An evaluation of in-patient alcohol/drug treatment using psycho-social functioning and substance use criteria

Mario Antony Farina
University of Wollongong
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AN EVALUATION OF IN-PATIENT ALCOHOL/DRUG TREATMENT USING PSYCHO-SOCIAL FUNCTIONING AND SUBSTANCE USE CRITERIA.

A thesis submitted in fulfilment of the requirements for the award of the degree

Doctor of Philosophy
(Clinical Psychology)

from

The University of Wollongong

by

Mario Antony Farina B.Sc.(Hons).

Department of Psychology

1998
I certify that the thesis entitled An Evaluation of In-Patient Alcohol/Drug Treatment Using Psycho-Social Functioning and Substance Use Criteria, and submitted for the degree of Doctor of Philosophy, is the result of my own research, except where otherwise acknowledged. I also certify that this thesis (or any part of the same) has not been submitted for a higher degree to any other university or any other institution.

signed

Date...
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And finally, I thank providence for the opportunity that has been given to me to engage in such an emotionally and spiritually enriching endeavour.
ABSTRACT
This thesis conducted an evaluation of Australian alcohol/drug treatment effectiveness by examining the interaction of client psychosocial and substance use characteristics with the characteristics of two different treatment programmes of different durations and operating from different philosophical positions. Information was gathered from clients in treatment at various stages of their engagement with their programmes of choice with the aim of applying a model of treatment evaluation developed by Bell, Williams, Nelson and Spence (1995).

By examining the interaction between client and treatment characteristics, this thesis has examined a number of key issues relevant to treatment effectiveness. The role of client and treatment characteristics were examined in relation to attrition/retention, end-of-treatment changes in clients' cognition, affect and behaviour, and 3-6 month follow-up of process change and outcome. This thesis has also made commentary upon and examined the role of several variables which have been discussed widely in the treatment research but not examined in great depth previously.

The client-treatment interaction was examined in four quasi-experimental studies with the goal of providing information from which to consider issues related to improving in-patient alcohol/drug treatment effectiveness.

Study 1 consisted of 458 observations at treatment commencement and compared treatment completers and treatment drop-outs who attended two treatment programmes of differing duration and philosophy (8 week cognitive-behavioural and 12 week traditional disease model). A significant difference in psycho-social functioning was found to exist between completers and drop-outs upon treatment entry in both treatment centres. In this study, at treatment commencement, treatment
drop-outs were found to have more psycho-social resources than treatment completers and were no more likely to drop-out of one treatment modality than another.

Study 2 consisted of 319 observations and addressed the issue of the impact of in-patient alcohol/drug treatment duration and philosophy on client psycho-social functioning. The results indicate that regardless of attending either of the in-patient alcohol/drug treatment programmes of differing durations and philosophies (4 and 8 weeks of cognitive-behavioural treatment and 6 and 12 of traditional disease model treatment), subjects had significantly improved on all psycho-social variables. However, subjects who had completed 8 weeks of cognitive-behavioural treatment had changed most, had acquired the most adaptive psycho-social resources and did not significantly differ at treatment completion in psycho-social functioning to a comparison group who were abstinent from all substances at 3-6 months post-treatment.

Study 3 initially examined 458 observations and addressed the impact and outcome of holding differing attributions for the cause of alcoholism on client psycho-social functioning and alcohol use post-treatment and at treatment re-commencement. It was found that although this overall sample did not differ significantly in pre-treatment alcohol use, attributing the cause of alcoholism to a disease was related to having poorer psycho-social functioning at treatment commencement. Also, in study 3, 227 past-treatment attenders were observed. Among these 227 individuals a significant relationship was found to exist between holding attributions associated with cognitive-behavioural philosophy and adaptive post-relapse psycho-social functioning. Findings indicated that individuals who had engaged in treatment prior to treatment re-commencement were significantly more likely to attribute the cause of alcoholism to a disease, had significantly fewer psycho-social resources, used more alcohol prior to treatment re-commencement and were significantly more likely to drop-out of treatment early than clients who had attended past treatment and who
attributed the cause of alcoholism to a bad habit or to a combination of a disease and a bad habit.

Study 4 consisted of 73 observations taken at 3-6 months post-treatment to examine the outcome of having attended 8 weeks of cognitive-behavioural treatment and 12 weeks of traditional disease model treatment. Unfortunately, because of the small sample size that finally eventuated in Study 4 and because comparison groups commenced treatment with significantly different psychological resources and substance use prior to treatment commencement, any conclusions that derive of Study 4 results were significantly compromised. However, Study 4 results could possibly suggest that at 3-6 months post-treatment outcome assessment, 8 weeks of cognitive-behavioural treatment completers functioned significantly better, were more likely to be abstinent from substance use, were significantly more likely to be employed, and used significantly a fewer number and quantity of substances if not abstinent than a group who had completed traditional disease model treatment. At 3-6 months post-treatment assessment, clients who completed 8 weeks of cognitive-behavioural treatment had maintained a statistically significant change on all dependent variables and had significantly more adaptive psycho-social resources and substance use than a group of clients who had completed 12 weeks of traditional treatment.

In examining the conceptual issues stated above, all the studies in this thesis found depression to be a key variable. For example, in the first study (n= 458), depression was found to be the best predictor of differences between treatment completers and drop-outs. In the second study (n= 319), levels of depression changed most in magnitude of change among all groups between pre-treatment assessment and treatment completion assessment. In the third study (n= 458), depression was found to be the best predictor of differences between groups who held differing attributions for the cause of alcoholism. Finally, in the fourth study (n= 73), depression was found to be the best predictor of differences between 3-6 months post-treatment outcome
groups who had completed cognitive-behavioural or traditional disease model treatment.

At the conclusion of this thesis evidence has been provided that suggests:
(1.) that in-patient alcohol/drug treatment drop-outs had more adaptive psycho-social resources prior to treatment than treatment completer. However, drop-outs who had attended treatment prior to re-treatment were more likely to attribute the cause of alcoholism to a disease and to have fewer adaptive psychological resources than treatment completers who had attended past treatment and attributed the cause of alcoholism to a bad habit;
(2.) that holding a disease attribution for the cause of alcoholism was related to less adaptive psychological functioning and substance use in the event of relapse (post-treatment use requiring re-entry into treatment);
(3.) that those in-patient alcohol/drug treatment centres who teach a disease conceptualisation about alcoholism may not be acting in their clients' best interests; and,
(4.) that 8 weeks of cognitive-behavioural treatment displayed a trend towards providing more effective treatment than 12 weeks of traditional disease model treatment in equipping clients at treatment completion with the psycho-social resources required to eventually take control of substance use behaviour.
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Chapter 1. - A Measure of Psycho-Social Functioning May be a Useful Indicator of In-patient Alcohol/Drug Treatment Effectiveness.

The aim of this thesis has been to examine a number of issues relevant to the evaluation of residential in-patient alcohol/drug treatment. By doing so, it is intended that this work will help in determining how to improve the performance of in-patient alcohol/drug treatment.

This thesis has examined questions related to in-patient treatment retention, duration and philosophy and client attributions for the cause of alcoholism. The first study examined the relationship between client psycho-social resources and pre-treatment alcohol/drug use and in-patient treatment retention. The second study examined the relationship between client progress in in-patient treatment programmes of different duration and philosophy. The third study examined the relationship between having been in past treatment, client attributions for the cause of alcoholism, psycho-social functioning and pre-treatment re-commencement alcohol use. Finally, the fourth study of this thesis has examined a limited outcome evaluation of client psycho-social functioning and substance use at post-treatment in relation to differing treatment durations and philosophies.

1.1 The consequences of alcohol/drug abuse

Bootzin and Accocella (1988) list the nine criteria which encompass alcohol and other psycho-active substance dependence and which include both psychological and physiological consequences. These criteria include:

(1.) preoccupation with the drug;
(2.) unintentional overuse. - Problem users begin to find that they have taken more of the drug than they intended;
(3.) tolerance. - As tolerance increases the person requires more and more of the drug;
(4.) withdrawal. - With habituation, the body and the brain require the drug in order to maintain stability. If the drug level is decreased, the person undergoes withdrawal symptoms, psychological and physical disruptions ranging from mild anxiety and tremors to acute psychosis and, in extreme cases death result;

(5.) relief substance use. - The person often takes the drug in order to relieve withdrawal symptoms;

(6.) persistent desire or efforts to control drug use. - Many drug dependent people try repeatedly to quit, and repeatedly relapse. Drug abuse is a chronic disorder, and complete cures are not common;

(7.) a pattern of drug-impaired performance in social or occupational circumstances, or when drug use is dangerous;

(8.) the abandonment of important social, occupational, or recreational activities for the sake of drug use. - Many of life’s major functions - work, friendship, marriage, child rearing - conflict with heavy drug use and may be given up as a result;

(9.) continued drug use despite serious drug related problems;


A manifestation of three or more of the above criteria is sufficient to lead to a diagnosis of physiological and psychological alcohol/drug dependence.

With continued abuse of alcohol or other drugs, physiological and psychological dependence may develop. This thesis examines psycho-active substance use, but especially focusses on alcohol use because second to nicotine, alcohol is the psycho-active substance most used and abused in Australia. The consequences of physiological and psychological alcohol or other substance dependence may be severe. For example, Collins and Lapsley (1996), cited the results of a study which examined the social costs of drug abuse in Australia in 1988 and 1992, and found that almost one in five Australian deaths each year (approx. 25,500)
have drug related causes. Of these, 26% are alcohol related, and include medical conditions that derive from alcohol abuse or misuse, traffic accidents, and misadventure. Alcohol abuse, among other drug abuses, is most responsible for physiological damage such as liver and neurological conditions. Overdosing with other drugs whilst under the effect of alcohol is strongly correlated (80% of hospital admissions for overdose involve alcohol). Alcohol and other drug abuse is related to suicide, especially among men in the 15-34 age group. There is a greatly increased risk of sexually transmitted diseases and unwanted pregnancies due to loss of inhibition after drinking alcohol or using other drugs. The social consequences of alcohol/drug abuse include a strong correlation between consumption of alcohol/drugs and criminality. In particular, crimes of violence commonly involve alcohol. The combined effect of psycho-active substance abuse contributes to anti-social behaviour, especially vandalism, malicious damage and assault. Alcohol/drug abuse is responsible for low performances in work, school and play. Given that the ramifications of continued alcohol/drug abuse are so depleting of social resources, the need for effective alcohol/drug abuse treatment is a matter of urgency (Collins and Lapsley, 1996).

Effective treatment is crucial because, unfortunately, although the health risks are high and the consequences of alcohol/drug abuse may be damaging to both the individual and society, research suggests that individuals generally return to harmful alcohol/drug use after treatment. For example, Ludwig (1972) found that 91% of alcoholics returned to maladaptive patterns of alcohol use after alcohol treatment. Armor, Polich and Stambul (1978) found a similar after-treatment figure (90%). In Australia in the present day, the statistics remain similar regarding post-treatment alcohol-use goal maintenance. Mattick and Jarvis (1993) have recently confirmed these statistics, finding that they are still relevant in Australia currently. Thus, it is essential that treatment of alcohol/drug abuse should be as effective as possible in
order that it may work to ameliorate the consequences of alcohol/drug abuse both individually and socially.

It is imperative that an evaluation of in-patient alcohol/drug treatment be conducted. Wragg (1992) claimed that in the past, treatment programmes in Australia have largely been planned on the basis of best guesses as to what will work to effect a positive treatment outcome. This opinion was also maintained by Heather and Tebbutt (1989) in regards to alcohol treatment. Heather and Tebbut asserted that, unfortunately, research pertaining to an Australian context has in general not been employed in the construction of programmes for the treatment of alcohol/drug dependence/abuse. Moreover, these researchers claimed that treatment programmes, be they intervention or prevention oriented, designed on the basis of the evidence of research, are only a recent innovation. If indeed alcohol/drug treatment has failed to come to terms with research based programmes, clearly, it is important to focus on research issues concerned with alcohol/drug treatment. Most Australian alcohol/drug treatment units provide a fairly eclectic model of treatment and most units are set up to provide residential in-patient treatment (Mattick and Jarvis, 1993). There are many questions however that require clarification regarding the retention of clients, the impact and outcome of treatment type and duration, and the impact of client factors on treatment outcome. Although these questions have been addressed in the past in both the U.S.A and the U.K. findings are inconsistent and answers to these questions continue to be largely inconclusive (Finney, Hahn and Moos, 1996). This thesis will examine a number of relevant questions pertinent to these domains of the in-patient alcohol/drug treatment/client relationship.

