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An analysis of treatment retention and attrition in an Australian therapeutic community for substance abuse treatment

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An Analysis of Treatment Retention and Attrition in an Australian Therapeutic Community for Substance Abuse Treatment

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This thesis is presented in fulfilment of the requirement for the degree of Doctor of Psychology

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Abstract

Research undertaken in the last three decades has consistently reported that the length of time spent in inpatient and outpatient alcohol and other drug (AOD) treatment programs predicts treatment success (De Leon, Melnick, Kressel, & Jainchill, 1994; Hubbard, Craddock, & Anderson, 2003; Simpson, Joe, Fletcher, Hubbard, & Anglin, 1999). However, treatment attrition rates are high and present a major problem for improving treatment outcomes. Various factors that have been reportedly associated with increased AOD treatment attrition rates include being female, younger clients, clients using methamphetamines, and clients with elevated psychopathology scores. The aim of this thesis is to improve understanding of various factors reported in the research literature to influence AOD treatment retention, including client psychopathology, age, gender and primary drug of abuse.

The research was conducted in two phases. Phase one involved an analysis of archival data of clients admitted to a single Australian therapeutic community (TC) program over a 6-year period (2000-2005).The second stage involved a focus group comprised of nine Australian and New Zealand therapeutic community managers and senior clinicians who discussed the findings from the first phase of the study and provided feedback on these findings. The focus group also discussed barriers and solutions to incorporating these findings in TC treatment services. The results from the first phase indicated that elevated anxiety and depression scores at entry to treatment were strong predictors of client retention at 8 weeks, and retention at 14 weeks was predicted by high self-esteem scores at entry. Clients receiving medication (primarily anti-depressant medication) were more likely retained at 14 weeks. Older clients (24 – 29 years, and 30 – 50 years) were significantly more likely to drop out of treatment by the 14 week stage compared with the younger client group (17 – 24 years).

The second stage revealed general agreement with the findings, provided support for the efficacy of TC treatment for clients with comorbid mental health problems, highlighted challenges and benefits of working with mental health services, and suggested other factors influencing treatment retention. The first stage findings contribute to the understanding of TC treatment retention factors with an Australian population, but do not support previous findings that female clients, younger clients, clients with elevated anxiety or depression scores, or clients with methamphetamine abuse problems are more likely to drop out of TC treatment.

This study involved the collection of a large client database from a single TC over six years, including the longitudinal collection of client psychometric data at various stages throughout treatment. This study makes an important contribution to the understanding of various client factors and their respective influence on client retention and attrition within an Australian therapeutic community. The study has relevance for residential substance abuse treatment services in many countries, but has special relevance within Australia where few studies focusing on TC retention have been undertaken. There have been even less studies focusing on TC retention that have included longitudinal psychometric data collected from a client population primarily comprised of young methamphetamine-users.

Declaration

I certify that his thesis does not, to the best of my knowledge and belief:

i) incorporate without acknowledgement any material previously submitted for a degree or diploma in any institution of higher education.
ii) contain any material previously published or written by another person except where due reference is made in the text; or
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Mark Robert Porter Date May 10, 2013

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Acknowledgements

My desire to undertake research that would contribute to improving client outcomes in Therapeutic Communities began at the Palmerston Farm therapeutic community soon after I became the program manager in 1998. In the following years there were major changes in typical client presentations from an older client group with opiate abuse problems, to a generally younger client population presenting with methamphetamine abuse problems concurrent with high levels of psychological disturbance and comorbidity. The knowledge and experience of most clinical staff seemed almost redundant with this client change, and it quickly became apparent that significant program changes guided by current research were urgently required to more effectively enable the TC to support this client group.

I was fortunate during this time to employ many good staff, but two clinical psychologists in particular need to be acknowledged; Aidan Stockdale and Doctor Mario Farina. These men provided the clinical and supervisory skills to support remaining clinical staff, and introduce major program practise changes. Doctor Farina in particular has an excellent understanding of residential substance abuse treatment research and residential program management from his previous work in that field in New South Wales, and helped establish the process of measuring and recording client psychometric data at Palmerston Farm soon after his arrival.

The members of the Palmerston Board and Executive are acknowledged for their support for this research and encouragement during the early years of major program change. I acknowledge the many residents I worked with at Palmerston Farm who inspired other residents and all staff with their perseverance and courage in overcoming significant life challenges. My inspiration and motivation to undertake post-graduate studies and provide something meaningful for the Australian TC field was strongly influenced by the experience of working with residents in the process of self-growth within the therapeutic community.

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Introduction

Significance of This Study

Substance abuse continues to be a major social, health and economic problem in many countries. Scott, Dennis, Laudet, Funk, and Simeone (2011) report U.S. research indicating that individuals with a drug dependence diagnosis on average die 22.5 years earlier than those without such a diagnosis. The authors also report the finding that 2.8 % of the U.S. population (6.9 million persons) currently meet the diagnostic criteria for substance abuse disorders (Scott, et al., 2011, p. 737).

Increasing the effectiveness of substance abuse treatment is consequently an important health and economic goal for many nations. Substance abuse treatment programs can be divided into outpatient and inpatient programs, and inpatient programs are commonly called residential programs. Residential programs are typically regarded as more expensive to operate than outpatient programs; however they remain a common form of substance abuse treatment, especially for persons with more severe substance abuse problems. Therapeutic communities are a particular form of residential substance abuse treatment that are usually structured in a hierarchical manner with residents expected to take increasing responsibility within the community as they progress with their recovery. Therapeutic communities are often utilised by persons who have a history of substance abuse treatment failure, more severe substance abuse problems, unstable living conditions, involvement with criminal activity, and injecting drug users (De Leon, 2000). The effectiveness of many forms of substance abuse treatment is predicted by the length of time in treatment, and yet premature treatment attrition remains common, especially from residential treatment programs, including TCs. Although the typical duration of client stay in TC treatment programs during the 1960's and 1970's was 2-3 years, it is now common for TC programs to be only 3, 6 or 12 months long (De Leon, 2000, p.3). Attrition from these modern shorter TC programs remains a major barrier however for the provision of effective treatment. Obtaining a better understanding of the factors that predict client retention and attrition from TCs has therefore been the focus of much published substance abuse treatment research in recent decades.

Previous studies examining factors that contribute to treatment retention in therapeutic communities for people with substance abuse problems have almost

always been conducted in the United States and Western Europe. There have been very few published studies examining treatment retention in Australian TCs. A comparison of US and Australian national household studies of substance abuse notes many significant differences in the patterns of substance abuse between these two countries (Maxwell, 2008). The author notes many significant differences between Australia and US prevalence rates of life-time use of various types of substances, and states that since 1998 substance use within Australia has decreased significantly for most drugs (excluding alcohol and ecstasy), however use of most illicit drugs in the US has increased. As substance abuse patterns and populations can differ significantly between countries, it is important to better understand treatment retention factors in Australian TC's, because there may be significantly different patterns of substance abuse and cultural norms that may influence treatment retention and attrition.

Within a particular country there may also be significant differences between patterns of substance abuse and the profile of the treatment population. An example of this within-country difference is that during the period of this data collection there was a greater proportion of the AOD treatment population presenting with methamphetamine problems in Western Australia compared to eastern states (Australian Institute of Health and Welfare, 2006). It is therefore probable that these within-country differences in population substance-using profile will be reflected in differing treatment retention rates due to the influence of factors believed to influence client treatment retention (e.g. primary drug of abuse and mental health difficulties).

Another potentially confounding factor of adopting findings from various TC retention studies is there is often significant variation between these programs, including beliefs about addiction and substance abuse recovery. These differences may manifest as differences in therapeutic content, therapeutic emphasis, program structure, staffing structure, and support services. These program differences are sometimes termed program factors, and it is increasingly common to include or note these factors in recent studies of client treatment retention (Curran, Stecker, Han, & Booth, 2007). The significant program structure and staffing variations between some TC's mean that these program factor differences may have a confounding influence on retention findings. The relevance of some TC program factors to client retention and attrition is explored and discussed in the second stage of this thesis.

The present study is, therefore, a very useful addition to the knowledge base of client retention and attrition from Australian TCs because it contains a large sample of

client data obtained from one Western Australian TC program that maintained continuity of most of the various differential program factors mentioned above during the 6-year period of data collection. The data is also important because it contains longitudinal measures of client psychometric data following treatment entry. This data is useful for analysing changes in mental health and well-being during the course of withdrawal from various substances and the following initial weeks of abstinence that can contribute to a better understanding of co-morbidity. This study makes a significant contribution towards improved understanding of client factors predicting attrition and retention from TCs, including an improved understanding of the dynamics of client mental health functioning after initiating abstinence.

Economic Costs of Substance Abuse

Residential services have often been regarded as an expensive option for the treatment of substance abuse; however the higher cost of this form of treatment needs to be understood in the context of the overall cost to society of substance abuse. This section will present some estimates of the costs of substance abuse in various countries during recent decades. Determining the total costs of substance abuse is a complex task involving calculation of various direct and indirect costs to the individual and the state. This task is made especially difficult because substance abuse involves many substances including alcohol, tobacco, and various illicit substances. The related costs for all these substances are therefore, estimated in most cases, especially the various costs associated with illicit drug use. Although complex, cost determination of substance abuse is required to help guide policy makers and public health planners. Many countries report costs associated with alcohol use only, because the figures are more transparent and more easily determined than including costs of illicit substance abuse.

The estimated 1998 annual costs of alcohol abuse in the United States of America (USA) were US$148 billion (Harwood, 2000). The added costs of other forms of substance abuse in the USA are likely to increase this figure significantly. For example, a RAND Corporation study reported that the 2005 costs of methamphetamine abuse in the USA was $23.4 billion (Rand Organisation, 2009). The costs of alcohol consumption to the United Kingdom’s (UK) National Health Service (NHS) in 2001 was estimated at 1.47 billion pounds, and increased to 2.7

billion pounds by 2006/2007 (NHS, 2010). The same 2010 NHS report notes that alcohol is the third leading cause of disease burden in developed countries.

Thavorncharoensap, Teerawattananon, Yothasamut, Lertpitakpongand, and Chaikledkaew (2009) undertook a review of the cost of alcohol abuse in various countries, and suggested that the relative costs of alcohol consumption may be more easily understood when the costs are stated as a percentage of a country's Gross Domestic Product (GDP). The authors report that in the 12 countries selected for their analysis, the economic burden of alcohol consumption equated to between 0.45 – 5.44% of GDP for each country.

A series of studies have been undertaken within Australia in recent decades to determine the total cost of alcohol, tobacco and other drug abuse that highlight the increasing costs of these problems to Australian society. The authors stated that almost one in every five deaths within Australia between 1988 and 1992 had drug-related causes (Collins & Lapsley, 1996). A determination of the 1998/1999 costs by the same authors estimate tangible social costs of A$5.045 billion for illicit drugs, A$6.12 billion due to alcohol, and A$11.92 billion attributed to tobacco abuse (Collins & Lapsley, 2002). The most recent analysis by Collins and Lapsley (2008) of the total costs of tobacco, alcohol and illicit drug abuse within Australia during 2004/2005 states that total costs for that year exceeded A$55 billion, and noted that tobacco accounts for A$31.5 billion, alcohol A$15.3 billion, and illicit drugs A$8.2 billion.

A recent breakdown of Australian Government spending on illicit drug policy in 2002/2003 revealed that total costs were $3.2 billion, and that state governments accounted for approximately 70% of this spending. This figure was comprised of $1.3 billion on proactive expenditure, of which 55% was devoted to law enforcement, 23% to prevention, 17% to treatment, 3% to harm reduction and 1% to activities spanning several of those areas (Moore, 2008). Expenditure on the consequences of illicit drug use was estimated to be another $1.9 billion, and the large majority of this amount was crime-related costs. The author notes that this illicit drug cost policy mix breakdown is very similar to cost breakdowns reported in other western countries.

There is no evidence to suggest the costs of substance abuse have decreased in Australia and other countries in more recent years, and given the significant social and economic costs of substance abuse to these countries, there is no doubting the need to reduce costs where possible. Significant resources are devoted to education and policy

to control alcohol abuse, and policing, border protection, judicial and incarceration costs to reduce the supply of illicit substances. Another method of reducing the costs of substance abuse is to reduce on-going demand for substances by providing more effective substance abuse treatment programmes. There are various models of intervention for treating substance abuse and some of these models are resource intensive and require significant initial investment, and recurrent state and private funding.

There have been no published comprehensive studies examining the cost-effectiveness of substance abuse treatment in general within Australia; however Ciketic, Hayatbakhsh, Doran, Najman and McKetin (2012) recently completed a review within Australia of various treatments for methamphetamine abuse. The authors noted the difficulty of determining treatment efficacy due to the heterogeneity of treatments, the lack of treatment protocols by many treatment services, and the difficulty of consequently determining the cost-effectiveness of various treatment approaches. Further complicating an accurate determination of substance abuse treatment cost-effectiveness is the heterogeneity of treatment presentations by individuals who may or may not present with a wide range of comorbid physical and mental health problems that are likely to have significantly different treatment needs, and costs. Despite the limitations in determining the cost-effectiveness of various treatment interventions, in the last decade there has been considerable research examining the cost-effectiveness of various substance abuse treatment programmes in the USA and the U.K.

A study of 43 Californian substance abuse treatment providers during 2000/2001 reported that the average treatment cost per individual was $1,583, and that this was associated with a monetary benefit to society of $11,487 per treated individual, (Ettner, Huang, Evans, Ash, Hardy, Jourabchi, & Hser, 2006). The authors note this cost saving primarily represents a reduction in the cost of crime and increased employment earnings. However, there are many other unaccounted cost savings from improved health and quality of life for the individuals concerned. Despite this, the savings reported represent a greater than 7:1 ratio of benefits to costs, and the authors note that investment in substance abuse treatment is obviously cost-effective.

Potential cost savings from effective substance abuse treatment will generally be greater with young persons, however some research findings have reported specific

difficulties treating young persons for substance abuse problems because they are believed to be more likely to drop out of treatment compared with older clients (Hser, Grella, & Hubbard, Hsieh, Fletcher, Brown, & Anglin, 2001). Attempts to improve substance abuse treatment for adolescents have included the establishment of specialised substance abuse treatment services for adolescents; however, these specialist services are often expensive. King, Gaines, Lambert, Summerfield, and Bickman (2000) report a study of 428 adolescents that estimated the average treatment cost for each person was $13,067. The authors note, however, that for a subset of the young persons studied who were diagnosed with a comorbid disorder, the average treatment costs were more than double at $29,057. The authors note that comorbid mental health problems in adolescents with substance abuse problems presents more complex treatment demands that account for the higher average cost of treatment. Comorbidity is common in substance abuse populations and Chan, Dennis, and Funk (2008) report the findings of a large study involving 4,930 adolescents and 1,956 adults admitted to various substance abuse treatment centres in the USA. They note that two thirds of clients had a co-occurring mental health problem in the year prior to treatment, and that young adults were found to be most vulnerable clients for having co-occurring mental health problems.

There has been fast growing awareness of comorbidity in all age groups within the substance abuse treatment population field during the last decade. This has raised many questions for researchers, policy makers and clinical staff about treatment options, treatment effectiveness and cost-effectiveness of various substance abuse programs in meeting the needs of clients with complex substance abuse problems. Determining the cost-effectiveness of substance abuse programs has therefore also needed to account for the fact that a large proportion of the presenting population have more than one disorder, and that analyses of treatment effectiveness should consider the effects of intervention across multiple domains in client lives to more accurately determine the potential costs and cost savings of suitable treatment.

Measuring Substance Abuse Treatment Effectiveness

The topic of evaluating treatment effectiveness has been a complicated and contentious issue in the substance abuse treatment field for many years (Sindelar, Jofre-Bonet, French, & McLellan, 2004). The authors note that many service providers and researchers believe treatment effectiveness should be measured on a

single scale, which is achieving and sustaining abstinence from substance abuse. The goal of abstinence in these more traditional substance abuse treatment programmes is determined from a philosophy of treatment that is commonly termed the “disease model”. For example, Alcoholics Anonymous and Narcotics Anonymous are two large organisations operating in many western countries within the substance abuse treatment field that suggest that abstinence is the only acceptable goal of treatment.

Much research into addictive behaviours published in recent decades suggested that brief returns or “lapses” to substance abuse are part of the process of unlearning chronically habitual behaviour, and do not necessarily represent failure or relapse (Saunders & Houghton, 1996). This recognition that recovery from substance abuse treatment is a process over time has led to the acceptance and adoption by many public policy makers and treatment programmes of the legitimacy of harm minimisation goals rather than abstinence as the only acceptable goal for substance abuse treatment services.

Harm minimisation philosophy recognises that many individuals are either unable, or unwilling, to stop using various substances completely, therefore harm minimisation treatment goals may be utilised to reduce the level of substance use so there is less disruption in the person’s life. Another common harm minimisation goal might be to ensure that their drug use is safe, and this may typically involve teaching people about safe syringe use and disposal to reduce the risk of blood-borne disease. Researchers have recognised that it is more appropriate to measure substance abuse treatment effectiveness across multiple domains, including reduced drug use, improved psycho-social functioning, reduced crime and increased employment (Sindelar et al., 2004). This issue of appropriate treatment goals often overlaps with common differences between the clinical aims of inpatient versus outpatient treatment programmes. Inpatient services generally retain the goal of abstinence from all substance abuse, at least during the inpatient programme, whereas many outpatient programmes adopt harm minimisation or substance use reduction goals. An Australian review of long-term residential treatment services reported that 66% of the 56 Australian services reviewed reported having an abstinence treatment philosophy (Ernst & Young Consulting Team, 1996). The following section will briefly describe what is meant by inpatient or residential substance abuse treatment services.

Residential Substance Abuse Treatment

Residential services play an important role in providing substance abuse treatment in the USA and the UK, and other western countries (Gossop, Marsden, Stewart, & Rolfe, 1999). The cost-effectiveness of residential substance abuse treatment services has been queried, however, because it is generally regarded as more expensive than outpatient treatment. In response to those claims, McGeary, French, Sacks, McKendrick, and DeLeon (2000) report that when the costs of increased number of hospital days and emergency visits by outpatient clients were considered, residential treatment and outpatient treatment costs were similar.

Other studies of inpatient treatment for substance abuse have focused on whether inpatient treatment is more effective than outpatient treatment or drug substitute modalities such as methadone programmes. Mattick, Baillie, Grenyer, Hall, Jarvis, and Webster (1993) reported there is limited evidence to suggest inpatient treatment for alcohol problems was more effective than outpatient treatment. More recently, however, the Drug Outcome Research in Scotland study (DORS) noted that clients in residential services were more likely to achieve 90 day abstinence rates than clients in all other forms of substance abuse treatment (McKeganey, Bloor, Robertson, Neale, & MacDougall, 2006). There is also the realisation that poor people with no employment and insecure housing may benefit more from residential interventions than they would benefit from outpatient interventions.

There are complexities when comparing substance abuse treatment modalities, because client treatment goals may differ greatly, effectiveness is measured differently by different modalities and programmes, and there are high levels of heterogeneity in programs even with a similar modality (Ettner, Huang, Evans, Ash, Hardy, Jourabachi, & Hser, 2006). Researchers also need to follow up clients to determine post-treatment outcomes; however this is difficult as client populations are often homeless and difficult to maintain in longitudinal research programmes. Despite these difficulties in obtaining meaningful comparisons of treatment outcomes of different treatment modalities, several studies have reported that residential treatment services are more effective than outpatient services engaging persons with co-morbid mental health problems and those with housing problems (Nuttbrock, Ng-Mak, Rahav, & Rivera, 1997; McKeganey et al., 2006). Etheridge, Hubbard, Anderson, Craddock, and Flynn (1997) also note that persons with more severe substance abuse

problems are more likely to require more intensive interventions than what is normally offered in community settings.

It should also be noted that residential treatment for substance abuse can take various forms. In some situations the residential service is provided by a public or private clinic or hospital where detoxification or medically-managed withdrawal occurs initially, and is then typically followed by a period of individual and group counselling in the clinic or hospital. These clinic and hospital-based programs tend to be shorter-term programs of only a few weeks duration, and are often utilised by persons with more social support, and a more structured life including stable employment and housing. Other residential treatment programmes are designed to cater for persons with more complex problems and these programmes may have a residential duration of between 28 days to a year of more. Many of these longer-term residential programmes are described as therapeutic communities, and the following section will describe this specific type of residential treatment service and some of the research findings relating to their effectiveness.

Therapeutic Communities

Therapeutic communities (TCs) have existed in the substance abuse treatment field for about 50 years. TCs are a specific form of substance abuse treatment using residential programs structured in a hierarchical manner involving various treatment stages reflecting increasing levels of personal and social responsibility. TCs primarily differ from other styles of residential substance abuse treatment by their use of staff and residents as key agents of change with an approach that has been termed "community as method" (De Leon, 2000, p. 92). TCs typically use a hierarchical model of treatment that occurs in several stages with the aim of increasing residents' personal and social responsibility (NIDA Research Report, 2002). TCs have become a common form of residential treatment for substance abuse in many western countries; however their cost-effectiveness has been questioned over the decades.

Gowing, Cooke, Biven, and Watts (2002) reviewed the TC outcome literature and reported that there is little evidence to support the claim that TCs are more effective than other forms of substance abuse treatment. The authors did note, however, that there was substantial research evidence that TC treatment is associated with reduced drug use and criminality, improved health and psychological functioning, and increased involvement in work, education and training. Lees,

Manning, and Rawlings (2004) undertook a meta-analysis of 29 published studies of TC treatment effectiveness where TC programs had been compared with various other control interventions or control institutions. The authors noted several difficulties obtaining randomised controlled trials of TCs in the published literature, especially given that TC entry criteria may be complex and that the variety of treatment outcomes that may be chosen for comparison in different studies. Despite these limitations, they note that their analysis indicated that most published studies reported that TC treatment outcomes were more effective than the various control programs and institutions across the multiple domains compared.

