it is that an individual will leave treatment early. Individuals who use substances more heavily may experience more substance use problems and therefore are motivated to get them sorted out, so stay in treatment longer. On the other hand, individuals with less use may not experience such dramatic cravings and are in a better place to be able to work in treatment. However, there are inconsistencies when comparing results as previous studies have focused on many different types of drugs and settings.

Methodological Limitations

As mentioned previously, conclusive findings on client predictors of youth treatment retention or attrition are difficult to find. A major reason for this lack of clarity stems from the dearth of research conducted on youth alcohol and other drug treatment retention. As such, most conclusions are drawn from adult populations and so cannot easily be applied to youth. This is because the two groups not only vary developmentally but also in their drug use patterns, and types of treatment that work for them (Friedman & Glickman, 1987). As mentioned earlier, youth are at a stage where experimentation and socialisation are an important part of their lives but their ability to make decisions about risky behaviours and weighing up alternatives in decision making is just beginning to develop (Spooner, 1999). The few studies that do apply to youth are plagued by a range of methodological issues which further limits conclusions that may be drawn from them. These limitations are summarised below and largely reflect the unsystematic nature of the research that has examined youth treatment retention to date.

Research examining youth treatment retention, like most areas of research, represents an ad hoc approach to examining factors associated with treatment retention. On the whole this research has stemmed from studies examining treatment outcome rather than treatment retention per se. In these studies information on treatment retention has come from examining factors associated with positive treatment outcomes where the studies explore the association between the length of time in treatment and treatment outcomes (Friedman, Glickman, & Morrisey, 1986; Rush, 1979). Given the small pool of literature that has directly examined adolescent treatment retention (Battjes, Gordon, O'Grady, & Kinlock, 2004; Blood & Cornwall, 1994), this review of the literature includes studies that examine association between outcome and retention, and those with a primary focus on factors associated with treatment retention.

Despite differences in their foci, these studies reflect similar methodological limitations, including their retrospective nature, small sample sizes, gender bias in favour of males, the diversity of treatment modalities studied, lack of replication, the focus on specific drugs, differing definitions of how treatment retention is measured and inconsistent measurement and definition of variables. In addition, many studies rely solely on the use of self reports and the majority of research has been conducted in America. This has resulted in information that is limited in statistical capacity, relevant only to certain groups, treatment modalities, and of limited applicability to services outside the cultural context in which they were conducted. They have, therefore, limited application in Aotearoa New Zealand.

In order to overcome some of these limitations, the present study focused specifically on treatment retention as defined by the time spent in treatment from admission to discharge, treatment programmes used are in New Zealand, and information gathered on individuals' own views of their treatment as well as file data and information from clinicians in the treatment services.

Implications

Blood and Cornwall (1994) believe that identifying the pre treatment client variables related to completing treatment may help to screen possible treatment participants as to whether they will be successful or not. As mentioned earlier, dropouts from substance misuse treatment programmes are concerning for clinicians, treatment organizations, and for the clients (Stark, 1992). The role that client characteristics may play in treatment retention is not clear and requires more research, as most of the research on client characteristics to date has focused on adult populations (Blood & Cornwall, 1994).

Stark (1992) reviewed the adult literature and found a few outcome variables relating to adults leaving treatment early. Examples were young age, lower income, heavy drug use and criminality prior to treatment. As adults have different patterns of drug use and vary in treatment programmes that work for them, the results cannot be generalised to youth. Very few studies have focused on client characteristics that predict treatment retention in adolescent populations (Blood & Cornwall, 1994).

Given this lack of attention on youth, further research must include a specific focus on the retention of young people in alcohol and other drug treatments. Being able to identify client characteristics related to treatment retention would allow resources to be used more effectively and provide information to treatment programme developers that would help better meet the needs of non completers (Blood & Cornwall, 1994).

The Present Study

This present study sits within a larger study aimed at examining programme and client characteristics associated with treatment retention. This thesis focuses on the client characteristics, in particular gender, source of referral, substance use, and psychopathology, that have been examined as part of the larger study, in order to extend previous research on treatment retention. The focus of the present study is specifically on treatment retention i.e. length of stay rather than treatment outcome, in a group of young people in Aotearoa New Zealand. It was intended that the findings of this study would help clients, clinicians, treatment providers and funding

organizations alike by identifying some client characteristics that are related to treatment retention. By understanding more about why clients drop out of treatment it may be possible to identify which individuals are more likely to leave treatment early. If this is achieved then treatment programmes can be tailored more to the individuals needs diminishing the likelihood of individual's feeling they have failed in their treatment, and increasing treatment efficiency.

Method

Participants

Participants eligible to take part in the current study were any young person (13-18 years) who had been assessed and recommended for ongoing treatment at one of six youth specific treatment services in New Zealand during 2003/04. The designated treatment services represented a range of youth AOD treatments available in New Zealand including day, residential, outpatient, and either mainstream or ones specifically designed for Māori and Pasifika youth. Descriptions of each service are provided below:

Youth Specialty Services (YSS), Christchurch (Mainstream outpatient) (n=10).
This is an adolescent mental health service administered by the Mental Health Division of the Canterbury District Health Board in Christchurch. Referrals are received from many different sources including school counsellors, psychiatric emergency services, social workers, and the Department of Corrections. Participants in the current study were involved in Youth Specialty Services specialized treatment stream for substance use issues. To be eligible for treatment the young person does not need a diagnosis of substance abuse or dependence but does need to be exhibiting high levels of substance use or difficulties associated with substance use. The client's substance use issues often co-exist with other mental health issues. Staff at YSS consist of psychiatrists, clinical psychologists, psychiatric nurses, and social workers who are all trained to conducted intake assessments. Treatment is based on a case-management model using individual, group, and family therapy.

Odyssey Youth Day Program, Christchurch (Mainstream day patient) (n=13). This service is aimed at young people aged 12-19 years who have met criteria for substance dependence. They have generally been temporarily or permanently excluded from an educational or vocational placement due to their use of substances. This comprehensive alcohol and other drug treatment programme is based on the therapeutic community concept of self-help. The staff and young people work together to encourage and promote positive change in the individual to help manage their lives more effectively. There is a 4-6 week assessment phase in which an

individualized treatment plan is developed. Treatment includes individual, group and family work, educational/vocational assessment, life skills development, recreational activities, and a medical and psychiatric assessment. Clients move up through levels which are expected to take an average of 3-4 months to complete.

Odyssey Youth Residential Programme, Auckland (Mainstream residential) (n=13). The principles behind this programme are similar to the Odyssey Christchurch Day Programme described above. The young people have no educational or vocational placement, no stable home environment, and a history of persistent criminal offending related to substance use. The youth reside on the premises in a controlled and stable environment. Odyssey House is a trust funded by outside sources including District Health Boards.

Te Atea Marino, Auckland (Māori outpatient) (n=2). A regional Kaupapa Māori based alcohol and drug service situated within the Waitemata District Health Board. This service provides assessment, treatment and educational interventions on an individual and group basis.

Tupu Alcohol and Drug Services, Auckland (n=9). A regional/mobile Pacific outpatient service that offers individual/group/family counseling. Young people must identify as being of a particular Pacific culture, and have problems with alcohol and/or other drugs or gambling. The average number of sessions is four, both for the individual and group programme. However, the number of individual sessions is negotiated with the individual following a completed assessment. A file is held open for a maximum of eight weeks from the last date of contact. If the client is not contactable an average of three attempts are made to re-engage them. Tupu is funded by the Waitemata District Health Board.

Rongo-Ātea Youth Residential Drug and Alcohol Treatment Service, Hamilton (n=5). This is a Kaupapa Māori youth AOD residential service. To be eligible the young person must be between 13–18 years of age and have a clinical diagnosis of substance dependence or severe substance abuse. Admission must be voluntary and if there are mental health issues they have to be addressed prior to admission. Rongo–Ātea is completely alcohol and other drugs free and smoking of nicotine is limited.

There is a Kaupapa Māori education programme with drug and alcohol education woven throughout. Generally, the programme is delivered over four months but an individual can stay for longer depending on their treatment needs and personal circumstances. Rongo–Ātea is funded by the Waikato District Health Board if the young person resides within the midland region. For those residing outside this area there is a fee per night and funding must be secured prior to entry.

Materials

Data for this study was collected over a 10-month period. Each participant completed a one and a half hour face to face structured and semi structured interview. A verbal interview format was chosen to overcome any potential literacy issues participants may have had.

The **Youth Retention Study (YTRS) Questionnaire** designed by the National Addiction Centre sought to explore the following areas:

- Sociodemographics;
- Family/friends/spirituality/leisure activities;
- Circumstances surrounding entry to treatment;
- Factors associated with treatment retention (Addiction Treatment Retention Questionnaire (ATRQ));
- Perceptions of AOD treatment;
- History of substance use including a diagnosis of dependence and/or abuse of alcohol, cannabis, inhalants, stimulants, opioids, hallucinogens, tranquillisers;
- Current and treatment substance use goals;
  Psychiatric history focusing on conduct disorder, ADHD, social phobia, agoraphobia, depression, PTSD, panic disorder, suicidality (Modified mini-International Neuropsychiatric Interview (MINI));
- Personality variables including novelty seeking (Temperament and Character Inventory (TCI)), and impulsivity (Barratt Impulsivity Scale (BIS));
- Perceived effectiveness of the treatment services (Service Review).

Measures Used

For the structured component of the questionnaire the following instruments were used:

1) Sociodemographic Questions

A section of questions seeking sociodemographic information including, age, gender, ethnicity, sexual orientation, current living arrangements, living arrangements at treatment, education, criminal convictions (e.g. "Have you ever been convicted of a crime?"), employment status and income source. The ethnicity question was based on the 2001 New Zealand Census ethnicity question which allowed multiple options as responses. Options were NZ European, Maori, Samoan, Cook Island Maori, Tongan, Niuean, Chinese, Indian, Other (Dutch, Japanese, Tokelauan etc).

2) Modified Mini-International Neuropsychiatric Interview (MINI) Version 5.0.0 (Sheehan, Lecrubier, Sheehan, Amorim, Janavas, Weiller, Hergueta, Baker, & Dunbar, 1998).

The MINI is a short structured diagnostic interview that assesses the presence of a comprehensive range of common psychiatric disorders in the DSM-IV. The MINI has been validated and endorsed by expert professional opinion (Sheehan et al., 1998). In this study the MINI was revised to allow exploration of current as well as pre-treatment diagnosis. For brevity not all Axis 1 disorders were explored. Only those commonly associated with youth or substance use disorders were chosen. These were major depressive episode (e.g. "Have you been consistently depressed or down, most of the day, nearly every day, for the past two weeks?"), suicidality, panic disorder, agoraphobia, social phobia, post traumatic stress disorder (e.g. "Have you ever experienced or witnessed or had to deal with an extremely traumatic event that included actual or threatened death or serious injury to you or someone else?"), anorexia nervosa, attention-deficit/hyperactivity disorder. A conduct disorder section was also added.

In addition, an elaborated alcohol and drug section of the MINI was used to ascertain current and pre treatment diagnoses of substance abuse and dependence on the following: alcohol, cannabis (e.g. "Have you used cannabis more than ten times in your life?"), inhalants, opioids, and stimulants. Use of hallucinogens, tranquillisers, and miscellaneous drugs, such as herbal highs, was also explored. To obtain the pre-

treatment diagnoses questions were asked about current abuse/dependence (e.g. "In the past six months have you been high or hung over from cannabis more than once when you had other responsibilities at school, at work, or at home?") and participants were then asked if they were experiencing these same issues with each substance when they were at treatment (e.g. "Were these same sorts of things happening with your cannabis use when you came to (treatment service)?"). Therefore, pre-treatment diagnosis was a proxy measure.

3) Alcohol Use Disorders Identification Test (AUDIT) (Saunders, Aasland, Babor, de la Fuente, & Grant, 1993).