Answers to some questions regarding in-patient alcohol/drug treatment/client relationship may place substance dependence treatment centres employing in-patient treatment in a better informed position to change client functioning adaptively. It is essential that alcohol/drug treatment be as efficient as possible because as stated
above, the consequences of alcohol and/or other substance abuses, are physiologically, psychologically and socially severe.

1.2 How is treatment effectiveness increased?

Researchers in Australia and overseas have generally attempted to identify how to increase alcohol/drug treatment effectiveness by addressing questions related to treatment retention, duration of treatment, and the effect of type of treatment on client alcohol/drug use post-treatment (Bell, Williams, Nelson and Spence, 1995; Bell, Richard and Feltz, 1996; Condelli, 1993, 1994; Floyd, Monahan, Finney and Morley, 1996; Heather and Tebbutt, 1989; Mattick and Jarvis, 1994; Simpson, 1995). However, more conclusive research findings are required if questions regarding how to improve in-patient alcohol/drug treatment effectiveness are to be answered (Condelli, 1994; Rose-Colley and Cinelli, 1992; Floyd, Monahan, Finney and Morley, 1996; Mattick and Jarvis, 1994). This is especially true in Australia where answers to questions concerning retention, duration and type (philosophy) of treatment, and the impact of client functioning on treatment outcome are central to the issue of how to increase treatment efficacy and how to ensure cost effectiveness.

Soaring health care costs and economic pressures in Australia and other countries have made drug/alcohol in-patient treatment cost-effectiveness a central issue in health care planning (Ernst and Young consulting team, 1996; Mattick and Jarvis, 1993; Sobell, Sobell, Brown, Cleland and Buchan, 1995). In the United States of America, Hubbard, Marsden, Rachal, Harwood, Cavanaugh and Ginzburg (1989) found that when comparing the major modalities of drug/alcohol treatment delivery, in-patient treatment is by far the most costly. Ali, Miller and Cormack (1992) found that in-patient alcohol/drug treatment is also very costly in Australia. Furthermore, although Ali et al. concluded that in-patient treatment has the potential to be cost effective in Australia, Heather and Tebbutt (1989), raised another issue by asking, "Does treatment work?". This is a critical issue that still needs to be fully answered in
the Australian context. Ali et al. (1992) recommended that programmes for the treatment of alcohol/drug problems be critically assessed in Australia. The issue of assessment with the view to evaluating treatment effectiveness is not recent or peculiar to Australia. In America in 1978, Armor, Polich and Stambul made the point that "the large investment of public funds into a comprehensive treatment program designed to alleviate a health problem calls for an equally comprehensive evaluation of its effectiveness" (1978, p.2). Given the lack of public money for funding of alcohol/drug treatment in Australia today (Collins and Lapsley, 1996), a valid appraisal of in-patient alcohol/drug treatment, conducted with a view to increasing its efficacy, is just as important in Australia today as it was in America in 1978.

1.3 The research literature reaches differing conclusions regarding in-patient treatment effectiveness

Because alcohol/drug treatment facilities in Australia are often in-patient units, it is important to examine the research available that can provide a critical assessment of the efficacy of this treatment modality. There is disagreement about the efficacy of in-patient alcohol/drug treatment. Some research has tended to find very poor in-patient treatment success rates (De Leon, Melnick and Jainchill, 1994; Mattick and Jarvis, 1993, 1994; Simpson, 1995). Mattick and Jarvis (eds.) (1993) in a comprehensive literature review, cite a number of studies that indicate no in-patient treatment outcome superiority over out-patient treatment outcome. Mattick and Jarvis commence their review by quoting a number of researchers (Miller and Hester, 1986; Adelman and Weiss, 1989; Mazza and Stevens, 1988; Edwards,1980) who conclude that no real differences in alcohol/drug treatment outcome pertaining to duration and setting can be found. These researchers found no significant difference in treatment outcome or impact for in-patient or out-patient clients. Annis cited in Mattick and Jarvis (1993) states:
It is concluded that:... (iv) well controlled trials have also demonstrated that outpatient programmes can produce comparable results to inpatient programmes... (Annis, 1986, p.175. In Mattick and Jarvis, 1993).

In a further examination of the in-patient/out-patient effectiveness question, Mattick and Jarvis (1994) conducted a combined narrative/meta-analytic review of the results of a number of well-conducted randomized controlled clinical trials. They found no evidence that residential in-patient treatment was superior to non-residential out-patient treatment. Thus the general consensus of many studies is that there is no evidence of benefit to alcohol/drug dependent individuals derived from residential in-patient treatment over out-patient treatment.

Yet, contradictory evidence can be found that supports the efficacy of in-patient treatment. However, these studies raise issues regarding the duration of in-patient treatment. For example, a number of studies conclude that long-term in-patient treatment is more effective than short-term treatment when viewed from an extended time perspective (Aron and Daily, 1974; Bell, Richard and Feltz, 1996; Fals-Stewart and Schafer, 1992; French, Zarkin, Hubbard and Valley-Rachal, 1993; Gottheil, McLellan, and Druley, 1981; Gottheil, in Stol, 1988; McLellan, Luborsky, and O’Brien, 1986). The issue of in-patient versus out-patient treatment efficacy is not straight forward when duration of treatment is also considered. However, Condelli and Dunteman (1993) mention several studies (De Leon, Wexler, and Jainchill, 1982; Simpson, 1981; Bale, Stone, Kaldau, Engelsing, Elashoff, and Zarcone, 1980) that have found a significant relationship between remaining in in-patient treatment and better client functioning post-treatment.

Such claims and counter claims clearly indicate the need for discussion. Nace (1993) contended that residential in-patient treatment offers alcohol dependent individuals, at least, a respite from their alcohol-using environment. This respite,
Nace (1993) argued, allows the client an opportunity to put into practice and reinforce the therapeutic approaches learned in treatment. Unfortunately, findings regarding in-patient alcohol/drug treatment efficacy upon which one could base improvements, have been inconclusive. Therefore, the obvious confusion raised by claims and counter claims regarding in-patient alcohol/drug treatment clearly needs further discussion and examination. According to Wickizer, Maynard, Atharly, Frederick, Koepsell, Krupski, and Stark (1994) the disparate findings may arise due to the use of different dependent measures or criteria to examine alcohol/drug treatment efficacy.

1.4 The criteria examined determine the way in which impact and outcome evaluations are perceived

According to Bell, Williams Nelson, and Spence (1995), the criteria used to examine treatment efficacy determines the way in which impact and outcome evaluations are perceived. Studies that show positive alcohol/drug long-term in-patient treatment impact and outcome have not employed a solely drug-free treatment outcome criterion but have also taken into consideration client social, psychological and drug-use behaviour (Bell, Williams, Nelson and Spence, 1995; Ernst and Young Consulting Team, 1996; Hubbard, Marsden, Valley-Rachal, Harwood, Cavanaugh, and Ginsburg, 1989). On the other hand, some overseas studies have evaluated long-term in-patient alcohol/drug treatment programmes and have found that it is not overly effective when a post-treatment abstinence evaluative criterion is used (Heather and Tebbut, 1989; Miller, Tebbutt and Heather, 1986).

However, studies that have used criteria other than post-treatment abstinence to measure in-patient alcohol/drug treatment impact and outcome have found more positive results. For example, in the past, Aron and Daily (1974) used court convictions as a measure of programme effectiveness and they observed that having completed longer term treatment resulted in less court convictions. They concluded
that ‘... treatment is more effective, as determined by a comparison of the ... court conviction rates, and by an analysis of the cost effectiveness of the programs’ (1974, p.635). Similarly, McLellan, Luborsky, and O'Brien (1986) compared the effectiveness of three treatment modalities using a total of 181 drug and alcohol dependent male/female voluntary subjects. They found that for alcohol dependent patients, with regards to demographic predictors, longer treatment duration and better discharge status was related to better follow-up status. McLellan et al. (1986) stated that more treatment was generally associated with better outcome for patients in the areas of employment, criminal behaviour, family relations, and psychological health. More recently, French, Zarkin Hubbard, and Rachal (1993) found that drug use and criminal activity diminished as a consequence of time in treatment. They found this effect to be more robust for clients who had taken part in in-patient treatment. Therefore, it seems that using a total abstinence criterion for evaluation of the effectiveness of alcohol/drug treatment may be a major reason that treatment can be viewed as having limited effectiveness. When other criteria are used alcohol/drug treatment may be found to be effective.

1.5 A critique of drug/alcohol treatment's adherence to a total abstinence criteria as a measure of treatment outcome success

In Australia, as in the rest of the Western world, the criteria used to evaluate the effectiveness of alcohol/drug treatment have been largely determined by the philosophy of treatment (Ernst and Young Consulting Team, 1996; Finney, Hahn, and Moos, 1996; Floyd, Monahan, Finney, and Morley, 1996; Monahan and Finney, 1996). Traditional alcohol/drug treatment programmes have, in the main, accepted the tenets of the disease/medical or disease/enlightenment models (Ali, Miller and Cormack, 1992; Chiauzzi, 1991; Heather and Tebbut, 1989; Mattick and Jarvis, 1993; Rose-Colley and Cinelli, 1992; Seigal et al., 1995). Those who espouse the disease model (for example, proponents of Alcoholics Anonymous and Narcotics Anonymous) view total abstinence as the only effective outcome. Unfortunately, a
belief in total abstinence as an indication of successful treatment outcome may present a problem for a fair and equitable evaluation of alcohol/drug treatment effectiveness. Miller (1992) suggests that 'a propensity for relapse is, in fact, one of the striking commonalities of the addictive behaviours' (p. 93). Miller's assertion is vindicated by the number of studies that find no positive results for alcohol/drug treatment effectiveness because they use an abstinence criterion as a measure of success. Miller states that 'It is well known that the treatment of addictive behaviours is regularly followed by high rates of relapse' (1992, p.93). According to Floyd et al. (1996), in a 1980 report, Miller and Hester estimated that only about 26% of treated clients could be considered to be "successful" at 12 months post-treatment when success is defined as the total absence of drinking. These studies, it is argued, do not appear to indicate that long-term in-patient alcohol treatment is ineffective in its impact on client behaviour but, simply, that most alcohol/drug dependent individuals lapse in the course of learning to maintain their goals, irrespective of whether such goals are total abstinence or moderation of alcohol/drug use. The concept of harm minimization is largely overlooked by proponents of the disease model (Byrne, 1996).

With the current doubts, in some quarters over the value of a 'disease' model's conceptualisation of the causes of psycho-active substance dependence, the usefulness of a continued abstinence from drug/alcohol criterion for the evaluation of treatment outcome, and impact, becomes questionable (Ali, Miller and Cormack, 1992; Farina and Wragg, 1995a; Ford, 1996; Heather and Tebbut, 1989; Heather, Miller and Greeley, 1991; Hodgins, el-Guebaly and Armstrong, 1995; Marlatt and Gordon, 1985, 1988; Mattick and Jarvis, 1993; Miller and Hester, 1986; Rose-Colley and Cinelli, 1992). This is an especially arguable premise as the work of many researchers of addictive disorders has supplied evidence that a lapse into chronically habituated behaviour for addicts attempting to control their habit may not in the majority of cases signal relapse, but may be part of the unlearning of chronically habituated behaviour (Beck, Wright, Newman and Liese, 1993; Bell, Williams, Nelson, and Spence, 1995;
Marlatt and Gordon, 1985; Heather, Miller and Greeley, 1991; Miller, 1992; Mattick and Jarvis, 1993; Mardula, 1996; Prochaska and DiClemente, 1984; Saunders and Houghton, 1996). What the disease model would label relapse is more appropriately termed a lapse according to a harm minimization model. Daley and Marlatt (1992) distinguish between a 'lapse' and a 'relapse'. According to Daley and Marlatt, a lapse "refers to the initial episode of alcohol or other drug use following a period of recovery, whereas the term relapse refers to failure to maintain behaviour change over time" (1992, p.533).