There have been many studies in the last two decades reporting that the style of treatment practised in therapeutic communities has adapted to suit changing substance abuse populations and funding requirements. In particular, the recognition that many individuals seeking substance abuse treatment have mental health difficulties has required many TCs to specialise or modify their normal practices. The specialised TCs are often referred to as “modified TCs” and they usually have a less demanding program structure with reduced emphasis on confrontational group work (De Leon, 2000). Brunette, Mueser, and Drake (2004) undertook an analysis of controlled studies of AOD residential services including many TCs, and noted that TCs were more effective in helping persons with multiple problems (especially clients with comorbid mental health problems) if they were able to appropriately integrate mental health services within their substance abuse service. There has been considerable research in recent decades to determine how to better engage, assess, treat and retain comorbid populations in residential substance abuse treatment services, including TCs.

Sacks, Banks, McKendrick, and Sacks (2008) report a recent analysis of four studies comparing various forms of standard treatment versus treatment within therapeutic communities that had been modified for clients with co-occurring severe mental health disorders. The authors note that the modified TCs had better treatment outcomes for clients with mental health comorbidities across several measures and domains including substance use, mental health, crime, HIV risk, employment and obtaining stable housing after treatment. The authors also note that the differences in outcomes varied between studies and further research is required to better clarify the factors that contribute to treatment effectiveness with this population.

Therapeutic Community Retention

TC outcome research indicates that the most consistent indicator of positive treatment outcomes in all modified and standard TC programmes is the amount of time the person spent in treatment (Greenfield, Burgdorf, Chen, Porowski, Roberts, & Herrell, 2004). In particular, 90 days has often been reported in recent decades as the minimum time that should be spent in a TC or residential service to be of benefit (Baker, Gowing, Lee, & Proudfoot, 2004; Messina, Wish, & Nemes, 2000). Various factors have been hypothesised to influence TC treatment retention, and the following section will discuss these substance abuse treatment retention research findings.

Treatment Retention

Many researchers have reported that the amount of time spent in inpatient substance abuse treatment is positively correlated with successful treatment outcome where abstinence is the given definition of success (De Leon, Melnick, Kressel, & Jainchill, 1994; Hubbard, Craddock, & Anderson, 2003; Simpson, Joe, Fletcher, Hubbard, & Anglin, 1999). Brewer, Catalano, Haggerty, Gainey, and Fleming (1998) report the results of a meta-analysis of opiate treatment studies in which short periods of treatment (less than 8 weeks) and leaving treatment prematurely were significant predictors of substance abuse relapse. Although time in treatment appears to be the strongest predictor of successful substance abuse treatment outcome, Baker, Gowing, Lee, & Proudfoot (2004, p.80) note, “but this is a complex issue with time being something of a proxy indicator for engagement, participation and progress in treatment.” There is general agreement among researchers in this field that the amount of time in AOD treatment programs is a strong predictor of successful outcome, however there remains mixed findings of the client factors hypothesised to predict treatment attrition. The following sections discuss some of the client factors that have been commonly reported by researchers as predicting AOD treatment attrition.

Retention and Gender

Women are often under represented in AOD treatment research studies with researchers noting existing substance abuse treatment models have been informed by primarily studying men (Sun, 2006). Many studies have reported that women are more likely than men to drop out of inpatient substance abuse treatment prematurely (Copeland & Hall, 1995; De Leon et al., 1994; Haller, Miles, & Dawson, 2002). It has also been suggested that female substance abuse is closely linked to comparatively

poorer psychological functioning with higher rates of co-morbidity, especially depression and suicidal ideation (Allen, 1994; Copeland & Hall, 1995; Hser, Huang, Teruya, & Anglin, 2004; Wilke, 2004).

Messina, Wish, and Nemes (2000) analysed data from 412 clients (116 females and 296 males) who had sought substance abuse treatment and were randomly assigned to two different TCs followed by a period of outpatient care. Both men and women who completed the longer 12 month program were much less likely to relapse, commit crime or be unemployed, compared to males and females who attended the shorter six month TC program. The authors noted that the women in this sample had been abusing drugs for approximately 10 years with a high degree of previous criminal involvement and appeared to benefit from longer-term residential services more than the males in the sample. There were no significant gender differences for completion of the longer 12 month program.

Greenfield, Brooks, Gordon, Green, Kropp, McHugh, Lincoln, Hien, and Miele (2007) reviewed the substance abuse treatment outcome literature from 1975 to 2005. They noted that almost half the number of women compared to men develop substance abuse problems, and are much less represented in substance abuse treatment populations and related research studies. The authors also noted that, when women do seek treatment, they often present with more severe mental health and social problems, and may have different needs compared to males in treatment. Greenfield et al. (2007) found no evidence that women-only substance abuse treatment programmes were more effective for women than mixed-gender programmes, but did note there was considerable evidence that addressing specific needs of women within mixed-gender programmes is effective. The authors found that, once in treatment, gender is not a significant predictor of treatment retention, completion or outcome. Sun (2006) reviewed the substance abuse treatment literature, and reported findings of 35 women-only treatment services and studies with separate gender findings from mixed-gender treatment services. The author notes that nine studies reported that women only programs had better treatment retention than mixed-sex programs, but notes that most of the studies had significant design limitations.

In summary, there does not appear to be consistent findings that gender-specific treatment services reliably produce improved treatment retention or other improved treatment outcomes. More recent research has focused on the specific needs of females in substance abuse treatment including program factors hypothesised to

affect female retention in residential treatment. In general, there has been little published research on Australian substance abuse residential treatment samples comparing treatment attrition rates of males and females. Specifically, there is little published Australian research examining gender differences in psychological functioning during residential treatment for women with substance abuse problems.

Retention and Age

Client age has often been noted as a factor predicting treatment outcome following substance abuse treatment. It is commonly believed by many AOD treatment clinical staff that older clients have more likely "hit bottom" (this is a term often used in the AOD treatment field to describe the client with an overwhelming number of problems in multiple domains of their life due to their substance abuse). It is commonly believed that these older clients are more likely to be motivated to complete treatment than younger clients with less complex problems. Supporting these common AOD staff perceptions that older clients are usually more motivated to undertake and complete treatment than younger clients are research findings that adolescents and young adults are less likely to be retained in substance abuse treatment programmes (Williams & Chang, 2000).

Grella, Hser, Joshi, and Anglin (1999) reported on the Drug Abuse Treatment Outcome Studies (DATOS) that analysed outcomes of 551 clients in long-term (12 months) residential services with outcomes of 571 clients in outpatient programs. The authors found that younger clients (less than 30 years) stayed in treatment for fewer days than older clients in both outpatient treatment counselling and residential modalities. The authors suggested that, although retaining younger clients in treatment was more difficult, the benefits of retention for long-term treatment success were apparent and therefore the problem of retaining younger persons in treatment needed to be better understood. Joe, Simpson and Broome (1999) also analysed the DATOS findings and reported that younger clients tended to remain less days in treatment for all substance abuse treatment modalities.

Recent research by Adams, Peden, Hall, Rayens, Staten, and Leukefeld (2011) of female offenders in a community-based residential substance abuse facility indicated that older women were much more likely to remain in treatment than younger women, although the authors note that this was a particularly vulnerable population with concerns about future employment. Satre, Mertens, Arean, and

Weisner (2004) followed up 925 former clients 5 years after treatment and reported outcomes according to client age. The authors found that older adults (55-77 years) had been retained in treatment longer than middle-aged (40-54 years) or younger (18-39 years) clients, and the older client group were more likely to be abstinent 5 years later than younger and middle-age groups. Analysis of these outcomes revealed that age group was not the most significant factor predicting 5-year outcomes, and that other variables such as gender, treatment retention, primary drug of abuse and social networks had greater effect in predicting 5-year AOD abstinence rates. Although there are obviously other confounding factors affecting long-term outcomes, there remains the common finding that younger persons tend to remain in most AOD treatment modalities for shorter periods of time compared to older clients.

Retention and Self-Esteem

Various client attributes have been studied to determine if there are possible links to the aetiology of substance abuse, and recovery from substance abuse. Research has indicated that low self-esteem in both men and women is implicated in the development of alcohol use disorders, and women with low self-esteem are also at risk of developing drug use disorders (Trucco, Connery, Griffin, & Greenfield, 2007). Low self-esteem has been associated with alcohol and other drug abuse with researchers noting that low self-esteem is common in both outpatient and inpatient treatment populations (Malcolm, 2004). Females presenting for maintenance treatment for opiate abuse have reported lower self-esteem than men, and this was suggested to be closely related to the high rate of depression in women seeking substance abuse treatment (Giacomuzzi, Riemer, Ertl, Rossler, Hinterhuber, & Kurz, 2005).

In recognising that persons low in self-esteem are more at risk of developing substance abuse problems, increasing client self-esteem is often included as a goal in substance abuse treatment interventions. However, the relationship between changes to client self-esteem and successful substance abuse treatment is unclear. Improvement in self-esteem scores during substance abuse treatment for women appears to be an important factor predicting treatment success (Wilke, 2004), but the findings for males are less clear. Malcolm (2004) reported on a sample of homeless men receiving outpatient substance abuse treatment where self-esteem scores decreased concurrent with a general decrease in the group’s alcohol and other drug

use. Hawke, Hennen, and Gallione (2005) reported outcomes from a study of 185 adolescent males from five New Jersey therapeutic community programs, and note that a measure of therapeutic involvement was a strong predictor of treatment retention and outcome. The measure of therapeutic involvement was comprised of numerous factors, but further analyses indicated that self-esteem was a strong component predicting therapeutic involvement and retention. Dekel, Benbenishty, and Amran (2004) reported that both male and female clients with higher self-esteem were more likely to be abstinent at 15 months post-treatment compared to clients with lower self-esteem in a study of 167 heroin addicts from 3 TCs in Israel.

Trucco et al., (2007) conducted a relatively small study (41 women and 60 men), but provided an interesting analysis of the association of self-esteem with substance abuse treatment. The authors reported that at treatment entry low self-esteem was associated with depression and other psychiatric disorders in both men and women, but that self-esteem was not related to relapse or one-year post treatment drinking outcomes, gender or self-efficacy. They further noted that the definition of self-esteem is unclear and that many studies have collapsed measures of self-efficacy with self-esteem and self-concept.

The research suggests that self-esteem scores may be an important predictor of treatment retention and attrition for female and younger clients in particular. However, the mixed findings reported in the literature suggest that the relationship between self-esteem and substance abuse treatment completion requires further clarification. Many studies of substance abuse treatment retention and client self-esteem have also noted a strong relationship between client self-esteem and concurrent measures of anxiety and mood.

Retention and Anxiety and Mood Disorders

The most common coexisting disorders with alcohol and other substance abuse are anxiety and affective disorders (Donohue, Acierno, & Kogan, 1996; Scott, Gilvarry, & Farrell, 1998). Scott et al. (1998) reviewed the findings of clinical samples from the United Kingdom and reported that 28% of individuals with a substance abuse problem will also have an anxiety problem, and 26% will have an affective disorder. McKenna and Ross (1994) estimated that at least 50% of individuals who abuse alcohol and/or other drugs have at least one comorbid psychiatric disorder. The National Survey of Mental Health and Wellbeing

(NSMHWB) undertaken with an Australian population in 2007 noted high rates of comorbidity between alcohol and other drug use disorders and mental health issues (Mills, Deady, Proudfoot, Sannibale, Teeson, Mattick, & Burns, 2007). The authors reported that the most common comorbid mental health issues in the population abusing alcohol and other drugs were mood, anxiety and personality disorders.

Many drug treatment retention/attrition studies have reported that clients with substance abuse and psychiatric comorbidity have higher rates of treatment attrition and relapse (Charney, Paraherakis, Negrette, & Gill, 1998; Miller, 1992; Moos, Mertens, & Brennan, 1994). However, Meier and Best (2006) reported an analysis of United Kingdom residential treatment services for substance abusers and noted that the proportion of dual-diagnosis rates within these samples did not appear to influence retention rates. A review of 58 treatment outcome studies undertaken by Meier and Barrowclough (2009) provides a recent summary of research on this question. The authors noted that a past history of mental health problems did not predict treatment attrition. However, evidence for current mental health problems affecting substance abuse treatment attrition was contradictory. They noted that most treatment retention research studies have focused on the effects of affective disorders, anxiety disorders and personality disorders as they are the most common mental health problems reported by the majority of studies. They note that most clients in substance abuse treatment with concurrent anxiety, mood and most personality disorders are not more likely to drop out, however clients with anti-social personality disorder are at elevated risk of attrition.

The high prevalence of current comorbidity in substance abuse treatment populations is nevertheless reported by many researchers to contribute to low treatment retention rates, and it is often noted that psychiatric disorders need to be accurately identified and addressed during substance abuse treatment to improve retention rates. As previously described, during the last 20 years many therapeutic community programmes have modified the style and content of their programmes with the aim of improving retention rates for clients with mental health problems. Tailoring interventions in therapeutic communities to better retain residents with mental health problems suggests the need for accurate diagnoses, however obtaining definitive mental health diagnoses is often complicated with substance abusing populations.

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Co-existing Versus Substance-induced Disorders

Several researchers dispute the high prevalence figures reported for current psychiatric comorbidity in substance abuse treatment populations (Charney et al., 1998; Grant et al., 2004; Raimo & Schuckit, 1998). Curran, Booth, Kirchner, and Deneke (2007) stated that, in the case of mood disorders, many studies have failed to distinguish coexisting disorders from temporary symptoms of substance intoxication and withdrawal because assessment is usually undertaken on admission to treatment, soon after or during the substance abuse withdrawal period. They noted that significant positive change in patient psychopathology usually occurs in the immediate weeks following admission to substance abuse treatment and suggested that these cases are not representative of mood disorders independent from the substance abuse problem.

More accurate prevalence rates of comorbidity in substance abuse treatment populations would be better determined by measuring anxiety and depressive symptoms following the withdrawal period from substance abuse. Curran et al. (2007) suggest the discrimination between major depressive episodes and substance-induced mood disorders requires a detailed time-line evaluation of the client, but note that most symptoms of substance-induced depression resolve within four weeks of abstinence. Baker, Kay-Lambkin, and Lee (2009) note the high frequency of anxiety and mood disorders in substance abuse treatment populations suggests screening for these problems should be undertaken in AOD treatment services. The authors make the important note that this should be undertaken with assessment tools that have been specifically validated for use with alcohol and other drug service clients after the clients have completed the active phase of substance use withdrawal.

Many studies have noted that females have high depression levels at treatment entry, but there are a limited number of studies examining treatment retention and changes in psychopathology in substance abuse treatment populations that include female participants (Brooner, King, Kidorf, Schmidt, & Bigelow, 1997; Greenfield et al., 2007). Curran et al., (2007) reported on a male sample showing elevated depression scores at treatment exit are a predictor of relapse within three months of treatment cessation, but noted that elevated depression scores at treatment entry in this sample did not reliably predict treatment attrition.

A recently published analysis of 227 cocaine dependent individuals in 6 TCs in Spain reported high rates of co-occurring psychiatric morbidity for these persons

(65.6%), with mood, anxiety and psychotic disorders predominating. The authors describe the use of a semi-structured questionnaire designed to help discriminate independent or primary psychiatric disorders, from substance-induced disorders. They were consequently able to determine that the large majority of both mood and psychotic co-occurring psychiatric disorders were substance-induced psychiatric disorders. The authors note that the finding has important ramifications for how integrated mental health treatment should be implemented within TCs to best effect (Vergara-Moragues, Gonzalez-Saiz, Lozano, Espinosa, Calderon, Bilbao-Acebos, Garcia & Garcia, 2012). In regard to the implementation of integrated mental health treatment within substance abuse treatment settings, Sterling, Chi & Hinman (2011) note that although there is considerable evidence for the benefits of integrated mental health care, a variety of practical and ideological barriers remain within many U.S. substance abuse treatment settings, and note that only about half of the U.S. AOD services offer dual AOD and mental health treatment. The authors note that some of these barriers may relate to the primary form of substance abuse that services treat, and the next section focuses on reported findings of primary drug of abuse and treatment retention.

Retention and Primary Drug of Abuse

Persons entering substance abuse treatment programmes are usually required to indicate to the service the primary drug or substance that has been problematic for them in recent times, and this is usually termed the person's "primary drug of abuse". Treatment services typically service populations where various substances have been indicated as the "primary drug of abuse", and recognise that persons often abuse multiple substances. Most residential services therefore do not alter or tailor the treatment programme according to the person's identified primary drug of abuse. However, many service staff believe people gravitate to the use and abuse of specific substances for various personal reasons that may or may not be effectively addressed in a particular treatment programme. Many researchers have hypothesised that an individual's primary drug of abuse may be important in determining whether the person remains in treatment, however the research findings regarding whether a person's primary drug of abuse helps predict their retention in various forms of substance abuse treatment have been mixed.

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There were no significant differences reported by Copeland and Sorensen (2001) in a North American sample regarding the successful completion of outpatient treatment for stimulant users in a study comparing cocaine and methamphetamine users. Patkar, Thornton, Mannelli, Hill, Gottheil, Vergare, and Weinstein (2004) measured treatment outcomes of 143 individuals receiving 12-week substance abuse outpatient treatment and noted no significant differences in treatment completion rates when comparing the alcohol, cocaine and multi-substance abusing groups. More recently, however, Meier and Best (2006) conducted a survey of 57 AOD residential rehabilitation services in England and Wales, and noted that treatment completion rates were significantly lower for programmes with more clients admitted for illicit drug problems than for alcohol problems. There does not appear to be any consistent finding reported in the literature for any particular primary drug of abuse affecting treatment retention.

The majority of AOD treatment attrition studies in the previous twenty years have been undertaken in either the USA or Western Europe and have focused on populations where alcohol, opiates and cocaine were the primary drugs of abuse. There is increasing concern during the last two decades about methamphetamine abuse in Australia, North America and many Asian countries, and yet there has been limited research undertaken with clients presenting to Australian inpatient treatment facilities with this class of drug as the primary presenting drug problem (Australian Institute of Health and Welfare, 2002). There has been considerable research undertaken in North American with this particular population group during the last decade. Luchansky, Krupski, and Stark (2007) studied all adults and youth admitted to Washington State substance abuse treatment services in 2003. They found that both adult and youth clients who identified methamphetamines as their principal drug of use had shorter episodes of both inpatient and outpatient treatment, and were less likely to have positive outcomes compared to clients identifying alcohol and cannabis as their primary drug of abuse. Hillhouse et al., (2007) reported findings from their study of 420 methamphetamine abusing adults that females and persons with high depression levels were less likely to successfully engage with substance abuse treatment for methamphetamine abuse. The authors also noted there has been little published research identifying predictors of treatment retention and completion with methamphetamine abusing populations.

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Retention and Methamphetamines

There is limited understanding of comorbidity and psychopathology change following abstinence with methamphetamine treatment populations in particular (Dawe & McKetin, 2004). Few substance abuse inpatient treatment population studies have reported changes in psychopathology during treatment, and even fewer have examined gender differences in psychopathology change. A focus on changes in client psychopathology within the methamphetamine-abusing treatment population is also rare within the research literature. Dyer and Cruickshank (2005) reported findings of an analysis of methamphetamine abusing clients seeking detoxification in Western Australia, and reported moderate to high levels of depression in this sample, however the authors noted that further research is required to further determine the relationship between depression and treatment outcome with this population.

Rawson et al., (2000) found that methamphetamine users reported significantly higher depression scores than cocaine users and that these elevated scores persist for longer periods of time and negatively affect treatment retention. These authors noted that elevated depression scores persist among some former methamphetamine abusers even years after treatment. In contrast to this report of persistent elevated depression scores among former methamphetamine abusers, McGregor et al., (2005) stated that the majority of withdrawal symptoms with methamphetamine users resolve within the first week of withdrawal, including depression symptoms. This study only involved a small sample (n = 21) that included a single female participant. Lin et al., (2004) conducted a larger study of incarcerated Taiwanese methamphetamine users (n = 325, including 145 females), where 37% of the sample reported psychiatric problems. No significant gender differences were reported for mood disorders with this sample; however there was no analysis of psychopathology change following drug use cessation.

A review of relevant literature by Baker and Dawe (2005) focussed on describing the prevalence and course of the most common co-occurring psychological problems with methamphetamine users. These authors state there has been very little investigation of the psychopathology course of methamphetamine use and co-occurring psychological problems. They also note that diagnostic certainty requires a substantial period of abstinence. Baker and Dawe (2005) also state that psychopathology scores should be measured at least 2 weeks after initiation of

abstinence, and preferably measured repeatedly during treatment to better determine the role of depression and anxiety in treatment retention.

Gonsalves, Sapp and Huss (2007) report findings of a recent study comparing methamphetamine and non-methamphetamine users entering a U.S. short-term residential dual diagnosis treatment facility, and note that the methamphetamine sub-population were more likely to be younger, and to drop out of treatment early compared to non-methamphetamine users. Darke, Kaye, McKetin, and Duflou (2008) report a review of the major physical and psychological harms of methamphetamine use, and note that compared to normal populations, high rates of substance-induced psychosis, depression and anxiety are reported by users.

Ciketic, Hayatbakhsh, Doran, Najman, and McKetin (2011) report an analysis of the effectiveness of various outpatient and inpatient treatment interventions for persons with methamphetamine problems, and note that there are very low rates of methamphetamine treatment access within Australia despite the fact that Australia has one of the highest rates of methamphetamine use in the world. It remains possible that these low treatment rates of methamphetamine users within Australia may reflect that treatment services are not meeting the mental health needs of this client group, and therefore methamphetamine users who do access treatment are therefore more likely to drop out.

Retention and Prescribed Psychoactive Medication

Determining a more accurate clinical picture of client psychopathology after in-patient entry has important ramifications for treatment content and service policy. An accurate determination of whether a mood disorder exists or is primarily a short-term function of substance withdrawal may help determine whether continued specific psychological or pharmacological interventions are warranted.

Until relatively recently, the use of medication for mental health disorders was discouraged or disallowed in many substance abuse treatment settings in the USA (Brady & Verdun, 2005). Knudsen, Ducharme, and Roman, (2007) conducted a more recent national study of 766 substance abuse treatment centres in the USA, and noted that less than half of these treatment centres allowed client use of SSRI medications for mood disorders. The frequency of use of prescribed medication for psychiatric disorders within Australian residential AOD treatment facilities is more difficult to determine, because there has been little published research of Australian residential

treatment services in general, and what has been published usually does not indicate whether clients are allowed prescribed medication use during residential treatment.