This brief measure developed by the World Health Organization covers pre treatment and current alcohol use, focusing on level of consumption and alcohol-related problems. The AUDIT is used as a screening tool to identify harmful and hazardous drinking and has been validated on primary health care patients in six countries. In this study it provided valuable information on drinking patterns such as frequency and quantity of use, as well as identification of issues associated with drinking. The AUDIT was modified for this study to include current (e.g. "In the past six months have you or someone else been injured as a result of your drinking?") and past alcohol use (e.g. "In the six months before you went to treatment how often did you have a drink containing alcohol?"). There are 10 items and response options range from 0 to 4 for each item, resulting in a total possible score of 40. The AUDIT has excellent reliability and validity in a range of populations. Traditionally, the AUDIT is used as a pen and paper questionnaire but for the current study the questions were read aloud. Participants were shown cue cards of response options to choose from.

4) Cannabis Use Disorders Identification Test (CUDIT) (Adamson, & Sellman, 2003).

The CUDIT consists of the same items as the AUDIT but measures cannabis pre treatment (e.g. "In the six months before you went to treatment how often did you use cannabis?") and current use (e.g. "In the past six months how often did you have a feeling of guilt or remorse after using cannabis?") rather than alcohol use. Again all questions were read aloud and response options cue cards used to help participants.

5) Addiction Treatment Retention Questionnaire (ATRQ), designed by the National Addiction Centre, 2004.

This 68 item questionnaire was designed specifically for this study. Questions were based on factors associated with retention which had been explored in past literature. The aim was to evaluate a number of factors associated with treatment retention. The questions covered a range of demographic, clinical, family (e.g. "When growing up was your female maternal figure was often drunk?"), social, treatment (e.g. "The treatment programme was what you had expected it to be like before you went?"), service structure/process and staff variables (e.g. "You think the staff of the treatment programme should have both male and female staff in it?"). Statements were read aloud to participants and they were asked to indicate to what extent they agreed or disagreed with the statement. Response options ranged from 0 to 4, strongly disagree to strongly agree as well as a not applicable option for statements not applying to a participant's situation.

6) Temperament and Character Inventory (TCI) (Cloninger, Przybeck, Svrakic, & Wetzel, 1994)

This TCI is used to assess differences between people in basic dimensions of temperament which are emotion-based habit patterns. For this study only the 20 novelty seeking questions from the TCI 144 were used (e.g. "I often try new things just for fun and thrills, even if most people think it is a waste of time"). Usually the TCI is a pen and paper test where the subject answers true or false to a series of statements but for this study statements were read aloud to participants and answers were recorded by the interviewer. Higher scores indicate a high degree of novelty seeking.

7) Barratt Impulsivity Scale (BIS) (Patton, Stanford, & Barratt, 1995).

The BIS is a 30-item instrument that assesses impulsivity as a trait independent of anxiety. It consists of 3 subscales: impulsive, non-planning (looking at present orientation and lack of consideration for the future) (e.g. "I plan tasks carefully"), motor impulsivity (acting on the spur of the moment) (e.g. "I am self-controlled"), and attentional impulsivity (impulsivity in focusing on the task at hand) (e.g. "I am a steady thinker"). Higher scores on the BIS indicate that an individual has a high degree of impulsivity. The BIS has proven reliability and there is support for the

validity. The 30 items are rated on a scale ranging from rarely/never to almost always/always.

8) Treatment Service Reviews.

The reviews were used to ascertain the perceived effectiveness of treatment received from the AOD services. Participants were asked two questions related to the treatment service they attended. The first question used a five-point Likert scale asking each participant to indicate how they are now, compared to when they were at treatment (e.g. "Compared with how you were first seen at (name of treatment service) how are you now?"). The second also used a five-point Likert scale to determine how much the participant thought the service had helped with their problems (e.g. "How much do you think (name of treatment service)has helped you with your problems?"). These reviews were completed for each category of substance use and mental health diagnosis where applicable, and as an over all evaluation of general improvement and effectiveness.

9) Semi structured Questions

Semi-structured questions were asked to allow data to be inductively generated about various aspects of participant's lives that may be related to treatment retention including:

- perceptions of their alcohol and drug use (e.g. "When you entered treatment you thought you were drinking too much alcohol?");
- circumstances surrounding entry to treatment (e.g. "Whose decision was it for you to go to treatment?");
- perceptions of AOD treatment (e.g. "What were your main reasons for staying in treatment this long?");
- their involvement and level of functioning in the home, school, employment, family relations, peer relations, spirituality and leisure activities (e.g. "What are the things you like about your whanau/family?").

Semi structured questions were interspaced in sections throughout the interview.

10) Other Data Sources

- Individual clinical files at the treatment programme were examined by the interviewer with the permission of each participant. Information was gathered about level of substance use on entering treatment and associated problems, length of time in treatment, the type of treatment the young person received, how they responded to treatment and reasons for leaving. Data on the exact time spent in treatment (the dependent variable) and reason for discharge was gathered from the file searches to provide accurate measures not dependent on recall (Appendix 1).

- Non-participant file searches were conducted by staff at Odyssey House Christchurch and Youth Specialty Service. Ethical approval was obtained from the Multi-Region Health and Disability Ethics Committee. Due to the difficulties in recruiting, information was gathered on all individuals who were "uncontactable" or declined to participate. Questions were asked about substances used and any diagnosis, source of referral, reason for discharge, and time spent in treatment. Given the time and resource constraints of the present study only the Christchurch treatment services completed the file searches (Appendix 2).

- Clinician questionnaires were completed by one senior clinical staff member related to each participant's clinical experiences. Consent was obtained from each participant to gather this information but participants were not excluded from the study if this consent was not given. The appropriate clinician was identified during the file search and a questionnaire mailed to the clinicians. Specific questions were asked about the participant's time in treatment such as how the clinician thought the young person managed in treatment, problems they thought the young person had, how long they stayed in treatment and why they thought the young person left. The clinicians were also asked to give their ideas in general on why young people stay in or leave alcohol and other drug treatment programmes. The information from these questionnaires has not been analysed as part of this thesis but will be used as part of the larger study.

Study Design

The current study is part of a larger study aimed at improving youth AOD services by examining client and programme characteristics associated with treatment retention. Approval to conduct this research was obtained from the Multi-Region Health and Disability Ethics Committee. The current study focused exclusively on client characteristics related to treatment retention using face to face questionnaires. This descriptive retrospective study was conducted with 52 young people who presented for AOD treatment at one of six different New Zealand treatment services during 2003/04. The dependent variable was retention defined as length of time in treatment (days/months) for youth in day or residential programmes and number of sessions attended for youth outpatient services. The independent variables were the client characteristics as described above.

Procedure

Recruitment

Each service was asked to compile a list (detailed recruitment list) of full names and full contact details of all clients aged 13-17 years, who attended at least one assessment interview at their service between 1st January 2003 and 31st December 2004. Participants were placed on the detailed recruitment list in chronological order according to the date of their first assessment interview. A coded form of this list was then sent to the research team to randomize. This randomized list was then returned to the services, and staff at the treatment services attempted to contact each individual according to the randomized order. If contact was successful, information about the study was provided and the young person was invited to participate. If the young person agreed they were told that an interviewer would be in touch to arrange a suitable time for the interview. If clients were not able to be contacted or if they refused to participate they were declared "uncontactable".

The interviewers were a mixture of research clinicians, researchers, and research assistants. All interviewers had extensive training including an in-depth explanation of the study, the research instruments being used, simulated practice interviews and were observed and practised administering the questionnaire by the principal investigator until all parties were confident with the interview process.

Of the 233 young people eligible for the study 52 took part, showing an overall low recruitment rate of 22%. Only 31 participants were recruited from a possible 144 in the day/residential treatment programmes (22%), and 21 from a possible 89 in the outpatient treatment programmes (24%). This was despite extensive attempts being made to contact all eligible young people by treatment staff. Telephone numbers from the young person's files while they were at treatment were used as a first point of contact. If these contact details were no longer accurate, where possible new contact details were gathered from a member of the household. If new contact details were unable to be obtained or a phone number was disconnected, other staff at the relevant treatment service were asked if they knew current contact details. If this was still unsuccessful, searches of the New Zealand White Pages Telephone Directory were conducted on the young person and any family mentioned in their file. If all means available were exhausted the client was marked as "uncontactable". If the correct contact details were gathered, or a possible lead still existed, recruiters were told to make at least five contact attempts before declaring the client as "not contactable".

Interview Process

Verbal consent was obtained from potential participants by the recruiting staff member to pass their details to the interviewers. An interviewer then contacted the participant to arrange a mutually convenient time and place to conduct the interview. At the beginning of the interview each participant was given an information sheet and issues of confidentiality, anonymity and voluntary participation were discussed (Appendix 3). Participants were told of their right to refuse to answer any question and that they could terminate the interview at any time. Any problems brought up by the participant regarding the information sheet were discussed. Written consent was also obtained as well as consent to audio tape the interview for the qualitative component for the larger study. Participants were also asked whether they wished to receive a copy of the results at the completion of the study. (Appendix 4).

Each participant took part in a one on one interview which took approximately one and a half hours to complete. Interviews were conducted at a place chosen by the participant and included the participant's residence, The National Addiction Centre, the treatment facility, correctional facility, or a quiet café. If a face to face interview was not possible and the participant agreed, a telephone interview was arranged. Sixteen of the interviews were conducted at the participant's home, seven in a correctional facility, twelve at the treatment facility, one at a café, two at school, and fourteen were interviewed on the telephone. At the completion of the interview participants received a $20 music voucher for their time. If the participants were in a correctional facility a $20 phone card was given in place of the music voucher.

Data Analysis

Statistical Analysis

Quantitative data was entered into SPSS (Statistical Package for the Social Sciences, Version 14.0 for Windows) from which descriptive and comparative summaries were generated. Chi-square tests for independence, Fisher's exact tests, 1-way ANOVA, Spearman's Rank Order Correlation and Kruskal Wallis non-parametric ANOVAs were performed to explore relationships between independent variables and treatment modality, study inclusion and length of stay measures. Statistical significance was inferred when $p<0.05$.

Theme Analysis

Qualitative data was collected as part of the larger study to allow for new ideas about factors associated with treatment retention to emerge. For this thesis only the data from semi-structured questions relating to client characteristics have been analysed. As there was only a small amount of such data examining client characteristics, this has been coded into themes reflecting the quantitative client characteristics examined, and has been presented at the end results section of this thesis.

Results

This section provides an overview of the results of the study component for which I was responsible. Results are presented in three sections:

1) Participants and Non Participants Differences.
2) Sample Description: including sociodemographics, substance use, psychological and personality characteristics and treatment related factors.
3) Treatment Retention Factors.

Data collected from the 52 participants were analysed separately for those in Day/residential programmes (n=31), and those in outpatient programmes (n=21). Length of time in treatment was defined as number of days in the programme for the day/residential group and number of sessions attended for the outpatient group. The two treatment modalities were analysed separately because of the difference in defining treatment retention and also to investigate whether there were differences in the individuals who attended the different types of programmes.

The cut off for short, medium and long retention was parallelled with what was known from previous adult literature. Rush (1979) reported 44% of clients leave treatment in the first month. Therefore short term retention was set as less than a month for day/residential, and 1-2 sessions for outpatient (the number of sessions that would have been attended on average in a month). The longer term retention for day/residential was further divided into two groups; <4 months and 4+ months as this represented clear disjunctures in the data, and also provided sufficient numbers in each group for useful statistical comparison. Comparable retention intervals of 3-5 sessions and 6+ sessions were defined for the outpatient group.

Participants' perceptions about their treatment derived from more open ended questions are incorporated in the results section.

1) Participants and Non-Participants Differences

Sociodemographic variables of participants and non-participants are shown in Table 1. Non-participants were defined as youth who attended the YSS or Odyssey Christchurch treatment services in 2004/05 but who could not be contacted or refused to participate. The comparison between participants and non-participants was carried out to establish if there were certain characteristics about a young person which made them more likely to participate. This part of the analysis was done only for the present study, not as part of the larger study which is why data was collected only from the South Island sites.

Chi-square analysis showed a significant difference (p=0.02) in gender between participants and non-participants. Females were more likely to participate (42%) than refuse to participate or be unable to contact (9%), and males were less likely to participate (58%) than refuse to participate or be unable to contact (91%). In regards to ethnicity, no statistically significant difference was seen. Participants consisted of 48% of individuals who identified as Maori, 40% as Pakeha, and 12% as Other. There were no differences in the method of referral between the groups, with the majority of young people from both groups being "other mandated" to treatment. Reason for discharge was relatively evenly spread between the two groups, the most common reason for discharge being clinician approved. A Kruskal-Wallis non-parametric test showed a significant difference (p=0.01) in age between the two groups. Participants in the study were younger, with a mean age of 16 years compared to 16.6 years for non-participants. Of the non-participants 32 (70%) could not be contacted and 14 (30%) declined to participate.