Few addicts are capable of or are willing to stop the use of the substances to which they are addicted immediately and forever once having decided that they will attempt to control their addiction. The normal course of events for most addicts attempting substance use behaviour change may be to have a series of lapses whilst learning how to live without or control drug use (Annis, 1986; Beck, Wright, Newman, and Liese, 1993; Bell, Williams, Nelson, and Spence, 1995; Bell, Richard, and Feltz, 1996; Chiauzzi, 1991; Curry, Marlatt, and Gordon, 1987; Heather, Miller, and Greeley, 1991; Hodgins, el-Guebaly, and Armstrong, 1995; Marlatt and Gordon, 1985; Mattick and Jarvis, 1993; Rose-Colley and Cinelli, 1992; Rogers, 1994; Saunders and Houghton, 1996; Watson, 1991; Walton, Castro, and Barrington, 1994; Waisberg, 1990). Many researchers argue that what seems to determine eventual success or failure in learning to live with or without the use of alcohol or other drugs is "dynamic" client psychological functioning such as cognitions and affect. Psychological functioning is related to how clients explain and thus predict the proximal and distal consequences of their lapse (Beck, Wright, Newman, and Liese, 1993; Bell, Williams, Nelson, and Spence, 1995; Bell, Richard, and Feltz, 1996; Hodgins, el-Guebaly and Armstrong, 1995; Leitner and Dunnett, 1993; Marlatt and Gordon, 1985; Marlatt and Baer, 1988; Peele, 1988; Saunders and Houghton, 1996; Walton, Castro and Barrington, 1994).
In the last two decades there has been a growing understanding that since a return to old behaviour is common for clients attempting to maintain behaviour change, a lapse should not necessarily be seen as an indication of treatment failure. Many researchers argue that it is logical to assume that clients left to their own devices for any length of time after treatment are likely to return to levels of psychological functioning associated with maladaptive alcohol/drug use behaviour for brief periods of time (Beck, Wright, Newman, and Liese, 1993; Galanter, 1989; Hodgins, el-Guebaly, and Armstrong, 1995; Hubbard et al., 1989; Lowinson, Ruiz, Millman and Langrod, 1992; Marlatt and Baer, 1988; Rogers, 1994; Waisberg, 1990; Wragg, 1992; Yudofsky and Hales, 1994). However, it is not logical to assume that because these individuals may briefly re-develop or entertain old thinking, feeling and behaviour, these should then be permanently re-established and lead to a re-installation of old alcohol/drug use behaviour patterns (Bell, Williams, Nelson and Spence, 1995; Demers, Kishchuk, Bourgault and Bisson, 1996).

For example, Mattick and Jarvis (1993) also argue that a temporary return to old behaviour is common for individuals attempting alcohol/drug use behaviour change. They cite Marlatt and Gordon (1985) who also distinguish between a lapse (a temporary period of alcohol/drug use) and a relapse (a return to pre-treatment levels of alcohol/drug use). Marlatt and Gordon argue that a lapse is for most alcoholics who are attempting alcohol use change, a part of the unlearning of old, deeply conditioned alcohol use behaviour. A lapse may end quickly or it may lead to a relapse. Marlatt and Gordon also consider that the effects of the initial lapse are mediated by the person’s affective and cognitive reactions to the lapse. Marlatt and Gordon argue that a relapse is more likely to occur for the person who has a strong perception of having violated an abstinence rule. These researchers refer to this as the abstinence violation effect (AVE). Unfortunately, since traditional alcohol/drug treatment programmes generally follow the tenets of the disease model of addiction (as conceptualised by Alcoholics Anonymous and Narcotics Anonymous philosophy), an AVE may result
for traditional treatment completers who may lapse in the normal course of attempting alcohol/drug use behaviour change.

Therefore, for those who adhere to a disease model philosophy of alcohol addiction it appears that little or no distinction between a lapse and relapse is made. A lapse is regarded as a guarantee of the reactivation of an uncontrollable compulsion to return to chronic use of substances. A lapse is believed to signal an imminent and certain consequence, namely, relapse. Prochaska and DiClemente's (1984) 'model of change' refutes this belief regarding the consequence of a lapse. Prochaska and DiClemente's (1984) model views 'lapse' as a temporary return to strongly habituated behaviour due to the incursion of a powerful cue for which the individual, as yet, has learned no alternative response. Prochaska and DiClemente suggested that, in fact, the lapse should be regarded as a temporary return to maladaptive behaviour, and part of the process of learning new responses to old, entrenched conditioning. Prochaska and Di Clemente argued, as did Marlatt and Gordon (1985), that the likelihood of a lapse becoming a relapse is increased if the alcoholic/addict has been taught that a temporary return to old behaviour is a signal of complete loss of control. On this basis, if a lapse into maladaptive behaviour is part of the process of unlearning old conditioning, abstinence should not be viewed as the only valid measure of positive alcohol/drug treatment outcome or impact. Furthermore, this issue becomes even more evident when it is possible that traditional treatment programmes, based on disease model theoretical framework, may increase the possibility of relapse by creating the likelihood of an abstinence violation effect for the individual attempting alcohol/drug use behaviour change. This situation may arise as a consequence of not recognising that a temporary return to old behaviour is part of a 'normal' recovery process.

For these reasons, some researchers argue that measures which tap the change in a client's thinking and feeling may be more useful indicators of alcohol/drug
treatment impact and outcome (Bell, Williams, Nelson and Spence, 1995; Marlatt and Gordon, 1985; Prochaska and Di Clementi, 1986; Simpson, 1995). Measuring cognitive and affective change over the course of treatment and post-treatment may be more logical and appropriate than relying solely on an abstinence only criterion. Many researchers argue that the role of treatment is to produce positive change in a client's cognition, affect and subsequent behaviour (Bell, Richard and Feltz, 1996; Bell, Williams, Nelson and Spence, 1995; Miller, 1992). In changing the way a client thinks and feels, Annis (1986) suggested that alcohol/drug treatment prepares the client for the long drawn out process of behaviour change. This is the basis of the argument that was made by researchers such as Brook and Whitehead (1980) who believed that the major role of treatment facilities should be to improve a client's psychological functioning. Marlatt and Gordon (1985) argued that treatment should produce an improvement in the client's attitude to him/herself and others. Marlatt and Gordon believed that an improvement in social functioning is also beneficial and changes as a consequence of a change in thinking and feeling. This improvement in psycho-social functioning results in an eventual improvement in drinking/drugging behaviour. Recent researchers continue to express this belief (Bell, Williams, Nelson and Spence, 1995; Bell, Richard and Feltz, 1996).

1.6 A total abstinence measure for treatment evaluation may not be the most useful outcome criterion to employ

If alcohol/drug dependence is viewed from a Cognitive Social Learning Theory (CSLT) perspective (Bandura, 1977, 1982), it is regarded as learned maladaptive behaviour which can be ‘unlearned’. According to the CSLT philosophy, a re-use of substances after treatment may sometimes be a part of the ‘unlearning’ of a chronically habituated behaviour. CSLT considers that substance re-use after treatment is often a natural occurrence in the process of behaviour change (Marlatt and Gordon, 1985; Prochaska and Di Clemente, 1986). If CSLT is correct, then the
validity of using an abstinence criterion as a measure of treatment effectiveness becomes doubtful.

In the present context, it is most evident that alcohol and drug use cannot be adequately explained by using a disease model conceptualisation. Research indicates that explanations of the aetiology of alcoholism which only consider a 'within person' conceptualisation are not adequate. Ali, Miller and Cormack (1992) suggested that a more adequate model explaining the aetiology of addiction should incorporate a triadic concept which identifies the effect of learned behaviour:

"Current thinking about the nature of alcohol and other drug problems suggests that there are biological, psychological and social factors which contribute to patterns and other drug use; that for many problem drinking and drug taking behaviour is a learned behaviour that can be 'unlearned' " (1992, p.7).

This unlearning is realised by changing the way individuals perceive themselves in relation to alcohol/drugs, and in relation to their place in the world and a future with or without alcohol/drugs (Beck, Wright, Newman and Liese, 1993; Bell, Richard and Feltz, 1996; Bell, Richard and Dayton, 1996; Bell, Williams, Nelson and Spence, 1995; Marlatt and Gordon, 1985; Prochaska and Di Clemente, 1986). On this basis, it is evident that alcohol/drug treatment must improve an individual's perception of self-in-the-world if it is to produce an eventual improvement in better end-state functioning and maintenance of more adaptive behaviour for the individual. End-state functioning encompasses not only levels of substance use but also a range of psychological and social functioning behaviours.

Treatment evaluation based on the tenets of CSLT would take all of these factors into account. CSLT describes human behaviour as learned and maintained via a reciprocally determined interaction between the person, the environment and
behaviour (Bandura, 1982). Therefore, any description of the aetiology of alcohol
dependence based on Cognitive Social Learning theory takes all these factors and their
effect on addiction into account (Bandura, 1986). Bandura's (1977, 1982, 1986)
theory of "reciprocal determinism" recognises that human behaviour cannot be
explained solely by person, or environment, or behaviour effects, but takes into
consideration the ongoing effect that these three factors have on each other. Cognitive
Social Learning theory recognises that an individual's behavior is determined by the
individual's perception of his/her internal and external environment. In this way, a
model of alcohol/drug dependence based on Cognitive Social Learning theory may
offer a more adequate framework from which to explore treatment effectiveness. For
example, some individuals develop and maintain chronic physical and psychological
dependence on alcohol/drugs as a ramification of situational and environmental
antecedents, beliefs, expectations, the individual's family history and current
relationships, and prior experiences with alcohol/drugs or activity associated with
their use (Marlatt and Baer, 1988). According to CSLT an individual learns to use
alcohol or drugs abusively due to modelling and reinforcement, which are the
consequences of social factors and maintained by psychological factors (Bandura,
1977, 1982). Wragg states that children acquire 'patterns of behaviour similar to that
of parents, peers and significant others ...(1992, p.17). Moreover, these patterns are
maintained in adulthood, according to Marlatt and Gordon (1985), by an individual's
learned expectations or anticipation or avoidance of events associated with positive
reinforcement or negative reinforcement. The emphasis of a CSLT philosophy and
theories that espouse similar premises is on learning rather than on the biological
factors that precipitate and maintain maladaptive alcohol/drug use behaviour.

Moreover, Marlatt and Gordon (1985) argue that 'both the body and the mind
are involved in a reciprocal relationship' (p.202). The argument that ensued in the
past over endogenous or exogenous theories of the aetiology of alcohol/drug addiction
are clearly much less applicable or currently valid. Marlatt and Gordon suggest that
physical ramifications (withdrawal, physical arousal) are experienced subjectively by an individual. Initially when alcohol/drug use is first commenced the individual experiences euphoric states and pleasant states. The individual develops a preference for these sensations and the cognitions that are associated with them. This is compounded, Marlatt and Gordon maintain, by ‘... expectancies and attributions about the drug or other agent as the "cause" of the pleasurable experiences’. These beliefs ‘exert an important cognitive influence’ (1985, p.203). Having acquired these beliefs about the drug’s effect, the individual is psychologically addicted and his/her life becomes consumed with obtaining the pleasurable experience ... even when this pleasurable experience ceases to occur and life becomes consumed by beliefs that the individual cannot live without the drug. For alcohol/drug dependent individuals, confidence in their own ability to perform normal everyday tasks without the motivational reward of the mental state that they seek via the use of alcohol/drugs becomes virtually non-existent (Beck, Wright, Newman and Liese, 1993; Yudofsky and Hales, 1994). Beliefs related to low self-efficacy, such as: "I can't live without alcohol!", become dominant. Marlatt and Gordon (1985) posit that in this manner, addiction must be viewed as both a physical and a psychological condition manifesting itself in the way individuals have learned to think about it and themselves in regards to alcohol/drug use. The individual’s future behaviour may therefore be pre-determined by the beliefs he or she holds regarding the subjective effects of alcohol/drugs on his/her functioning in the psycho-social domains (Bell, Richard, and Dayton, 1996; Bell, Richard, and Feltz, 1996).