The difficulty with some AOD residential treatment services prohibiting the use of prescribed psychoactive medications is that, many persons seeking to enter "drug free" residential AOD treatment services will abruptly cease taking prescribed medications to qualify for entry. One problem with abrupt cessation of prescribed psychoactive medications immediately prior to residential service entry is many individuals may experience substance abuse withdrawal symptoms with accompanying increased mental distress symptoms. Escalation of mental symptoms and decreased mental well-being due to entry to a novel environment, concurrent with withdrawal from substance use and various prescribed medications may possibly contribute to the high rates of early treatment attrition witnessed in many residential AOD treatment services.

Lynskey (1998) reported that a number of placebo-controlled studies have indicated treatment for alcohol dependence may be enhanced with anti-depressant medication. The large majority of AOD treatment studies focusing on attrition rates in residential services do not indicate whether prescribed psychoactive medications are available to clients. It is possible that reported treatment attrition rates are influenced by service policy regarding the exclusion or availability of prescribed medications for clients experiencing mental health problems (Knudsen, Ducharme, & Roman, 2007).

Summary

Most analyses of AOD residential treatment services (including therapeutic communities) conclude that residential treatment is an effective form of intervention for individuals with various substance abuse problems. High treatment attrition rates in residential interventions are common however, and many studies have therefore sought to identify causes of attrition from residential substance abuse treatment. Various client and program factors have been identified in individual studies that predict client attrition; however, there is no consensus of what are reliable attrition factors, and the search for factors influencing attrition is complicated by many variables. Some of the attrition factors that have been identified in the literature include client gender, age, mental health status, and primary drug of abuse.

There are a large number of studies examining retention and attrition in residential treatment settings in the USA, and a smaller number of studies of United

Kingdom and other European treatment services, but little published literature examining client retention and attrition in Australian AOD residential or TC treatment services. It is important to undertake research with Australian TC treatment services, as there are different population mixes and some different patterns of substance abuse compared to other countries that may influence client treatment retention.

In recent years there have also been numerous research findings stating that persons entering residential treatment with methamphetamine-use problems are much more likely to drop out of treatment, and that many of these clients have comorbid mental health problems. Australia continues to have high rates of methamphetamine use, and so this study also seeks to better understand if methamphetamine-using clients are at much higher risk of TC attrition. The second stage of this study involved presenting the findings of the first stage to experienced managers and senior clinicians of Australian and New Zealand TCs for comment and reaction. The primary aim of the second stage is to help determine the validity and utility of the stage one findings from the perspective of TC senior staff, and to explore possible barriers and solutions to introducing knowledge of the stage one findings to TCs.

Stage 1 Research Aims

It is possible, on the basis of past findings, to hypothesise that gender, age, primary drug of abuse and client psychopathology are factors that may influence AOD inpatient treatment attrition. However, past findings are inconsistent in their identification of whether these factors influence inpatient treatment attrition. The aim of the first study reported in this thesis was to examine several of these previously reported predictors of retention and attrition in an Australian therapeutic community. More specifically the study aimed to examine the association between gender, age group, primary drug of abuse, medication use, self-esteem, anxiety and depression scores at entry, at 2-weeks and at 8-weeks, and treatment retention at 8 and 14 weeks, and explore hypotheses generated from past research findings.

Hypothesis 1 is that both male and older clients will be more likely retained in treatment at both 8 weeks and 14 weeks.

Hypothesis 2 is that clients nominating methamphetamines as their primary drug of abuse will be more likely to drop out of treatment by 8 weeks and 14 weeks.

Hypothesis 3 is that clients with elevated anxiety and depression scores will be more likely to remain in treatment at 8 weeks and 14 weeks.

Stage 1 Method

Participants

The sample consisted of 234 adults (150 males, 84 females) who voluntarily entered a Western Australian therapeutic community (Palmerston Farm) during a six-year period (2000-2005). The agency client database for the period of data collection contains no personal-identifying information and is comprised of client data indicating age, gender, primary substance of abuse, medication use, and psychological test scores (depression, anxiety and self-esteem), that were collected by the agency for client monitoring purposes throughout the period of clients' substance abuse treatment.

The client demographic data were routinely collected by administrative staff soon after client entry to the TC program. The psychometric data were collected by clinical staff at entry, and then re-measured during the second, eighth and fourteenth weeks of remaining clients. The psychometric data remained in client files to allow clinician monitoring of client mental health throughout their period of treatment. Agency staff transcribed client demographic and psychometric data from client files on an annual basis, and this de-identified information was electronically stored on a secure, dedicated archive at the agency. This author was later granted access by the Chief Executive officer of the Agency to use the de-identified client data archive for the purpose of this research.

Participant Demographics

Client Age

Preliminary analysis of the frequencies of the treatment entry data resulted in the decision to separate the data into three age groups of approximately even numbers. These three categories are; 17-23 years inclusive (n = 77), 24-29 years (n = 80) and 30-50 years (n = 77).

Client Gender

There were 150 males and 84 females at treatment entry.

Stage 1 Materials

The psychometric measures of anxiety, self-esteem and depression were selected by the drug treatment agency involved due to their availability at no charge, and their recommendation for AOD agency use by the Western Australian Best Practice in Alcohol and Other Drug Interventions Working Group's publication: "A Guide for Counsellors Working with Alcohol and Other Drug Users" (Marsh & Dale, 2000).

Self-esteem

- Rosenberg Self-Esteem Scale (RSE) - (Rosenberg, 1989).

The Rosenberg Self-Esteem (RSE) Measure is a 10-item, 4-point scale measure, originally designed to measure the self-esteem of high school students. However, since its development in 1965 the scale has been used with many different populations from a large variety of occupations. Extensive research has demonstrated concurrent, known-groups, predictive and construct validity of the RSE, and it correlates highly with other self-esteem measures, and in predicted directions with commonly used measures of anxiety and depression. The RSE has a Guttman scale coefficient of reproducibility of .92, indicating excellent internal consistency, and 2-week test-retest reliability correlations of .85 indicating very high internal stability (Fischer & Corcoran, 1994). The scale produces scores from 10-40 with higher scores indicating greater self-esteem. Scores were divided into 3 categories: 10-20 (low); 21-30 (medium); and 31-40 (high). Items in the scale include; "I feel that I have a number of good qualities", "I take a positive attitude towards myself", and "I feel that I'm a person of worth, at least on an equal plane with others".

Depression

- The Centre for Epidemiological Studies Depression Scale (CES-D) (Radloff, 1977)

The CES-D is a 20-item scale designed to measure depression in the general population. However, it has also been used with clinical and psychiatric populations. The instrument is easily used, extensively researched and has broad applicability. The CES-D has excellent concurrent validity and correlates well with a range of other depression and mood scales. It has good known-groups validity and discriminates well between psychiatric inpatients and the general population, and moderately well

between levels of severity within patient groups. The CES-D has good internal consistency with alphas of .85 in the general population and .90 in the psychiatric population. The CES-D also has acceptable test-retest correlations ranging from .51 to .67 (tested from two to eight weeks). This measure has also been shown to be sensitive to measuring change in psychiatric status after treatment (Fisher & Corcoran, 1994). Items in the CES-D include; "I was bothered by things that usually don't bother me", "I had trouble keeping my mind on what I was doing", "I felt that everything I did was an effort", and "I felt depressed".

The CES-D produces scores ranging from 0-60, with scores above 16 indicative of depressed mood, and scores above 26 indicative of major depression (Ensel, 1986; Zich & Attkinson, 1990). Depression categories used for this analysis were: 0-15 (Normal); 16-26 (indicative of Mild Depression); 27-60 (indicative of Major Depression).

Anxiety

- Mind Over Mood Anxiety (MOM-A) Inventory (Greenberger & Padesky, 1995)

This scale was recommended for use with substance abuse treatment populations by Marsh and Dale (2000) and has been used by several AOD treatment services in Western Australia. Little research has been published on this inventory although Cox, Beal, and Brittain (2005) report results of a concurrent validity study comparing the Mind over Mood Inventory with the Beck Anxiety Inventory (BAI) and the Burns Anxiety Inventory (Burn's-A) with a group of 100 undergraduate students. Cox et al. state that the MOM-A correlation with the Burn's-A was 0.849, ($p < .01$), and the correlation with BAI was 0.724 with the Beck Anxiety Inventory.

The Mind Over Mood Anxiety instrument presented difficulties in determining commonly accepted categories of anxiety scores because this instrument has not been cited in previous research. The 24 item measure produces scores from 0-72, and in the absence of suggested categorical scoring for this instrument, the scores were divided into three approximately equal categories using a method described by Keller, (2005): Class width = (maximum score – minimum score/ number of classes). This method resulted in 3 anxiety classifications: 0-24 (low anxiety), 25-48 (medium anxiety), and 49-72 (high anxiety). The instrument asks respondents to rate how much they have Therapeutic Community Retention

experienced symptoms in the previous week, and test items include; “Feeling nervous”, “Sweating not due to the heat”, “Avoiding places where I might feel anxious”, and “Rapid heartbeat”.

Psychoactive Medication Use

Prescribed client psychoactive medications included anti-depressant medication (primarily Selective Serotonin Re-uptake Inhibitor type, or SSRI), anti-psychotic medications, and mood stabiliser medications. The large majority of prescribed client medications were the SSRI anti-depressant class of medication, with smaller numbers of clients prescribed various mood stabiliser and anti-psychotic medications. At entry there were 151 clients not taking medications, 67 clients taking anti-depressants, 12 clients prescribed anti-psychotics, and 4 clients prescribed mood stabilising medications. A small number of clients had also been prescribed Naltrexone; however this was not recorded in the database. The small number of clients prescribed medications other than anti-depressants did not allow their separate analysis effect on client treatment retention. Client use of any medication was therefore collapsed into a single Medication Use variable, with two levels, “Medication Use” or “No Medication Use”.

Primary Drug of Abuse

On treatment entry clients are asked to name their current primary drug of use, resulting in four primary drug categories comprising amphetamines (principally methamphetamine, however the two terms are used inter-changeably throughout this paper), alcohol, opiates and cannabis. It should be noted that, from the year 2000, there was a reduction in the local availability of opiates (heroin) in Western Australia, and a sharp and sustained increase in the availability and illicit use of methamphetamines. The change in patterns of primary drug of abuse from opiates and alcohol to methamphetamines presented major challenges for most Western Australian AOD residential treatment services at that time. The methamphetamine-using population were usually younger males who were commonly presenting to AOD treatment services with a range of mental health problems. This population soon became the major client group in most Western Australian treatment services during those years. It should be noted that Methamphetamines are primarily labelled as Amphetamines in most of the frequency and analysis tables within the results section.

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Stage 1 Procedure

Written permission was obtained from the AOD Agency to assess and analyse the residential treatment facility's client database from the 2000-2005 period (see Appendix D). The researcher was provided with an electronic copy of the database that was copied to the researcher's private computer. This data file was password protected on the researcher's private computer. The database contains non-identifiable client data and corresponding psychological test scores collected as standard clinical practice during that period of operation. The psychometric data collection points of the residential service occurred at program entry, then 2, 8 and 14 weeks after entry. For the purpose of this analysis, and to allow comparisons with past research findings, the 8 and 14 week points in the treatment program were chosen as the times to measure client treatment retention. Analysis of the data using a statistical package (Statistical Package for the Social Sciences, SPSS, Version 19) identified variables indicating a significant association with retention and attrition risk at the 8 and 14-week stages of treatment.

Analysis of 14-week retention in treatment was chosen for the purpose of exploring the 3-month period of treatment that previous research analysing AOD treatment retention and longer-term outcomes had stated was significant (Simpson, Joe, Broome, Hiller, Knight, & Rowan-Szal, 1997). Other research analysing retention rates in residential programmes have used similar 90 day retention periods, (Baker, Gowing, Lee, & Proudfooot, 2004; Brunette, Mueser, & Drake, 2004).

The 8-week time period in this research was chosen by agency clinicians to help discriminate substance–induced elevated psychiatric symptoms from elevated symptoms attributed to distinct mental health disorders. Gossop, Marsden, and Stewart (2006) noted that many clients entering substance abuse treatment have psychiatric symptoms that significantly decrease usually within the first month of abstinence. Senior clinicians of the T.C. service also believed that methamphetamine withdrawal was more complicated in some individuals, and suspected that improvement in psychiatric symptoms could continue over an extended period of up to 8 weeks.

The psychopathology data were also collected at 2 weeks; however the archived client data indicated that only nine clients left treatment during the first two weeks. The agency clinical staff believed this comparatively small number of client

dropouts in the initial two-week period was a reflection of the agency's stringent entry conditions to the TC. Client entry to this TC involved continuous proof of abstinence in the two weeks immediately prior to entry as determined by at least twice weekly outpatient urinalysis. The residential service clinical staff believed this period of pre-entry abstinence provided a significant motivational "test" to help avoid early client attrition. This pre-admission period was also believed to help protect existing clients from new arrivals who can subsequently leave on impulse soon after arrival. The 2-week pre-admission procedure also protected the agency from medical complications in the event of complicated substance abuse withdrawal, as the service is located in a rural area and is unable to easily obtain medical assistance on site.

It was decided that this small number of clients (nine clients) leaving treatment during the initial 2-week period provided insufficient change in retention numbers to offer any meaningful results of possible effects of the various independent variables. Data from the 2-week period following entry were therefore not analysed.

Stage 1 Data Analysis

The first stage of data analysis involved use of Binary Logistic Regression using SPSS (Statistical Package for the Social Sciences, Version 19). Binary logistic regression analysis is a useful statistical method when there is a dichotomous dependant variable (e.g., treatment retention or attrition), and allows the relative contributions of multiple independent variables (e.g., gender, primary drug, age, psychoactive medication use, psychological test scores) to be determined (Cizek & Fitzgerald, 1999) and expressed as an odds ratio (OR).

Stage 1 Independent Variables

Independent variables in the analysis include age, gender, primary drug of abuse, use of prescribed psychoactive medications, and measures of anxiety, depression and self-esteem. All continuous variables (e.g. age, and the anxiety, depression and self-esteem measures), were converted into approximately equal categories to better enable interpretation and use of the results in stage 2 of the study.

Stage 1 Results

The sample of 234 clients was comprised of 150 males and 84 females at program entry. By 2 weeks, the sample was reduced to 143 males and 82 females, or 96.1% of the original sample. By 8 weeks the sample had further reduced to 104 males and 59 females, or 69.6% of the original sample. At 14 weeks, 67 males and 33 females, or 42.7% of the original sample remained in the program.

Table 1

Independent variable frequencies at specific program times

Independent Variables	Number at Entry	Number at 2 weeks	Number at 8 weeks	Number at 14 weeks
Gender				
Male	150	143	104	67
Female	84	82	59	33
Age Group				
(18 – 24)	77	76	46	30
(25 – 29)	80	74	60	29
(30 – 50)	77	75	57	41
Primary Drug				
Amphetamines	132	128	89	56
Opiates	31	29	21	9
Alcohol	44	43	33	23
Cannabis	27	25	20	12
Medication				
Anti-depressant	67	67	49	25
Anti-psychotic	12	12	9	4
Other	4	4	2	1
All Medication:	83	83	60	30
No medication	151	142	103	70
Depression level				

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Low (0 – 15)	43	49	72	57
Medium (16 – 26)	61	88	68	34
High (27 – 60)	130	88	23	9
Anxiety Level				
Low (0 – 24)	86	124	132	86
Medium (25 – 48)	134	99	30	14
High (49 – 72)	14	2	1	0
Self-Esteem Level				
Low (10 – 20)	2	0	0	0
Medium (21 – 30)	153	113	38	12
High (31 – 40)	79	112	125	88
Totals	234	225	163	100

Table 1 summarises frequency change of the independent variables over time, and indicates that rates of attrition are reasonably similar within gender, age and the primary drug categories.

The following tables Nos. 2 to 13 are cross-tabulations of several of the independent variables that have been included to better describe data frequencies between some of the variables, and changes of key variable frequencies (depression levels) over time.

Table 2

Client Gender X Age Group at Program Entry

			Age group			
			17-23	24-29	30-50	Total
	Male	Count	48	56	46	150
		% within Client Gender	32.0%	37.3%	30.7%	100.0%
		% within Age group	62.3%	70.0%	59.7%	64.1%
	Female	Count	29	24	31	84
		% within Client Gender	34.5%	28.6%	36.9%	100.0%
		% within Age group	37.7%	30.0%	40.3%	35.9%
Total		Count	77	80	77	234
		% within Client Gender	32.9%	34.2%	32.9%	100.0%
		% within Age group	100.0%	100.0%	100.0%	100.0%

Table 2 provides the number and percentage of males in females at entry according to the three age groupings and indicates that the age group distributions of male and female clients were similar.

Table 3

Primary Drug of Abuse X Age Group

		Age group			Total
		17-23	24-29	30-50	
Amphetamines	Count	51	50	31	132
	% within Primary Drug	38.6%	37.9%	23.5%	100.0%
	% within Age group	66.2%	62.5%	40.3%	56.4%
Opiates	Count	8	13	10	31
	% within Primary Drug	25.8%	41.9%	32.3%	100.0%
	% within Age group	10.4%	16.3%	13.0%	13.2%
Alcohol	Count	5	10	29	44
	% within Primary Drug	11.4%	22.7%	65.9%	100.0%
	% within Age group	6.5%	12.5%	37.7%	18.8%
Cannabis	Count	13	7	7	27
	% within Primary Drug	48.1%	25.9%	25.9%	100.0%
	% within Age group	16.9%	8.8%	9.1%	11.5%
Total	Count	77	80	77	234
	% within Primary Drug	32.9%	34.2%	32.9%	100.0%
	% within Age group	100.0%	100.0%	100.0%	100.0%

Table 3 shows the age groupings of the entire sample at entry according to primary drug of abuse. In this table it can be seen that primary drug of abuse was associated with age, and that amphetamines/methamphetamines were nominated as the primary drug of abuse by 66.2% of the 17 – 23 year old group, 62.5% of the 24-29 year old group, and 40.3% of the 30-50 year old group. The large majority (65.9%) of persons nominating alcohol as their primary drug were in the older age group, and 48.1% of persons nominating cannabis as their primary drug were in the youngest group.

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Table 4

Medication Use X Age Group

		Age group			
		17-23	24-29	30-50	Total
No Medication	Count	48	51	52	151
	% within + or - Medication	31.8%	33.8%	34.4%	100.0%
	% within Age group	62.3%	63.7%	67.5%	64.5%
Any Medication	Count	29	29	25	83
	% within + or - Medication	34.9%	34.9%	30.1%	100.0%
	% within Age group	37.7%	36.3%	32.5%	35.5%
Total	Count	77	80	77	234
	% within + or - Medication	32.9%	34.2%	32.9%	100.0%
	% within Age group	100.0%	100.0%	100.0%	100.0%

Table 4 shows the three age groupings of the sample at entry according to medication use and indicates that medication use at program entry was unrelated to age of client.

Table 5

Client Gender X Depression Level at Entry

		Depression level at Entry			
		Low (0 - 15)	Medium (16 - 26)	High (27 - 60)	Total
Male	Count	32	45	73	150
	% within Client Gender	21.3%	30.0%	48.7%	100.0%
	% within Depression level	74.4%	73.8%	56.2%	64.1%
Female	Count	11	16	57	84
	% within Client Gender	13.1%	19.0%	67.9%	100.0%
	% within Depression level	25.6%	26.2%	43.8%	35.9%
Total	Count	43	61	130	234
	% within Client Gender	18.4%	26.1%	55.6%	100.0%
	% within Depression level	100.0%	100.0%	100.0%	100.0%

Table 5 shows depression levels at program entry for male and female clients, with a greater percentage of females (67.9%) reporting high levels of depression at entry, compared to males (48.7%).

Table 6

Client Gender X Anxiety Level at Entry

		Anxiety Level at Entry			Total
		Low (0 - 24)	Medium (25- 48)	High (49- 72)	
Male	Count	65	77	8	150
	% within Client Gender	43.3%	51.3%	5.3%	100.0%
	% within Anxiety Level	75.6%	57.5%	57.1%	64.1%
Female	Count	21	57	6	84
	% within Client Gender	25.0%	67.9%	7.1%	100.0%
	% within Anxiety Level	24.4%	42.5%	42.9%	35.9%
Total	Count	86	134	14	234
	% within Client Gender	36.8%	57.3%	6.0%	100.0%
	% within Anxiety Level	100.0%	100.0%	100.0%	100.0%

Table 6 shows anxiety levels at program entry and indicates that both males and females primarily reported low to medium levels of anxiety at entry, with a higher percentage of males reporting low anxiety levels compared with females.

Table 7

Client Gender X Self-Esteem Level at Entry

		Self-Esteem Level at Entry			
		Low (10 - 20)	Medium (21 - 30)	High (31 - 40)	Total
Male	Count	2	94	54	150
	% within Gender	1.3%	62.7%	36.0%	100.0%
	% within Self-Esteem Level	100.0%	61.4%	68.4%	64.1%
Female	Count	0	59	25	84
	% within Gender	.0%	70.2%	29.8%	100.0%
	% within Self-Esteem Level	.0%	38.6%	31.6%	35.9%
Total	Count	2	153	79	234
	% within Gender	.9%	65.4%	33.8%	100.0%
	% within Self-Esteem Level	100.0%	100.0%	100.0%	100.0%

Table 7 shows self-esteem levels for male and female clients at program entry and indicates that the large majority of clients enter the program with medium levels of self-esteem (62.7 % of males, and 70.2% of females).

Table 8

Primary Drug of Abuse X Client Gender

	Male	Female	Total
Amphetamines	85	47	132
	56.7%	56.0%	56.4%
Opiates	20	11	31
	13.3%	13.1%	13.2%
Alcohol	23	21	44
	15.3%	25.0%	18.8%
Cannabis	22	5	27
	14.7%	6.0%	11.5%
Total	150	84	234
	100.0%	100.0%	100.0%

Table 8 indicates that the majority of both male (56.7%) and female (56.0%) clients noted amphetamines/methamphetamines as their primary drug of abuse. Remaining males nominated cannabis (14.7%), opiates (13.3%), and alcohol use (15.3%) as their principal drugs of abuse; and the remaining females nominated cannabis (6.0%), opiates (13.1%) and alcohol (25.0%) as their principle drugs of abuse.