Table 1

Sociodemographic Details, Source of Referral, and Reason for Discharge of a Group of Adolescents Who Attended AOD Treatment in New Zealand. Comparing Adolescents Who Participated in the Study with Those Who Did Not.

Variables	Participants (n=52)	Non Participants (n=46)	*p*
Mean age at treatment	16.0	16.6	0.01*
Gender (n) %			0.02*
Male	(30) 57.7	(42) 91.3	
Female	(22) 42.3	(4) 8.7	
Ethnicity (n) %			0.06
Pakeha	(21) 40.4	(27) 58.7	
Maori	(25) 48.1	(18) 39.1	
Other	(6) 11.5	(1) 2.2	
Source of referral (n) %			0.10
Court mandated	(12) 23.1	(13) 28.3	
Other mandated	(30) 57.7	(31) 67.4	
Self referred	(10) 19.2	(2) 4.3	
Reason for discharge (n) %			0.66
Clinician approved	(22) 42.3	(23) 50.0	
Disciplinary discharge	(11) 21.2	(11) 23.9	
Self Discharge	(11) 21.2	(6) 13.0	
Non attendance	(8) 15.4	(6) 13.0	

2) Sample Description

Sociodemograhic Variables

Sociodemographic details of the sample are presented in Table 2. Chi-square analysis showed that there was a significant gender difference between participants who had attended Day/Residential and Outpatient programmes (p=0.02). Although there were slightly more males (58%) than females (42%) in the full sample, significantly more of the participants who had attended day/residential settings were male (71%) compared to outpatient settings (38%). The full sample of participants had a mean age of 16 years when at treatment and 17.9 years when interviewed. The difference in ethnicity was significant (p<0.01), with 48% of all participants being Maori. The Day/Residential group consisted of a majority (55%) of Maori participants compared to 38% in the outpatient group. Six percent of the outpatient participants identified as belonging to another ethnic group including Chinese, Samoan, Tongan, and Indian. This reflected recruitment from a Pacific specific outpatient treatment service.

A large majority of the sample (92%) identified as heterosexual, and there was no significant difference in sexual orientation between treatment modalities. Two participants from the outpatient group identified as bisexual and one as lesbian. Only one participant identified as bisexual from the day/residential group. In terms of current living circumstances the majority of participants (58%) lived with a relative and 21% lived in a controlled environment which included residential treatment or a correctional facility. When they entered treatment 73% of the full sample lived with a relative and 10% lived in a controlled environment. The difference in living situation prior to treatment between the day/residential and outpatient groups was not significant.

With regard to current source of income, the most common sources for the full sample were employment 35%, 29% on government benefit, and 23% supported by family. Differences between the two groups were not statistically significant, but what was seen was that more of the outpatient group (33%) at the time of the interview were supported by family than the day/residential group (16%), and more participants in the day/residential group (35%) were on a government benefit than the outpatient group (19%). The number of participants living on proceeds of crime or being employed at the time of the interview was similar across the two groups. There were no significant differences between the treatment modalities with regard to their source of income at treatment. At treatment 46% of the sample were supported by family, 27% were on a government benefit, 17% living on proceeds of crime and 6% were employed. Fifty two percent of the outpatient group were supported by family compared to 42% in the day/residential group. A higher percentage of participants in the day/residential group were on a government benefit (32%) than the outpatient group (19%).

The number of years spent at secondary school was not significantly different between the day/residential (2.7 years) and outpatient groups (2.9 years). Of the entire sample 60% had been convicted of a crime. Significantly more participants from the day/residential group (71%) had been convicted of a crime compared to 43% of the outpatient group (p=0.04). A large number of participants (62%) of the whole sample had been in CYFS care.

Table 2

Sociodemographic Details of a Group of Adolescents Attending AOD Treatment in New Zealand as a Full Sample and a Breakdown of the Sample by Treatment Modality.

Sociodemographic Variables	Full (n=52)	Day/Residential (n=31)	Outpatient (n=21)	*p*
Mean age at interview	17.9	18.2	17.5	0.08
Mean age at treatment	16.0	16.2	15.7	0.19
Ethnicity (n) %				<0.01*
Maori (25)	48.1	(17) 54.8	(8) 38.1	
Pakeha (21)	40.4	(14) 45.1	(7) 33.3	
Other (6)	11.5	(0) 0	(6) 28.6	
Gender (n) %				0.02*
Male (30)	57.7	(22) 71.0	(8) 38.1	
Female (22)	42.3	(9) 29.0	(13) 61.9	
Sexual Orientation (n) %				0.29
Heterosexual (48)	92.3	(30) 96.8	(18) 85.7	
Lesbian (1)	1.9	(0) 0	(1) 4.8	
Bisexual (3)	5.8	(1) 3.2	(2) 9.5	
Current Living Situation (n) %				0.62
With Relative (30)	57.7	(17) 54.8	(13) 61.9	
Controlled Environment (11)	21.2	(7) 22.6	(4) 19.0	
Flatting Situation (8)	15.4	(6) 19.4	(2) 9.5	
Other (3)	5.8	(1) 3.2	(2) 9.5	
Treatment Living Situation (n) %				0.61
With Relative (38)	73.1	(23) 74.2	(15) 71.4	
Controlled Environment (5)	9.6	(1) 3.2	(4) 19.0	
Flatting Situation (3)	5.8	(3) 9.7	(0) 0	
Other (6)	11.5	(4) 12.9	(2) 9.5	
Current Income Source (n) %				0.58
Supported by Family (12)	23.1	(5) 16.1	(7) 33.3	
Government Benefit (15)	28.8	(11) 35.5	(4) 19.0	
Proceeds of crime (2)	3.8	(1) 3.2	(1) 4.8	
Employed (18)	34.6	(11) 35.5	(7) 33.3	
Other (5)	9.6	(3) 9.7	(2) 9.5	
Treatment Income Source (n) %				0.50
Supported by Family (24)	46.2	(13) 41.9	(11) 52.4	
Government Benefit (14)	26.9	(10) 32.3	(4) 19.0	
Proceeds of crime (9)	17.3	(5) 16.1	(4) 19.0	
Employed (3)	5.8	(1) 3.2	(2) 9.5	
Other (2)	3.8	(2) 6.5	(0) 0	
Mean number years at secondary- school	2.8	2.7	2.9	
Criminal Conviction (n) %				0.04*
Yes (31)	59.6	(22) 71.0	(9) 42.9	
CYFS Care (n) %				0.53
Yes (32)	61.5	(18) 58.1	(14) 66.7	

Lifetime Substance Use

Lifetime substance use and age of first use is presented in Table 3. Missing data from the day/residential group was not included in the analysis. Having used a substance more than ten times suggests more regular not just experimental use. Kruskal-Wallis non-parametric tests showed no significant differences between the day/residential and outpatient groups in their lifetime substance use or age at first use. Taken as a whole, the most preferred substances were alcohol, cannabis, and nicotine. All participants who completed the questions on substance use had used cannabis or alcohol more than ten times in their lifetime and 96% of the full sample had smoked nicotine more than ten times. Tranquilisers were the least used substance with 18% of the full sample having used them more than ten times.

With regard to the age of first use, nicotine and alcohol were used at the youngest ages, 11.5 years and 11.6 years respectively in the full sample. In the whole sample stimulants and tranquilisers were used at a later age (15 years), than the other substances.

Table 3

Lifetime Substance Use of a Group of Adolescents Attending AOD Treatment in New Zealand as a Full Sample and a Breakdown of the Sample by Treatment Modality.

Substance Use Variables	Full (n=51)	Day/Residential (n=30)	Outpatient (n=21)	*p*
Used substance >10x (n) %				
Nicotine >10x	(49) 96.1	(30) 100	(19) 90.5	0.09
Alcohol >10x	(51) 100	(30) 100	(21) 100	1.00
Cannabis >10x	(51) 100	(30) 100	(21) 100	1.00
Inhalants >10x	(22) 43.1	(14) 46.7	(8) 38.1	0.54
Opioids >10x	(14) 27.5	(9) 30.0	(5) 23.8	0.63
Stimulants >10x	(26) 51.0	(18) 60.0	(8) 38.1	0.12
Hallucinogens >10x	(22) 43.1	(16) 53.3	(6) 28.6	0.10
Tranquilisers >10x	(9) 17.6	(7) 23.3	(2) 9.5	0.24
Mean age first use (years)				
Nicotine	11.5	11.2	11.8	0.55
Alcohol	11.6	11.3	11.9	0.73
Cannabis	12.1	11.7	12.5	0.47
Inhalants	14.6	14.2	14.4	0.78
Opioids	14.0	15.4	13.6	0.33
Stimulants	15.2	14.7	14.8	0.90
Hallucinogens	14.4	14.9	13.0	0.24
Tranquilisers	15.3	15.3	15.5	0.37

Substance Misuse

Substance misuse characteristics are presented in Table 4. Missing data from the day/residential group was not included in the analysis. Chi-square analysis indicated that there were no significant differences between the treatment modalities in their drug use. Alcohol and cannabis were the two most commonly misused substances by participants in the current study. Over 70% of the sample had a diagnosis of alcohol abuse or dependence at treatment. High rates were also seen for cannabis misuse at treatment with 92% of the sample having a diagnosis of cannabis abuse and over 90% having a diagnosis of cannabis dependence. All but one of the participants in the day/residential group (97%) had a diagnosis of cannabis dependence at treatment compared to 81% of the outpatient group. In relation to current diagnoses of cannabis dependence, a shift can be seen with a greater number of participants from the outpatient group meeting current diagnosis for cannabis dependence.

There was some evidence of current and at treatment, abuse and dependence on other substances but at much lower levels than for alcohol and cannabis. Stimulants were the most misused substance following alcohol and cannabis. Current stimulant abuse of the sample was 20% and dependence (14%). Abuse of stimulants at treatment was more common (26%) than dependence (20%). Opioids were the least common substance to be misused by participants at the time of the interview. Differences in the AUDIT and CUDIT scores at treatment between the day/residential and outpatient groups were not statistically significant. However, the CUDIT score in the day/residential group (25.2) was higher than the outpatient group (17.9) which reflects the higher rates of cannabis misuse seen in the day/residential group.

Table 4

Current and at Treatment Substance Misuse of a Group of Adolescents Attending AOD Treatment in New Zealand. Details of the Whole Sample and a Breakdown of Use by Treatment Modality.

Substance Use	Full (n=51)	Day/Residential (n=30)	Outpatient (n=21)	*p*
Alcohol Abuse (n) %				
Current (28)	54.9	(19) 63.3	(9) 42.9	0.15
At treatment (39)	76.5	(22) 73.3	(17) 81.0	0.53
Alcohol Dependence (n) %				
Current (28)	54.9	(17) 56.7	(11) 52.4	0.76
At Treatment (38)	74.5	(22) 73.3	(16) 76.2	0.82
Cannabis Abuse (n) %				
Current (26)	51.0	(16) 53.3	(10) 47.6	0.69
At treatment (47)	92.2	(28) 93.3	(19) 90.5	0.71
Cannabis Dependence (n) %				
Current (24)	47.1	(11) 36.7	(13) 61.9	0.08
At Treatment (46)	90.2	(29) 96.7	(17) 81.0	0.06
Inhalant Abuse (n) %				
Current (2)	3.9	(1) 3.3	(1) 4.8	0.80
At Treatment (8)	15.7	(4) 13.3	(4) 19.0	0.66
Inhalant Dependence (n) %				
Current (1)	2.0	(0) 0	(1) 4.8	0.23
At Treatment (8)	15.7	(3) 10.0	(5) 23.8	0.18
Opioid Abuse (n) %				
Current (0)	0	(0) 0	(0) 0	
At Treatment (8)	15.7	(4) 13.3	(4) 19.0	0.58
Opioid Dependence (n) %				
Current (1)	2.0	(0) 0	(1) 4.8	0.23
At treatment (8)	15.7	(4) 13.3	(4) 19.0	0.58
Stimulant Abuse (n) %				
Current (10)	19.6	(6) 20.0	(4) 19.0	0.93
At Treatment (13)	25.5	(8) 26.7	(5) 23.8	0.82
Stimulant Dependence (n) %				
Current (7)	13.7	(4) 13.3	(3) 14.3	0.92
At Treatment (10)	19.6	(6) 20.0	(4) 19.0	0.93
Mean Treatment AUDIT Score	23.1	24.7	20.8	0.27
Mean Treatment CUDIT Score	22.2	25.2	17.9	0.09

Psychological and Personality Profile

A psychological and personality profile of the full sample is presented in Table 5. Missing data from the day/residential group was not included in the analysis. Chi-square analysis revealed no significant differences in current diagnoses and diagnoses at admission between the day/residential and outpatient groups. Conduct disorder (50%) and depression (46%) were the two most common psychiatric diagnoses in the full sample at the time of admission to treatment. This pattern was also seen in the current diagnosis with conduct disorder (22%) and depression (20%) being the most prevalent. A diagnosis of ADHD at admission (30%) was also common. However, there were a larger number of participants who reported suicidal ideation (defined as thinking about harming oneself, thinking about suicide, having a suicide plan or attempting suicide) at the time of admission to treatment in the outpatient group (52%) compared to the day/residential group (28%). A majority of the full sample (70%) had experienced a traumatic event (defined as an event causing death or serious harm to another). This number was higher in the day/residential group (79%) than the outpatient group (57%).