In summary, it appears that since alcohol/drug dependence is maintained by psychological determinants, a total abstinence from alcohol or drugs criterion would not appear to be the most valid measure of treatment impact or outcome. Therefore, it is evident that questions regarding the effectiveness of in-patient alcohol/drug treatment cannot be usefully answered by using a total abstinence criterion. Since future alcohol/drug use behaviour is mediated by the way an individual thinks and
feels, it becomes necessary to measure how treatment impacts on client thinking and feeling. Thus, measures of psychological change become important measures of treatment efficacy. This is especially so, since those who focus on the part played by psychological change factors in the initiation or continuation of alcohol/drug dependence, stress cognitive and affective change as a necessary aim of treatment (Annis, 1986; Beck, Wright, Newman and Liese, 1993; Bell, Richard and Dayton, 1996; Bell, Richard and Feltz, 1996; Bell, Williams, Nelson and Spence, 1995). In this regard, it becomes important to understand how in-patient alcohol/drug treatment impacts psychological functioning. Of course, although alcohol/drug use still needs to be part of any assessment of end-state functioning, it is evident that such concepts as total abstinence are of limited value as the only criterion by which to judge treatment effectiveness.

1.8 The relationship between alcohol/drug treatment and psycho-social functioning

According to Glanz, Lewis and Rimer: ‘The cognitive version of Social Learning Theory emphasizes what people think, that is, their cognitions, and their effect on affect and behaviour’ (1991, p.161). Furthermore, Glanz et al. and others argued that the way people view a situation determines the likelihood of their performing a therapeutic behaviour (Antaki and Brewin, 1982; Bandura, 1977, 1982, 1986; Bell, Williams, Nelson and Spence, 1995; Bell, Richard and Feltz, 1996; Leitner and Dunnet, 1993; Lewis, 1994; Seligman, 1992; Yudofsky and Hales, 1994). Therefore, these researchers attest, any treatment programme aimed at promoting or developing health oriented behaviour must affect a positive change in client cognition by increasing their belief in their ability to change - an assertion with which Brook and Whitehead (1980) undoubtedly would have agreed as they believe that the major role of treatment facilities should be to improve a client's psychological resources. According to Bell et al. (1995) an improvement in psychological resources will lead to an improvement in social resources. It would be expected that an improvement in
these domains would also take place in relation to the psycho-social adaptiveness of subsequent substance use.

Therefore, those who focus on the part played by psychological change factors in the initiation or continuation of alcohol/drug dependence, stress cognitive and affective change as a necessary aim of treatment (Annis, 1986; Bell et al., 1995). Bell et al. (1995) also added social domain resources as measured by social support as criteria that should be included in treatment evaluation. Bell et al. considered that the domains of cognitive functioning, emotional wellbeing, and social support frame the immediate goals of drug abuse treatment. Each of these domains encompasses an aspect of the drug abuse treatment process and highlights the treatment goals of many programmes and modalities of treatment delivery. Bell et al. also argued that...

"behavioral outcomes, such as drug use cessation, gainful employment and a prosocial lifestyle, are the ultimate, distal goals of drug abuse treatment. According to theories of drug abuse treatment, the behavioral outcomes are the result of social and psychological changes in the client, which represent the client's progress through treatment. Thus the proximal, during treatment goals of drug abuse treatment are summarized as client progress in specific domains, such as emotional wellbeing, cognitive functioning, and social support resources. The process of drug abuse treatment is gradual and operates through these proximal goals" (1995, p. 211).

Therefore, according to Bell et al., an indication of the effect of treatment on client functioning should measure not only alcohol/drug use but also the cognitive, affective, and social support domains of client functioning. In this manner, an examination of how in-patient drug/alcohol alcohol treatment impacts on clients' psycho-social functioning and alcohol/drug use may lead to more interpretable treatment effectiveness evaluations. Bell et al. propose a conceptual model for
treatment evaluation where client resources in the psycho-social domains are measured at treatment commencement, during treatment and treatment completion, and post-treatment. Bell et al.'s model presents a suitable treatment evaluation framework upon which this thesis is based (Figure 1a.). It will be noted that where Bell et al. refer to "client resources" in this thesis the terms "client psycho-social resources" and "psycho-social functioning" will be used.

Figure 1.0 - Bell et al.'s Conceptual Model of Treatment Process Evaluation

The only way that the treatment evaluation model used in this thesis will differ from Bell et al.'s conceptual model is in the exclusion of a measure of criminality. Bell's model will be used but will not be tested in this thesis.

1.9 Chapter 1 summary

The abuse of alcohol or drugs leads to severe psychological and social consequences. For these reasons it is vital that alcohol/drug abuse treatment should
be as effective as possible. However, there are limited data which could be viewed as conclusive when one examines what treatment approaches are effective. The inconclusiveness of findings regarding the effectiveness of alcohol/drug treatment may arise due to the methods and criteria used for measuring success. For example, the use of a total abstinence criterion as a measure of alcohol/drug treatment success may not be a useful criterion upon which to base judgements regarding treatment effectiveness. This conclusion has been based on the evidence which indicates that it is common for some problem abusers of alcohol or drugs who are attempting alcohol/drug use behaviour change to return to pre-goal alcohol/drug use for brief periods during post-treatment periods as part of learning new alcohol/drug use behaviour.

As indicated in the discussion above concerning lapse-relapse and the abstinence violation effect, psychological factors play a significant role in treatment outcome. Therefore, this thesis will examine the importance of psychological factors in two areas. The first area involves an examination of psychological factors in relation to end-state functioning. The second area involves an examination of psychological functioning in relation to the issue of cognitive factors as reciprocally linked to treatment philosophy and outcome. For example, holding a disease model conceptualisation versus a CSLT conceptualisation may have significant effects on lapse-relapse behaviour and thereby end-state functioning.

The preceding discussion also recognised the importance of social factors in end-state functioning. Therefore, the thesis measured client psychological and social functioning criteria plus alcohol/drug use behaviour. Furthermore, it did so by adhering to the structure of a conceptual model of treatment evaluation as proposed by Bell, Williams, Nelson, and Spence (1995). In this model, client psycho-social functioning is examined at treatment commencement, completion, and post-treatment.
Using this model may have offered a suitable framework upon which to base the structure of this thesis and to examine in-patient alcohol/drug treatment effectiveness.

Chapter 2 will elaborate upon a number of psycho-social variables which might usefully be employed to examine the cognitive and affective domains of client functioning and as indicators of treatment's effectiveness. Chapter 2 will also discuss social support as a predictor of therapeutic behaviour change in the social domain.
Chapter 2 - Psycho-Social Functioning Measures as Indicators of Treatment Effect

There are a range of variables which might usefully be selected to provide an indication of future adaptive resources. A number of key variables in the cognitive, affective and social support domains have been variously linked to behavioural change and successful adaptive coping.

2.1 Self-efficacy beliefs

One of these variables in the cognitive domain is self-efficacy. Self-efficacy is a variable that resides in the cognitive domain. 'Self-efficacy', according to Prochaska and Di Clemente, is "the belief that one's own efforts play a critical role in succeeding in the face of difficult situations" (1984 p.10). Self-efficacy, as conceived by Bandura (1977, 1982, 1986), also implies confidence in one's ability to perform and maintain a desired behaviour. "Perceived self-efficacy is concerned with judgements of how well one can execute courses of action required to deal with prospective situations" (Bandura, 1982, p.122). If an alcohol treatment programme is to help the individual change old habits, it may therefore need to impact on self-efficacy in relation to changing alcohol use behaviour.

Bandura (1982, 1986) maintained that people who have good self-efficacy concerning their skills to cope with a situation, have as a consequence self assurance that makes them capable of mobilizing effort required to deal with situations which threaten the maintenance of positive behaviour change. In other words, individuals who have a sense of self-efficacy in their ability to remain abstinent from or moderate alcohol use, are more likely to resist the urge to abuse alcohol in 'high risk of alcohol use situations'. Furthermore, for such individuals, the mastery of 'high risk' situations that once cued alcohol abuse has the effect of further increasing the individuals' self-efficacy regarding their ability to remain abstinent from or moderate alcohol use.
Waisberg (1990) stated that traditional in-patient alcohol treatment programmes attempt to convince alcoholic patients that abstinence from alcohol is within their capacity to achieve. Waisberg further suggested that since this type of treatment programme is in the business of increasing a client's self-confidence to resist the urge to abuse alcohol, an indication of effective treatment impact would be reflected in an increase in a client's self-reported self-efficacy beliefs to resist the urge to abuse alcohol.

Using a twelve item measure of self efficacy, DiClemente (1981) successfully predicted that changers would maintain their non-smoking behaviour for a specified period after smoking. Rist and Watzl (1983) used self-efficacy assessment devices developed in the smoking behaviour field of research to study alcoholic behaviour. One hundred and forty five subjects in their study were assessed on a questionnaire designed to obtain ratings of self efficacy/assertiveness in non-drinking situations prior to commencing a three month in-patient social skills training programme, and upon completion of the programme. Ratings of self efficacy in this study were found to be predictive of drinking behaviour after treatment.

2.2 Locus of control

Locus of control is another variable that resides in the cognitive domain. Locus of control is directly related to the degree of accountability or responsibility that one perceives oneself to have for the control of events in one's life (Waisberg, 1990). Rotter (1966) contended that when individuals interpret an event as not contingent upon their own behaviour, but attributable to forces beyond control, they must be seen as having an external locus of control. The converse is true of the internally oriented locus of control individual.

If individuals are to change past behaviour, not only is it necessary to believe in the capacity to maintain change, but they must also believe in their ability to affect
that change. If clients are to become responsible for ongoing wellbeing, then such beliefs are essential. In acquiring such beliefs, the individual can become accountable for actions, can assume responsibility, can make decisions, and can accept the consequences of those decisions (Bloom, 1988; Feist and Brannon, 1989; Glanz, Lewis and Rimer, 1991). From this perspective, an internal locus of control, where one perceives that one's past and future actions have and will continue to produce an effect, is clearly linked to accepting responsibility for the maintenance of behaviour change. Clearly, in addition to self-efficacy factors, the issue of locus of control also assumes importance. A measure of locus of control is also predictive of future behaviour. A measure of change in locus of control over the course of treatment also presents a viable measure of treatment impact.

Cognitive Social Learning Theory maintains that the likelihood that a behaviour will occur is linked to the belief that benefits can be obtained in a certain situation (Andrews, Crino, Hunt, Lampe, and Page, 1994; Glanz, Lewis and Rimer, 1991; Hawton, Salkovskis, Kirk, and Clark, 1993; Monti, Abrams, Kadden, and Cooney, 1989). If individuals believe that they lack the power required to control what happens, they are unlikely to perform a given behaviour. In fact, Waisberg (1990) argued that the results of previous investigations have shown that tasks which imply that outcomes are personally controllable by an individual evoke behaviour which is more adaptive and success oriented than when the tasks are perceived to be externally controlled.

According to Caster and Parsons, "...belief in external control by chance, rather than internal control, appears to be associated with unfavourable treatment outcome in male alcoholics receiving inpatient therapy" (1977, p.2087). O’Leary, Donovan and O’Leary (1976) and Waisberg (1990) found that treatment works if it effects a change in the locus of control of a psycho-active substance dependent individual. Furthermore, O’Leary et al. found that subjects who had an internal locus
of control orientation at treatment commencement attained better inter and intra-
personal control of their lives during the course of and after treatment. They
concluded that alcoholics who are externally oriented may benefit less from treatment
and may have a higher likelihood of relapse. O'Leary et al. summarized their findings
by indicating that an effective in-patient alcohol treatment programme would be
expected to produce an "overall shift toward a more internal locus of control" (1976,
p.504).

Feist and Brannon (1989) suggested that individuals who are externally
oriented in their locus of control are more likely to suffer negative affect than
individuals who are internally oriented. An external orientation is correlated with
beliefs that attempts at self determination are futile and useless. "What's the use of
even trying" type automatic thoughts are most evident in externally oriented locus of
control individuals (Beck and Steer, 1987). Depression ensues more often for these
individuals as the result of a learned helplessness maintained by the way they think
about themselves and their ability to effect change to a situation (Andrews, Crino,
Therefore, an examination of client's locus of control is a useful indicator of treatment
impact on client functioning essential for treatment evaluation.