Table 9

Client Gender X Psychoactive Medication Type

	No Medication	Anti-Depressants	Anti-Psychotics	Other Medication	Total
Male	104 (69.3% of males)	34 (22.7%)	9 (6.0%)	3 (2.0%)	150 (100%)
Female	47 (55.9% of females)	33 (39.3%)	3 (3.6%)	1 (1.2%)	84 (100%)
Total	151 (64.5% of clients)	67 (28.6%)	12 (5.1%)	4 (1.7%)	234 (100%)

Table 9 indicates more males (69.3 %) than females (55.9 %) were not prescribed medications. A higher proportion of females (39.3 %) compared to males (22.7 %) were prescribed anti-depressant medications. A higher proportion of males (6.0 %) were prescribed anti-psychotic medication compared to females (3.6%).

Table 10

Depression Level at Entry X Medication Use

		Depression level at Entry			Total
		Low (0 - 15)	Medium (16 - 26)	High (27 - 60)	
No Medication	Count	36	39	76	151
	% No Medication	23.8%	25.8%	50.3%	100.0%
	% Depression level at Entry	83.7%	63.9%	58.5%	64.5%
Any Medication	Count	7	22	54	83
	% With Medication	8.4%	26.5%	65.1%	100.0%
	% Depression level at Entry	16.3%	36.1%	41.5%	35.5%
Total	Count	43	61	130	234
	% within + or - Medication	18.4%	26.1%	55.6%	100.0%
	% Depression level at Entry	100.0%	100.0%	100.0%	100.0%

Table 10 indicates the majority of clients prescribed medications scored in the high depression level at program entry (65.1% of all medicating clients), and medium depression level at entry (26.5% of all medicating clients). It should also be noticed that 50.3% of the clients taking no medications scored in the high level of depression at entry, and 25.8% scored in the medium level of depression.

Table 11

Depression Level at 2 Weeks X Medication Use

		Depression level at 2 Weeks			Total
		Low (0 - 15)	Medium (16 - 26)	High (27 - 60)	
No Medication	Count	40	56	46	142
	% No Medication	28.2%	39.4%	32.4%	100.0%
	% Depression level at 2 Weeks	81.6%	63.6%	52.3%	63.1%
Any Medication	Count	9	32	42	83
	% With Medication	10.8%	38.6%	50.6%	100.0%
	% Depression level at 2 Weeks	18.4%	36.4%	47.7%	36.9%
Total	Count	49	88	88	225
	% within + or - Medication	21.8%	39.1%	39.1%	100.0%
	% within Depression level at 2 Weeks	100.0%	100.0%	100.0%	100.0%

Table 11 indicates that there was a general decrease in the number of persons in the high levels of depression to the medium and low levels of depression for both the medicating and non-medicating clients at 2 weeks compared to the numbers of person in high depression levels at entry (Table 10).

Table 12

Depression Level at 8 Weeks X Medication Use

		Depression level at 8 Weeks			Total
		Low (0 - 15)	Medium (16 - 26)	High (27 - 60)	
No Medication	Count	53	39	11	103
	% No Medication	51.5%	37.9%	10.7%	100.0%
	% Depression level at 8 Weeks	73.6%	57.4%	47.8%	63.2%
Any Medication	Count	19	29	12	60
	% With Medication	31.7%	48.3%	20.0%	100.0%
	% Depression level at 8 Weeks	26.4%	42.6%	52.2%	36.8%
Total	Count	72	68	23	163
	% + or - Medication	44.2%	41.7%	14.1%	100.0%
	% Depression level at 8 Weeks	100.0%	100.0%	100.0%	100.0%

Table 12 indicates decreasing numbers and percentages of clients remaining with high levels of depression at 8 weeks within both medication and non-medication groups.

Table 13

Anxiety Level at Entry X Medication Use

Entry Anxiety level		No Medication	Any Medication	Total
low (0 - 24)	Count	60	26	86
	% within + or - Medication	39.7%	31.3%	36.8%
Medium (25- 48)	Count	81	53	134
	% within + or - Medication	53.6%	63.9%	57.3%
High (49- 72)	Count	10	4	14
	% within + or - Medication	6.6%	4.8%	6.0%
Total	Count	151	83	234
	% within + or - Medication	100.0%	100.0%	100.0%

Table 13 indicates a lower percentage of medicating clients in the low anxiety level group (31.3%), compared to non-medicating clients at entry (39.7%). There was a higher percentage of medicating clients in the medium anxiety level (63.9%) group compared to the non-medicating clients (53.6%).

Table 14

Primary Drug of Abuse X Psychiatric Medication Type

		No Medication	Anti-Depressant	Anti-Psychotic	Other Medication	Total
Amphetamines	Count	91	36	5	0	132
	% within Medication	60.3%	53.7%	41.7%	.0%	56.4%
Opiates	Count	22	7	0	2	31
	% within Medication	14.6%	10.4%	.0%	50.0%	13.2%
Alcohol	Count	23	19	0	2	44
	% within Medication	15.2%	28.4%	.0%	50.0%	18.8%
Cannabis	Count	15	5	7	0	27
	% within Medication	9.9%	7.5%	58.3%	.0%	11.5%
Total	Count	151	67	12	4	234
	% within Medication	100.0%	100.0%	100.0%	100.0%	100.0%

Table 14 indicates the breakdown of medication type by primary drug of use, and reveals that anti-psychotic medication was prescribed to clients who had reported that either methamphetamines, or cannabis as their primary drug problem. Anti-depressant medication was the most common medication, and had been prescribed to: 36 (27.3%) of methamphetamine users, 7 (22.5%) of opioid users, 19 (43.2%) of alcohol users, and to 5 (18.5%) cannabis users. “Other medications” were comprised of Naltrexone that had also been prescribed to two opioid users, and mood stabilising medications had been prescribed to 2 alcohol users.

Prediction of retention at 8 weeks:

The primary questions posed in stage 1 of this thesis concerned prediction of retention in the program at eight and fourteen weeks. By eight weeks, of the original 234 clients (150 males and 84 females) only 163 (69.7%) remained (104 males and 59 females). In this initial set of 7 analyses, the variables of gender, age, drug of abuse, use of medication, level of anxiety, depression and self-esteem assessed on entry into the program were progressively entered into a series of binary logistic regression equations predicting retention as a method of preliminary exploration of the data. Significant results ($p < .05$) are identified in bold type within the tables.

Table 15

Analysis No. 1 for Gender Predicting Retention at 8 Weeks

Step 1a	*p*	Exp(B)	95% C.I. for Exp(B)	
Gender	.885	0.958	0.535	1.715
Constant	.000	2.360		

Gender was not a significant predictor of retention at 8 weeks.

Table 16

Analysis No. 2 for Gender and Age Group Predicting Retention at 8 Weeks

Step 1a	*p*	Exp(B)	95% C.I. for Exp(B)	
Gender(1)	.821	0.934	0.518	1.685
Age group	.128			
(18 – 24 years)				
Age group (1)	.126	0.588	0.298	1.161
(25 – 29 years)				
Age group (2)	.732	1.133	0.554	2.316
(30 – 50 years)				
Constant	.001	2.778		

Age group and gender in the equation were not significant predictors of 8 week retention.

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Table 17

Analysis No. 3 for Gender, Age Group and Primary Drug Predicting Retention at 8 Weeks

Step 1a	*p*	Exp(B)	95% C.I. for Exp(B)	
Gender(1)	.738	0.903	0.496	1.643
Age Group	.128			
Age Group(1)	.181	0.609	0.295	1.259
Age Group(2)	.594	1.224	0.582	2.573
Drug (Amphetamines)	.563			
Drug(1) (Opiates)	.195	0.518	0.191	1.400
Drug(2) (alcohol)	.266	0.505	0.151	1.685
Drug(3) (Cannabis)	.539	0.687	0.208	2.272
Constant	.009	4.700		

Gender, age group and primary drug type were not significant predictors of 8 week retention.

Table 18

Analysis No. 4 for Gender, Age Group, Primary Drug Type and Medication Use Predicting Retention at 8 Weeks

Step 1a	*p*	Exp(B)	95% C.I. for Exp(B)	
Gender(1)	.822	0.933	0.510	1.708
Age Group	.122			
Age Group(1)	.161	0.594	0.286	1.231
Age Group(2)	.639	1.195	0.567	2.519
Drug	.636			
Drug(1)	.225	0.539	0.198	1.464
Drug(2)	.299	0.527	0.157	1.766
Drug(3)	.532	0.683	0.207	2.257
Medication(1) (Any medication)	.432	0.781	0.421	1.447
Constant	.006	5.358		

Medication use was not a significant predictor of 8 week retention when gender, age and primary drug were also included in the model.

Table 19

Analysis No. 5 for Gender, Age Group, Primary Drug Type, Medication Use and Anxiety Levels at Entry Predicting Retention at 8 Weeks

Step 1a	*p*	Exp(B)	95% C.I. for Exp(B)	
Gender(1)	.865	0.947	0.503	1.783
Age Group	.127			
Age Group(1)	.188	0.602	0.283	1.282
Age Group(2)	.550	1.261	0.590	2.697
Drug	.633			
Drug(1)	.248	0.549	0.199	1.517
Drug(2)	.318	0.531	0.154	1.836
Drug(3)	.637	0.743	0.217	2.547
Medication Group(1)	.562	0.828	0.439	1.565
Anx Lev Ent	.006			
Anx Lev Ent(1) (Medium anxiety)	**.012**	**5.313**	**1.446**	**19.524**
Anx Lev Ent(2) (High anxiety)	**.002**	**7.572**	**2.141**	**26.775**
Constant	.841	0.839		

Medium and high anxiety levels were significant predictors of 8 week retention when gender, age group, primary drug and medication use were also included in the equation. The medium level of anxiety at entry was significant (OR = 5.313, 95% C.I = 1.446/19.524, p = .012). The high level of anxiety was also significant (OR = 7.572, 95% C.I. = 2.141/26.775, *p* = .002), indicating that the groups with medium or high level of anxiety at entry were significantly more likely to be retained at 8 weeks.

Table 20

Analysis No. 6 for Gender, Age Group, Primary Drug Type, Medication, Anxiety and Depression Levels at Entry Predicting Retention at 8 Weeks

Step 1a	*p*	Exp(B)	95% C.I. for Exp(B)	
Gender(1)	.632	0.854	0.446	1.632
Age Group	.088			
Age Group(1)	.149	0.564	0.259	1.228
Age Group(2)	.519	1.290	0.595	2.796
Drug	.659			
Drug(1)	.244	0.539	0.190	1.526
Drug(2)	.308	0.513	0.142	1.849
Drug(3)	.559	0.687	0.195	2.423
Medication Group(1)	.660	0.862	0.446	1.667
AnxLevEnt	.011			
AnxLevEnt(1) (Medium Anxiety)	**.034**	**4.628**	**1.121**	**19.102**
AnxLevEnt(2) (High Anxiety)	**.003**	**6.680**	**1.880**	**23.735**
DepLevEnt	.032			
DepLevEnt(1) (Med Depression)	.790	0.879	0.340	2.270
DepLevEnt(2) (High Depression)	**.021**	**2.719**	**1.162**	**6.362**
Constant	.857	0.852		

With the addition of depression levels into the previous equation, the medium level of anxiety at entry was significant (OR = 4.628, 95% C.I. = 1.121/19.102, *p* = .034), and high levels of anxiety at entry was significant (OR = 6.680, 95% C.I. = 1.880/23.735, *p* = .003). The high level of depression at entry was also significant (OR = 2.719, 95% C.I. = 1.162/6.362, *p* = .021). Clients with medium and high levels of anxiety at entry, and high level of depression at entry were significantly more likely retained at 8 weeks.

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Table 21

Analysis No. 7 for Gender, Age Group, Primary Drug Type, Medication, Anxiety, Depression and Self-Esteem Levels at Entry Predicting Retention at 8 Weeks

Step 1a	p	Exp(B)	95% C.I. for Exp(B)	
Gender(1)	.610	0.844	0.439	1.623
Age Group	.063			
Age Group(1)	.166	0.574	0.261	1.259
Age Group(2)	**.377**	**1.429**	**0.647**	**3.160**
Drug	.635			
Drug(1)	.225	0.516	0.177	1.503
Drug(2)	.289	0.492	0.133	1.824
Drug(3)	.528	0.664	0.186	2.371
MedicationGroup(1)	.765	0.903	0.465	1.756
AnxLevEnt	.019			
AnxLevEnt(1)	.059	4.034	0.948	17.163
AnxLevEnt(2)	**.006**	**6.024**	**1.659**	**21.871**
DepLevEnt	.018			
DepLevEnt(1)	.675	1.251	0.440	3.561
DepLevEnt(2)	**.008**	**3.517**	**1.398**	**8.852**
SELevEnt	.240			
SELevEnt(1) (Med Self-esteem)	1.000	0.999	0.047	21.460
SELevEnt(2) (High Self-esteem)	.096	1.870	0.894	3.910
Constant	.531	0.549		

Self-esteem level at entry did not predict retention at 8 weeks when added to the other variables in the equation. The high level of anxiety at entry was significant (OR = 6.024, 95% C.I. = 1.659/21.871, *p* = .006). The high level of depression at entry was also significant (OR = 3.517, 95% C.I. = 1.398/8.852, *p* = .008). The groups with high level of anxiety of depression were more likely retained in treatment at 8 weeks.

Table 22

Analysis No. 8 for Gender, Age Group, Primary Drug Type, Medication, Anxiety, Depression and Self-Esteem Levels at 2 Weeks Predicting Retention at 8 Weeks

Step 1a	*p*	Exp(B)	95% C.I. for Exp(B)	
Gender(1)	.705	0.881	0.456	1.700
MedicationGroup(1)	.979	0.991	0.513	1.916
Age Group	.039			
Age Group(1)	.141	0.558	0.257	1.213
Age Group(2)	.349	1.489	0.647	3.424
Drug	.274			
Drug(1)	.054	0.311	0.095	1.022
Drug(2)	.177	0.380	0.093	1.550
Drug(3)	.224	0.426	0.108	1.687
AnxLev2	.619			
AnxLev2(1)	.999	0.000	0.000	.
AnxLev2(2)	.999	0.000	0.000	.
DepLev2	.875			
DepLev2(1)	.983	0.988	0.333	2.930
DepLev2(2)	.664	0.843	0.391	1.817
SELev2(1)	.522	1.238	0.643	2.385
Constant	.999	3.200		

None of the variables including anxiety, depression or self-esteem levels at 2 weeks predicted retention at 8 weeks.

The following set of analyses (Tables 16 to 22) involved the progressive addition of variables into equations looking for significant predictors of retention at 14 weeks. The anxiety, depression and self-esteem scores were program entry scores.

Table 23

Analysis No. 9 for Gender Predicting Retention at 14 Weeks

Step 1a	*p*	Exp(B)	95% C.I. for Exp(B)	
Gender(1)	.425	1.248	0.724	2.148
Constant	.051	0.647		

Gender did not predict retention at 14 weeks

Table 24

Analysis No. 10 for Gender and Age Group Predicting Retention at 14 Weeks

Step 1a	*p*	Exp(B)	95% C.I. for Exp(B)	
Gender(1)	.328	1.318	0.758	2.293
Age group	.062			
Age group (1)	.072	0.555	0.292	1.055
Age group (2) (30-50 years)	**.027**	**0.484**	**0.254**	**0.921**
Constant	.903	0.966		

The addition of age group to the equation indicated that the oldest age group (30-50 years) was significantly more likely to drop out of the program prior to 14 weeks (OR = .484, 95% C.I. = .254/.921, *p* = .027).

Table 25

Analysis No. 11 for Gender, Age Group and Primary Drug Predicting Retention at 14 Weeks

Step 1a	*p*	Exp(B)	95% C.I. for Exp(B)	
Gender(1)	.328	1.318	0.758	2.293
Age Group	.062			
Age Group(1)	.072	0.555	0.292	1.055
Age Group(2) (30-50 years)	**.027**	**0.484**	**0.254**	**0.921**
Drug	.903	0.966		
Drug(1)	.328	1.318	0.758	2.293
Drug(2)	.062			
Drug(3)	.072	0.555	0.292	1.055
Constant	.027	0.484	0.254	0.921

The addition of primary drug to the equation showed that the oldest age group (30-50 years) were significantly more likely to drop out prior to 14 weeks (OR = .484, 95% C.I. = .254/.921, *p* = .027).

Table 26

Analysis No. 12 for Gender, Age Group, Primary Drug Type and Medication Predicting Retention at 14 Weeks

Step 1a	*p*	Exp(B)	95% C.I. for Exp(B)	
Gender(1)	.415	1.268	.716	2.245
Age Group	.161			
Age Group(1)	.147	0.599	0.300	1.197
Age Group(2)	.068	0.533	0.271	1.048
Drug	.340			
Drug(1)	.858	0.924	0.391	2.185
Drug(2)	.202	0.483	0.158	1.475
Drug(3)	.708	1.217	0.436	3.396
Medication(1) (Any meds)	.137	1.548	0.870	2.753
Constant	.633	0.775		

The addition of medication to the equation resulted in none of the variables predicting retention at 14 weeks.

Table 27

Analysis No. 13 for Gender, Age Group, Primary Drug Type, Medication and Anxiety Level at Entry Predicting Retention at 14 Weeks

Step 1a	*p*	Exp(B)	95% C.I. for Exp(B)	
Gender(1)	.448	1.253	.700	2.243
Age Group	.189			
Age Group(1)	.184	.621	.308	1.254
Age Group(2)	.078	.541	.273	1.071
Drug	.324			
Drug(1)	.880	.936	.394	2.224
Drug(2)	.220	.495	.161	1.521
Drug(3)	.626	1.296	.458	3.671
MedicationGroup(1)	.115	1.595	.892	2.849
AnxLevEnt	.259			
AnxLevEnt(1)	.118	2.993	.758	11.827
AnxLevEnt(2)	.102	3.052	.800	11.642
Constant	.115	.258		

The addition of anxiety level to the equation resulted in no variable predicting retention at 14 weeks.

Table 28

Analysis No. 14 for Gender, Age Group, Primary Drug Type, Medication, Anxiety and Depression Levels at Entry Predicting Retention at 14 Weeks

Step 1a	*p*	Exp(B)	95% C.I. for Exp(B)	
Gender(1)	.437	1.262	.701	2.271
Age Group	.199			
Age Group(1)	.199	.630	.312	1.275
Age Group(2)	.081	.543	.274	1.079
Drug	.394			
Drug(1)	.979	.988	.413	2.365
Drug(2)	.321	.561	.179	1.760
Drug(3)	.540	1.390	.485	3.985
MedicationGroup(1)	.079	1.699	.941	3.066
AnxLevEnt	.188			
AnxLevEnt(1)	.069	3.899	.901	16.862
AnxLevEnt(2)	.092	3.190	.828	12.293
DepLevEnt	.463			
DepLevEnt(1)	.231	.577	.234	1.420
DepLevEnt(2)	.857	.940	.479	1.843
Constant	.089	.229		

The addition of depression level to the equation resulted in no variable predicting retention at 14 weeks.

Table 29

Analysis No. 15 for Gender, Age Group, Primary Drug Type, Medication, Anxiety, Depression and Self-Esteem Levels at Entry Predicting Retention at 14 Weeks

Step 1a	*p*	Exp(B)	95% C.I. for Exp(B)	
Gender(1)	.450	1.257	.694	2.276
Age Group	.291			
Age Group(1)	.243	.654	.321	1.334
Age Group(2)	.131	.585	.291	1.174
Drug	.401			
Drug(1)	.966	1.019	.422	2.460
Drug(2)	.362	.585	.185	1.853
Drug(3)	.487	1.456	.505	4.203
MedicationGroup(1)	.077	1.709	.944	3.097
AnxLevEnt	.242			
AnxLevEnt(1)	.094	3.594	.805	16.050
AnxLevEnt(2)	.118	2.993	.757	11.837
DepLevEnt	.723			
DepLevEnt(1)	.709	.829	.310	2.217
DepLevEnt(2)	.652	1.181	.573	2.433
SELevEnt	.166			
SELevEnt(1)	.635	2.227	.082	60.495
SELevEnt(2)	.059	1.899	.975	3.699
Constant	.029	.131		

The addition of self-esteem level at entry to the equation resulted in no variable predicting retention at 14 weeks.

Table 30

Analysis No. 16 for Gender, Age Group, Primary Drug Type, Medication, Anxiety, Depression and Self-Esteem Levels at 2 Weeks Predicting Retention at 14 Weeks

Step 1a	*p*	Exp(B)	95% C.I. for Exp(B)	
Gender(1)	.369	1.320	0.721	2.419
Age Group	.143			
Age Group(1)	.080	0.524	0.255	1.079
Age Group(2)	.088	0.537	0.263	1.097
Drug	.353			
Drug(1)	.578	0.771	0.309	1.926
Drug(2)	.137	0.414	0.130	1.324
Drug(3)	.989	1.008	0.342	2.971
Medication Group(1)	.051	1.825	0.996	3.342
AnxLev2	.592			
AnxLev2(1)	.780	0.660	0.036	12.208
AnxLev2(2)	.615	0.476	0.026	8.564
DepLev2	.437			
DepLev2(1)	.244	0.564	0.215	1.480
DepLev2(2)	.828	0.925	0.460	1.860
SELev2(1)	.975	1.010	0.557	1.832
Constant	.709	1.811		

The variables of gender, age group, primary drug type, medication, anxiety, depression or self-esteem levels at 2 weeks did not predict retention at 14 weeks.