With regard to the mean BIS and TCI score, a Kruskal-Wallis non-parametric test showed that there was no significant difference between the day/residential and outpatient groups. Participants in the day/residential group were no more impulsive or novelty seeking than those in the outpatient group.

Table 5

A Current and at Treatment Psychological and Personality Profile of a Group of Adolescents Attending AOD Treatment in New Zealand. Depicts details of the Full Sample and Provides a Breakdown by Treatment Modality.

Diagnosis	Full (n=50)	Day/Residential (n=29)	Outpatient (n=21)	*p*
Depression (n) %				
Current (10)	20.0	(6) 20.7	(4) 19.0	0.89
At Treatment (23)	46.0	(13) 44.8	(10) 47.6	0.85
Suicidal (n) %				
At Treatment (19)	38.0	(8) 27.6	(11) 52.4	0.08
Panic Disorder (n) %				
Current (2)	4.0	(1) 3.4	(1) 4.8	0.82
At Treatment (8)	16.0	(4) 13.8	(4) 19.0	0.62
Agoraphobia (n) %				
Current (7)	14.0	(3) 10.3	(4) 19.0	0.34
At Treatment (7)	14.0	(4) 13.8	(3) 14.3	0.96
Social Phobia (n) %				
Current (4)	8.0	(3) 10.3	(1) 4.8	0.47
At Treatment (8)	16.0	(5) 17.2	(3) 14.3	0.78
PTSD (n) %				
Current (3)	6.0	(1) 3.4	(2) 9.5	0.37
At Treatment (8)	16.0	(5) 17.2	(3) 14.3	0.74
Conduct Disorder (n) %				
Current (11)	22.0	(6) 20.7	(5) 23.8	0.75
At Treatment (25)	50.0	(14) 48.3	(11) 52.4	0.87
ADHD (n) %				
At Treatment (15)	30.0	(11) 37.9	(4) 19.0	0.15
Experienced a Traumatic Event (n) %				
In lifetime (35)	70.0	(23) 79.3	(12) 57.1	0.09
Mean BIS Score	79.0	79.1	79.0	0.80
Mean TCI Score	13.6	13.8	13.2	0.54

Treatment Related Variables

Treatment related variables of the sample are shown in Table 6. Treatment related variables are defined as the source of referral and reason for discharge. Source of referral consists of court mandated - referred by the courts; other mandated - referred by schools, relatives, other social agencies, and self referred- young person referred themselves. The categories of reason for discharge are clinician approved- client left because they completed the programme, employment or the clinician felt that they

were ready to leave; disciplinary discharge- asked to leave because they had broken rules; self discharge- the client chose to leave without the advice of the clinician; and non attendance- asked to leave because they consistently did not turn up to treatment.

The majority of the sample (58%) were referred from sources categorised as "other mandated" and a significant difference between treatment modalities was noted. Significantly, more of the outpatient group (76%) were "other mandated" compared to the day/residential group (45%). The day/residential group had a larger percentage of self referred clients (29%) compared to the outpatient group (5%).

Discharged with a clinician's approval (42%) was the most common reason for discharge in the full sample, followed by disciplinary discharge (21%) and non attendance (21%). A significant difference ($p<0.01$) between the two modalities with regard to their reason for discharge was seen. This was because no participants from the outpatient group were self discharged or discharged for disciplinary reasons and consequently more were clinician approved discharges. Disciplinary discharge was not relevant to people attending outpatient services because they were only there for a one to two hour session at a time.

Table 6

Treatment Related Variables: The Source of Referral and Reason for Discharge. Depicts Details of the Full Sample and Provides a Breakdown by Treatment Modality.

Treatment Related Variables	Full (n=52)	Day/Residential (n=31)	Outpatient (n=21)	*p*
Source of referral (n) %				0.05*
Court mandated (12)	23.1	(8) 25.8	(4) 19.0	
Other mandated (30)	57.7	(14) 45.2	(16) 76.2	
Self referred (10)	19.2	(9) 29.0	(1) 4.8	
Reason for discharge (n) %				0.00*
Clinician approved (22)	42.3	(9) 29.0	(13) 61.9	
Disciplinary discharge (11)	21.2	(11) 35.5	(0) 0	
Self Discharge (8)	15.4	(8) 25.8	(0) 0	
Non attendance (11)	21.2	(3) 9.7	(8) 38.1	

3) Treatment Retention Factors

Sociodemographic Variables

The association between sociodemographic variables and the length of time spent in treatment is presented in Tables 7 and 8. Chi square analyses showed that sociodemographic variables were not related to treatment retention for the day/residential or outpatient group. Participant's age, gender, ethnicity, or having been convicted of a crime were not associated with how long they spent in treatment. Kruskal-Wallis analyses showed no association between age and length of stay in treatment. A difference, although not statistically significant (p=0.10), was seen in the length of time participants spent in outpatient treatment when they had been convicted of a crime. Of participants who stayed for 1-2 sessions, 71% had been convicted of a crime compared to 43% of those who stayed for 3-5 sessions and 14% of those who stayed for more than 6 sessions.

Participants were asked the open ended question "Being a male/female made staying in treatment hard?" If participants agreed with the statement they were asked "How did being male/female make it hard?" Of the 52 participants 77% thought that their gender did not make staying in treatment harder. Of the 33% of participants who did think their gender made staying in treatment hard, the majority were females in the day/residential programmes.

Table 7

Association Between Sociodemographic Variables and the Length of Time Spent in Day/Residential AOD Treatment.

	Length of Stay			
	<30.5 days	31-121 days	122+ days	
Client Characteristics	(n=6)	(n=15)	(n=10)	*p*
Mean age at treatment	18.1	18.3	18.2	0.97
Gender (n) %				0.39
Male	(3) 50.0	(12) 80.0	(7) 70.0	
Female	(3) 50.0	(3) 20.0	(3) 30.0	
Ethnicity (n) %				0.86
Maori	(3) 50.0	(9) 60.0	(5) 50.0	
Pakeha	(3) 50.0	(6) 40.0	(5) 50.0	
Other	(0) 0	(0) 0	(0) 0	
Ever been convicted of a crime (n) %	(4) 66.7	(13) 86.7	(5) 50.0	0.14

Table 8

Association Between Sociodemographic Variables and the Length of Time Spent in Outpatient AOD Treatment.

Client Characteristics	Length of Stay 1-2 sessions (n=7)	3-5 sessions (n=7)	6+ sessions (n=7)	*p*
Age at treatment (μ)	17.6	17.0	18.0	0.46
Gender (n) %				0.24
Male	(3) 42.9	(4) 57.1	(1) 14.3	
Female	(4) 57.1	(3) 42.9	(6) 85.7	
Ethnicity (n) %				0.41
Maori	(4) 57.1	(2) 28.6	(2) 28.6	
Pakeha	(1) 14.3	(2) 28.6	(4) 57.1	
Other	(2) 28.6	(3) 42.9	(1) 14.3	
Ever been convicted of a crime (n) %	(5) 71.4	(3) 42.9	(1) 14.3	0.10

Life Time Substance Use

The association between life time substance use and the length of time spent in treatment is presented in Tables 9 and 10. Missing data from the day/residential group was not included in the analysis. Chi-square analyses revealed no significant differences in the day/residential or outpatient groups. If a participant had used a substance more than 10 times in their lifetime, the use was not associated with the time the participant spent in treatment. The mean age a participant first used a substance was shown in Kruskal-Wallis non-parametric tests to have no relation to length of stay in treatment programmes.

Table 9

Association Between Lifetime Substance Use and the Length of Time Spent in Day/Residential AOD Treatment.

Substance Use Variables	Length of Stay <30.5 days (n=6)	31-121 days (n=14)	122+ days (n=10)	*p*
Used substance >10x (n) %				
Nicotine >10x	(6) 100	(14) 100	(10) 100	1.00
Alcohol >10x	(6) 100	(14) 100	(10) 100	1.00
Cannabis >10x	(6) 100	(14) 100	(10) 100	1.00
Inhalants >10x	(1) 16.7	(7) 50.0	(6) 60.0	0.60
Opioids >10x	(3) 50.0	(2) 14.3	(4) 40.0	0.41
Stimulants >10x	(4) 66.7	(8) 57.1	(6) 60.0	0.17
Hallucinogens >10x	(4) 66.7	(9) 64.3	(3) 30.0	0.20
Tranquilisers >10x	(3) 50.0	(2) 14.3	(2) 20.0	0.22
Mean age of first use				
Nicotine	11.0	11.1	11.6	0.78
Alcohol	11.8	10.9	11.7	0.39
Cannabis	11.5	11.9	11.7	0.78

Table 10

Association Between Lifetime Substance Use and the Length of Time Spent in Outpatient AOD Treatment.

Substance Use Variables	Length of Stay 1-2 sessions (n=7)	3-5 sessions (n=7)	6+ sessions (n=7)	*p*
Used substance >10x (n) %				
Nicotine >10x	(7) 100	(6) 85.7	(6) 85.7	0.80
Alcohol >10x	(7) 100	(7) 100	(7) 100	1.00
Cannabis >10x	(7) 100	(7) 100	(7) 100	1.00
Inhalants >10x	(3) 42.9	(3) 42.9	(2) 28.6	0.59
Opioids >10x	(2) 28.6	(1) 14.3	(2) 28.6	0.49
Stimulants >10x	(4) 57.1	(4) 57.1	(2) 28.6	0.80
Hallucinogens >10x	(2) 28.6	(2) 28.6	(2) 28.6	0.93
Tranquilisers >10x	(1) 14.3	(0) 0	(1) 14.3	0.75
Mean age first use (years)				
Nicotine	12.1	10.3	12.8	0.42
Alcohol	12.8	10.7	12.1	0.78
Cannabis	12.9	12.1	12.5	0.77

Substance Misuse

The association between substance misuse at admission to treatment and the length of time spent in treatment is presented in Tables 11 and 12. Missing data from the day/residential group was not included in the analysis. Chi-square analyses for substance misuse at treatment and time spent in treatment showed no significant differences for the outpatient group. Having a diagnosis of substance abuse/dependence at treatment was not associated with time spent in treatment. The *P*-value for inhalant abuse in day/residential group was statistically significant (p=0.01), but given the small numbers in this group, this should be interpreted cautiously. Chi-square analyses for misuse at admission to treatment for the other substances revealed no significant differences in the day/residential group. The mean AUDIT and CUDIT scores were not significantly different between the various lengths of time spent in treatment for the day/residential or outpatient groups.

Table 11

Association Between Substance Misuse at Treatment and the Length of Time Spent in Day/Residential AOD Treatment.