2.3 Depression and positive-negative automatic thoughts

According to Lowinson, Ruiz, Millman and Langrod (1992), alcohol
dependent individuals generally exhibit high levels of depression. Baving and Olbrich
(1996) reported prevalence rates for depression in alcohol dependent individuals as
ranging between 30 and 71%. Thus, given this high prevalence between depression
and alcohol dependence, it will be important to examine depression in any study
interested in changing an alcoholic's beliefs. Given that depression is more usually
correlated with an external locus of control, and the prevalence of negative automatic
thoughts that tend to accompany an external locus of control orientation, then
depression must be considered, in concert with these two variables, as a very significant psychological factor (Andrews, Crino, Hunt, Lampe and Page, 1994; Hawton, Salkovskis, Kirk and Clark, 1993; Seligman, 1975, 1992). In fact, many researchers suggest that depression, and the type of automatic thoughts that accompany depression may directly affect the course of treatment (Andrews, Crino, Hunt, Lampe and Page, 1994; Beck, Rush, Shaw and Emery, 1979; Beck, Wright, Newman and Liese, 1993; Lowinson, Ruiz, Millman, and Langrod, 1992). Lowinson et al. (1992) argued that the learning of future coping strategies conducive to the maintenance of behaviour change is minimal when negative affect and cognition are not addressed in treatment.

Alloy and Ahrens (1987) stated that a pessimistic view of the future in combination with a low rating of ability to affect change in one's behaviour is sufficient cause for depression. They emphasised the impact that feelings of hopelessness which arise as negative beliefs about the future have on the aetiology and maintenance of depression and the impact of depression on the maintenance of maladaptive behaviour. Alloy and Ahrens suggested that beliefs that desirable outcomes from a change in drinking behaviour are unlikely and that the individual is helpless to change alcohol use behaviour are associated with depression and continued abuse of alcohol. The state of depression, according to Kendall and Hollon (1989) is generative of the type of automatic thoughts that produce it and these automatic thoughts, reciprocally, are maintained by the affect of depression and the behaviour associated with it. In this manner, a vicious, self-defeating cycle of depressed mood and depressed thinking is established (Andrews, Crino, Hunt, Lampe and Page, 1994; Hawton, Salkovskis, Kirk, and Clark, 1993).

According to Ingram, Smith, Kendall, Donnell and Ronan (1987), cognitive explanations for the aetiology of human emotional distress stress the relationship between cognitive variables and negative affect. In the area of depression, Ingram et
al. claim, '...investigators have found patterns of dysfunctional information processing (Clark and Teasdale, 1982; Derry and Kuiper, 1981; Ingram, Smith and Brehm, 1983), an increased occurrence of irrational beliefs (Nelson, 1977), increased negative self-statements (Harrell and Ryon, 1983; Hollon and Kendall, 1980), and learned helplessness deficits (Seligman, 1974, 1975) ...' (1987, p.734). These studies give credence to the assertion that we feel what we think (Andrews, Crino, Hunt, Lampe and Page, 1994; Araujo, Goldberg, Eyma, Madhusoodanan, Buff, Shamim and Brenner, 1996).

In 1967, Beck stressed that the way an individual processes information, and the way events are interpreted determines affective state and ensuing behaviour. On this basis, negative cognition is related to negative affective state. Hollon, Kendall and Lumry (1986) suggest that negative cognition is causal in the aetiology, and maintenance of depression. Specifically, Beck (1967) and others (Ross, Gottfredson, Christensen and Weaver, 1986; Teasdale and Barnard, 1993; Hawton, Salkovskis, Kirk, and Clark, 1993; Andrews, Crino, Hunt, Lampe, and Page, 1994) claim that depression arises as a consequence of persistent and all encompassing distortions in both cognitive process and content. Negative self-statements are both the product and the cause of negative affect. Because one is depressed, one has a negative attitude to life; because one has a negative attitude to life, one is depressed (Kendall, Howard and Hays, 1989; Kendall and Hollon, 1989; Teasdale and Barnard, 1993; Hawton, Salkovskis, Kirk, and Clark, 1993; Andrews, Crino, Hunt, Lampe, and Page, 1994).

Ross, Gottfredson, Christensen and Weaver (1986) state that 'with regards to depression, a number of researchers have emphasised the role that cognitive distortions play in making some individuals vulnerable to depression and in maintaining depression once it starts' (p.160). The validity of this assertion was substantiated in Ross et al.'s. (1986) study where they found high positive correlation (.81) between the Beck Depression Inventory (BDI), a measure of negative effect, and
the Automatic Thoughts Questionnaire - 30 (ATQ-30), which is a measure of negative automatic thoughts.

According to Beck, Rush, Shaw and Emery (1979), continued depression for the alcohol dependent individual is not conducive to therapeutic behaviour change in two ways. Beck, Rush, Shaw, and Emery state that "patient's lack of motivation to carry out even the most simple tasks is a major symptom of severe depression. The patient knows what he [sic.] has to do, but he doesn't have the internal desire or stimulus to carry it out. In most cases, the patient immobilizes himself by believing he is unable to perform the activity or that he will not receive any satisfaction from doing the activity" (1979, p.182). Second, Beck et al. further state that intensified dependency is a prevalent symptom of depression.

Greeley, Swift and Heather (1992) have shown that depressed mood is a predictor of increased desire for alcohol. Therefore, a treatment programme aimed at reducing a client's desire for alcohol would need to address and alleviate depressed mood. Hawton, Salkovskis, Kirk and Clark (1993) argue that most cognitive therapies reduce an individual's negative affect by focusing on misinterpretations, distorted and negative thoughts, and dysfunctional attitudes. This in itself, they argue, must be taken as an indication of the link that exists between negative maladaptive ways of thinking, depression, and the negative outcome that may ensue for a client if thinking is not changed to a more adaptive, less depressed orientation. Hodgins, el-Guebaly, and Armstrong state that "retrospective studies of relapse have consistently found that negative mood states (e.g., depression ... ) are the most frequently reported precipitants of relapse across a range of abused substances (e.g., Litman et al., 1983; Marlatt and Gordon, 1985)" (1995, p. 400). Therefore, because of this finding it is clearly essential that treatment both examines and changes negative and depressed attributions and feelings of learned helplessness.
2.4 Psychiatric symptom severity

Although depression is the most prevalent psychiatric disorder among alcohol and other drug dependent individuals, the full range of affective disorders is represented (Heather, Miller and Greeley, 1991; Hoffman and Gressard, 1994; Hodgins, el-Guebaly, and Armstrong, 1995; Baving and Olbrich, 1996). Regier, Farmer, Rae, Locke, Keith, Judd, and Goodwin (1990) found that the incidence of psychiatric disorders was higher among alcohol dependent individuals than in the general population. Pickens, Svikis, McGue, and La Buda (1995) state that Regier et al. (1990) found that "in a community based study, alcoholics were ... 2.3 times more likely to have a mental disorder than individuals in the remainder of the population" (1995, p. 129). Furthermore, the presence of psychiatric disorders is strongly related to both the impact and the outcome of treatment (Lowisohn, Ruiz, Millman, and Langrod, 1992; Yudofsky and Hales, 1994; Jarvis, Tebbut, and Mattick, 1995). Therefore, it is clear that assessment for the presence of psychiatric co-morbidity as measured by a global psychiatric symptom severity index is also valuable (Mattick and Jarvis, 1993). Furthermore a measure of psychiatric symptom severity represents a robust global measure of overall affective functioning (Derogatis, 1983).

Mattick and Jarvis (1993) also found that there is a high prevalence of psychiatric co-morbidity among people with drug and alcohol problems. This is unfortunate, as in an editorial comment in The Journal of Drug and Alcohol issues - Connexions, Vol.12, No.5 (1992) it was stated:

"The literature, mainly from the United States, points to the fact that people with a substance dependence, with an additional psychiatric diagnosis, have a poorer treatment outcome than those with an exclusive substance abuse diagnosis".

Most studies which evaluate this area of treatment effectiveness are concerned with 'chicken or the egg' questions such as which comes first, addiction or psychiatric
problems (Baving and Olbrich, 1996). McLellan, Luborsky and O'Brien (1986) are among the many researchers who have attempted to determine if psychiatric problems are the consequence of excessive drug/alcohol abuse or if excessive drug/alcohol abuse is the consequence of an original psychiatric disorder. Baving and Olbrich (1996), argue that whatever the nature of the relationship between psychiatric conditions and alcohol abuse, the coexistence of both disorders is of great clinical significance. These researchers cite studies which found a significant incidence of more chronic use of alcohol for individuals with co-morbid psychiatric disorders and a poor prognosis for outcome if not treated. Mattick and Jarvis (1993) stated that the presence of psychiatric co-morbidity among alcohol dependent individuals is associated with poorer treatment outcome and reduced probability of eventual recovery from abusive and maladaptive drinking behaviour.

Questions attempting to answer which comes first, addiction or psychiatric disorder, also lead to questions concerning the effect of drug/alcohol treatment on psychiatric functioning. Does treatment alleviate the psychiatric disorder or do the symptoms of the psychiatric disorder abate as the consequence of cessation of or moderation of drug and alcohol use? Questions such as these may be irrelevant when one considers that individuals suffering both psychiatric problems and drug/alcohol dependence are less likely to succeed in treatment (Araujo, Goldberg, Eyma, Madhusoodanan, Buff, Shamim and Bremmer, 1996; McLellan, Luborsky and O'Brien, 1986; Lowinson, Ruiz, Millman and Langrod, 1992; Miller, 1992; Mattick and Jarvis, 1993; Yudofsky and Hales, 1994; Touyz, Byrne and Gilandas, 1994). McLellan, Luborsky, Woody, O'Brien and Druley (1983) found that the presence of psychiatric co-morbidity determined the outcome of drug and alcohol treatment for their sample of subjects.

One would have to consider that a diminishment in psychiatric symptom severity is attributable to a treatment effect when one considers the assertions of a
great many researchers (e.g., Beck, 1967; Beck, Rush Shaw, and Emery, 1979; Bootzin and Accocella, 1988; Hollon, Kendall and Lumry, 1986; Marlatt and Gordon, 1985) who state that cognition plays a major part in the aetiology, maintenance and treatment of psychopathology across all samples of clinical populations. Ingram, Kendall, Donnell and Ronan (1987) argue that dysfunctional information processing and one of its sequelae... maladaptive automatic thoughts, are conducive to the maintenance of psychiatric disorder and negative affect. It follows then, that if treatment reduces the frequency of these maladaptive automatic thoughts, reduction in psychiatric symptom severity should also eventuate (Lowinsohn, Ruiz, Millman and Langrod, 1992; Teasdale and Barnard, 1993; Yudofsky and Hales, 1994). What is important, is that over the course of alcohol/drug treatment psychiatric symptom severity should be reduced.

2.5 Social support

One factor that has been variously and negatively related to psychiatric co-morbidity is social support. Low social support and a high incidence of co-morbid psychiatric disorders is prevalent among individuals who qualify for a dual diagnosis (Lowinsohn, Ruiz, Millman and Langrod, 1992). This may be due to reciprocal causation. Low social support may be conducive to the development of negative affective states and negative affective states may lead to isolation and thus low social support. However, aside from this argument, Greeley, Swift and Heather (1992) reported that it is quite common to find low social support and a high incidence of psychiatric symptomatology in an alcohol dependent population.

Glanz, Lewis and Rimer (1991, p.198) stated that social support (forces or factors in the social environment that facilitate the survival of human beings) can be identified as four types of human interactions. Firstly, there is 'Emotional support' which comprises love, caring, empathy, trust, respect. According to Glanz et al., who cite the research of House (1981), emotional support has been shown to have the
highest correlation with physical wellbeing. Secondly, there is 'Instrumental support' which is defined as the giving of money, accommodation, aid and assistance. Thirdly, 'Informational support' is advice, suggestions and information that give people other non-envisioned ways of approaching situational and emotional problems. And lastly, 'Appraisal support' consists of the giving of information and appraisal with which an individual can self reflect and compare him/herself to others. Quite simply, social support, according to Feist and Brannon (1989) 'can be seen as a measure of the quality of one's social contacts' (p.233).

Lin, Dean and Ensel (1983) stressed the importance of social attachment and social bonds for human wellbeing. They cited Bowlby (1969) who pointed out that people function well emotionally when they are certain that they have at least one person who will come to their aid should the need arise. Feist and Brannon (1989) emphasized the importance of social support for the initiation and maintenance of health behaviour. They argued that social factors, such as social isolation, damage health and increase illness and mortality rates. Feist and Brannon stated that the evidence (Berkman and Syme, 1979; House, Robbins and Metzner, 1982) would imply that the adverse effects of lack of social support may be due to the inadequate encouragement, advice and feedback from significant others concerning an individual's health practices. John Cassel (1976), according to Feist and Brannon (1989), hypothesized that two important themes underlie the deleterious effects of social isolation. These are, as mentioned above, a lack of feedback from significant others and lack of all the benefits to human wellbeing encompassed in the broad term 'social support'.