Table 31

Analysis No. 17 for Gender, Age Group, Primary Drug Type, Medication, Anxiety, Depression and Self-Esteem Levels at 8 Weeks Predicting Retention at 14 Weeks

Step 1a	*p*	Exp(B)	95% C.I. for Exp(B)	
Gender(1)	.296	1.490	0.706	3.146
Age Group	.039			
Age Group(1)	.887	0.931	0.344	2.515
Age Group(2) (30-50 years)	**.032**	**0.388**	**0.163**	**0.923**
Drug	.281			
Drug(1)	.680	1.255	0.426	3.694
Drug(2)	.393	0.557	0.145	2.136
Drug(3)	.373	1.823	0.486	6.828
Medication Group(1) (Any medication)	**.028**	**2.252**	**1.094**	**4.638**
AnxLev2	.511			
AnxLev2(1)	1.000	.000	.000	.
AnxLev2(2)	1.000	.000	.000	.
DepLev2	.682			
DepLev2(1)	.383	.570	.161	2.014
DepLev2(2)	.515	.672	.203	2.225
SELev2(1)	.993	.996	.384	2.581
Constant	1.000	7.198E8		

The highest age group (30-50 years) was significantly more likely to drop out prior to 14 weeks (OR = .388, 95% C.I. = .163/.923, *p* = .032), and the group taking medication were more likely retained at 14 weeks (OR = 2.252, 95% C.I. = 1.094/4.638, *p* = .028).

Following an analysis of the various category variables, it was decided to adjust two of the variables (Primary Drug & Anxiety Level) and re-run the previous analyses involving all independent variables predicting retention at 8 weeks and 14 weeks, (Analyses 18 – 22).

Therapeutic Community Retention

The 2 variables adjusted for Analyses 18 - 22, were:

1) Primary Drug: Amphetamines =1; Opiates, Alcohol & Cannabis (Depressants) = 2.

2) Anxiety Level: Low Anxiety (0- 24) = 1; and Medium/High Anxiety (25 – 72) = 2.

Analysis 18 examined variables predicting attrition and retention 8 weeks after treatment entry. The Dependent Variable (DV) was retention in treatment at 8 weeks, and Independent Variables (IV) were gender, age group, medication use, primary drug of abuse; and depression, anxiety and self-esteem levels measured at treatment entry.

Table 32

Analysis No. 18 Retention at 8 Weeks with Entry Level Scores

Variable	*OR*	95% *CI*	*p*
Gender (males)			
Gender 1 (female)	1.127	.601/2.114	0.709
Drug (amphetamines)			
Drug 1 (depressants: opiates, alcohol & cannabis)	0.789	.423/1.471	0.456
Medication (none)			
Medication 1 (any)	0.832	.437/1.582	0.575
Age (17 - 23 years)			
Age 1 (24 - 29 years)	0.583	.280/1.211	0.148
Age 2 (30 - 50 years)	1.367	.636/2.940	0.424
Anxiety level (low)			
Anxiety level (medium/high)	0.817	.376/1.774	0.609
Depression level (low)			
Depression level (medium)	1.284	.465/3.544	0.630
Depression level (high)	**3.725**	**1.534/9.047**	**0.004**
Self-Esteem level (low)			
Self-Esteem level (medium)	0.661	.036/12.211	0.781
Self-Esteem level (high)	1.983	.966/4.070	0.062

There was one significant variable predicting 8 week retention with treatment entry depression, anxiety and self-esteem scores. The group with high entry levels of depression were 3.725 times more likely retained at 8 weeks; (OR = 3.725, CI = 1.534/9.047, P = 0.004).

Analysis No. 19 examined variables predicting attrition and retention 8 weeks after treatment entry. The Dependent Variable (DV) was retention in treatment at 8 weeks, and Independent Variables (IV) were age group, gender, medication use, primary drug of abuse; and depression, anxiety and self-esteem levels measured at 2 weeks after treatment entry.

Therapeutic Community Retention

Table 33

Analysis No. 19 Retention at 8 Weeks with 2-Week Scores

Variable	*OR*	95% *CI*	*p*
Gender (males)			
Gender 1 (female)	1.039	0.504/1.982	.908
Drug (amphetamines)			
Drug 1 (depressants: opiates, alcohol & cannabis)	0.622	0.326/1.189	.151
Medication (none)			
Medication 1 (any)	0.936	0.489/1.795	.843
Age (17 - 23 years)			
Age 1 (24 - 29 years)	0.620	0.297/1.293	.203
Age 2 (30 - 50 years)	1.592	0.701/3.614	.266
Anxiety level (low)			
Anxiety level (medium/high)	1.332	0.626/2.835	.457
Depression level (low)			
Depression level (medium)	1.055	0.359/3.101	.923
Depression level (high)	0.874	0.409/1.868	.728
Self-Esteem level (medium)			
Self-Esteem level (high)	1.290	0.677/2.459	.439

There was no significant variable predicting 8- week retention in the seventh analysis:

Analysis No. 20 examined variables predicting attrition and retention 14 weeks after treatment entry. The Dependent Variable (DV) was retention in treatment at 14 weeks, and Independent Variables (IV) were age group, gender, medication use, primary drug of abuse; and depression, anxiety and self-esteem levels measured at treatment entry.

Table 34

Analysis No. 20 Retention at 14 Weeks with Entry Scores

Variable	*OR*	95% *CI*	*p*
Gender (males)			
Gender 1 (female)	0.816	0.458/1.455	.491
Drug (amphetamines)			
Drug 1 (depressants: opiates, alcohol & cannabis)	1.050	0.595/1.852	.867
Medication (none)			
Medication 1 (any)	1.571	0.877/2.814	.129
Age (17 - 23 years)			
Age 1 (24 - 29 years)	0.573	0.292/1.125	.106
Age 2 (30 - 50 years)	0.522	0.266/1.024	.059
Anxiety level (low)			
Anxiety level (medium/high)	1.283	0.642/2.564	.481
Depression level (low)			
Depression level (medium)	0.833	0.316/2.192	.711
Depression level (high)	1.262	0.621/2.564	.520
Self-Esteem level (medium)			
Self-Esteem level (high)	**1.967**	**1.019/3.797**	**.044**

There was one significant variable predicting retention at 14 weeks. The high self-esteem 2 group were1.967 times more likely retained in treatment at 14 weeks compared to the low self-esteem group, (OR = 1.967; 95% CI = 1.019/3.797; P = .044). The oldest age group (30-50 years) were less likely retained in treatment at 14 weeks compared to the youngest group; (OR = 0.522; 95% CI = .266/1.024; P = .059), however this result was not significant.

Analysis 21 examined variables predicting attrition and retention 14 weeks after treatment entry. The Dependent Variable (DV) was retention in treatment at 14 weeks, and Independent Variables (IV) were age group, gender, medication use, primary drug of abuse; and depression, anxiety and self-esteem levels measured 2 weeks after treatment entry.

Therapeutic Community Retention

Table 35

Analysis No. 21 Retention at 14 Weeks with 2-Week Scores

Variable	*OR*	95% *CI*	*p*
Gender (male)			
Gender 1 (female)	0.749	0.416/1.349	0.336
Drug (amphetamines)			
Drug 1 (depressants: opiates, alcohol & cannabis)	1.033	0.583/1.832	0.912
Medication (none)			
Medication 1 (any)	1.673	0.928/3.015	0.087
Age (17 - 23 years)			
Age 1 (24 - 29 years)	**0.497**	**0.250/.989**	**0.047**
Age 2 (30 - 50 years)	0.502	0.251/1.004	0.051
Anxiety level (low)			
Anxiety level (medium/high)	1.354	0.691/2.653	0.377
Depression level (low)			
Depression level (medium)	0.591	0.228/1.533	0.280
Depression level (high)	0.968	0.489/1.917	0.926
Self-Esteem level (medium)			
Self-Esteem level (high)	1.104	0.617/1.976	0.740

There was one significant variable predicting retention at 14 weeks when including 2 week depression, anxiety and self-esteem scores. The middle age group (24 – 29 years) were less likely retained in treatment at 14 weeks compared to the youngest group (17-24 years); (OR = 0.497; 95% CI = .250/0.989; P =.047). The oldest age group (30 - 50 years) were less likely retained in treatment at 14 weeks compared to the youngest group (17-24 years); (OR = 0.502; 95% CI = .251/1.004; P =.051), however this result just failed to reach significance.

Analysis 22 examined variables predicting attrition and retention 14 weeks after treatment entry. The Dependent Variable (DV) was retention in treatment at 14 weeks, and the Independent Variables (IV) were age group, gender, medication use, primary drug of abuse; and depression, anxiety and self-esteem levels measured at 8 weeks after treatment entry.

Table 36

Analysis No. 22 Retention at 14 Weeks with 8-Week Scores

Variable	*OR*	95% *CI*	*p*
Gender (males)			
Gender 1 (female)	0.680	0.329/1.402	0.296
Drug (amphetamines)			
Drug 1 (depressants: opiates, alcohol & cannabis)	1.221	0.599/2.490	0.583
Medication (none)			
Medication 1 (any)	**2.137**	**1.054/4.333**	**0.035**
Age (17 - 23 years)			
Age 1 (24 - 29 years)	0.716	0.283/1.810	0.480
Age 2 (30 - 50 years)	**0.324**	**0.283/1.810**	**0.009**
Anxiety level (low)			
Anxiety level (medium/high)	1.775	0.672/4.688	0.247
Depression level (low)			
Depression level (medium)	0.611	0.178/2.099	0.434
Depression level (high)	0.790	0.248/2.516	0.691
Self-Esteem level (medium)			
Self-Esteem level (high)	1.127	0.444/2.860	0.801

There were two significant variables predicting retention at 14 weeks in this analysis. The medication group was 2.317 times more likely retained at 14 weeks than the non-medication group; (OR = 2.137, 95% CI = 1.054/4.333; P = .035).The oldest age group (30-50 years) were less likely retained at 14 weeks compared to the youngest group (18 – 24 years); (OR = 0.324; 95% CI = .283/1.810; P = 0.009).

Therapeutic Community Retention

Table 37

Summary of Significant Results:

(Variables predicting retention & attrition when all variables included in equations)

	Analysis Number	Significant Variables *P* <.05	Odds Ratio > 1.0 More likely	Significant Variable *P* <.05	Odds Ratio < 1.0 Less likely
8 week Retention 1					
Entry scores 1	7	H Anx (49-72)	6.024		
		H Dep (27-60)	3.517	Nil	
2 Week scores 1	8	Nil		Nil	
14 Week Retention 1					
Entry scores 1	15	Nil		Nil	
2 week scores 1	16	Nil		Nil	
8 week scores 1	17	Medicating	2.252	Age (30-50)	0.388
2 indicates Analysis (# 6 - 10) with 2 adjusted variables	Analysis #	Significant Variables *P* <.05	Odds Ratio > 1.0 More likely	Significant Variable *P* <.05	OddsRatio < 1.0 Less likely
8 week Retention 2					
Entry scores 2	18	H Dep (27-60)	3.725	Nil	
2 week scores 2	19	Nil		Nil	
14 Week Retention 2					
Entry scores 2	20	S/E (High)	1.967	Nil	
2 week scores 2	21	Nil		Age (24-29)	0.497
8 week scores 2	22	Medicating	2.137	Age (30-50)	0.324

Summary of Stage 1 Binary Logistic Regression Results

The initial 5 binary logistic regression analyses involving all independent variables (analyses Nos. 7, 8, 15, 16 & 17) are discussed first; followed by a discussion of the results of the second set of 5 analyses (analyses Nos. 18, 19, 20, 21 & 22) after two of the independent variables were adjusted.

Analyses 7 & 8:

Analysis 7 indicated that 8 week retention was significantly predicted by clients with high levels of anxiety and high levels of depression at treatment entry. Interestingly, there were no variables predicting attrition by 8 weeks.

Analysis 8 indicated that no variables, including levels of anxiety, depression and self-esteem at 2 weeks were significant for predicting retention or attrition at 8 weeks.

Analyses 15 – 17:

No variables predicted 14 week retention or attrition when using the anxiety, depression and self-esteem level scores at entry (Analysis 15).

No variables predicted 14 week retention or attrition when using the anxiety, depression and self-esteem level scores at 2 weeks (Analysis 16).

Retention at 14 weeks was predicted by clients taking medication when including the 8 week anxiety, depression and self-esteem scores (Analysis 17). The oldest group of clients (30 – 50 years) were significantly less likely retained at 14 weeks when the 8 week psychopathology scores were included in the analysis.

Analyses 18 – 22:

Analyses 18 - 22 were undertaken after two independent variables had been adjusted. These adjustments involved the collapsing of the initial 4 primary drug categories into 2 categories; i.e. either depressants (opiates, alcohol and cannabis), or amphetamines/methamphetamines. The second adjustment was the collapsing of the initial three levels of anxiety scores into two levels only; i.e. low levels of anxiety, or medium & high levels of anxiety.

Following these two variable adjustments, 8 week retention was only predicted by high levels of depression at entry (Analysis 18).

When measuring depression, anxiety and self-esteem scores at 2 weeks, no variables predicted retention or attrition at 8 weeks (Analysis 19).

14 week retention was predicted by clients with high levels of self-esteem at entry (Analysis 20).

When incorporating the 2 week depression, anxiety and self-esteem scores into the equation, no variables predicted 14 week retention, but the middle age group (24 – 29 years) were significantly less likely retained (Analysis 21).

When incorporating the 8 week anxiety, depression and self-esteem scores into the equation, the medicating clients were significantly more likely retained, and the oldest age group were less likely retained in treatment at 14 weeks (Analysis 22).

Stage 1 Discussion

The significant findings of the stage 1 analyses were as follows. Gender did not have a significant influence on treatment retention or attrition at either 8-weeks or 14-weeks after program entry. Client age group predicted treatment attrition at 14-weeks, but not in the expected direction of higher levels of attrition with younger clients. Elevated depression and anxiety at entry scores predicted 8 week treatment retention. Clients prescribed various psychoactive medications for mental health problems were more likely to be retained in treatment at 14 weeks. The following section will summarise the retention and attrition findings for each of the independent variables analysed in the first stage of this study.

Gender and Treatment Entry

It is also important to note the gender disparity at treatment entry (150 males or 64% of total 234 clients at entry, versus 84 females or 36%, representing a ratio of male to female clients at entry of 2.8:1).The finding of a greater number of males entering the substance abuse treatment program is common, and Greenfield, Brooks, Gordon, Green, Kropp, McHugh, Lincoln, Hien & Miele, (2007) report a large review of women substance abuse clients in the United States of America (U.S.A.), and note that women are much less likely to enter substance abuse treatment services compared

to men, hence mixed-gender, U.S.A. substance abuse treatment services almost always have less females compared to male clients. This finding of much less women entering substance abuse treatment services than males is not limited to U.S.A. substance abuse treatment programs. Swift, Copeland & Hall (1996) report an analysis of Australian alcohol treatment services, and note that male to female ratios of clients in treatment ranged from 3:1 to 10:1.

The higher ratios of men versus women in substance abuse treatment are usually greater in residential services, and many researchers have commented that the significantly reduced number of women entering residential treatment services is due to family and child-rearing responsibilities of women clients, (Szuster, Rich, Chung & Bisconer, 1996). The finding that the proportion of total male and female clients entering the TC during the period of data collection was less than 3:1 is interesting given that women were unable to enter the treatment program with their children from 2000, or soon after the initiation of data collection of this present study. Clearly, factors other than the ability of women clients to enter treatment with their children must account for the fact the program was attracting a relatively high proportion of female clients.

Gender and Treatment Retention

During the period of data collection there were 150 males and 84 females who formally entered the program, and 143 males and 82 females remained in the program by 2 weeks, representing 95.3 % and 97.6% of the original sample respectively. Frequency analyses indicated that 104 males and 59 females were retained in treatment at 8 weeks, representing 69.3% and 70.2% of the original sample. When measuring retention at 14 weeks, 100 clients (67 males and 33 females) remained in treatment, representing 42.7% of the original sample of 234 clients, with 44.7 % of the original 150 males, and 39.3% of the original 84 females. There were no significant findings for effects of gender on treatment attrition or retention at either the 2-week, 8-week or 14-week periods.

The first important finding of this study relative to gender and retention was there were no significant differences between male and female retention rates at either 8 or 14 weeks after entry. This finding that females were not more likely to drop out of treatment may reflect specific program processes and components the TC had introduced to help retain females in treatment. Specific program components

introduced by the TC to support female clients include that female clients were always offered the choice of a female counsellor, and that there was an emphasis on individual counselling rather than confrontational mixed-gender group therapy typical of many TC's. Women were also housed in separate living quarters with strict rules about access to those quarters, and the agency provided gender-specific therapy groups, parenting education, and access to specialist gender-specific services in the community. These women-sensitive treatment components in residential services have been previously reported as contributing to retention of females, and some of these findings are summarised by Greenfield et al. (2007). These program factors may have contributed towards female retention rates in this sample comparable with the male clients; however other factors possibly influencing female retention will be examined next.

Gender and Anxiety, Depression & Self-Esteem Scores at Treatment Entry

Previous research has indicated that females were more likely to enter substance abuse treatment with higher levels of depression and lower levels of self-esteem, and that these women were more likely to drop out of substance abuse treatment prematurely (Haller, Miles, & Dawson, 2002; Wilke, 2004).

Consistent with previous findings many of the females entering the TC reported high rates of depression with 57 of the 84 females (68%) reporting clinical levels of depression (27-60 range) as measured at entry by the CES-D. In comparison, only 73 of the 150 males (49%) measured in this range at treatment entry. A higher percentage (50%) of females (82) remained in this higher level of depression scores at 2 weeks after entry, compared to 47 of the 143 males (33%). By 8 weeks however, gender differences had mostly disappeared with only 9 of 59 females (15%) remaining in the high depression level, compared to 14 of the remaining 104 males (13%). There was a steady drop in mean depression levels for both males and females after treatment entry.

The finding of high depression level scores for both males and females entering the TC replicates previous findings that it is common for clients to enter residential treatment with relatively elevated scores of psychopathology, especially depression. The fact that depression scores decreased quickly for many clients, reinforces previous findings of many researchers who note that staff should be cautious of making mental health diagnoses at treatment entry. The findings of this

study replicate previous findings noting there is a decrease in depression scores for many clients during the initial weeks following residential treatment entry and initiating abstinence from substance use (Gossop, Marsden & Stewart, 2006).

Females in the sample did not report consistently lower levels of self-esteem compared to males, and no females scored in the lowest self-esteem range at treatment entry. When comparing the other self-esteem ranges, 94 of 150 males (63%) scored in the medium self-esteem range at treatment entry, compared with 59 of 84 females (70%) scoring in that range. 54 males (36%) scored in the highest level of self-esteem at treatment entry, compared to 25 females (30%) scoring in the highest range.

By 2 weeks after treatment entry, no male clients scored in the lowest level of self-esteem. By 8 weeks, 20 of 104 males (19%) reported medium levels of self-esteem, compared to 18 of 41 females (44%). 84 of 104 males (81%) scored in the highest range of self-esteem, and 41 of 59 females (69%) also scored in this range. After 14 weeks following treatment entry, only 6 males (9%) of the remaining 67 males, and 6 females (18%) of the remaining 33 females, were in the medium range of self-esteem scores. The large majority of clients, 61 (91%) of the remaining 67 males were in the high range of self-esteem, and 27 (82%) of the remaining 33 females were also scoring in the high range of self-esteem.

The general increase in client self-esteem following residential treatment entry reflects previous findings that self-esteem increases over treatment time for women (Wilke 2004). However not all studies have reported a mean increase in self-esteem scores during residential substance abuse treatment. Malcolm (2004) reports a study of 305 homeless male substance abusers residing in a residential treatment facility who were compared to a control sample receiving community-based treatment. Self-esteem scores did not show a major change over time for either group, and the mean self-esteem score for both groups was slightly lower at immediate post-treatment (3 months), and at other time intervals following, than mean self-esteem scores at the initiation of treatment. The author notes that for their sample of homeless males, self-esteem scores do not necessarily increase following decreased substance use.

There was no consistent major gender difference in self-esteem scores at treatment entry for the sample, and this contradicts the findings of many other reports stating that women are more likely to enter treatment with lower self-esteem. Women's self-esteem scores in this sample also increased over time similar to increases in the men's self-esteem scores.

Therapeutic Community Retention

It is possible that the analysis and tools used to measure psychopathology in this sample were insufficient to capture important patterns of psychiatric problems and score change over time. It is therefore possible those women entering treatment with greater depression scores also reported lower self-esteem scores than males entering treatment with similar depression scores, and those women were less likely to improve in depression and self-esteem over time. Edokpolo, James, Kearns, Campbell, and Smyth (2010) report the results of a relatively small sample of adolescents (65 males and 23 females) seeking substance abuse treatment. They note that although the sample was small, the females reported much higher internalising and externalising psychiatric scores than the males, and that the female comorbidity patterns were often more complex than for the males in the sample. The authors note that distinct comorbidity patterns within clients may account for different etiological roles in the development of substance abuse problems, and consequently have different treatment requirements and outcomes. The authors suggest that increasing self-esteem may be more important for female clients than male clients during substance abuse treatment.

Retention and Depression, Anxiety & Self-Esteem Scores

The first set of analyses utilising all independent variables (Analyses 18-22), indicated that clients with medium and high levels of anxiety at treatment entry were significantly more likely to be retained at 8 weeks. Clients with high levels of depression at treatment entry were significantly more likely retained at 8 weeks in both sets of analyses. Clients with high levels of self-esteem at treatment entry were significantly more likely to be retained at 14 weeks in both sets of analyses (18-27). The finding that clients entering the program with high levels of depression and anxiety were more likely retained at 8 weeks was not expected. As previously described, the majority of previous retention research findings have reported that client mental health problems are more likely to predict treatment attrition.

It is possible that specific program factors may account for the finding that clients with high levels of anxiety and depression were more likely to remain in the program. Two specific program factors that have been previously noted as important in affecting client retention is the relative number of allocated clients per counsellor (Hser, Joshi, Maglione, Chou, & Anglin, 2001), and the level of counsellor qualifications (Simpson, Joe, Rowan-Szal, & Greener, 1997).