	Length of Stay			
	<30.5 days	31-121 day	122+ days	
Diagnosis	(n=6)	(n=14)	(n=10)	*p*
Alcohol abuse (n) %	(4) 66.7	(10) 71.4	(8) 80.0	0.82
Alcohol dependence (n) %	(5) 83.3	(9) 64.3	(8) 80.0	0.57
Cannabis abuse (n) %	(5) 83.3	(13) 92.9	(10) 100	0.43
Cannabis dependence (n) %	(6) 100	(13) 92.9	(10) 100	0.55
Inhalant abuse (n) %	(0) 0	(0) 0	(4) 40.0	0.01*
Inhalant dependence (n) %	(0) 0	(0) 0	(3) 30.0	0.36
Opioid abuse (n) %	(2) 33.3	(1) 7.1	(1) 10.0	0.27
Opioid dependence (n) %	(2) 33.3	(0) 0	(2) 20.0	0.10
Stimulant abuse (n) %	(3) 50.0	(4) 28.6	(1) 10.0	0.21
Stimulant dependence (n) %	(3) 50.0	(2) 14.3	(1) 10.0	0.12
AUDIT score (mean) sd	(25.2) 9.36	(21.5) 10.60	(29.1) 11.09	0.23
CUDIT score (mean) sd	(25.8) 9.64	(22.3) 10.93	(29.1) 6.03	0.22

Table 12

Association Between Substance Misuse at Treatment and the Length of Time Spent in Outpatient AOD Treatment.

	Length of Stay			
	1-2 sessions	3-5 sessions	6+ sessions	
Diagnosis	(n=7)	(n=7)	(n=7)	*p*
Alcohol abuse (n) %	(6) 85.7	(4) 57.1	(7) 100	0.12
Alcohol dependence (n) %	(5) 71.4	(4) 57.1	(7) 100	0.16
Cannabis abuse (n) %	(7) 100	(6) 85.7	(6) 85.7	0.58
Cannabis dependence (n) %	(6) 85.7	(6) 85.7	(5) 71.4	0.73
Inhalant abuse (n) %	(2) 28.6	(2) 28.6	(0) 0	0.29
Inhalant dependence (n) %	(2) 28.6	(2) 28.6	(1) 14.3	0.77
Opioid abuse (n) %	(1) 14.3	(1) 14.3	(2) 28.6	0.73
Opioid dependence (n) %	(1) 14.3	(1) 14.3	(2) 28.6	0.73
Stimulant abuse (n) %	(2) 28.6	(2) 28.6	(1) 14.3	0.77
Stimulant dependence (n) %	(2) 28.6	(1) 14.3	(1) 14.3	0.73
AUDIT score (mean) sd	(20.3) 12.31	(14.3) 11.54	(27.7) 8.71	0.10
CUDIT score (mean) sd	(15.4) 10.20	(15.6) 9.62	(22.6) 7.64	0.28

Psychological and Personality Profiles

The association between psychological and personality characteristics and the length of stay in treatment for day/residential and outpatient groups are presented in Tables 13 and 14. Missing data from the day/residential group was not included in the analysis. Chi-square analysis revealed no significant differences in length of treatment for participants presenting with any of the psychological disorders. Having a diagnosis of psychopathology did not affect treatment retention. However, the presence of conduct disorder in the day/residential group was approaching significance, indicating a trend towards participants staying in treatment longer if they had been diagnosed with conduct disorder. The mean BIS and TCI scores were not associated with time spent in treatment. Being more impulsive or having a high level of novelty seeking did not influence how long participants in the day/residential and outpatient programmes spent in treatment.

Table 13

Association Between Psychological and Personality Characteristics and the Length of Time Spent in Day/Residential AOD Treatment.

	Length of Stay			
	<30.5 days	31-121 days	122+ days	
Diagnosis at Treatment	(n=5)	(n=14)	(n=10)	*p*
Conduct Disorder (n) %	(0) 0	(7) 50.0	(7) 70.0	0.06
ADHD (n) %	(0) 0	(5) 35.7	(6) 60.0	0.08
Social Phobia (n) %	(0) 0	(2) 14.3	(3) 30.0	0.32
PTSD (n) %	(2) 40.0	(2) 14.3	(1) 10.0	0.36
Depression (n) %	(3) 60.0	(6) 42.9	(4) 40.0	0.75
Suicidal (n) %	(2) 40.0	(3) 21.4	(3) 30.0	0.71
Mean BIS score	80.0	77.6	80.7	0.80
Mean TCI score	14.4	13.3	14.2	0.65

Table 14

Association Between Psychological and Personality and the Length of Time Spent in Outpatient AOD Treatment.

	Length of Stay			
	1-2 sessions	3-5 sessions	6+ sessions	
Diagnosis at Treatment	(n=7)	(n=7)	(n=7)	*p*
Conduct Disorder (n) %	(4) 57.1	(3) 42.9	(4) 57.1	0.83
ADHD (n) %	(0) 0	(2) 28.6	(4) 57.1	0.30
Social Phobia (n) %	(1) 14.3	(1) 14.3	(1) 14.3	0.10
PTSD (n) %	(0) 0	(1) 14.3	(2) 28.6	0.28
Depression (n) %	(4) 57.1	(2) 28.6	(4) 57.1	0.28
Suicidal (n) %	(4) 57.1	(3) 42.9	(4) 57.1	0.60
Mean BIS score	86.3	74.7	75.9	0.14
Mean TCI score	14.3	13.1	12.3	0.62

Treatment Related Variables

The association between treatment related variables and the length of time spent in treatment for day/residential and outpatient groups are presented in Tables 15 and 16. The source of referral and the reason for discharge were variables not related to treatment retention in the day/residential or outpatient group. Participant's time in treatment was not affected by the method they were referred to treatment or the way in which they were discharged.

Table 15

Association Between Treatment Related Variables and the Length of Time Spent in Day/Residential AOD Treatment.

	Length of Stay			
Treatment Variables	<30.5 days (n=6)	31-121 days (n=15)	122+ days (n=10)	*p*
Source of referral (n) %				0.93
Court mandated	(1) 16.7	(5) 33.3	(2) 20.0	
Other mandated	(3) 50.0	(6) 40.0	(5) 50.0	
Self referred	(2) 33.3	(4) 26.7	(3) 30.0	
Reason for discharge (n) %				0.16
Clinician approved	(0) 0	(5) 33.3	(4) 40.0	
Disciplinary discharge	(2) 33.3	(6) 40.0	(3) 30.0	
Self discharge	(4) 66.7	(3) 20.0	(1) 10.0	
Non attendance	(0) 0	(1) 6.7	(2) 20.0	

Table 16

Association Between Treatment Related Variables and the Length of Time Spent in Outpatient AOD Treatment.

	Length of Stay			
Treatment Variables	1-2 sessions (n=7)	3-5 sessions (n=7)	6+ sessions (n=7)	*p*
Source of referral (n) %				0.39
Court mandated	(2) 28.6	(2) 28.6	(0) 0	
Other mandated	(5) 71.4	(5) 71.4	(6) 85.7	
Self referred	(0) 0	(0) 0	(1) 14.3	
Reason for discharge (n) %				0.24
Clinician approved	(3) 42.9	(6) 85.7	(4) 57.1	
Disciplinary discharge	(0) 0	(0) 0	(0) 0	
Self discharge	(0) 0	(0) 0	(0) 0	
Non attendance	(4) 57.1	(1) 14.3	(3) 42.9	

Spearman's Rho correlations are presented in Table 17. The ATRQ questions related to client characteristics were grouped together for the purpose of analysis. Questions that were grouped together fell into the same categories. Clients' perceptions of their alcohol use looked at whether participants thought they were using too much of any substance. Direct measures of retention included questions about other youth in the programme encouraging the participant to stay in or leave treatment.

Spearman's Rho correlations showed a negative correlation between experiencing cravings and clients leaving treatment for the day/residential group (-0.39). This indicates that the more cravings a client experienced while in a day/residential programme, the less time they spent in treatment. This was not seen in the outpatient group, which would be expected as they do not reside at the treatment service.

Table17

Spearman's Rho Correlations Showing the Relationship Between Specific Client Characteristic ATRQ Questions and the Time Spent in Day/Residential and Outpatient Treatment.

ATRQ Questions	Day/Residential (Length of stay based on30.5 day month)	Outpatient (Number of sessions)
Clients perceptions of their substance use	0.11	0.17
Client was self motivated to attend treatment	-0.06	0.24
Client was motivated by other sources to attend treatment	-0.32	-0.27
Client had treatment goals	0.03	-0.27
Clients perception of treatment	0.10	0.08
Experiencing cravings made client leave treatment	-0.39*	-0.47
Direct measures of retention	0.08	-0.13

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

Participants Views on Staying in, Completing, and the Impact of Treatment.

Participants were asked semi structured, open ended questions about their main reason for staying in treatment as long as they did. The most common reason the young people in day/residential and outpatient programmes considered they stayed in treatment was because "they had to". Either there was an outside force making them stay in treatment such as parents or school, or if they did not attend, they would end up in a correctional facility. Other common responses were that they "enjoyed the programme" or that they "wanted to make a difference in their lives". Some examples of responses were:

> "Mum made me go, she picked me up from school and drove me there and dragged me out of the car."
>
> "Coz I had got into quite a bit of trouble so I had to go."
>
> "I would go to jail if I didn't."
>
> "Nothing else to do, found it fun to be there."
>
> "I wanted to make a bit of a change."

Being mandated to treatment was seen as an important point for staying in treatment by the young people.

Three quarters (75%) of participants who were asked thought that treatment had had a positive impact on their lives. Aspects of the day/residential treatment most enjoyed were activities and day trips, staff, food and other youth in the programme. Rules and cleaning were common responses for things that were not enjoyed. For participants in outpatient programmes feeling comfortable and having understanding staff were things they liked about treatment The rooms used for counseling not being youth friendly and the programme being boring were things not liked about outpatient treatment programmes.

When participants were asked if they thought treatment would make their life better, those that agreed had common responses that they would experience fewer problems and that they would stop using drugs. Other responses were to reduce their use and get a job. Some examples of quotes from participants' interviews were:

"I would come out and everything will be back to normal, no drinking or drug use."

"Wouldn't be in trouble anymore, cut down a bit, start new."

"Help to keep clean."

Participants were asked if they thought it was important to complete a treatment programme. Those who thought it was important indicated reasons such as:

"To say I graduated."

"Make me and my family happy."

"So I have more of a chance of a better future."

"To get myself 'fixed up' as I knew I was heading into a dead end street."

Discussion

This section begins with a discussion of the findings of this study. Following that, the effect of gender, psychopathology, source of referral and the severity of substance use on treatment retention is summarised. Methodological strengths and limitations are then discussed. Finally, future directions and implications of the study are proposed.

The purpose of the present study was to determine whether there were client characteristics related to AOD treatment retention. In particular, were gender, the presence of psychopathology, source of referral, and substance use associated with the time young people spent in AOD treatment programmes? Treatment retention was not found to be significantly associated with any of the above client characteristics in the present study. These results suggest that the specific characteristics of clients in AOD treatment that were measured in the present study do not impact on their retention in the programme, which is consistent with much of the previous literature.

This is an important finding as a majority of previous studies on youth treatment retention have primarily focused on client variables rather than programme variables (Blood & Cornwall, 1994; Feigelman, 1987). Programme variables have been overlooked in the literature as it was previously thought that programme variables have little effect on treatment completion (Friedman & Glickman, 1987). Therefore, authors have examined what it is about an individual that helps them stay in treatment or makes them leave, rather than aspects of the programme itself. Despite this focus on client variables in the previous literature, all the inconsistent findings have made it difficult to produce a reliable profile of the types of individuals who will typically remain in treatment. This highlights the possibility that variables other than client characteristics contribute to youth AOD treatment retention, such as programme characteristics, or that there may be an interaction between client and programme characteristics.

Gender

The findings of this study showed that a participant's gender on its own was not a predictor of treatment retention. Males and females were equally likely to stay in or leave treatment. Previous research by Feigelman (1987) supports this finding in a day programme setting. However, Blood and Cornwall (1994) contradict these findings and suggest that males are more likely to complete an intensive day or residential treatment programme. The major difference between these two studies and the present study was that the present study focused on length of stay as a measure of treatment retention as opposed to treatment completion. The present study did not look at treatment completion as many of the services in New Zealand did not have definite guidelines for completing treatment. Therefore, results cannot be easily compared because completing treatment and length of stay in treatment, while are both potential measures of retention, are measured differently and have different meanings. However, consistent results can be found even in studies conducted in different locations, with different treatment modalities, using various designs and definitions of treatment retention. Unfortunately there are no previous studies completed on gender differences in outpatient settings with which to compare the present findings.