Logically, it is understandable that not having anybody to care for or not having carers to support the individual, would lead to feelings of futility, and lack of motivation for initiation and maintenance of change. Certainly, good social support, or conversely, the lack of it, seems to be of as much relevance for positive behaviour
change and maintenance of that behaviour change for the substance dependent individual as it is for any human being (Feist and Brannon, 1988; Hoffman and Gressard, 1994; Wotherspoon, 1995).

For example, Fagan and Mauss (1986) found that recidivism among skid-row alcoholics was high due to the fact that they have poor social supports. Fagan and Mauss asserted that the results of their study had identified the advantage that good social support brings to the alcoholic. Fagan and Mauss devised an Alcoholic Re-entry Program (ARP) so as to test their hypothesis that social re-entry is crucial to the ongoing maintenance of therapeutic behaviour for the recovering alcohol dependent individual. Their ARP treatment model consisted of five overlapping phases among which was a community re-entry phase. During this phase a small group of volunteers and lay persons recruited from churches in the area, gave the recovering skid-rowers social support. The volunteers, designated sponsors, had certain responsibilities which the ARP training manual cited as thus: 'Assist a recovering skid-row alcoholic ... in relocating, bettering his or her employment, housing, and social status through moral support, acceptance, advice, shared experiences, advocacy, and reflection on problems, solutions, and personal strengths (Fagan and Mauss, 1986)'. In other words, the group of alcohol dependent individuals in the Fagan and Mauss study received the social support that many researchers have found so beneficial for a stable, happy life (Cassel, 1974; House, 1981). With this programme, which aimed to increase social support by employing the use of sponsors described above, A.A. participation, new friendships, employment opportunities and public benefits, Fagan and Mauss obtained positive results for the criteria measured, which included 50% abstinence at followup for the group of skid-rowers. Wotherspoon (1995) also found that increasing social support via the introduction of support groups may be a cost effective method of providing longer term treatment/management.
According to Wotherspoon (1995) a primary feature of social support is its relatively strong influence on behaviour. Wotherspoon (1995) cites Johnson and Johnson who state 'few influences on our behaviour are more powerful than the support and approval of a group of friends or acquaintances' (1987, p.24). Brownell, Marlatt, Lichtenstein and Wilson (1986) avowed that social support has been related to success in the treatment of addictive disorders and cited as evidence the research of Best (1980), Colletti and Brownell (1982), and Moos and Finney (1983). Furthermore, Brownell et al. (1986) stated that research in this area has mostly evaluated 'social support as a predictor variable and the modification of social factors to boost treatment effectiveness' (p.771). In regard to the relationship between social support and treatment, Havassy, Hall, and Wasserman (1991) found that higher levels of social support were linked to significant reductions in relapse across treatment groups. Havassy et al. concluded that social "integration may provide a sense of identity and self-esteem that in turn triggers a chain of positive physiological and psychological events culminating in the practice of health-promoting behaviours" (1991, p. 244).

2.6 Client self-ratings of alcohol problem severity

The perceived severity of a health problem is a component of the "Health Belief Model" (Hochbaum, 1958; Rosenstock, 1960, 1966, 1974). The Health Belief Model (HBM) argues that the perceived severity of a health problem determines whether action will be taken. According to the HBM, individuals are said to be more likely to take action for their health problems if they believe their problem is severe, and if they believe that treatment will reduce the severity of their problem (Glanz, Lewis and Rimer, 1991).

Feist and Brannon (1989) argued that the HBM is a most useful model for predicting who will seek or remain in health care treatment. It is also useful for predicting who will comply with health care advice and who will not. In citing the
findings of Kirscht (1979), Feist and Brannon (1989) contended that the perceived severity factor is a robust predictor of subjective health behaviour. Feist and Brannon suggest that beliefs about a health problem's severity are directly and positively related to anxiety. In this sense, very high levels of perceived problem severity have been associated with high levels of anxiety and the presence or absence of these factors may lead to action being taken for the remediation of a health problem.

Ratings of problem severity have been successfully used to predict drug/alcohol treatment impact and outcome. Sobell, Sobell, Brown, Cleland, and Buchan (1995) used subjective evaluations of drinking problem severity to measure the change in this variable pre-treatment and post-treatment. They found that the changes in ratings of alcohol problem severity were significant between 12 months pre-treatment and 6 months or 12 months post-treatment. Sobell et al. argued that their findings suggested that pre-treatment alcohol problem severity dropped over the course of drug/alcohol treatment and predicted post-treatment perceptions of alcohol problem severity.

Ratings of alcohol problem severity have also been used in the prediction of treatment retention. Rees, Beech and Hore (1984) conducted a study where they were concerned with identifying factors associated with retention in the treatment of alcoholism. Rees et al. found "some support for the view that patients' perceptions of the severity of their drinking problem was an important means of differentiating between early dropouts (Immediate and Rapid Dropouts) and longer term attenders (Slow Dropouts and Clinic Attenders)" (1988, p. 306).

A number of authors have reported an association between individuals' perceptions of the severity of their health problems and both compliance with treatment and the impact and outcome of treatment (Jones, Jones and Katz, 1988; Clark, Rosenstock, Hassan, Evans et al., 1988; Sobell, Sobell, Brown, Cleland, and
Buchan, 1995; Farina and Wragg, 1995). In any evaluation of alcohol/drug treatment effectiveness, subjective client ratings of alcohol problem severity would provide further insight into the relationship between beliefs and behaviour.

2.7 Other variables directly relevant to drug and alcohol treatment evaluation which will be measured

All the variables so far discussed are referred to in this thesis as client psycho-social resources. However, there are other variables that require examination for a thorough treatment evaluation which also are included in the client psycho-social resources rubric. It is logical in any evaluation of alcohol in-patient treatment effectiveness that alcohol/drug use be examined. However, as discussed in Chapter 1, abstinence may not be a useful criterion upon which to judge treatment effectiveness. Therefore, to conduct a more comprehensive examination of treatment impact and outcome the variables cited above plus alcohol/drug use were examined in this thesis.

The following alcohol/drug use variables were measured at treatment commencement and 3 to 6 months post-treatment: quantity of alcohol/drugs consumed per day; days in a week upon which alcohol/drugs were consumed; age at which alcohol/drug use commenced; years of alcohol use; previous alcohol/drug programme attendance; attributions for the cause of alcoholism.

Also the following dynamic demographic variables, some of which reside in the social functioning domain, were measured at treatment commencement and 3 to 6 months post-treatment: employment, age, years of education, drug of choice, marital status, and accommodation.

2.8 Chapter 2 summary

The overall purpose of this chapter has been to review the psycho-social variables which appear to be linked to positive treatment outcome. Past studies that
have examined the question of treatment effectiveness have tended to give the impression that only behavioural variables associated with substance use need be considered. This thesis has taken a much wider perspective of treatment process and outcome by examining a range of psycho-social factors deemed relevant to adaptive functioning in addition to the traditional behavioural outcomes of drug/alcohol use. Those who focus on the part played by psycho-social factors in the completion of treatment programmes stress change in cognition, affect and social support as necessary for those that remain in treatment (Bell, Williams, Nelson, and Spence, 1995).

Of relevance to this thesis are changes to a client's self-efficacy to resist the urge to drink (alcohol) heavily, locus of control, a ratio of positive-negative automatic thoughts, depression, psychiatric symptom severity, social support, and alcohol/drug use and other demographic variables. The use of these variables measured at different times during treatment and post-treatment may also allow for an identification of the cognitive, affective and behavioural characteristics likely to be exhibited by individuals who drop out of in-patient alcohol treatment early and those who remain in treatment and the post-treatment psycho-social resources of treatment completers (Ali, Miller and Cormack, 1992; Annis, 1986; Bell, Williams, Nelson, and Spence, 1995; Bell, Richard and Feltz, 1996; Marlatt and Baer, 1988; Marlatt and Gordon, 1985; Prochaska and Di Clemente, 1986; Mattick and Jarvis, 1993).

Thus, a measure of the change in a client's self-efficacy to resist the urge to drink (alcohol) heavily, in relation to changes in locus of control orientation, the ratio of positive-negative automatic thoughts, depression, psychiatric symptom severity, perceived social support, ratings of alcohol problem severity and alcohol/drug use should provide a thorough indication of the resources of clients at treatment entry, and treatment completion. Furthermore, the use of these variables should shed more light
on the issue of treatment efficacy by measuring treatment's effect on client psycho-social and alcohol/drug resources post-treatment.

Chapter 3 contains a thesis overview and methodology sections. Furthermore, Chapter 3 develops a rationale for using attributions for the cause of alcoholism as another moderator of treatment effect. Attributions for the cause of alcoholism may well be a very important factor related to treatment philosophy and relevant as a powerful change variable in post treatment behaviour and also self-selection for treatment.
Chapter 3 - Thesis Overview and Methodology

The scope of this thesis - To supply more information with which to increase in-patient alcohol treatment effectiveness

This thesis generally focusses on alcohol use because next to nicotine, alcohol is the most prevalent and psycho-socially damaging psycho-active substance misused in Australia (Collins and Lapsley, 1996). Alcohol misuse results in great cost to society and the individual. For this reason, alcohol/drug treatment must be effective in ameliorating the social and psychological consequences of alcohol misuse. However, this thesis will also examine other drug use. There is limited conclusive research upon which to base judgements regarding how to improve alcohol/drug treatment effectiveness. This is largely due to the fact that treatment success or failure has generally been and generally continues to be judged using a total abstinence outcome criterion exclusively. Although there are many outcome studies that do examine factors other than drug use and some studies accept a reduction in drug use as an indication of improvement, these are only most recent developments. The literature is dominated by studies that use an abstinence criterion (Floyd, Monahan, Finney and Morley, 1996). This is unfortunate because research reveals that lapses to pre-treatment alcohol/drug use behaviour is invariably part of learning to change the use of alcohol and drugs post-treatment. In Chapter 2, a number of client psycho-social resource variables were identified that may be usefully employed in alcohol/drug treatment evaluation. In this chapter, it is also suggested that attributions held by clients about the cause of alcoholism may play a significant role in post-treatment in the event of a lapse to alcohol or other drug use.

3.1 A model for treatment evaluation with which to examine client and in-patient treatment factors that may influence outcome

As mentioned in Chapter 1, Bell et al. (1995) describe a conceptual model of the treatment evaluation procedure. This model can provide a framework from which
in-patient treatment can be examined (see p.20). In Bell et al.'s model, client behaviours, such as drug abuse, employment and criminality, are seen as related to client's social and psychological states. According to Bell et al, the process of drug abuse treatment evaluation involves the examination of the clients' pre-treatment psycho-social resources and substance use behaviour, the impact of programme therapeutic interventions on the client during-treatment, psychological response to treatment, and the outcome of treatment as measured by change in clients' psycho-social functioning and substance use behaviour.

It is important to note that Bell et al.'s (1996) evaluation model accounts for the interaction between client and treatment characteristics by measuring the psycho-social resources that clients bring to treatment and the effect of treatment on client psycho-social resources. It is crucial to treatment evaluation that this person-situation-behaviour interaction be studied because Heather and Tebbutt (1989) argue that "there is a possibility that the main determinants of outcome following treatment are not characteristics of the treatment itself, but of the clients entering treatment". Monahan and Finney state that "theories of patient-treatment matching specify that patient characteristics moderate the effects of treatment on outcome (Project MATCH Research Group, 1993). That is, certain types of patients may do better in certain types of treatment whereas other types of patients may do better in other types of treatment" (1996, p.790). This thesis attempted to identify the type of clients that do better in certain types of Australian alcohol/drug in-patient treatment.

This thesis conducted an evaluation of treatment effectiveness which took into account both treatment characteristics and client characteristics and their interaction with each other. In selecting Bell et al.'s model for treatment evaluation, it may have been possible to address the issue raised by both Heather and Tebbutt (1989) and Monahan and Finney (1996). This thesis will examine the effect of client characteristics on treatment and the effect of treatment on client characteristics and in
3.2 Key issues relevant to the evaluation of treatment effectiveness

There is of course a number of key issues relevant to treatment effectiveness that needs to be addressed. Issues relating to the relationship between client psycho-social resources or personality variables and retention of clients in treatment, duration of treatment programme, attributions that clients hold for the cause of alcoholism, programme philosophy and successful treatment outcome are all factors relevant to treatment evaluation that need to be explored. The purpose of this thesis and the studies which it comprises has been the examination and evaluation of aspects of in-patient treatment and client functioning deemed important to the question of treatment effectiveness. The issues examined in this thesis are addressed in the remainder of this chapter.