Therapeutic Community Retention

Although weekly client counselling forms a major part of most residential treatment programs, Simpson et al. (1997) report that the effectiveness of counselling on retaining substance abusing clients in treatment has primarily been demonstrated only for qualified and experienced counsellors. Hser et al., (2001) undertook an extensive analysis of retention involving 26,047 clients in 87 Los Angeles County substance treatment programs, and noted that staff qualifications was an important program factor helping predict retention in most programs. Despite these findings of the importance of counsellor qualifications influencing client retention in substance abuse treatment services, Meier, Donmall & Heller (2004) report a survey of 326 English and Welsh specialist drug treatment services, and report that only 17% of these services provided counselling by accredited counsellors. The survey collected responses from 58 services who were identified as residential treatment services, and 51 (88%) of these services provided individual counselling to clients, but few of the counselling staff had any formal counselling qualifications.

This author is not aware of Australian statistics regarding the percentage of residential treatment staff having formal counselling qualifications, but during the time of data collection it was not required that residential substance abuse treatment programs employ accredited counselling staff. Despite the lack of state requirements, the majority of the Palmerston Farm counselling staff were graduate trained, and the program employed at least one post-graduate clinical psychologist in a senior clinical role throughout most of the data collection period. Employing senior clinical staff with counsellor supervisory responsibilities also enabled the training of clinical psychology trainees in the clinical program during those years. The counsellor:client ratio during this period was approximately 4 to 5 clients per counsellor, reflecting a low counsellor client load when compared to most U.S.A. and U.K. residential treatment programs. Hser et al. (2001) note that a low number of clients per counsellor can help prevent counsellor burn out, and predicts improved client retention rates.

The post-graduate clinicians in the TC program were usually allocated to clients of the same gender who had been identified at treatment entry with elevated anxiety and depression scores. The interventions with the higher risk clients were primarily cognitive behavioural therapy (CBT) in orientation, and tailored to suit individual client needs. The relatively low caseloads of the counselling staff, mandatory weekly supervision of counsellors by senior experienced clinicians, and

the use of post-graduate trained clinical staff in residential substance abuse treatment programs for client counselling is uncommon in residential substance abuse treatment settings. These specific program factors may have influenced the findings, and may therefore also restrict generalisation of the findings.

Another specific program factor that may have influenced the retention finding of this study was the program began allowing client use of prescribed psychoactive medications for various mental health disorders from 1999, and during the following 6 year period of data collection. The effectiveness of psychoactive medication use in improving client substance abuse treatment retention in Australian TC or other residential substance abuse programs has not been widely reported or researched.

Other specific program factors that may have influenced reported retention findings in this study include that the program reduced the availability of packaged food, drinks with high sugar content, tobacco, and music and television use. A strong emphasis was also placed on the importance of utilising appropriate social support within the community, healthy nutrition, exercise, recreation, appropriate sleep patterns, and engagement in meaningful work activities. The work activities involved training in various tool uses (e.g. welding, fabrication and construction), tractor and other machinery use, property maintenance, and the commercial production of accredited organic fruit and vegetables. Various work activities involving both staff and clients were scheduled on most week-day mornings from 7am-11 am.

Although there is no research indicating the effectiveness of work-related program structure factors contributing to client retention, experienced senior program staff believed meaningful work activities and the mandatory introduction of healthier lifestyle factors helped reduce client anxiety and mood symptoms, and thereby encouraged program retention. These regular activities could be described as a form of “behavioural activation” (Martell, Dimidjian & Herman-Dunn, 2010), which has been shown to be an effective intervention for depression. The engagement of client interest in improving various aspects of their lifestyle may have also had beneficial effects in engaging client trust. Improved trust and therapeutic alliance between staff and clients has been shown by several studies (Corrigan & Bogner, 2007; Curran et al., 2009) to positively affect treatment retention rates.

Age and Treatment Retention

The older group of clients (30-50 year olds) were more likely to leave treatment before 14 weeks when including the depression, anxiety and self-esteem test scores at 8 weeks in the first set of analyses. The second set of analyses indicated that the 24-29 year old group were more likely to leave before 14 weeks compared to the younger group of 17-24 year olds when including the 2-week depression, anxiety and self-esteem test scores. The 30-50 year old group were more likely to leave treatment before 14 weeks compared to the younger group of 17-24 year old group when including the 8-week test scores.

The finding that the youngest group of clients were less likely to drop out of treatment is not supported by the majority of research findings regarding residential treatment retention. Most previous retention studies have reported that older clients are better retained in substance abuse treatment (Joe, Simpson & Broome, 1998), and state that this is a reflection of older persons usually having greater motivation to change their substance use patterns. Brecht, Greenwell, and Anglin (2005) analysed 10 years of data for methamphetamine treatment admissions to Californian services, and reported that clients with limited education, more severe drug use, injecting drug use patterns, and being younger were more likely to drop out of treatment.

One possible reason why the younger client group was better retained in this treatment sample is that their drug use history was generally shorter and less severe than older clients. Numerous studies report that clients with a longer and more severe substance use history usually have a history of relapsing and treatment failure, (Williams & Chang, 2000).This current study was unable to include these factors in the analyses as drug use severity and drug-using history were not recorded in the programme's archived data set.

It also remains possible that specific program factors relating to the TC may account for the finding that the younger clients were more likely retained in treatment. One distinct part of the Palmerston Farm TC was the incorporation of a variety of work activities within the therapeutic program. These mandatory work activities included community meal preparation, general property maintenance, automated irrigation maintenance, a tree and plant nursery, care of a range of animals, and the commercial production of a wide range of certified bio-organic foods. Many of the younger clients in the program reported little past engagement in paid employment work, and consequently possessed limited employment work skills. Most clients were

generally keen to engage in the program's work-related activities; however it is possible that older clients with more experience in the paid work force were more reluctant to engage in unpaid work for relatively long periods within the program.

During the latter part of this data collection period, the program had initiated the accreditation process of having various work skill acquisition components of the program formally recognised. This initiative was especially welcomed by the younger clients who often reported having no formal training or work qualifications. The program also trained interested residents in bulk food purchasing, meal planning, food preparation, kitchen and personal hygiene, food storage, cooking and related kitchen responsibilities, and accreditation for these skills was also being sought.

Although differences in client work engagement attitudes were not measured, it is possible that greater work engagement positively affected client mood, anxiety and self-esteem levels, such that work was indirectly influencing the retention of younger clients. The influence of therapeutic involvement in residential programs positively affecting retention of young adolescent clients has been previously reported by Hawke, Hennen, and Gallione (2005). The authors note that therapeutic involvement facilitates the recovery process and also manifests as improved trust and positive rapport with program staff.

Primary Drug and Retention

There was no significant finding for primary drug of abuse although clients who had indicated opiates as their primary drug of abuse were more likely to leave treatment prior to 8 weeks. This finding was unexpected as previous research had indicated greater difficulty for programs retaining methamphetamine-abusing clients, rather than clients who had nominated other substances as their primary drug of use (Maglione, Chao & Anglin, 2000). Considerable research has been published regarding the complexities of treatment for methamphetamine users in the last decade. This includes research findings indicating that methamphetamine use often results in extended withdrawal periods, and is associated with a range of mental health problems affecting treatment retention (Dyer & Cruikshank, 2005; and Glasner-Edwards, Mooney, Marinelli-Casey, Hillhouse, Ang, & Rawson, 2008). Other studies have failed to find a significant effect for methamphetamine influencing substance abuse retention (Hammerbacher & Lyvers, 2006), or post-treatment 1 year treatment outcomes, (Luchansky, Krupski, & Stark, 2007).

Therapeutic Community Retention

Table 3 indicates that only 25.8% of the opiate–abusing clients in this sample were in the youngest age group (17-23 years), compared to 38.6% of methamphetamine users being in that age group. The mean age of the opiate group (28 years) was older than the mean age of the methamphetamine-using group (25 years). As previously noted older clients were more likely to leave treatment before 14 weeks. Another possible reason that young methamphetamine clients were retained in treatment is that the program allowed continued client use of prescribed psychoactive medications. Many of the methamphetamine using clients entered the treatment program with high levels of anxiety and depression scores, and although these measures tended to quickly decrease in the large majority of clients, senior clinical staff believed that prescribed medications appeared to support some clients through the initial stages of the treatment program.

Psychoactive Medication Use and Retention

Both sets of analyses indicated that the clients who had been prescribed psychoactive medications were significantly more likely retained in treatment at 14 weeks when analysed with 8 week depression, anxiety and self-esteem scores. High self-esteem and medication use were the only significant predictors of 14 week retention. The finding that the client group taking psychoactive medication were more likely retained at 14 weeks appears to validate the decision by this agency to change its existing policies in 1999, and begin accepting clients to their residential service who had been prescribed various psychoactive medications.

This author is not aware of previous published research regarding prescribed psychoactive medication use affecting substance use residential treatment retention. The fact that pharmacotherapy may help improve the retention of clients has been noted however, and in particular Haller and Miles (2004) note that many women who enter residential treatment with high levels of psychopathology may be helped to remain by the availability of prescribed psychoactive medications. This author is not aware of information indicating the frequency of prescribed medication use in Australian residential substance abuse treatment centres. Knudsen, Ducharme, and Roman (2007) report the results of a large survey of medication use in 403 privately funded and 363 publically-funded treatment services in the USA. They note that less than half of these services (49.3%) allow the use of SSRI medication, and only 21.2% allowed Naltrexone use. They report a tendency for 12-step based programs to not

allow medication use, and for medication use to be adopted by those services with detoxification facilities, access to physicians, and who employ a high proportion of Master's-level counselling staff.

From early 1999, the Palmerston Farm TC began accepting clients prescribed various psychoactive medications. The rapid increase in the availability of methamphetamines in Western Australia (W.A.) from the late 1990's appeared to coincide with a large increase in young persons applying for entry to the service who had been diagnosed with various mental health problems including psychoses. The influx of large numbers of young clients with methamphetamine-abuse problems having concurrent mental health difficulties and prescribed psychoactive medications, resulted in a significant increase of tension within the existing clinical team. The majority of the program's counselling staff had no experience with methamphetamine-using clients, and believed the TC should not admit clients prescribed psychoactive medications. Program management persevered with the policies allowing medicating clients, and consistent with findings reported by Knudsen et al. (2007), were able to support existing clinical staff by increasing the number of clinical psychologists on the team, and forging closer ties with the local public mental health services. Within two years of changing client medication policies and increasing the number of post-graduate trained clinical staff, the average length of client stay in the TC more than doubled to 100+ days, and remained above 100 days for the following years of data collection. This significant increase in the client average length of stay occurred despite the increased complexity of client presentations.

The finding in this study that clients prescribed psychoactive medications were significantly more likely to be retained in the program at 14 weeks, suggests client use of prescribed psychoactive medications may be helpful in achieving improved client retention rates in AOD residential treatment services. Few treatment retention studies have reported if clients are prescribed medications, and counselling qualifications and other program factors may be confounding factors in this study, so the usefulness of client medication usefulness requires further investigation from other client retention studies where possible effects of this variable on retention have been analysed.

Stage 2

The second stage of this study involved qualitative analysis of focus group findings where the primary quantitative findings from stage one of this study were presented to Chief Executive Officers, Program Managers and senior clinicians from major Australian and New Zealand therapeutic communities for feedback and general discussion.

Stage 2 Aims

The primary aim of the stage 2 focus group was to explore the implementation value of the Stage one findings. The focus group presented the Stage one findings to the focus group participants who were all well experienced with TCs. Feedback about the stage one findings was sought, followed by an exploration of barriers and possible solutions to implementing knowledge of identified stage one variables influencing treatment retention and attrition in therapeutic community treatment programs. The aims of the second stage were framed as the following three questions to participants:

What are the participant's thoughts or reactions to the Stage 1 findings?
Can participants identify any barriers and possible solutions to including knowledge of the identified Stage 1 client factors in this study that predict attrition in TCs?
What other factors may be likely influencing client attrition and retention within TCs?

Stage 2 Method

The second research stage was qualitative research involving a single focus group with senior representatives of leading Australian and New Zealand TCs. The analysis was undertaken using a thematic analysis method whereby major themes were identified from analysis of the focus group transcript. Sub-themes of the major themes were identified and explored with reference to the relevant published literature.

Participants

The Program Managers and senior clinicians of various non-government agencies providing AOD therapeutic community (TC) services within Australia and New Zealand were invited to participate in a focus group session lasting approximately one hour (Appendix A).The nominated participants were attending the

2011 Australasian Therapeutic Communities National Conference held in Fremantle, Western Australia and were invited to participate in the focus group by this author. There were five male participants and four female participants representing therapeutic community services based in urban Australian cities, a New Zealand city, and one remote Australian community.

Stage 2 Procedure

Once participants had agreed to take part in the focus group, they were provided with an information letter (Appendix B) outlining the nature of the study. All participants were required to sign a consent form prior to participating in the focus group, and were provided with the opportunity to clarify any issues regarding the nature of the research. They were informed of their right to withdraw from the research at any stage without any adverse consequences. Focus group attendees were advised that the discussion was recorded by audio recording, and were assured that all comments remained confidential and non-identifiable, and that only the primary researcher would transcribe the taped session.

Initially the researcher described the proposed primary research goal of exploring hypothesised relationships between factors believed to contribute to residential treatment retention and attrition. The focus group sought to elicit participant responses to the stage one research findings, explore barriers and solutions to incorporating knowledge of the identified variables affecting client attrition and retention, and discuss alternate methods of retaining clients at higher risk of attrition. Each dependent variable from the initial stage of the study was discussed with the participants who provided feedback about their perception of the relevance of those variables in affecting TC treatment retention and attrition. The majority of participants generally agreed with the findings presented, and these responses were further explored for possible reasons why some of these findings differed from previously reported findings in the literature. Participants described what they believed were other important factors affecting client treatment attrition and retention in their respective therapeutic communities. Various solutions and barriers to client retention problems were also explored.

Stage 2 Analysis

The audio recording was transcribed verbatim and analysed using thematic analysis (Braun & Clarke, 2006) to determine themes relevant to participant perceptions and comments regarding the research findings. The thematic analysis procedure involved careful multiple readings of the transcription, before identification and grouping of participant comments into major identified themes, and sub-sets of the major themes.

Identified Themes and Sub-Themes

After thorough analyses of the data set a decision was made to code the data collected from the focus group into two broad themes, named “client factors” and “program factors’. These two themes were constructed to further sort the data-set statements regarding the various variables hypothesised to influence client retention and attrition. The two major themes included all variables that were the focus of the first stage of the study, but also included other factors believed by many of the participants to be at least equally important for improving or at least influencing client retention.

The various variables from Stage 1 that were presented to the group for discussion have been listed as sub-themes of a broad theme labelled “client factors”. The sub-theme of client motivation in this group was not included in the initial stage of the study, but recognised by all participants as a major dynamic client factor influencing treatment retention, and has been included under the primary theme of client factors. All participants noted that various non-client factors were very important influences on client retention and attrition. These factors have been collected under the broad theme called “program factors”. The two major themes identified of “client factors” and “program factors”, and the respective sub-themes of each are listed in Table 14.

Stage 2 Results

Table 38

Major Themes of Client & Program Factors, and Sub-Themes

Client Factors	Program Factors
Age	TC Model Practices
Gender	TC Medication Policy
Primary Drug	TC Client Dynamics
Mental Health	TC Staff
Motivation	

The themes identified by the thematic analysis were reduced to two major themes of client factors and program factors. The previous stage 1 independent variables were identified as sub-themes of the client factors; and the sub-themes of the program factors were identified by the focus group participants as factors they believed were also relevant to client retention and attrition. These sub-themes of both the major themes of client and program factors will be discussed in turn with reference to the relevant research literature.

Stage 2 Discussion

Major Theme - Client Factors

Client Age

The finding that older clients were more likely to leave treatment early compared to younger clients received minimal feedback from the group. One service manager mentioned that most of their clients would fit into the young age category (18-24 years) described by the current study. Several managers stated that their service did not experience problems retaining young clients because they adapted their TC program years ago to better retain the younger clients coming to their service.

Most participants agreed with a statement by one manager that services can retain younger persons in the TC, however they noted that younger clients are more prone to boredom and it was necessary to maintain a well-structured program for them.

> *"You can retain them in the TC, so long as you keep them busy".*

The manager of the agency servicing remote aboriginal communities noted that they mostly have older clients (50+) in their service, and that although younger clients may enter the service, their retention is dependent on there being others of a similar age.

> *"Our age group is all the older age group (50+). But we do get younger ones in, however we find that those younger ones… that if there is not already an age group around their age group, then that young person will not stay."*

Possible client attrition due to a population comprised of significantly different age groups within a particular substance abuse program has not been a focus noted in the treatment retention research literature. It is possible this is because there has been a tendency in the last two decades in particular for the establishment of adolescent-specific and alcohol-specific services. Despite the possibility of retention problems due to client age differences, the majority of participants agreed that some positive outcomes are gained by mixing clients of different ages within a treatment service.

> *"We have got four houses on our campus, and originally our place was organised where you started at House # 1, then went to # 2, then # 3, and House # 4 was the women's house. So one of the things we did was actually mix the houses, so it's not rocket science, so you have older people looking after the younger people, and that has made a significant difference to our (client) retention".*

This importance of older and more senior clients helping younger clients orientate to the rules and processes within the TC so the younger clients are more likely to remain in treatment was described by a New Zealand program manager who stated:

"If you don't have older people there, you are kind of expecting the people to lick it off the grass or something, to kind of get the understanding of what is going on."

"And they wonder why it is so unhealthy, and why it isn't working" (Stated in context of without there being any older residents around to instruct newer and younger residents).

The exchange below was between two group participants discussing the use of older residents to visit an off-site pre-admission house to help orientate prospective TC residents:

"In our pre-admission house we take some of the older residents to stay the night."
"That's a good idea."
"It's also good for the older residents too."

In describing the components of a generic TC program De Leon (2000) states in reference to the importance of residents helping each other : "All members of the community are expected to be role models – roommates; older and younger residents; junior, senior, and directional staff. TCs require these multiple role models to maintain the integrity of the community and assure the spread of social learning effects" (De Leon, 2000; p. 383). This statement reflects participants' belief that client retention is likely to improve when there is mixing of different aged clients within a spirit of mutual help fostered by clients and staff in the TC.

Following the discussion of client age effects on treatment retention, the next hypothesised retention variable that was discussed was client gender differences.

Client Gender

The finding of no significant gender differences in treatment retention was accepted and agreed by the majority of participants. Most participants agreed that women are a minority in most of their TC services, and that they often arrive with more severe mental health issues. Several participants mentioned that they had

introduced specific program factors into the services in recent decades to better retain and support women. These factors included separate rooms and houses, gender-specific group work, and same-sex counsellors where possible.

> "*Women come into treatment a lot more damaged than men. It's easier for men to get into treatment. By the time a woman gets there, they are a lot more damaged. Learning how to work with that, and in a way with those separate rooms and different places."*

An important issue that emerged during the discussion was the provision of gender-specific housing. One manager of an Australian residential agency servicing rural and remote aboriginal communities mentioned that it was almost impossible to be referred or to retain aboriginal women in that service until they could offer women-only accommodation. For example:

> *"We actually had to set up a specific women's house because of the cultural factors around that. We found that if we have more than one or two women in (the service), that they will always stay, and they will stay the full term; but if we have less women in, the less they will stay around."*

A large review of published literature from 1975 to 2005 of substance abuse treatment entry, retention and outcomes for women by Greenfield, Brooks, Gordon, Green, Kropp, McHugh, Lincoln, Hien, and Miele (2007) noted that women were generally less likely than men to engage with any specific substance abuse treatment service, especially residential services. The authors note that women were more likely than men to engage with mental health services for their substance abuse problems. They also note that women with trauma histories, including sexual and physical assault and abuse may be less attracted to mixed-gender treatment services.

> *"We found we had to keep space for women, not to fill the house with men. We had to keep so many beds, and make a woman friendly area."*

The importance of gender specific areas and housing seems to be even more critical in the rural and remote TC programs servicing Aboriginal populations as captured by the following statement of a service manager:

> *"People in the community won't refer to us until they spoke to me about identifying a specific house for women. And we did that and we assured them there would never be a male within that environment. Once we guaranteed that, our numbers went up by 700% within the first six months."*

Baird (2008) examined the literature regarding various barriers for women entering substance abuse treatment and noted there was considerable evidence that many women do not enter residential treatment in particular because women are generally the primary childcare providers. The Greenfield at al., (2007) review also noted that there were more barriers for women than men to initially enter substance abuse treatment, however once they had entered treatment their retention and outcomes were often reported as better than the males. Another important point raised in the discussion was the comment that many women may leave treatment early because of family and other responsibilities.

> *"Yes females accessing that service and again, that ideal of women completing the program, there are many variables around that you have to take into account. But they were more stable in the long-term, and accessed the transitional after care program with the one-on-one program in the home environment, and stuff like that. They accessed that more than the men did, and used that support system well."*

> *"…because a lot of women chose not to complete 6 months because they were going back to families. It didn't necessarily mean that treatment was a failure; it meant that there were personal and other responsibilities. What we found in the same research was that whilst we got fewer women through to completion, the women in the longitudinal studies did better"*.

This statement supports previous findings regarding the difficulty of retaining some female clients in residential treatment. The Greenfield, et al., (2007) review Therapeutic Community Retention

noted that several previous studies reported that treatment retention was influenced by the number of children the female client had (the more children, the less likely to be retained), and whether the female client received sufficient support from their spouse or family influenced their retention in treatment. The next hypothesised treatment retention variable that was discussed was the clients reported primary drug of abuse.

Client Primary Drug

The majority of participants answered "No" to the question of whether they believed that the primary drug of abuse helped predict client attrition. Upon further exploration of this response it became apparent that most of the TCs had adapted their treatment programs during the last decade to better retain the younger clients coming to their treatment services with amphetamine/methamphetamine problems. This indicates that retaining the particular client group of methamphetamine users had previously been more difficult, and this was captured by the following statement by one of the New Zealand program managers:

> *"What (X) was saying before, about 12 years ago when methamphetamine first came to New Zealand we had to learn how to work differently. Right so that was keeping it really busy for the younger ones. That was a really important part, so we did change, and that has helped retain them… how we learned to work with methamphetamines."*

The key point noted by this manager was their service was able to improve retention of young methamphetamine clients in their TC by changing their program to keep the younger clients sufficiently engaged and occupied. This is an important point because it indicates that programs and treatment staff are able to positively and successfully respond to particular demands and needs to improve the retention of young persons.