Even though there was no significant difference in whether males or females stayed in treatment longer, gender differences were seen in terms of the numbers of males and females attending each treatment modality, and whether or not they participated in the study. More males attended the AOD treatment programmes in 2003/04 than females and significantly more males than females attended the day/residential programmes. Females were more likely to take part in the study than decline to participate or not be able to be contacted, where males were more likely to not be able to be contacted or decline to participate than take part in the study.

Given that The New Zealand Youth Health Status Report (2002) indicated that number of females who misuse substances is increasing, the small numbers of females in AOD programmes potentially signals some concerns about treatment for females. In the past, AOD problems were recognised mainly in the male population and therefore treatment programmes were based on the needs of males and so may

not be meeting the needs of females (Blood & Cornwall, 1994). Females may not feel comfortable in a male orientated treatment programme, or numbers of places made available to females in day/residential settings may be limited. Also many AOD treatment programmes prefer to have at least 3 females attending at any one time for safety considerations. Females may not be accepted into a day/residential programme if there are not already other females in the programme.

The large number of males compared to females may also possibly indicate that males have more severe problems or are experiencing more problems than females and are therefore referred to day/residential programmes as opposed to outpatient programmes. However, increasing substance issues among females seen in the New Zealand Youth Health Status Report (2002) would suggest that if this were true in the past it may not hold for the future.

The finding that there were more females than males in outpatient programmes may also reflect the need for increased availability for females in day/residential services. Females may be referred to outpatient programmes because of the limited space available for them in day/residential programmes. With this in mind it may be a combination of client related issues, such as how they feel in the programme and aspects of the treatment programmes that are leading to gender differences across treatment modalities.

Psychopathology

I found that young people with a diagnosis of conduct disorder may tend to spend longer in day/residential treatment programmes. While not statistically significant, this trend is worthy of further exploration as it is a result which is not consistent with previous literature. Wise et al. (2001) suggested that adolescents with disruptive disorders such as conduct disorder, increased the likelihood of them leaving a residential treatment programme before completion. Having a diagnosis of depression did not increase retention in this study as was seen in earlier studies (e.g. Blood & Cornwall, 1994; Pagnin et al., 2005). These two studies found that the presence of depression predicted treatment completion in males, and youth who

stayed longer in treatment had more internalizing symptoms of depression in day/residential settings. The lack of significant findings in the present study may be due to the small sample size which made examining the individual psychiatric disorders challenging. Not all participants had a diagnosis of psychopathology, so numbers for analysis were small making interpretation difficult.

More participants in the outpatient group were suicidal at treatment than the day/residential group. This could be due to the fact that two of the outpatient services were youth mental health services not specifically AOD. Even though participants had specific AOD problems, they had been referred to a mental health service so it would be expected that a majority would also have co-morbid mental health issues. It was alarming to note that 67% of the sample had experienced a traumatic event which threatened or caused death to themselves or others. This highlights the fact that many young people in AOD treatment may have been through serious traumatic events in their lives. Although not seen in this study as associated with treatment retention, experiencing traumatic events may impact on how youth respond to treatment.

Referral Source

The source of the participants' referral to the treatment programme was not related to treatment retention in either outpatient or day/residential settings. This finding was inconsistent with many of the previous studies which showed that court and self referred youth stayed longer in treatment. Pompi and Resnick (1987) concluded that young people were more likely to stay in residential treatment when they were court referred. Feigelman (1987) reported in his day programme study, that self referred clients stayed in treatment longer than clients referred from other sources, but the results were just short of being significant so are not entirely conclusive.

The different findings between the current study and the Pompi and Resnick study may be due to 97% of participants in the Pompi and Resnick study having been referred by an agency of the justice system compared to 23% in the current study. The participants referred by the justice system had the option to refuse to go to

treatment. However, if they did refuse they would have been referred to a correctional facility. This brings up the question whether court referred participants are in the treatment programme to avoid harsher penalties. They know how to work the system: if they turn up and keep out of trouble they will quickly be back in the community. The designs of the studies were also different, with Pompi and Resnick's study comparing one treatment facility will a majority of court referred participants with other treatment programs with non court referred samples. Pompi and Resnick's study included an age range of 13-35 years which was older than the current study, and had a much larger sample size.

The finding in the present study that participants who were court referred did not stay in treatment longer than other participants was interesting. Generally, it had been expected that clients referred from the courts would stay in treatment because the consequences of dropping out are severe, such as going to a correctional facility (Pompi & Resnick, 1987). The finding suggests that external motivation may not be sufficient on its own to retain clients in treatment. Internal motivation which relates to Prochaska and DiClemente's transtheoretical model of behaviour change mentioned earlier, may have to also be present. If a young person is court referred to an AOD treatment programme as an alternative to a correctional facility but they are still in the beginning stage of change it will not necessarily mean they will be stay in treatment.

On the other hand, internal motivation was not enough on its own to successfully retain clients in treatment either. Being self referred to a programme in this study did not impact on the length of time spent in treatment. This was surprising, considering these participants recognise they have a problem and want to obtain help for it. It could be assumed that they would be determined to meet programme requirements (Feigelman, 1987).

Substance Use

Results showed that participant's substance use or age of first use of substances was not associated with time spent in treatment in outpatient programmes. The finding that all participants in the day/residential group with stimulant abuse at the time of treatment stayed in treatment for more than 4 months needs to be approached cautiously. This is due to the small numbers of participants who actually presented with stimulant abuse at treatment. The results of the present study could not be easily compared with other studies as the foci were different. The present study looked at a diagnosis of abuse/dependence of substances, types of substances used and the age at which substances were first used. Previous studies focused on comparing the use of cannabis and alcohol with other drugs, drugs of primary abuse and the recency/frequency of substance use (Battjes et al., 2004; Blood & Cornwall, 1994; Rush, 1979).

Despite the high numbers of participants presenting with alcohol and cannabis abuse/dependence at treatment, the severity of the substance use did not result in participants staying longer or droping out of treatment. Having a diagnosis of abuse or dependence suggests that individuals would be experiencing many negative consequences from their drug use. The negative consequences experienced were not related to the time spent in treatment in the present study.

All participants had used alcohol and cannabis more than ten times in their lives. Stimulants, hallucinogens and opioids were the most common drugs of choice following alcohol and cannabis. Having used more than ten times suggests regular use as opposed to experimenting with the drug. This shows that the use of drugs other than alcohol and cannabis is quite high in young people in alcohol and other drug treatment programmes. The results of the present study also showed that cannabis, alcohol, and nicotine were all used at a younger age than any other drug. However, the age of first use of substances was not related to the length of stay in a treatment programme, this is inconsistent with Feigelman's (1987) study. These researchers found that youth who used drugs at an earlier age were less likely to finish treatment.

There was a negative association seen between experiencing cravings and leaving treatment in the day/residential group. The significant finding that participants who had attended day/residential services were more likely to leave treatment when they experienced cravings makes logical sense. Young people attending day/residential services have their access to drugs severely limited, if not entirely eliminated. Consequently, in order to obtain drugs to satisfy their cravings most young people have to leave treatment. This was not applicable in outpatient settings as these youth only attended one to two hour sessions, and if they wanted to, would be able to satisfy cravings outside their session times.

Methodological Limitations and Strengths

Perhaps the most important strengths of the current study is the value of it being the first study on AOD treatment retention among youth to be conducted in a New Zealand context, and a broad sample of participants were included from different treatment modalities and ethnic backgrounds. This made it possible to produce a comprehensive description of a sample of young people who attend AOD treatment in New Zealand. Even though there were few statistically significant findings, the study has added to the field of youth AOD retention with up to date research which has been scarce and was conducted in a country other than the United States.

In addition, this lack of statistically significant findings can be viewed as a significant in itself. The finding that very few of the client characteristics measured in the present study were related to treatment retention is valuable information for future research. This indicates that characteristics other than those measured in this study, such as programme characteristics or other client characteristics should be examined. It also suggests that the way client characteristics and treatment retention were measured in this study may need to be revised, perhaps other methods of measurement may produce more statistically significant findings.

A limitation of the present study was the small sample size. This decreased the statistical power (increased Type II error rate) for examining client characteristics that may influence treatment retention. Therefore, finding significant results was less likely than if the sample had been larger. The small sample size was largely due to the difficulty in recruiting participants and is typical of studies of this type. The time that had elapsed between treatment and the interviewing was up to three years, making it difficult to track down potential participants. Adolescents with substance misuse problems often move from place to place and family do not necessarily know where they are. Therefore, phone numbers that were current when at treatment were often not current at the time of the interviewing and white pages searches were often unsuccessful. This highlights the difficulty of retrospectively conducting research with young people who have been in AOD treatment programmes. The population as a whole are challenging to track down once they leave treatment and many are difficult to engage in research.

Another limitation of this study is the use of self report. A majority of the information obtained for this research was through self reports. Self report data for this study relied on the young people having to remember back to when they were in treatment, recalling how they felt and what was going on in their lives in order to answer the questions. This method of collecting data also relies on whether the young person is being honest about their use, how they found treatment, and the problems they experienced. Many of the participants were initially hesitant to talk about their treatment service but when assured of confidentiality they appeared to speak openly. However, any apprehension that still existed may have influenced the answers that were given.

The use of self report data may also serve as a strength. The information obtained is entirely the young people's views. They were able to share their own experience of the treatment programmes they attended and what they liked and disliked about the programme. Young people's perspectives are extremely important as they are the ones involved in treatment and seeking good outcomes. In order to improve treatment programmes to better meet the needs of young people it is important to hear from the youth involved about what they thought worked and what did not, as well as views from the clinicians in programmes.

The length of the interview may also have been a limitation as some of the participants commented that they found the interview quite long. However, this was managed by the interviewers on a case by case basis. Breaks were scheduled between sections if participants needed refreshments or a cigarette. The interviewers had also been trained to identify when a participant was becoming fidgety and to take as many break as needed without impeding the data gathering too much. The fact that only 2 of 52 participants did not complete the interview indicated a reasonable level of engagement from participants.

A significant sample bias must be acknowledged. Participation in the current study was voluntary and only those who wanted to take part did. Results indicate that females are likely to participate in the research, and a trend towards young people identifying as Maori being more willing to participate than other ethnic groups.

It is also important to note that there have been many statistical tests used in this study and the *p* values for the tests have not been adjusted to maintain the Type I error rate. The significant results therefore, should be considered as primarily indicative and requiring confirmation in additional studies.

Future Directions

The small sample size of the present study suggests that further studies examining client characteristics related to treatment retention should be conducted again in the future but if possible with a larger number of young people. Optimally, participants would be examined as part of a prospective study, thereby eliminating recall bias. Treatment is also fresh in their minds and it may help ease the amount of uncertainty about the research that was felt by a few of the participants and their families. Some of the young people wanted to forget their time in treatment and past behaviours and bringing it up two years later produced some hesitancy. Some of the young people's families who were not interviewed felt their relative was doing well now and bringing up treatment might cause a relapse. It may also be beneficial to interview participant's families to obtain their view on what they thought about treatment and how it had worked for their relative. This would give another perspective on what

works and does not work in AOD treatment programmes.

Due to limited support of programme characteristics from recent literature it would be worth exploring characteristics of treatment programmes to see if they are associated with the amount of time spent in treatment. This would include variables such as the structure of the programme, school work, leisure activities, rules, and types of counselling. Examining therapist characteristics would also be valuable. How the therapists relate to clients, whether they talk to their clients, or talk at them, and whether they can build up trust and understanding. These may all impact on how comfortable a young person feels when attending an AOD treatment programme, and may be associated with a young person's decision to stay in or leave treatment.

Even though treatment retention has been shown to be a strong predictor of treatment effectiveness, it may be beneficial to examine success after treatment (Battjes et al., 2004). Retaining clients in treatment is important to allow them to get the benefits from treatment, but if the young person leaves treatment after a substantial amount of time and reverts to their old ways, treatment may have not have been as beneficial as it could have been. It is how clients perform after treatment that may be more important than how long they spend in treatment. Similarly, those who stay a short time may make long standing gains.