3.2.1 Treatment retention/drop-out

The first issue that this thesis will concern itself with is the issue of retention in in-patient treatment. Treatment retention is an important area to study because irrespective of how effective a treatment programme might be, if it cannot succeed in keeping clients in treatment, then it will not be optimally successful. Also, it is important with regard to client-treatment matching to identify clients likely to remain in the treatment setting. According to Heather and Tebbut (1989), early attrition from alcohol/drug treatment programmes is a problem of major proportions. In the main, studies which report attrition rates, reveal a common tendency for psycho-active substance dependent individuals to drop out of treatment early (Condelli and De Leon, 1993; Condelli and Dunteman, 1993; Craig and Olsen, 1990; De Leon, Melnick, Kressel and Jainchill, 1994; Farina and Wragg, 1994; Ryan, Plant and O'Malley, 1995). Australian findings are similar. For example, Latukefu (1987) found that the drop-out rate for five Australian therapeutic communities in the first thirty five days of
treatment was as high as 64%. Didcott, Flaherty and Muir (1988) examined admission rates to alcohol/drug treatment facilities in New South Wales and discovered that approximately 25% of clients were still in treatment after twenty eight days and only 10% completed treatment. Didcott et al. finally concluded that the retention rate for rehabilitation programmes was 6% when the influence of detoxification programme rates were partialed out of statistical analyses. More recently, the Ernst and Young Consulting Team (1996) found that treatment retention continued to be a problem for therapeutic communities in Australia.

3.2.2 Treatment duration, philosophy and attributions for the cause of alcoholism

The next issue addressed in this thesis was that of the relationship between treatment duration and philosophy, and client psycho-social functioning. Today, as in the past, researchers are attempting to determine if longer treatment is better than shorter treatment, or if more intense treatment is better than minimal treatment. These issues revolve around the essential question of treatment duration. In addressing the issue of treatment duration, researchers are attempting to reduce individual treatment costs by identifying the minimum duration of treatment capable of producing therapeutic results. This is an important question to address. If a minimum amount of treatment necessary to produce an effective minimization of harm can be identified, more people could be treated cost-effectively.

To be cost effective, treatment should not only be as short as possible, but it must also have the optimum therapeutic impact on client resources during treatment and following treatment. The philosophy upon which a treatment programme is based determines its theoretical framework and its delivery. In regards to the impact of treatment philosophy on client resources post-treatment, the relationship between treatment philosophy, attributions for the cause of alcoholism, and client psycho-social resources at treatment commencement, completion and post-treatment has been
explored in this thesis. Regarding the treatment philosophy issue, this thesis also examined the impact of what is taught to the clients during treatment about their alcohol problem on their post-treatment resources and alcohol use. Inherent in the treatment philosophy issue is the issue of how the philosophy of alcoholism taught during treatment is related to client post-treatment psycho-social resources and substance use (Schaler, 1997).

An examination of the impact of treatment philosophy is important since current drug and alcohol treatment programmes in Australia generally offer a range of in-patient programmes of varying treatment focus and philosophy which imply certain social identities for the problem alcohol/drug user. The relationship between social identity and response to treatment for alcohol/drugs has recently been identified (Weisz, 1996). According to Weisz, "current models of social identity highlight the subjective manner in which identity labels become infused with importance and meaning ... Interdisciplinary work suggests that social identities influence behaviour ..." (1996, p.445). Weisz argued that the social identity perspective emphasises the importance of self-definition as it is subjectively construed and socially enacted in the process of behaviour change. According to Saunders and Houghton (1996), Marlatt and Gordon (1985) "contended that the likelihood of a relapse is increased when a lapser attributes the resumption of use to factors that are uncontrollable and possibly unchangeable (such as having "loss of control" or the "disease of alcoholism"), and the lapser subsequently developed a sense of hopelessness" (Saunders and Houghten, 1996, p.845). Marlatt and Gordon (1985) term this cognitive-affective behaviour the "Abstinence Violation Effect" (AVE). They attribute the AVE effect to certain implications for predictions of future behaviour which accompany disease philosophy assumptions held by an individual for the genesis and maintenance of drug/alcohol problems. It is therefore important to examine the interaction between treatment and clients' attributions on client pre- and post-treatment behaviour and psycho-social resources.
Thus, by identifying and examining some issues relevant to effective treatment this thesis will attempt to answer questions relating to the effect of client attributions and treatment setting. This may be accomplished by examining the degree to which two types of in-patient alcohol/drug treatment programmes of different treatment duration and philosophy interact with client psycho-social resources and use of alcohol and drugs.

3.3 The studies

The issues stated above were examined in four studies. These four studies examined: the psycho-social resources that clients bring to in-patient alcohol/drug treatment; how client psycho-social functioning changes during certain philosophies and lengths of in-patient alcohol/drug treatment; how client attributions for the cause of alcoholism and treatment philosophy interact with client psycho-social functioning and post-treatment psycho-social functioning and substance use; and, post-treatment outcome as it relates to having attended programmes of differing philosophies and durations.

Study 1 comprised 458 observations (overall sample) taken at treatment commencement (Time 1). Study 1 focused on the relationship between what clients bring to treatment, as measured by their psycho-social resources and pre-treatment alcohol and other drug use, and treatment retention. Study 1 also examined the relationship between amount of treatment completed and the psycho-social resources and substance use that clients bring to treatment. It did so by examining the psycho-social resources and pre-treatment alcohol and other use of early and late treatment drop-outs.

Study 2 comprised 319 observations of the overall sample (N= 458) taken at treatment commencement (Time 1). Of this sub-sample of observations (n= 319), 173 observations were taken mid-treatments (Time 2), and 146 observations were taken at
treatment completion (Time 3). Study 2 examined the relationship between client psycho-social functioning and treatment duration and philosophy. Specifically, Study 2 examined client progress through treatment by comparing psychological functioning and social support change at a number of times during a 12 week disease model based traditional treatment programme (T.T.) and an 8 week cognitive-behavioural treatment programme (C.B.T.). An abstinent comparison group (n= 43) was derived from a sub-sample of treatment completers (n= 146) who returned 3-6 months post-treatment data (n= 73).

Study 3 re-examined the overall sample of observations (N= 458) at treatment commencement and is both an outcome of treatment study and a retention study. That is, Study 3 examined the pre-treatment relationship that existed between client attributions for the cause of alcoholism and client psycho-social functioning and alcohol and other drug use of clients who had attended treatment prior to entering current treatment. Study 3 also examined the relationship between client attributions for the cause of alcoholism and retention/attrition.

Study 4 comprised a sub-sample of 73 observations taken at 3-6 months post-treatment (Time 4). These 73 observations came from the 146 clients who completed treatment. Study 4 is an outcome study which compared the psycho-social resources and substance use of completers of two treatment programmes of differing philosophy and duration (T.T. & C.B.T.) who returned 3-6 months post-treatment data (Time 4). Study 4 examines the interaction between treatment setting and client post-treatment functioning by comparing psycho-social functioning and substance use post-T.T. and C.B.T. treatment of 12 and 8 weeks durations respectively.
3.4 General information

The information regarding thesis methodology contained in this chapter pertains to all the studies that comprised this thesis. Information particular to the studies will be contained in the study method sections of the relevant studies. The four studies that comprised this thesis used a quasi-experimental self-selection design in which subjects from two treatment programmes were employed. Data were collected at pre-treatment (Time 1), intermediate treatment (Time 2), treatment completion (Time 3), and 3 to 6 months post-treatment (Time 4) in each programme.
3.5 Subjects

At Time 1, the overall subject pool comprised 458 in-patients who came from two Government funded in-patient alcohol/drug treatment agencies of different duration and philosophy of treatment located in N.S.W., Australia. Of this overall sample, 146 completed treatment (Time 3) and 73 (50%) returned 3-6 months post-treatment (Time 4) data.

At treatment commencement (Time 1), the overall sample of 458 subjects' ages ranged between 18 and 62 with a mean age of 31.25 years. Although subjects endorsed use of other drugs, all subjects endorsed alcohol as their primary drug of choice. Subjects commenced alcohol use at a mean age of 13.95 years and used alcohol for an average of 17.30 years prior to entering alcohol treatment. The overall sample consisted of 357 (77.94%) subjects who had received between 1-4 years of a high school education, 78 (17.03%) who had received between 5-6 years of high school education, and 23 (5.02%) who had acquired a degree or diploma via tertiary education. Of the overall sample, 252 (55.02%) had been unemployed for more than 1 year, 133 (29.04%) had been unemployed 3-12 months, 73 (15.94%) had been employed within the last three months prior to treatment commencement.

3.6 Subject selection

The subjects taking part in this thesis met the following criteria:

- subjects had taken part in a detoxification programme for alcohol abuse at a registered detoxification centre prior to entering one of the two rehabilitation programmes;
- subjects who have rated themselves as having drunk more than 4-5 standard drinks of alcohol per day, every day (this figure exceeds recommended safe limits of alcohol consumption) prior to detoxification;
- subjects were attending or have attended an alcohol rehabilitation programme; and,
- subjects rated their alcohol consumption prior to treatment as a problem.
3.7 The alcohol/drug in-patient treatment programmes

Subjects in this thesis came from:

1. a traditional 12 week in-patient alcohol/drug treatment programme based on an Alcoholics Anonymous (A.A.) and Narcotics Anonymous (N.A.) disease model theoretical framework (n= 212);

2. an 8 week in-patient alcohol/drug treatment programme based on a cognitive-behavioural theoretical framework (n= 246).

The Disease Model Based Traditional Treatment (T.T.) Programme:

The alcohol/drug in-patient traditional treatment (T.T.) programme examined in this thesis was a three months (12 weeks) in-patient, 20 bed, unit. The T.T. programme was based on an Alcoholics Anonymous (A.A.) and Narcotics Anonymous (N.A.) milieu treatment theoretical framework assuming a disease model philosophy. The T.T programme incorporated group meetings of all residential clients, where a "disease" model view of addiction was taught. Psychotherapy involved confrontation, Transactional Analysis and Gestalt therapy techniques. Clients were offered the opportunity of individual counselling on a weekly basis during the programme. Compulsory attendance at two "12 Step" meetings per week and daily morning readings of A.A. and N.A. literature were also part of the normal treatment procedure. Video and audio tapes which adhere to a disease model philosophy augmented drug and alcohol education, group therapy and individual counselling. This traditional A.A. and N.A. based treatment programme taught clients that they are alcoholics or addicts who are sick people, that they have the disease of chemical dependency from which they can never recover and that the only way that they can arrest the disease is via abstinence. Clients were also taught that a return to drink/drugging would result in loss of control use and relapse.
The Cognitive-Behavioural Treatment (C.B.T.) Programme

The cognitive-behavioural treatment (C.B.T.) programme examined in this thesis took place in a 17 bed in-patient unit. It was an 8 week substance dependence treatment programme based on a cognitive-behavioural theoretical framework composed of cognitive-behavioural therapy, lifestyle management, relapse prevention, self-identity and social skill training modules. These treatment psycho-educational modules were structured and sequential. Two group sessions of each module of one hour duration each were delivered per week for a total of 16 sessions per module. Individual counselling followed a cognitive-behavioural model and aimed to build on skills acquired in the psycho-educational modules presented in a group setting. Clients received a minimum of one session of counselling per week. Video and audio tapes augmented drug and alcohol education, group therapy and individual counselling. The emphasis of this cognitive-behavioural treatment programme was on training clients in the skills they would require to take control of their substance problem. Clients were taught that their alcohol/drug problem use is a bad habit which they have learned. Clients were also taught that a return to habitual alcohol/drug use behaviour is a normal part of the process of learning to maintain behaviour change and that a return to habituated behaviour does not lead to loss of control unless the individual believes that loss of control will result or unless the individual chooses to lose control. Clients were taught to identify high-risk of use or misuse situations and that they can learn to identify high risk situations in the event of post-treatment alcohol/drug use goal infraction.