> *"We struggle the most with their retention...opiates."*

> *"I think that's true of Opioid users who tend to leave our service program earlier, and are less disaffected by mental health issues including anxiety and depression, and they have been well serviced over a period of time."*

Several participants noted that they now struggle to retain opiate users in TC treatment, and one manager of a service that accepted clients prescribed Methadone (a synthetic opiate), noted that they tended to lose many younger male clients prematurely from their program because they wanted to return to using illicit opiates in the community:

> *"What we kind of concluded, and remember that Methadone might be part of it, was that this group of men who were the youngest kids, were keen to get off (Methadone), and "get on" (start using opiates again). This was a group of men who were starting to get quite entrenched and possibly hadn't finished (using). Do you know what I mean?"*

There was general agreement with the first stage finding of this study that retaining opiate users in treatment was now more difficult than retaining methamphetamine users; however no reasons were offered to explain this change. It was apparent that some TCs had successfully responded to the growth of a generally younger population of methamphetamine users in their services by introducing program adaptations designed to improve retention of this group by keeping these clients occupied, motivated, optimistic, and better engaged with staff and more senior residents. It is not possible from the analyses undertaken here however to determine if these various program adaptations to better hold methamphetamine users in treatment, have inadvertently influenced the attrition rates of clients with opiate use problems.

Client Mental Health

The finding that clients reporting high levels of depression and anxiety at admission were more likely to be retained at 8 weeks was accepted by the majority of participants who agreed that these clients are not more likely to leave treatment prematurely now. Several managers commented that many of the clients entering treatment with elevated mood and anxiety scores are more likely to remain in treatment than clients without these mental health problems. Two managers noted:

> *"We found that the clients that reported the highest psychological distress at admission appeared to be the people that stayed longer, and they were also*

> *the people that tended to engage themselves in as many of the services, both medically and externally that our program had to offer."*

> *"I know the more disaffected they are by mental health, and drugs and alcohol, the longer they stay here, that's true."*

One manager noted that retention of clients with mental health problems was influenced by the perception of other clients, and therefore the presence of others with mental health problems makes it easier for those persons to remain in TC treatment.

> *"I can see that when we have a community when there's a higher level of dysfunction, dysfunctional people are more likely to stay"*

The large analysis of 58 published studies examining the effects of mental health problems and substance abuse treatment retention and attrition undertaken by Meier and Barrowclough (2009) noted that elevated depression scores did not consistently predict retention or attrition. The authors note that several studies reported that more severe depression predicted retention, whereas mild depression did not. They also note that two studies suggested an interaction between service modality and retention, in that depressed clients were more likely to remain in residential treatment programmes, but not necessarily more likely to remain in outpatient or methadone programmes.

This finding that the more severely depressed clients are likely to remain in residential treatment is consistent with the report of the service manager quoted above who suggests the more depressed clients may be more likely to remain in treatment to better access medical and other services offered by the agency. Another TC manager noted that their service provided a range of mental health medical services that they believe better enabled their service to hold on to clients with a variety of serious mental health issues:

> *"So we have had psychiatrists for about 20 years, and a GP on site, and a nurse for the last 20 odd years (a mental health nurse). So they are tested at the beginning and medicated if they need to be, and that is continuous, so the*

high end users do tend to stay, and those people do include poly-substance, including methamphetamines, and they are young as you said."

This statement reflects the suggestion by Knudsen, Ducharme, and Roman (2007) that services that implement evidence-based policies allowing client use of prescribed psychoactive medications with the support of supplementary psychiatric and mental health services may be better able to service and retain client groups with complex mental health and substance abuse (comorbid) problems.

This pro-medication use statement by this program manager did arouse substantial reactions from two others managers who disagreed with providing clients with psychoactive medications to better support clients with mental health problems. The two managers stated that they did not allow client use of medications because they believed clients should be "drug free" to better enable appropriate assessment of their mental health. Both of these managers noted that their programs operated with a "drug-free" approach. Roman, Abraham, and Knudsen (2011) note that the use of medications in treatment services is still strongly opposed by many programs especially those services with a "12-step" and/or "drug free" approach.

The primary issue conveyed in this discussion was that most services had adopted various measures in the last decade to better retain clients with mental health issues. Some services did this by providing relevant medical and social services, whereas other services sought alternative non-medication methods to support the retention of these clients. The issue of differing beliefs and policies about client use of medication is further discussed in the sub-theme discussion of medication use. The fact that some clients react negatively to remaining in a service with many persons having serious mental dysfunction was also mentioned during the discussion, as was the importance of client motivation for seeking and remaining in treatment.

Client Motivation

The majority of participants agreed with one manager's statement that client motivation was the most important factor predicting client entry and retention in substance abuse treatment. It was agreed by all participants that a client's motivation for treatment can be affected by many factors, and that motivation changes over time. Specific and common motivators mentioned by participants in regard to this included

the motivation not to lose a partner or children, the desire not to go to prison, the desire to find suitable work, to find stable accommodation, and the motivation to generally obtain a better quality of life.

> *"Our only predictor (of client retention) is motivation. Reasons for coming to treatment. It's the only one that we can establish."*

Motivation for entering and remaining in substance abuse treatment has been the focus of much theory and research in recent decades. DeLeon, Melnick, and Kressel (1997) describe the critical role of client motivation to enter and engage with substance abuse treatment, and that treatment is believed to produce positive changes in the client leading to engagement, reinforcement and retention in treatment. Motivation was not included as one of the variables for study in the first stage of this study however, and hence discussion of this factor will be restricted.

Residents enter substance abuse treatment with a range of internal and external motivational factors, and some motivations are believed to be more important than others in predicting treatment retention and outcomes. A recent paper by Klag, Creed, and O'Callaghan (2010) describing the role of various types of motivation in 350 residents entering six Australian TCs is relevant to this point. The authors note the important role of non-autonomous motivation, or extrinsic motivation in clients seeking and entering substance abuse treatment. This type of motivation is described as regulated by the demands of others or external factors, and that people act in a certain way (e.g. enter treatment) to avoid negative consequences of continued substance abuse. Klag et al., (2010) note however that externally regulated behaviours are contingency-dependent, and show poor maintenance once the contingencies are withdrawn. One example of this in the substance abuse treatment field is some clients who enter treatment to avoid prison, and then return to substance abuse after the risk of imprisonment (or other external motivator) has passed.

An earlier paper by Ryan, Plant, and O'Malley (1995) examining internal versus external motivation in clients seeking outpatient treatment for alcohol abuse, reported that clients high in internal and external motivation showed the best engagement and retention in treatment. Clients high in internalised motivation also showed good engagement and retention, whereas the clients low in internalised motivation showed poor engagement and retention irrespective of the level of external motivation. These results suggest that although residents enter treatment with a range

of internal and external motivations of varying intensity, it is important that the person engages with internal motivations for substance use cessation or improved control, during and following treatment to increase their chances of enduring positive outcomes.

Some TC's have trialled the use of specific interventions to either directly or indirectly enhance client motivation for the purpose of improving client TC retention. Soyez, De Leon, Broekhaert, and Rossel (2006) describe a trial undertaken in four Belgian TCs of a social network intervention for new clients. This intervention involved showing new clients and their family and friends, a video to orientate them to the TC, and an induction day with a following discussion with the TC staff. Compared to a control group of clients, the clients receiving the intervention were more likely to be retained in the TC and subsequent analysis revealed that the client's perceived social support and motivation were significant factors enhancing retention.

The manager of an agency servicing Aboriginal communities made a comment regarding remote Aboriginal client motivation to access and remain in substance abuse treatment. His comment reflects much of what has been stated in the research literature about the role of motivation of clients with substance abuse persons of all ages, genders, drug use patterns, mental health status, and from various cultures.

> *"There's always a crisis in their life. There's always a crisis motivation for them coming into treatment at some point, whether it's legal, whether it's a family situation, whether it's a personal one, and depending on that force of that motivation in their life at that moment, will dictate how long they will stay when they are completing it for us."*

Client motivation will not only vary in motivation type and strength between individuals, but may vary between cultural groups, and change over time. This has important implications for TC clinical staff that need to understand and work with an individual's motivation for entering and remaining in treatment.

Despite cultural differences in client motivation for treatment and differences in program structure and characteristics within different cultures, there is evidence that very different substance abuse treatments are still effective. Moggi, Giovanoli, Strik, Moos, and Moos (2007) describe an analysis of the relationship between program characteristics, client substance use and psycho-social functioning at a one-

year follow-up in a comparison of Swiss and U.S.A. residential treatment programs. The authors state that despite great differences in client characteristics, program content and intervention focus, similar outcomes were obtained at the one-year follow-up. The authors suggested that underlying processes of substance abuse treatment may enable the generalisation of treatment outcomes across cultures, but note that this was one small study that requiring further research.

The underlying processes affecting the outcome of client substance abuse treatment such as client motivation are often referred to as “dynamic factors” influencing client treatment retention and attrition. These dynamic client factors have increasingly become recognised as significant factors predicting treatment attrition and retention, and have become a major focus of study.

An analysis of factors associated with the retention of youth aged 13 – 19 years in various New Zealand residential and outpatient substance abuse treatment programs undertaken by Schroder, Sellman, Frampton, and Deering (2009) reported that a range of dynamic client characteristics and program variables were more likely to predict treatment retention than fixed client characteristics such as gender, criminal history, mental health status and primary drug problem. The more important dynamic client factors found to be significant for treatment retention included having higher internal motivation, greater external pressure to engage in treatment, and expectation of positive treatment outcomes and general life outcomes. The study also noted two significant program characteristics predicted retention of youth, and these were involvement with set treatment goals, and positive relationships with staff.

The importance of client motivation and positive client-staff engagement as predictors of retention rather than fixed client characteristic such as a client’s primary drug was mentioned during the discussion with the focus group participants. After the initial focus of discussion regarding the Stage 1 significant findings, the focus of the discussion shifted to participants discussing various “program factors” that they believed played an important role in determining client retention and attrition. The program factors identified by the participants are discussed in the following section.

Major Theme - Program Factors

TC Model Practices

Therapeutic communities (TCs) offer a specific form of residential substance abuse treatment with quite distinct program practices that has been described as "community as method" (De Leon, 2000, p.92.). Although these various practices may differ according to service philosophy, size and structure of the TC, and the particular population they are serving, many of the practices are common to most TCs. Some of these practices were noted by the focus group participants as important for engagement with new residents and thereby promoting their retention in treatment.

All participants agreed with the usefulness of a "buddy system", or similar process within TCs whereby new residents are helped by another resident to orientate to the community norms and expectations. This mentoring technique is very common in TCs and always involves the assigning of a more experienced resident to help support the new resident for the first few weeks after their entry to the community.

> *"A buddy system is very important."*

> *"Yet those first few days and first couple of weeks, of actually getting people settled is more important than getting the medication stuff right I think."*

The buddy system was a technique all participants acknowledged as important for helping to retain new residents because it facilitated their positive orientation to the community, the therapeutic program, and the many rules and community practices. Assigning a senior person as buddy or mentor who is more stabilised in treatment also lessens the likelihood of the new person gravitating to residents who may be ambivalent about treatment and therefore at an elevated risk of treatment attrition. The process of guiding and supporting a more vulnerable new resident commonly reinforces the older resident's awareness of their own personal growth since being in the community. The TC model notes the importance of residents learning from all others in the community, especially those who have been there longer and progressed along their treatment path, and are therefore more senior within the typical hierarchical structure of residents within the TC community. Senior residents are required to accept a range of increasing responsibilities within the whole community,

especially the monitoring and supporting of more vulnerable new clients that occurs within the buddy system.

There was agreement that the initial perceptions of a new resident entering the community are very important, and that attempts to make these initial perceptions positive is valuable in helping maintain their retention at this more vulnerable time. One method mentioned for helping new residents feel welcome when they enter the TC was having a welcoming ritual for them. One of the New Zealand TC services described their welcoming process.

> *"It's a cultural welcome where they actually have to come in and the whole community meets them, and they say who they are. It's just a lovely welcome."*

> *"I love the idea of having a welcoming committee. We looked at that and thought how we could improve it."*

> *"We have started doing that, called a cultural welcome. So they use a 'palfrey' when they come in. It's very important."*

> *"With singing, yes it's traditional… Yes, it's beautiful."*

Most TCs place importance on the person being welcomed to the community and helping them develop a sense of trust and belonging with program staff and other residents. De Leon (2000) describes the typical TC induction stage of treatment as lasting 30 days, and notes that clients are at highest risk of attrition during this stage. The TC buddy system and formal welcome are specific TC practices designed to help the new person orientate to the TC program's requirements, rules and practices. These welcoming practices also play an important role in helping the new resident feel valued and supported when they are in a period when they are most vulnerable to treatment attrition.

Medication Policy

The provision of prescribed psychoactive medication to clients in TC treatment elicited some strong and opposing views that reflect broader divisions about this topic in substance abuse treatment centres of different modalities and treatment

philosophies in the USA, Australia and New Zealand. Interestingly, the finding from the first stage of this study that clients prescribed medications were more likely retained at 14 weeks was not challenged by any participant, and most participants acknowledged that medications can help support many people especially during the early stages of treatment.

One issue raised by several participants regarding medication was whether persons prescribed psychoactive medication whilst they were still using alcohol and illicit substances, would have received an accurate diagnosis. A proponent of a "drug-free" TC stated their position.

> *"For some residents it can be more de-stabilising, because they are often prescribed their medication when they are still using, so they're whole physiology is changing and a lot of residents who come through our rehabilitation were having had regular doctors that have been readjusting medication, or changing of medication, or in some cases there's been over-prescribing of medication. So in a sense it can almost work against some residents, because we first try and find someone on a stable basis for them to kind of work in the community, but we are also trying to find a stable basis of what is the medication they should be on, and what dose."*

This perception above reflects the acknowledgement that it is very difficult for a mental health professional to discriminate symptoms of some mental illnesses from some symptoms of substance abuse. It is therefore common that clients who have been abusing substances and have been in contact with medical professionals prior to residential treatment entry will have been prescribed psychoactive medications for mental health symptoms that may be primarily substance-induced. An advantage of residential substance abuse treatment services is that staff can more reliably ensure that the client's drug use has ceased. Because most mental health symptoms of substance abuse disappear or dissipate within the first few weeks of drug use cessation, more discriminate mental health diagnoses can therefore be assessed.

Many TC and other residential substance abuse treatment services deny entry to clients currently prescribed psychoactive medications because these services don't have medical or nursing staff that can monitor resident or dispense medications within their facilities (De Leon, 2000). Many substance abuse treatment services also do not

have easy access to external mental health professionals or medical services experienced with undertaking mental health assessments of substance abusing clients.

This lack of integration between mental health and substance abuse services remains problematic in many developed Western countries. Gil-Rivas & Grella (2005) report the results of a survey of administrators and staff in 10 mental health and 16 substance abuse programs in Los Angeles County in California, and note that there remains significant variation of integration between mental health and substance abuse services, and highly variable staff perceptions within both services of the levels of integration of these two types of services.

The alternative viewpoint that there are advantages to client retention by allowing persons to enter residential treatment who have already been prescribed psychoactive medications, or who are prescribed medications soon after entry, was captured by the following participant's comment:

> *"That's where I think sometimes it does help your cause, because one doesn't know whether it is the anti-anxiety (medication?). Because coming off amphetamines they do suffer a lot of anxiety. There is a lot of symptoms here, depression and anxiety that comes with amphetamines specifically, so it's really hard to know what's going on, and retention is enhanced by giving them something that lowers that uptight and depressive feeling so they are less likely to leave".*

The above statements express the situation of many residential substance abuse treatment services with respect to mental health assessment and comorbidity. The case argued by one of the participants above is that client psychoactive medication use can alleviate some common symptoms of substance use withdrawal, such as heightened levels of anxiety and depression. In support of this position of allowing medication, a large study of over 100 U.S.A. treatment services with war veteran client populations reported that inpatient programs with more medication use had lower attrition rates (Swindle, Phibbs, & Paradise, 1995).

Many TCs have adapted their previous drug-free policies during the last decade by either allowing persons who have already been prescribed psychoactive medications to enter their treatment programs, or by having persons assessed and prescribed medications by trained mental health professionals within the service, or

having new clients with mental health problems screened and assessed by local medical practitioners or mental health professionals whom they regularly work with.

> *"Well yes because we have an MOU with the mental health service, and we have a really tight relationship with them, and they talk about most things, so they kind of know who we are and that has built up over years and years. We have also got some staff co-located in the medical centre so they understand what we do, and we understand what they do, so we consult quite a bit."*

However without close integration between the two services many community-based medical professionals are unfamiliar with discriminating mental health problems from substance-induced mental health symptoms, and symptom changes during the course of substance withdrawal. The following statements by several TC managers (mostly from services with drug-free policies), reflect this lack of service integration. The perception of many TC staff and managers is that many medical professionals inexperienced with working with TCs are over reliant on prescribing psychoactive medications for client's transient mental health symptoms.

> *"Every time you (we) get a new GP or you get a new Psychiatrist, you have to go through an education process."*

> *"In many ways I feel empathy for the doctor, because trying to get a doctor not to use his prescription pad is like asking an addict not to use."*
> *(Many laughs by TC managers who could relate to this common problem).*

> *"But that is the challenge that we are talking about though isn't it? Educating what is different about someone being in a TC, to someone being held in the community. A doctor is totally responsible for that person (in the community)."*

Many modern TC's have either employed their own mental health professional staff to counter this reliance on external professionals, or developed relationships with their local medical general practitioners and mental health professionals to allow improved exchange of information about mental health issues, substance abuse, and

the common course of client mental health symptoms following substance use cessation. These TC-medical relationships often take years to develop and changes in TC professional staff and/or local medical and mental health staff can quickly result in deterioration of the mutual understanding of each other's professional work.

Collaboration between mental health and substance abuse treatment services has often been problematic and divisive. A staff survey of Queensland mental health and substance abuse treatment services reported that insufficient collaboration between the services remained a major problem in dealing effectively with comorbid clients (Kavanagh, Greenaway, Jenner, Saunders, White, Sorban, & Hamilton, 2000). Although this survey of staff perceptions in mental health and substance abuse treatment services was undertaken over a decade previously, many of the reported problems of insufficient collaboration, mutual understanding and integration of these two services have continued in many developed countries (Gil-Rivas & Grella, 2005).

One New Zealand TC service that did not allow psychoactive medication use by clients mentioned they alternatively used a pre-admission house to help people complete substance use withdrawal and better orientate to substance use cessation before entering the TC. They stated that this pre-admission service had significantly improved their residential retention rates by helping clients adapt to living without substance use prior to going into the residential service. They believed this orientation service helped persons cope with cessation of substance use and significantly decreased the need for continuing use of any prescribed psychoactive medications.

TC Client Dynamics

Several managers stated they believed that retention of clients with mental health problems especially was influenced by client dynamics with their TCs:

> *"I can see that when we have a community where there's a higher level of dysfunction, dysfunctional people are more likely to stay. Where there's a community of a high level of dysfunction, if I've got some life skills I might only stay a few weeks and then get on with it. Whereas if there's other people I can relate to in the community, whether they be from the same criminal background, or they seem to be of the same skill level as me, I'm more likely to stay on."*

An important point noted by this manager is that there can be a large variation of client types in a TC at any particular time, and the “client mix” can effect attrition. The increasing recognition of client mental health comorbidity especially in recent decades led to the development of TCs that specialised in servicing that client group. These “modified TCs” were developed because it became apparent that some standard TC practices such as the more confrontational group work were unsuited for clients with major mental health difficulties (De Leon, 2000). Other modified TCs have also been developed to better retain clients by servicing distinct substance abusing population needs, including the needs of women, prison populations, adolescents, homeless men and women, HIV positive and AIDS clients, and methadone clients. These specialised or modified TCs are usually only available in areas situated nearby large urban populations where there is more likely to be sufficient demand for specialised residential treatment services.

In smaller cities, and rural and remote areas, there is usually insufficient demand to justify funding specialised residential programs or TCs designed exclusively for particular substance abusing populations. In those cases, residential and TC staff must integrate more heterogeneous client populations and most treatment services rely on program rules, policies and support services to lessen the likelihood of negative client dynamics developing that may result in treatment attrition. Most of the residential substance abuse treatment services and TCs in Western Australia are non-specialised programs containing a wide variety of clients.

Typical TC program policies designed to better retain heterogeneous client populations include specific group work for sub-populations within the TC, the use of the “buddy” system, and more considered allocation of counselling staff to meet the needs of particular clients. Other means of servicing specific client treatment needs within non-specialised services include the provision of supplementary services including mental health and medical services, child care, vocational training, activities to meet parole requirements, debt reduction services, gambling treatment, family therapy, relationship counselling and mediation, and post-treatment housing requirements. Despite the variety of specific services offered by these generic TCs and residential treatment programs, many clients nevertheless leave treatment early and this attrition is often attributed to dynamic factors within the client population.

Common dynamic factors within TCs affecting client attrition are often triggered by clients breaching standard TC rules. These rules almost always include

client prohibitions of alcohol or other drug use, sexual relations between clients, interpersonal violence, vandalism, theft, and threats to clients and/or staff. Client dynamics within a TC quickly become negative when clients rule breaches are not quickly admitted or exposed. “Hidden” rule breaches commonly leads to a culture of secrecy, divisions within the client community, and commonly culminates in multiple client attrition. TC staff therefore emphasise the need for all clients to contribute to the “safety of the community” by early admission of rule breaches, and enforcement of the rules. This culture of openness and respect for rules is critical to the therapeutic health of the TC, but is usually a challenge to the norms and beliefs of clients from illicit drug-using cultures and/or prisons where keeping secrets, violence and use of threats is very common.