Engagement in a programme may be an important aspect of success after treatment. This relates to the assumption mentioned earlier by Hser et al. (2001), and Hubbard et al. (1997), that the longer time spent in treatment, the better the outcomes. Some clients are in treatment for only three months but they graduate and the clinicians are pleased with their progress. On the other hand, clients can be in treatment for six months and leave treatment against the advice of clinicians without showing any progress. The varying time spent in a programme may reflect an individual's engagement in treatment. If an individual stays in treatment for 12 months but does not engage in the programme there may be not benefit in their having attended treatment for the long period of time. The question then is whether these individuals are getting the help they need from the treatment programme or are they just attending every day because they know it is their only option to avoid a correctional facility, their friends are there, or there is nothing else to do? Being able to look at

who engages in a treatment programme and why they are motivated to engage and change may help to make AOD treatment more effective for youth.

Associated with engagement in a treatment programme is the concept of motivation. The finding that court referred clients did not have high rates of retention, which contrasts with previous literature, suggests looking at internal and external motivation more closely. It may be the level of an individual's motivation, such as the desire to change, positive drive for a better life and readiness for treatment that contributes to treatment retention rather than the referral source specifically.

Summary

The extremely low recruitment rate for both outpatient and day/residential groups highlights the difficulty in conducting research with young people involved in AOD treatment. Given that adolescent substance use and abuse is a serious problem for many of today's youth, and that treatment resources are scarce, makes it important that further research on retention is conducted with young people in AOD treatment to help treatment programmes become more effective for them. Lack of significant findings also supported by past literature, would indicate the importance of looking beyond the individual for reasons about what makes them stay in or leave treatment.

Given the limited funding and places available for youth with AOD problems, it is extremely important that clients accepted into a programme are going to make the most of treatment and that an individual who is not going to comply with and benefit from treatment is not taking up a bed another could have. New Zealand AOD services have to be able to make the best use of the resources they have and one of the best ways to do that is be able to identify which clients will benefit from treatment and which will not. Evidence from the present study would suggest that these decisions should not be based solely on the client characteristics measured in this study, but may be an interaction between client and programme characteristics, or other types of client characteristics that were not measured in the present study. However, findings from the present study when considered in relation to findings from other studies indicate that client characteristics on their own are not useful

predictors of treatment retention in the ways it has been measured to date.

Conclusions

The current study produced the statistically significant results that experiencing cravings was associated with participants leaving treatment, and having a diagnosis of inhalant abuse at treatment was associated with participants staying in treatment. A possible trend that may be worth exploring further is the association between length of stay in treatment and the presence of conduct disorder at treatment. Extending research beyond client characteristics to include programme and therapist characteristics and their relationship to treatment retention would also be worthwhile.

Given the limitations associated with the current study it is not possible to conclude whether or not the client characteristics measured in this study are associated with a young persons' length of stay in AOD treatment. However what is clear from this and previous studies is that it is both difficult and problematic to develop profiles of young people who are likely to remain in treatment based on client characteristics alone. The current study has however, played an important role in paving the way for more research on youth AOD treatment retention in New Zealand. Despite the lack of statistically significant findings, as the first study on youth AOD treatment retention conducted in New Zealand this study has produced a comprehensive sample description of the types of young people attending AOD treatment services in New Zealand, adding to the limited knowledge of the youth AOD field in New Zealand.

Epilogue

Conducting this research on treatment retention in youth has been very interesting and eye opening. Some of the youth I interviewed had experienced very traumatic events in their young lives. It was extremely interesting to learn how their addiction to alcohol and other drugs, and their experiences of treatment had shaped their present lives. Hearing about their time in treatment and the events preceeding treatment gave me a real appreciation of what it must be like to live with an addiction, and the subsequent effect it has on all aspects of life. Also how difficult having to attend treatment and the ongoing fight with the addiction must be and the strength they need to succeed.

Treatment had had various effects on the young peoples' lives, some were using substances minimally and holding down a job or furthering education, while others were using more substances than before they attended treatment. Conducting the interviews at the participants' residence often helped to put problems they were talking about in context.

I felt that many of the young people I interviewed enjoyed the chance to tell someone that was prepared to listen how they found treatment. Even though the subject of substance misuse is serious, the interview situation was usually informal and relaxed and I had many a laugh with the young people as they talked about their lives. I thoroughly enjoyed the interaction with the youth who participated in the study.

Being part of the larger study was a valuable experience for me, enhancing my research and analytical skills and I also learnt useful skills to interview a tricky population in sometimes difficult situations.

References

American Psychiatric Association. (1994). *Diagnostic and statistical manual of mental disorders.* (4th ed.). Washington, DC: American Psychiatric Association.

Adamson, S. J., & Sellman, J. D. (2003). A prototype screening instrument for cannabis use disorder: The cannabis use disorders identification test (CUDIT) in an alcohol dependent clinical sample. *Drug and Alcohol Review*, *22*, 309-315.

Baekeland, F., & Lundwall, L. (1975). Dropping out of treatment: A critical review. *Psychological Bulletin, 82*, 738-783.

Barlow, D. H., & Durand, V. M. (2002). *Abnormal psychology: An integrative approach* (3rd ed.). Toronto, Canada: Wadsworth.

Battjes, R. J., Gordon, M. S., O'Grady, K. E., & Kinlock, T. W. (2004). Predicting retention of adolescents in substance abuse treatment. *Addictive Behaviors, 29,* 1021–1027.

Beckman, L. J., & Bardsley, P. E. (1986). Individual characteristics, gender differences, and dropout from alcoholism treatment. *Alcohol and Alcoholism, 21,* 213-224.

Berk, L. E. (2001). *Development through the lifespan* (2nd ed.) Boston, MA: Allyn & Bacon.

Blood, L., & Cornwall, A. (1994). Pretreatment variables that predict completion of an adolescent substance abuse treatment program. *Journal of Nervous and Mental Disease, 182*, 14-19.

Broome, K. M., Joe, G. W., & Simpson, D. D. (2001). Engagement models for adolescents in DATOS-A. *Journal of Adolescent Research, 16*, 608-623.

Callaghan, R. C., Hathaway, A., Cunningham, J. A., Vettese, L. C., Wyatt, S., & Taylor, L. (2005). Does stage-of-change predict dropout in a culturally diverse sample of adolescents admitted to inpatient substance-abuse treatment? A test of the transtheoretical model. *Addictive Behaviors, 30,* 1834–1847.

Cloninger, C. R., Przybeck, T. R., Svrakic, D. M., & Wetzel, R. D. (1994). *The temperament and character inventory (TCI): A guide to its development and use.* St. Louis, Missouri: Washington University.

Farabee, D., Prendergast, M., & Anglin, D. M. (1998). The effectiveness of coerced treatment for drug-abusing offenders. *Federal Probation, 62*, 3–10.

Feehan, M., McGee, R., Raja, S. N., & Williams, S. M. (1994). DSM-III-R disorders in New Zealand 18-year-olds. *Australian and New Zealand Journal of Psychiatry, 28*, 87-99.

Feigelman, W. (1987). Day-care treatment for multiple drug abusing adolescents: Social factors linked with completing treatment. *Journal of Psychoactive Drugs, 19*, 335-344.

Fergusson, D. M., Horwood, L. J., & Lynskey, M. T. (1995). The prevalence and risk factors associated with abusive or hazardous alcohol consumption in 16-year-olds. *Addiction, 90,* 935-946.

Friedman, A. S., & Glickman, N. W. (1987). Residential program characteristics for completion of treatment by adolescent drug abusers. *Journal of Nervous and Mental Diseases, 175*, 419-424.

Friedman, A. S., Glickman, N. W., & Morrissey, M. R. (1986). Prediction to successful treatment outcome by client characteristics and retention in treatment in adolescent drug treatment programs: A large-scale cross validation study. *Journal of Drug Education, 16*, 149-165.

Galanter, M. D., & Kleber, H. D. (2004). *Textbook of substance abuse treatment* (3rd ed.). Washington, DC: The American Psychiatric Publishing, Inc.

Haller, D. L., Miles, D. R., & Dawson, K. S. (2002). Psychotherapy influences treatment retention among drug-dependent women. *Journal of Substance Abuse Treatment, 23*, 431-436.

Hope, T. L., Adams, C., Reynolds, L., Powers, D., Perez, R., & Kelley, M. (1999). Parent vs. self-report: Contributions toward diagnosis of adolescent psychopathology. *Journal of Psychopathology and Behavioral Assessment, 21*, 349-363.

Horwood, L. J., & Fergusson, D. M. (1998). *Psychiatric disorder and treatment seeking in a birth cohort of young adults,* (pp. 1-68). Christchurch, NZ: Ministry of Health.

Hser, Y. I., Grella, C. E., Hubbard, R. L., Hsieh, S. C., Fletcher, B. W., Brown, B. S., & Anglin, M. D. (2001). An evaluation of drug treatment for adolescents in four United States cities. *Archives of General Psychiatry, 58,* 689-695.

Hubbard, R. L., Craddock, S. G., Flynn, P. M., Anderson, J., & Etheridge, R. M. (1997). Overview of 1-year follow-up outcomes in the drug abuse treatment outcome study (DATOS). *Psychology of Addictive Behaviors, 11,* 261-278.

Levin, F. R., Evans, S. M., Vosburg, S. K., Horton, T., Brooks, D., & Ng, J. (2004). Impact of attention-deficit hyperactivity disorder and other psychopathology on treatment retention among cocaine abusers in a therapeutic community. *Addictive Behaviors, 29*, 1875-1882.

McKellar, J., Kelly, J., Harris, A., & Moos, R. (2005). Pretreatment and during treatment risk factors for dropout among patients with substance use disorders. *Addictive Behaviors, 31*, 450-460.

Melnick, G., De Leon, G., Hawke, J., Jainchill, N., & Kressel, D. (1997). Motivation and readiness for therapeutic community treatment among adolescents and adult substance abusers. *American Journal of Drug and Alcohol Abuse, 23*, 485-506.

Ministry of Health. (2002a). *New Zealand youth health status report.* Wellington, NZ: Ministry of Health.

Ministry of Health. (2002b). *Youth Health – A guide to action.* Wellington, NZ: Ministry of Health.

Orlando, M., Chan, K. S., & Morral, A. R. (2003). Retention of court-referred youths in residential treatment programs: Client characteristics and treatment process effects. *American Journal of Drug and Alcohol Abuse, 29*, 337-357.

Pagnin, D., de Queiroz, V., & Saggese, E. G. (2005). Predictors of attrition from day treatment of adolescents with substance-related disorders. *Addictive Behaviors, 30*, 1065-1069.

Patton, J. H., Stanford, M. S., & Barratt, E. S. (1995). Factor structure of the barratt impulsivity scale. *Journal of Clinical Psychology, 51,* 768-774.

Pompi, K. F., & Resnick, J. (1987). Retention of court-referred adolescents and young adults in the therapeutic community. *Drug and Alcohol Abuse, 13,* 309-325.

Prochaska, J. O., & DiClemente, C. C. (1986). Toward a comprehensive model of change. In W. R. Miller & N. Heather (Eds.), *Treating addictive behaviours: Processes of change* (pp. 3-27). New York: Plenum Press.

Rush, T. V. (1979). Predicting treatment outcomes for juvenile and young-adult clients in the Pennsylvania substance-abuse system. In G. M. F. Breschner, A.S. (Ed.), *Youth drug abuse: Problems, issues, and treatment* (pp. 629-656). Lexington, MA: Lexington Books, DC Health.

Saddock, B. J., & Saddock, V. A. (2003). *Synopsis of psychiatry.* (9th ed.). Philadelphia, PA: Lippincott Williams & Wilkins.

Saunders, J.B., Aasland, O. G., Babor, T. F., de la Fuente, J. R., & Grant, M. (1993). Development of the alcohol use disorders identification test (AUDIT): WHO collaborative project on early detection of persons with harmful alcohol consumption-II. *Addiction, 88,* 791-804.

Sheehan, D. V., Lecrubier, Y., Sheehan, H., Amorim, P., Janvas, J., Weiller, E., Hergueta, T., Baker, R., & Dunbar, G. C. (1998). The mini-international neuropsychiatric interview (MINI): The development and validation of a structured diagnostic psychiatric interview for DSM-IV and ICD-10. *Journal of Clinical Psychiatry, 59*, 22-33.