New residents arriving to the TC very soon after substance abuse withdrawal are at high risk of attrition during the first few weeks of their orientation process, and it’s not uncommon for new residents to influence others to break the community rules and leave the TC with them. This negative influence of a new client can have a powerful effect on the dynamics of the community; so many TC programs have developed various procedures to decrease this risk. The allocation of a more experienced older client or “buddy” to help orientate and support new clients perceived as higher risk, and early engagement by senior staff with new clients are some examples of TC procedures aimed at supporting new clients through the initial stage after treatment entry. One participant described how it was common in New Zealand TCs to lessen this risk of early attrition of new clients by having an extended pre-admission phase for potential clients:

> *“I was quite gob-smacked coming from New Zealand to Australia, at how (I mean at one level I thought it was exciting and challenging), but how different it was how we get residents in. Because if you listen to New Zealand people here, they are going to talk about their clients who arrive quite civil. But they are actually working with them way before they get there, so they have separate assessment staff that are working with them from day one, and they have got these visits to the TC.”*

> *“And we have prior admission to the residential treatment; they actually come in and have lunch at the house…. Then they get to see what the community is*

like, and how it runs. So they might have two meals, and once they are in the pre-admission house, and they go over to the main house three times each week with all the others, so they get to see."

TC Staff

The importance of TC staff in helping settle new clients in the therapeutic community was also noted, and all participants agreed with the statement below that client engagement was strongly influenced by early contact with clinical staff. The second statement below notes that this staff contact can also occur effectively in group format:

"We found one of the predictors of retention in the early stages of treatment was staff contact."

"At out TC that is not necessarily that easy because we don't actually have single case management with the client. So what we did was we started two induction groups per week for the people in the first month where they just came as a group and met with staff to ask questions about the TC or whatever, and we made sure that the personal carers or senior residents were attending to them all the time explaining the program. But senior staff engagement is predictive really of retention."

The importance of counselling staff positively engaging with new clients has been previously noted in the substance abuse treatment outcome and retention literature, (De-Weert-Van Oene, Schippers, DeJong, & Schrivers, 2001; and Barber, Luborsky, Gallop, Crits-Cristoph, Frank, Weiss, Thase, Connelly, Gladis, & Siqueland, 2001). More recently, Palmer, Murphy, Piselli, and Ball (2009) undertook a qualitative survey of client and outpatient treatment staff perspectives after clients had dropped out of treatment. The findings noted that treatment retention was positively affected by the development of an early therapeutic alliance between staff and clients.

The number and type of professional and non-professional staff within TCs may vary greatly according to the size of the service, the client population, the amount and source of funding, the location of the TC, and the agency's guiding philosophy of

substance abuse and recovery. De Leon (2000) describes the evolution of substance abuse treatment from the 1960's when almost all TC staff were persons who previously had substance abuse problems, commonly called recovered persons or persons in recovery, compared to more recent TCs that employ many professional staff without substance abuse histories. Modern large TCs commonly employ psychologists, social workers, psychotherapists, teachers, physicians, nurses, lawyers, accountants and other professionally trained staff, but it remains common to also include some recovered persons in the TC staff profile who often serve as powerful role models to residents.

In substance abuse outpatient services, mental health and human services in the general public domain, the relationship between the client and the professional is viewed as the primary therapeutic element. Within the TC however, the client's relationship to "the peer community" is viewed as the essential therapeutic element, hence the term "community as method" is often used to describe the TC treatment process. TC Staff serve important roles as facilitators, guides, role models, and managers of this client/peer community relationship.

Most TC programs are structured so that the client community plays a major role of influencing the client, however most TC and other residential services also rely heavily on staff counsellors. Meier, Donmall, and Heller (2004) reported the results of a national survey of 326 drug specialist services in England and Wales and stated that individual counselling was undertaken in 78% of residential services. The counselling provided in residential services was generally provided on a weekly basis, but only provided by accredited counselling staff in 62% of residential services. Staff without counselling certification provided individual counselling sessions in the majority of all drug services surveyed (74%), and in only 16% of services was counselling provided exclusively by qualified staff.

Hser, Joshi, Maglione, Chou, and Anglin (2001) report the results of a survey of 87 programs in Los Angeles County and note that individual counselling was provided in 78.5% of residential programs, which is remarkably similar to the U.K. survey results reported above by Meier et al. (2004). Hser et al. (2001) note that the lower average caseload of clients (mean = 8 clients per counsellor) by residential counsellors was one of the few significant factors predicting client retention. Although the authors do not mention the percentage of residential counsellors with formal counselling qualifications, it can be presumed that counselling has an

important role in client retention due to the reported counsellor/client caseload retention effects.

Although weekly client counselling forms a major part of most residential treatment programs, Simpson et al. (1997) report that the effectiveness of counselling on retaining substance abusing clients in treatment has been demonstrated only for qualified and experienced counsellors. Hser et al. (2001) undertook an extensive analysis of retention involving 26,047 clients in 87 Los Angeles County substance treatment programs, and noted that staff qualifications was an important program factor helping predict retention in most residential programs. This researcher is not aware of Australian statistics regarding the proportion of counselling provision by graduate or post-graduate qualified staff within TC and other residential drug treatment services, but there is no obvious reason to suspect major differences from the U.K. or U.S.A. survey results reported.

Overall Discussion

It should be first noted that a relatively high proportion of the clients in this therapeutic community service were retained in treatment at 2 weeks and 8 weeks during the period of data collection. The high proportion of clients still retained at 2 weeks especially was believed by senior clinical staff to be a consequence of the stringent entry criteria at this particular TC that had been designed to exclude clients at unacceptably high risk of early attrition and consequent program disruption. The TC program entry criteria required the majority of clients entering the program during the period of data analysis to produce at least two consecutive urinalysis samples showing no alcohol or illicit drug use during the one or two weeks immediately prior to program entry. Most pre-entry clients were engaged in outpatient counselling or other forms of support, and had received information about the TC program rules, structure and expectations. It was believed that this mandatory withdrawal, pre-entry support and orientation prior to TC entry greatly reduced the high rates of early attrition that are commonly noted in the research literature. It should therefore be noted that the various variables significantly predicting 8-week and 14-week client retention and attrition findings of this TC sample may have limited generalisability to other TCs with significantly different pre-admission requirements and procedures.

The following sections will summarise the stage one findings for each of the independent variables analysed in conjunction with the input from participants in the second stage of the study, and compare the findings with the published literature.

Gender and Treatment Retention

The finding of no significant differences between male and female retention rates at either 8 or 14 weeks after treatment entry was unexpected as it was not consistent with the literature. As previously noted this result may reflect specific program processes and components the TC introduced to help retain females in treatment. Many of the participants in the second stage of the study also mentioned that their TCs had introduced gender-specific program factors such as separate housing and gender-specific group work, and stated that they believed these program factors exerted important influence on both the entry and retention of female clients at their TC services. It is therefore probable that these gender-sensitive program factors that existed within the TC contributed to better access and retention of female clients.

Previous research has also indicated that females were more likely to enter substance abuse treatment with higher levels of depression and lower levels of self-esteem, and that these women were more likely to drop out of substance abuse treatment prematurely (Haller, Miles, & Dawson, 2002; Wilke, 2004). The Greenfield et al. (2007) review note that women have often reported a higher incidence of co-occurring mood and anxiety disorders, and therefore many women may perceive the lack of psychiatric services within substance abuse treatment services as a significant barrier to entry. It is therefore possible that the TC program studied was attractive to many female clients entering with high levels of depression because for the initial years of the data collection period it was the only Western Australian residential substance abuse treatment service admitting clients prescribed psychoactive medications for diagnosed mental health disorders.

Previous reported findings that women are more likely to have higher levels of depression at treatment entry was also supported by this study where 68% of women compared to 48% of men entered treatment with depression levels in the clinical range. Several second stage participants noted that many women entered their programs with significantly higher need for health and mental health services than male clients, and believed that the provision of these services contributed to higher female TC access and retention rates.

Therapeutic Community Retention

There was no consistent major gender difference in self-esteem scores at treatment entry for the sample, and this contradicts the findings of many other reports stating that women are more likely to enter treatment with lower self-esteem. Women's self-esteem scores in this sample also increased over time similar to increases in the men's self-esteem scores. There was no significant gender difference in treatment entry anxiety scores, and these also tended to reduce for both men and women over time.

Age and Treatment Retention

The stage one finding that the youngest group of clients (17-24 year olds) were less likely to drop out of treatment by the 14 week stage was also unexpected and not consistent with the majority of research regarding treatment retention. Many previous retention studies have reported that older clients are more easily retained in substance abuse treatment (Joe, Simpson, & Broome, 1998; Brecht, Greenwell, & Anglin, 2005). However, this finding that younger clients were more likely retained was accepted by many of the second stage participants who noted that their programs had adapted content and style in recent years to better retain the increasing number of young persons with alcohol and methamphetamine problems accessing their programs. It is therefore probable that the introduction of specific program factors to better retain young persons may help account for the finding. As noted previously, the TC program in this study had a compulsory work and training component included in the program structure that was believed by senior staff to have powerful positive psychological effects on client mood, anxiety and self-esteem, and thereby helping to retain younger clients. However it also remains possible that younger clients had a short and less severe substance use history, including less history of treatment failure, and were therefore less susceptible to treatment attrition.

Primary Drug and Retention

There was no significant finding for primary drug of abuse affecting retention which was also unexpected given most previous research has indicated programs had greater difficulty retaining methamphetamine-abusing clients. However the fact that more recent published research (Hammerbacher & Lyvers, 2006; Luchansky, Krupski, & Stark, 2007) has not found that methamphetamine-using clients are more likely to leave treatment prematurely and relapse, suggests that some treatment

programs may have adapted their programs to better retain these clients. Several of the second stage participants noted that in more recent years they experienced more difficulty retaining the generally older opioid-using clients in TC treatment compared to the commonly younger group of methamphetamine-using client group. As noted previously, the older clients were more likely to leave treatment before 14 weeks in this program. Another possible reason the methamphetamine-using clients were more successfully retained in treatment was the program allowed prescribed psychoactive medication use, especially given many methamphetamine-using clients entered the program with high levels of anxiety and depression.

Depression, Anxiety & Self-Esteem Scores and Retention

An important finding of the first stage analysis was that clients with medium and high levels of anxiety, and high levels of depression at entry were significantly more likely to be retained at 8 weeks, and clients with high levels of self-esteem at treatment entry were significantly more likely to be retained at 14 weeks. The finding that high levels of anxiety and depression predicted retention was unexpected given the majority of previous research findings report that client mental health problems predict treatment attrition. This finding was accepted by most of the second stage participants however, several of whom noted it was common for the clients of their services with the most mental health problems to remain longer in treatment, especially when they were supported to access various health services they required.

Although not discussed with the second stage participants, it is possible that the low caseloads of the relatively highly qualified counsellors in the TC program could account for the retention of clients with mental health difficulties. Both low client caseload of counsellors, and having well qualified professional counsellors have been noted in the literature as having a positive effect on client retention (Hser, Joshi, Maglione, Chou & Anglin, 2001; Simpson, Joe, Rowan-Szal, & Greener, 1997). Another specific program factor that may have influenced the retention of clients with elevated depression and anxiety scores was that the program allowed client use of prescribed psychoactive medications for various mental health disorders.

Psychoactive Medication Use and Retention

The stage one findings also reported that clients prescribed psychoactive medications were significantly more likely retained in treatment at 14 weeks. This

finding that pharmacotherapy may help improve client retention of clients supports previous research reported by Haller and Miles (2004), however very few treatment retention studies have reported whether clients are taking prescribed psychoactive medications, and this appears to be an important finding requiring further research. It should be noted that the use of psychoactive medications by clients within Australian TCs is relatively new with the majority of Australian TC treatment programs only allowing client medication use within the last ten to fifteen years. Although there was acceptance of the useful role of psychoactive medications by most of the second stage participants, there was a divergence in participant responses about how client medication use should be adopted by programs. Two participants noted that their programs did not allow clients to enter their services with medications because of concerns about the validity of mental health assessments when persons were still using substances prior to treatment entry. Another obstacle to client medication use noted by several participants was their limited reliable access to health professionals familiar with their programs and their understanding of substance abuse and recovery. Several participants described difficulties establishing enduring professional relationships with local medical and psychiatric services, and believed medical services rarely understood TC treatment processes, and tended to over-prescribe to substance abusing clients. These participants described extended TC pre-entry assessment practices they claimed allowed their staff to support new clients and more reliably discriminate on-going mental health problems from temporary substance–induced mental health difficulties. The consensus view of participants however, was the recognition that many clients are vulnerable to attrition in the initial weeks after treatment admission, and various forms of support are beneficial in retaining those persons within the TC, whether that be various forms of peer support, psychiatric medication use, or extended orientation and support prior to TC entry.

Limitations of This Study

There are several limitations of this study. These include that measures of various program factors, and client dynamic variables such as client motivation for treatment were not included in the agency's database. Other fixed client variables such as years of drug use, drug use severity, previous AOD treatment, education levels, qualifications, and whether the client was court-mandated for treatment, were also not included in the database. These factors therefore could not be included in the

initial quantitative analysis, and it remains possible that some of these factors may be significant indicators of treatment attrition. Another limitation of the qualitative analysis is that limited resources did not enable a second coder to analyse the focus group data. A further limitation of this study is that the data was collected from only one TC and therefore findings may not be generalisable to other TC programs within Australia or overseas. This TC had several unusual features of operation that were unique within Australasian TCs at that time. These uncommon features included a mandatory farm work program including work skills training and the commercial cultivation of organic vegetables. The program was also unusual in that there was no incorporation of 12-step philosophy in the therapeutic program. There was an alternate emphasis placed on exposing clients to various recreational pursuits, the teaching of various stress management techniques, and instruction in mindfulness and other meditation practices. The program also employed at least one Masters level clinical psychologist on the clinical staff for most of the data collection period.

Despite the limitations of the database utilised, and possible limitations in the generalisability of the findings from this study to other TCs, this study remains an important contribution to the Australian AOD treatment retention research literature. In particular, the repeat measures of mood, anxiety and self-esteem undertaken throughout the program, indicated that clients with significant mental health difficulties were able to be held in treatment without major modifications to the treatment program. The study also indicated that the large majority of clients reported significant improvement in mood scores during the initial weeks of treatment, irrespective of whether clients were taking prescribed psychoactive medications.

Conclusion

The analysis of the second stage responses indicated there was general agreement with the first stage findings, even though the findings were obtained from a single Western Australian TC program, and collected from a client population from between six to eleven years ago. The general agreement with the first stage retention findings by the focus group participants may reflect that current TC client populations have maintained a high proportion of young persons with methamphetamine-use problems. The retention outcomes obtained from a decade old data sample appear to have remained relevant because the data were collected from the beginning of the rapid increase in methamphetamine-use in the Australasian region that has continued

to have a major influence on the profile of client treatment populations. Most of the second stage participants reported that the shift in dominant client population profile from opioid to methamphetamine use since 2000 has required major modifications of practices and policies within most Australian and New Zealand TCs since then. The retention and attrition findings of this study were not consistent with most of the existing literature from the U.S. and U.K. studies that have been published. However a major strength of this current study is that the data were collected from an Australian treatment population over a period of six years from within a single therapeutic community program. A limiting factor of the current study was that many client variables were not included in the data archive, and that the therapeutic community may have had significant differences from other TCs. Various program factors not included in the analyses may have influenced client attrition and retention rates, and therefore the findings of this study may be less generalisable to other residential substance abuse treatment services.

Several second stage participants described alternate solutions that their Australian and New Zealand treatment programs had developed to overcome some of the identified client retention risk factors including the problems of retaining women, young persons, methamphetamine users, and persons with complex mental health needs. Some participants described non-medicating means of safely supporting clients during the early stages of TC treatment, including the early stages when mental health diagnoses remain uncertain and clients are experiencing major discomfort amidst withdrawal and change in physical and mental health symptoms. The innovative solutions designed for the purpose of retaining higher risk clients described by TC managers in the second stage of this study, may help explain why therapeutic communities have remained an important and enduring component of substance abuse treatment services within Australia and New Zealand. In support of this statement, Tinworth (2012) reports that the Australasian Therapeutic Community Association (ATCA) currently has 38 members who run 66 TCs in Australia and New Zealand.

Although this study is an analysis of client treatment outcomes from only one Western Australian therapeutic community, the findings from this program combined with the input from other Australian and New Zealand TC managers, suggest that TCs remain a robust substance abuse treatment model capable of adapting their programs to meet complex client treatment needs, changing drug use patterns, and changing drug-using populations within the wider community.

Therapeutic Community Retention

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APPENDIX A

LETTER OF INTRODUCTION TO AGENCY DIRECTORS/CEO'S

DATE

ADDRESS

Dear……,

My name is Mark Porter and I am undertaking a Doctor of Psychology degree at Edith Cowan University. As part of my degree I am conducting a research study designed to assess various client factors that may contribute to client attrition from Alcohol and Other Drug (AOD) residential treatment services. As you are aware treatment attrition from AOD residential services very often predicts relapse to substance abuse.

Early recognition of factors that predict client attrition may allow residential treatment services to instigate interventions designed to counter treatment attrition, and thus increase residential treatment success rates.

The first stage of this research has involved an analysis of over five years of client data from an AOD residential treatment service designed to assess various client factors that may predict treatment attrition.

The next stage of this research project is to discuss the research findings with experienced AOD residential treatment clinicians. I wish to obtain clinical perspectives about the findings, and where relevant discuss suggestions of possible interventions designed to improve retention rates with relevant client populations.

I am seeking to involve managers and/or clinicians from several AOD residential treatment services and myself in a focus group that should last from 1 to 1.5 hours. The discussion will be audio-recorded and some notes taken but no clinician or agency will be identified. Clinicians will have the right not to

answer any questions or to leave the discussion group at any time if they so wish. This research has been approved by the Edith Cowan University (ECU) Research Ethics Committee. If you have any questions regarding the research then do not hesitate to call me Mark Porter on (08) 9431 3781 and, 0404 844 227 (m), or either of my supervisors Associate Professor Lynne Cohen on 6304 5575 or l.cohen@ecu.edu.au or Dr. David Ryder on 6304 5254 or david.ryder@ecu.edu.au. If you are interested in speaking to someone independent of this research, please contact the University Research Ethics Officer, Ms. Kim Gifkins on Phone: (08) 6304 2170 or via email at: research.ethics@ecu.edu.au.

I would appreciate your help in forwarding this letter to your Agency's residential treatment service clinical staff so interested clinicians may be able to contact me and arrange a time and location to meet.

Yours sincerely,

Mark Porter
D. Psychology Candidate,
School of Psychology,
Edith Cowan University.

Lynne Cohen
Associate Professor
School of Psychology
Edith Cowan University.

APPENDIX B

LETTER OF INTRODUCTION TO TC MANAGERS & CLINICIANS

Dear……,

My name is Mark Porter and I am undertaking a Doctor of Psychology degree at Edith Cowan University. As part of my degree I am conducting a research study designed to assess various client factors that may contribute to client attrition from Alcohol and Other Drug (AOD) residential treatment services. As you are aware treatment attrition from AOD residential services very often predicts relapse to substance abuse. Early recognition of factors that predict client attrition may allow residential treatment services to instigate interventions designed to counter treatment attrition, and thus increase residential treatment success rates.

The first stage of this research has involved an analysis of over six years of client data from an AOD residential treatment service designed to assess various client factors that may predict treatment attrition.

The next stage of this research project is to discuss the research findings with experienced AOD residential treatment clinicians. I wish to obtain clinical perspectives about the findings, and where relevant discuss suggestions of possible interventions designed to improve retention rates with relevant client populations.

I am seeking to involve clinicians from several AOD residential treatment services and myself in a focus group that should last from 1 to 1.5 hours. The discussion will be audio-recorded and some notes taken but no clinician or agency will be identified. Clinicians will have the right not to answer any questions or to leave the discussion group at any time if they so wish. This

research has been approved by the Edith Cowan University (ECU) Research Ethics Committee. If you have any questions regarding the research then do not hesitate to call me Mark Porter on 0404 844 227 (mobile), or either of my supervisors Associate Professor Lynne Cohen on Phone: 6304 5575 or l.cohen@ecu.edu.au; or Dr. David Ryder on Phone: 6304 5254 or david.ryder@ecu.edu.au. If you are interested in speaking to someone independent of this research, please contact contact the University Research Ethics Officer, Ms. Kim Gifkins on Phone: (08) 6304 2170 or via email at: research.ethics@ecu.edu.au.

I appreciate your interest in being involved with this research and encourage you to contact me as soon as possible so I can arrange a suitable time and convenient location for all participants to meet.

Yours sincerely,

Mark Porter
D. Psychology Candidate,
School of Psychology,
Edith Cowan University.

Lynne Cohen
Associate Professor
School of Psychology
Edith Cowan University.

APPENDIX C

DESCRIPTION OF FOCUS GROUP FORMAT AND QUESTIONS

INTRODUCTION:

Participants will be informed that all their comments are confidential and should not be repeated outside of the group. Participants will be informed that the session will be audio-taped and notes taken to aid in later transcription of the session to electronic form, but reassured that all comments will not be identifiable. If any identifying names are mentioned during the recording, they will be erased immediately. Pseudonyms will be used and transcripts will be numerically coded.

The focus group will begin with a brief introduction about the success of AOD residential treatment, but note that previous research findings have almost always stressed that successful long-term treatment for substance abuse is predicted by the amount of time in treatment. Treatment retention is therefore the most critical factor in determining the long-term outcome of substance abuse residential treatment. The research findings from the first stage of this research that involved an analysis of archived client data from an AOD residential service will be discussed with the group.

DISCUSSION OF CURRENT RESEARCH FINDINGS:

The group will be encouraged to express their thoughts on the research findings in view of their own experiences of treatment attrition of specific populations within their respective treatment services.

PROPOSED SOLUTIONS TO PROMOTE CLIENT RETENTION:

The participants will be encouraged to suggest ideas that may improve retention generally within residential services, and specifically to identify and improve retention of identified populations at risk of attrition.

BARRIERS TO IMPROVED RETENTION:

Common ideas that emerge about how to improve treatment retention will be discussed, especially with respect to possible barriers to successful introduction in various treatment services.

QUESTIONS AND DE-BRIEF:

Any questions about the research will be answered and participants will be reminded that all responses will remain confidential, and that all notes and the recording of the session will be destroyed after transcription.

Mark Porter
D. Psychology Candidate,
School of Psychology,
Edith Cowan University.

Lynne Cohen
Associate Professor
School of Psychology
Edith Cowan University.

APPENDIX D

Palmerston Association permission for use of archived data