Simpson, D. D., & Joe, G. W. (1993). Motivation as a predictor of early dropout from drug abuse treatment. *Psychotherapy, 30,* 357-368.

Spooner, C. (1999). Causes and correlates of adolescent drug abuse and implications for treatment. *Drug and Alcohol Review, 18*, 453-475.

Stark, M. J. (1992). Dropping out of substance abuse treatment: A clinically oriented review. *Clinical Psychology Review, 12,* 93-116.

Vourakis, C. (2005). Admission variables as predictors of completion in an adolescent residential drug treatment program. *Journal of Child and Adolescent Psychiatric Nursing, 18*, 161-170.

Wickizer, T., Maynard, C., Atherly, A., Frederick, M., Koepsell, T., Krupski, A., & Stark, K. (1994). Completion rates of clients discharged from drug and alcohol treatment programmes in Washington State. *American Journal of Public Health, 84*, 215-221.

Wilkins, C., Casswell, S., Bhatta, K., & Pledger, M. (2002). *Drugs in New Zealand: National surveys comparison 1998 & 2001.* Auckland, NZ: Alcohol and Public Health Research Unit.

Williams, R. J., & Chang, S. Y. (2000). A comprehensive and comparative review of adolescent substance abuse treatment outcome. *Clinical Psychology: Science and Practice, 7*, 138-166.

Wise, B. K., Cuffe, S. P., & Fischer, T. (2001). Dual diagnosis and successful participation of adolescents in substance abuse treatment. *Journal of Substance Abuse Treatment, 21*, 161-165.

Appendix 1

Participant File Search

Interviewers please fill in this form for each participant who gives consent to have the following data collected from their client file kept while they were at your treatment service.

Participant ID _____

Name of primary clinician within your service (to whom questionnaire can be sent)_____

Please note down any information from the file that gives you some indication of:

1. How much alcohol and/or drugs they were using when they entered the treatment programme? *(This may come from official screening tools used as part of the assessment or referral, or from comments made in notes etc. Please try to find as much information as you can for all drugs used.*

2. Any diagnoses of substance abuse or dependence (*given while at the service or prior to coming to the service – please note down when diagnosis given).*

3. What sorts of problems they were having related to their alcohol and/or drug use. *(This may include information about why they came to treatment etc.)*

4. Any other problems they were having including any physical or mental health diagnoses they had *(these may have been given while at the service or prior to coming to the service – please note down when these diagnoses were given).*

5. How long they spent in treatment (admission and discharge date and if an outpatient service number of sessions attended) and their reasons for leaving. *(Depending on your service this may be calculated as number of sessions attended, or number of days, weeks, months etc. If it is number of sessions, please indicate how long these sessions were and whether they were group or individual sessions. Reasons for leaving should be documented somewhere in their client file under discharge, but there may be other information that will be helpful as well).*

6. The type of treatment they received and any comments about how they responded to it. *(e.g. group, individual, family sessions etc. and if there are any comments about how they seemed to respond to particular aspects of their treatment or their treatment overall).*

Appendix 2

Youth Treatment Retention Study (YTRS) Non-Participant Details

Participant ID	
1. Reason for form completion	1 Not contactable 2 Refused to participate
2. Date of birth	
3. Gender	1 Male 2 Female
4. Ethnicity	
5. Substances ever used and age of first use	
6. AOD diagnosis	
7. Any other diagnosis (mental or general health)	
8. Source of referral	1 Justice 2 Health 3 Education 4 Self 5 CYFS 6 Other (please specify)

9. Date of admission	
10. Date of discharge	
11. No of sessions attended	
12. Reason for discharge	
13. Type of programme	1 Residential 2 Day 3 Outpatient
14. Session type	1 Group 2 Individual 3 Group and Individual
15. Family involved in treatment	1 yes 2 no
16. Living circumstances when entered treatment	1. Living with father 2. Living with mother 3. Living with mother and father 4. Living with a relative 5. Living with a foster parent 6. Living in a flat/house with flatmates 7. Living with partner/spouse 8. Living on your own 9. Living in a hostel/residential accommodation 10. Living in a boarding situation 11. No fixed abode 12 Other (specify) _____
17. Criminal conviction	1 yes 2 no
18. Time in correctional facility	1 yes 2 no
19. Time in CYFS care	1 yes 2 no

Appendix 3

National Addiction Centre

INFORMATION SHEET FOR YOUTH PARTICIPANTS

Improving Addiction Treatment Retention Rates for Young People

Introduction

In 2003 you attended _____ *(name of treatment service)*. You are invited to take part in a study that is being conducted by the National Addiction Centre (NAC) with youth from this and other treatment services in New Zealand.

The main purpose of this study is to discover the reasons why you chose to stay in or leave the treatment programme.

It is hoped that the results of this study may help health care professionals develop and put in place programmes that will better meet the needs of youth in addiction treatment programmes.

Aims of the Study

- To talk to a sample of young people who have undertaken alcohol and drug treatment in New Zealand.
- To find out the drug and alcohol history of this group of young people and to see if they have any additional problems.
- To see how long the group of young people stayed in treatment and to find out what effect this treatment had on their alcohol and drug use.
- To discover why some young people stay in treatment and why others leave.

Method

A 90-minute individual interview will be conducted with 140 young people who took part in addiction treatment programmes in 2003. These interviews will take place in a location of your choice. This place should be somewhere private where you feel safe and comfortable talking about your alcohol and other drug use. You may choose to bring a support person(s) with you to the interview. This person(s) should be someone who you can trust and feel comfortable answering personal questions in front of.

During the interview a variety of questions will be asked relating to treatment experiences, family background, alcohol and other drug use and mental health issues. If you agree, parts of this interview will be audio-taped. These tapes will be written up and all revealing details

will be removed before the tapes are stored in a secure place that can only be accessed by the researchers in this study.

With your permission we will also contact at least one of the clinical staff who you worked with on the treatment programme to ask them some questions about your time in the treatment programme. The type of questions we would like to ask them include:

- How long you stayed in treatment?
- How they thought you managed in treatment?
- What they thought made you leave or stay in treatment?
- Their ideas about why young people in general stay in or leave alcohol and drug treatment programmes.

With your permission we would also like to look at your file kept by the treatment programme to find out:

- How much alcohol and/or drugs you were using when you entered the treatment programme?
- Any problems you were having with your alcohol and/or drug use.
- Any other problems you were having.
- How long you spent in treatment and your reasons for leaving (if appropriate).
- The type of treatment you received and how you responded to it.

Further help with addiction issues, information and support will be given to you if you ask for it.

Participation

Your participation in this study is voluntary (your choice).

If you decide not to participate in this study, your future relationship with _____ *(name of treatment service)* will not be affected in any way.

If you do agree to take part in this study you can withdraw your participation at any time without any need for explanation.

You will be asked a number of questions during the interview some of which are quite personal in nature. You only need to answer the questions you wish to. You can also stop the interview at any point if you decide that you do not want to continue.

If any issues arise as a result of participating in this study, support and help will be made available to you. Should you require such assistance you should contact **Ria** immediately and she will organise the necessary support for you.

If you have any questions or concerns about your rights as a research participant you may wish to contact a **Health and Disability Services Consumer Advocate** by telephoning 0800 555 050 (if you live in Auckland or north of Auckland), 0800 423 638 (if you live in the North Island south of Auckland), 0800 377 7766 (if you live in the South Island outside of Christchurch) and 377 7501 (if you live in Christchurch).

Confidentiality

No information that could personally identify you will be used on any forms, reports or publications that come out of this study. If you wish you may choose a pseudonym (fake name) for yourself. You will be asked about this at the time of your interview.

Your name will not appear on any of the questionnaires. All information you give will be kept confidential unless you are at risk of harming yourself or others.

All the information you give us will be stored in a secure place where only the Principal Investigator and the Researchers will have access.

Results

If you would like the chance to read and comment on the written notes of your interview we will send these to you at an address you supply.

If you would like a copy of the results we will send them to you at an address you supply. Remember it will take some time to complete this research project so there will be some delay (approx. 2 years) between when you are interviewed and when you receive a copy of the results of the research.

Statement of Approval

This study has been reviewed by the:
Canterbury Ethics Committee
Auckland Ethics Committee
Waikato Ethics Committee
Hawkes Bay Ethics Committee
and was granted ethical approval on 21/2/05.

Principal Investigator

Associate Professor Doug Sellman
Director
National Addiction Centre
Department of Psychological Medicine
Christchurch School of Medicine and Health Sciences
University of Otago
Christchurch

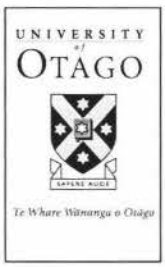
Telephone: (03) 364 0480 or 0800 Addiction (0800 233428)

Researchers

Ria Schroder or Anna Tentori
National Addiction Centre (NAC)
Department of Psychological Medicine
Christchurch School of Medicine and Health Sciences
University of Otago
Christchurch
Ph. (03) 364 0580 or 0800 Addiction (0800 233428)

IF YOU REQUIRE ANY FURTHER INFORMATION OR HAVE ANY QUESTIONS REGARDING THIS STUDY, PLEASE FEEL FREE TO CONTACT RIA, ANNA, OR DOUG.

Appendix 4



National Addiction Centre

CONSENT FORM FOR YOUTH PARTICIPANTS

Improving Addiction Treatment Retention Rates for Young People

Request for Interpreter

English	I wish to have an interpreter.	Yes	No
Māori	E hiahia ana ahau ki tetahi kaiwhakamaori/kaiwhaka pakeha korero.	Ae	Kao
Samoan	Ou te mana'o ia i ai se fa'amatala upu.	Ioe	Leai
Tongan	Oku ou fiema'u ha fakatonulea.	Io	Ikai
Cook Island	Ka inangaro au i tetai tangata uri reo.	Ae	Kare
Niuean	Fia manako au ke fakaaoga e taha tagata fakahokohoko kupu.	E	Nakai

I have read and understood the information sheet dated .....outlining a study designed to gather information about my alcohol and other drug use, my treatment experiences, my mental health and my ideas about why I remained in or left treatment.

I have had the opportunity to discuss this study and I am satisfied with the answers I have been given.

I have had the opportunity to use whanau support or a friend to help me ask questions and understand the study.

I understand that taking part in this study is voluntary (my choice) and I have not been influenced in any way to participate.

I understand that my participation in this study is confidential and that no material which could identify me will be used in any reports or publications on this study.

I have had adequate time to consider whether to take part in this study.

I understand that I may withdraw from the study at any time and this will not affect my future health care or treatment options.

I know whom to contact if I feel any distress or have any concerns as a result of my participation in this study.

I consent to my interview being audio-taped YES/NO

I consent to clinical staff members from .....
***(name of treatment service)* being contacted about my treatment experiences**
YES/NO

I consent to the researchers looking at my clinical file kept by.....
(name of treatment service)
YES/NO

I wish to receive a written transcript of the audio-tape of my interview
YES/NO

I wish to receive a summary of the results of this study. YES/NO

Please provide the address to which you would like a copy of your transcript and/or the results sent:

I wish to have my audio-tape returned to me at the conclusion of this study (please note the final completion date of this study is 10 years from the time of interview). **YES/NO**

I _____(full name) hereby consent to take part in this study.

Date: Signature:

Name and Contact Details of Principal Investigator:

Associate Professor Doug Sellman
National Addiction Centre (NAC)
Department of Psychological Medicine
Christchurch School of Medicine and Health Sciences
University of Otago
PO Box 4345
Christchurch
Ph. (03) 364 0480 or 0800 Addiction (0800 233428)

Name and Contact Details of Researchers:

Ria Schroder
National Addiction Centre (NAC)
Department of Psychological Medicine
Christchurch School of Medicine and Health Sciences
University of Otago
Christchurch
Ph. (03) 364 0580 or 0800 Addiction (0800 233428)

Anna Tentori
National Addiction Centre (NAC)
Department of Psychological Medicine
Christchurch School of Medicine and Health Sciences
University of Otago
Christchurch
Ph. (03) 364 0580 or 0800 Addiction (0800 233428)