3.8 Instruments

The "client psycho-social resource" variables used to examine the issues stated above (namely: retention, duration, philosophy and client attributions for the cause of their alcohol problem) have been identified in Chapter 2. Client psycho-social resource variables included: self-efficacy to resist the urge to drink (alcohol) heavily, locus of control, depression, a ratio of positive-negative automatic thoughts, a global
index of psychiatric symptom severity, social support, self-ratings of alcohol problem severity, alcohol and drug use (frequency, amount, age started, years used, beliefs about the cause of alcoholism), and other demographic variables (age, employment, relationship status, education, and accommodation). The variables were measured using the instruments that are described below. The following instruments have all been generally used in the four studies that comprise this thesis.

Self-efficacy to Resist the Urge to Drink (Alcohol) Heavily - was measured using Annis' (1986) Situational Confidence Questionnaire (alcohol) SCQ-39. The SCQ-39 is a 39 item measure of a person's self confidence to remain abstinent or moderate their drinking behaviour. Annis (1986) has obtained a high reliability of item placement with this scale (intrarater reliability of .92 and .99). Annis has also found that this instrument has high internal consistency (Alpha=0.87) and predictive validity.

Locus of Control - was measured using Craig, Franklin and Andrew's (1984) Locus of Control Behaviour Scale (LCBS). The LCBS is a 14 item measure of an individual's perception of personal control over life events. This scale has been shown to be related to the personal control factor on Rotter's I-E scale. However, Craig et al. contend that it is a more powerful predictor of behavioural relapse than the Rotter scale. This scale has been shown to have quite high internal consistency (Alpha=0.73) and good test-retest reliability in distinguishing between Internal and External Locus of Control (I-E) individuals.

Depression - was measured using the Beck Depression Inventory (BDI). Kendall, Hollon, Beck, Hammen and Ingram (1987) state that the BDI is a 21 item measure of syndrome depression. The BDI, according to Beck and Steer (1987), has evidenced high concurrent validity across a variety of studies. Beck, Steer and Garbin (In Beck and Steer, 1987) have found a mean correlation of .73 between the BDI and
the Hamilton Psychiatric Rating Scale for Depression (HRSD) for five psychiatric samples. For a sample of 105 alcoholics, correlation between the BDI and the HRSD was found to be .87. Correlations between the BDI and the Hopkins Symptoms Checklist - 90 - Revised’s (SCL-90-R) Depression-Dejection Scale, and the Minnesota Multi-Phasic Inventory’s Depression Scale have been found to be .76 and .61 respectively.

The Ratio of Positive-Negative Automatic Thoughts - The 40 item Automatic Thoughts Questionnaire - Revised (ATQ-R), was used to measure the ratio of positive-negative automatic thoughts held by clients. The ATQ-R is an instrument constructed to evaluate an individual’s cognitive and process distortions. Gottfredson, Christensen and Weaver (1986) found the ATQ-R, BDI and the MMPI-D scales to be highly correlated with this instrument with correlations ranging from .79 to .89 for their combined depression-nondepression criteria groups.

Global Index of Psychiatric Symptoms Severity - The Hopkins Symptoms Checklist - 90 - Revised (SCL-90R) was used to measure psychiatric symptoms. The SCL-90R is a 90 item global index of psychopathology. A recent review of this instrument (Garfield and Bergin, 1986) led to the conclusion that the SCL-90R is the most promising instrument among those reviewed where reliability and validity coefficients are concerned. The SCL-90-R administration and procedures manual reports internal consistency coefficients for the sub-scales of the SCL-90-R as ranging between .77 and .90. It also reports test-retest reliabilities for the sub-scales which range between .78 and .90 (Derogatis, 1983). Goldman (1992) reports a coefficient alpha of .98 in his study with psychiatric patients. The SCL-90-R manual reports a high degree of convergent validity between this instrument and the MMPI (Derogatis, 1983).
Social Support was assessed using a 7 item questionnaire developed by Paul Duncan Jones from the much longer, Interview Schedule for Social Interaction [ISSI] (Henderson, Duncan-Jones, McAuley and Ritchie, 1980). This measure was originally designed for use in a large twin study of aetiological factors in psychiatric illness (Andrews, 1990). In this twin sample, the coefficient alpha for the items was .77. In 1992, Goldman obtained an Alpha of .66 with his sample of subjects.

Self-Ratings of Perceived Severity of an Alcohol Problem - Problem alcohol-users were asked to rate the severity of their alcohol problem in order to determine their own perceptions of the severity of their alcohol problem. Users were asked the single question: "How much of a problem do you have with alcohol? They were limited to one of four responses: no problem; moderate problem; bad problem; I can't handle it.

Attributions for the cause of alcoholism were elicited in the following manner: Some people say that alcoholism is a disease or a sickness, while others say it is not a disease, but rather it is more like a bad habit. Do you see it as a disease or a bad habit? (Tick where applicable).

Subjects were limited to three responses: Disease; Bad habit; Both.

3.9 Procedure

Those subjects who indicated as their 'drug of choice' substances other than alcohol were excluded from this study. This was done so as not to confound the interpretation of the response to the SCQ-39. The SCQ-39 is an instrument which is designed to measure a client's self-efficacy to resist the urge to drink alcohol heavily in high risk of relapse situations (section 3.5). Therefore, it may be that a client whose 'drug of choice' is Heroin, for example, may indicate high self-efficacy to resist the urge to drink alcohol heavily, and yet have very low self-efficacy to resist the urge to use Heroin heavily in a high risk relapse situation. However, it must be
noted that although the selection procedure excluded individuals who did not indicate that alcohol was their 'drug of choice', it did not exclude individuals who also used other drugs in combination with alcohol. Retaining these clients represented greater ecological validity since polydrug use is common (Grant and Pickering, 1996) and advantageous because in the present day there are only a small amount of clients presenting for treatment who use alcohol only (Ernst and Young, 1996).

Subjects completed the instruments listed above (Section 3.5) as part of the on-going individual intake assessment procedure for the two Government funded drug/alcohol rehabilitation centres involved in the studies that comprise this thesis. Clients (n= 458) completed the instruments individually at treatment commencement, at intermediate treatment 319 completed the instruments, at treatment completion 146 clients completed the instruments, and at 3 to 6 months post-treatment 73 clients completed and returned the instruments. Clients completed the instruments individually so as to ensure that responses indicated the individual’s cognitive, affective, and social and substance use state, not that of a group consensus. Those residents who were not sufficiently literate to read the questionnaires by themselves were given assistance to complete the questions.

Residents were interviewed individually prior to completing the questionnaires, at which time the nature of this project was explained to them. It was emphasised that at no time would names be used, and that scores on the questionnaires would be treated as group data. Moreover, subjects were given the option of volunteering the scores for this study. Given that the confidentiality of information was stressed, no resident suitable for inclusion refused to volunteer information to this thesis. This 100% compliance by the suitable residents with the request for participation of their scores may be due to the staff’s positive attitude toward this research in both treatment centres.
3.10 Treatment of data

A rank transformation as delineated by Judd and McClelland (1989, p.513) and the S.A.S. Procedures Guide, Release 6.03 Ed. (The Rank Procedure, Ch.27, p.293) was applied in the analyses where measurement variables displayed non-normality and hetero-scedasticity of residuals. Data that were normally distributed were analysed using both parametric and non-parametric methods consisting multivariate analyses of variance, correlation and regression, and frequency.

The rank procedure for data transformation avoids the complications of interpretation of results that would have followed if other data transformation procedures were used. Judd and McClelland (1989) state: The rank tranformation cures many of the possible ills afflicting data ... outliers are controlled because the distances between extreme observations are reduced. Similarly, although the rank transformation does not produce normally distributed errors, it generally does eliminate problems of thick tails. The rank transformation does not ensure homogeniety of variance , but it usually is effective in preventing the very large differences in variance which could distort an analysis' (p.513). Both the S.A.S. Manual and Judd and McClelland (1989) state that the rank transformation procedure may be used with regression and variance techniques.

3.11 Mean Difference Scores

In order to analyse data in Studies 2 and 4 where comparisons between two times in treatment were made, ranked "Mean Difference Scores" were used. Mean Difference Scores (MDS), signifying change over time, were obtained by creating a dependent variable (DV) derived by subtracting Time 2 dependent variable scores from Time 1 dependent variable scores (MDS=DV at Time 2 - Time 1)) via the use of ranked repeated measures T-tests were the experiment-wise error-rate was adjusted. A negative MDS indicates a decrease and a positive MDS indicates an increase in the dependent variables under scrutiny. Therefore, for all measures other than self-
efficacy and social support, positive (increased) MDS are better than negative MDS (decreased). MDSs were then compared using between subjects multivariate analysis of variance. Effect sizes (ES) were calculated via the use of dependent variable means and standard deviations generated by this procedure.

There are advantages for using this analytical procedure over multivariate repeated-measures designs. Repeated-measures designs are notoriously susceptible to the sequence effects and carry-over effects which may exist between studies in this thesis due to the nature of the design employed. Furthermore, the statistical theory of repeated-measures designs assumes that the order of administration of experimental trials is randomized separately for each subject (Howell, 1987; Judd and Mc Clelland, 1989; Jaccard and Becker, 1990). Lastly, although using MDS does not overcome sequence and carry-over effects also, it does present an easier interpretation of the meaning of results of analysis than is usually the case with multivariate repeated-measures designs.

3.12 Adjustment of alpha
Given that the studies that comprise this thesis are based on multiple statistical analyses of data collected from the same subjects at several points across time, multivariate significant difference between groups was not accepted unless \( p < 0.0001 \).

3.13 summary
Chapter 3 consisted of the thesis overview and methodology. Chapter 4 following comprises Study 1. This study examined the relationship between treatment retention/attrition and client psycho-social resources and pre-treatment alcohol and other drug use. Essentially, Study 1 examined who stays and who drops out of treatment.
Chapter 4. - Study 1: The Relationship Between Treatment Retention/Attrition and Client Psycho-social Resources and Alcohol/Drug Use - "Who drops out and who stays?"

This study examines the relationship between the psycho-social resources that clients bring to in-patient alcohol/drug treatment and the retention of clients in programmes of differing duration (8 and 12 weeks) and philosophy (Traditional Disease Model Treatment and Cognitive-Behavioural Treatment).

4.1 Overseas and Australian treatment attrition rates

Recently, Siegal, Fisher, Rapp and Wagner (1995) stated that attrition from drug/alcohol treatment remains a major problem. Siegal et al. (1995) maintained that recent findings confirm the findings of earlier studies. Siegal et al. reported that both Craig, in 1985, and Baeklund and Lundwall, in 1975 found similar figures for in-patient treatment attrition rates ranging between 50% and 70%. It seems that nothing much has changed. For example, many more recent studies (Brewer, Zawadski, and Lincoln, 1990; Addenbrooke and Rathod, 1990; Condelli and Dunteman, 1993; Condelli and De Leon, 1993; De Leon, Melnick, Kressel and Jainchill, 1994; Ernst and Young Consulting Team, 1996; Seigal, 1995; Stark and Campbell, 1988) lend support to the findings of Craig (1985), and Baeklund and Lundwall (1975) in reporting drug/alcohol attrition rates of approximately 70%.

4.2 Treatment attrition can be linked to treatment success or failure

It is unfortunate that treatment attrition rates are so high because an American national study of treatment effectiveness (T.O.P.S) by Hubbard, Marsden, Rachal, Harwood, Cavanaugh, and Ginzburg (1989) found that time in treatment is positively correlated with both in-treatment and post-treatment therapeutic behaviour change. More recently, the Ernst and Young Consulting Team (1996) reported that regarding
Australian residential treatment: "length of time in treatment is the most consistent factor associated with good treatment outcomes" (p.39, 1996). In fact, there is general consensus that for treatment to be effective in bringing about positive change in client behaviour, clients must remain in treatment (Siegal, 1995; Monahan and Finney, 1996; Finney, Hahn and Moos, 1996).

On this basis, it is understandable that attrition rates may sometimes be taken as an indicator of treatment failure or success. Allison and Hubbard (1985) presented evidence that may lend some support to this viewpoint. They argued that, in general, drop-outs have a poorer prognosis for eventual acquisition of adaptive psycho-social resources than those who remain in treatment. This was an accepted premise even in the 1970s. For example, Aron and Daily (1974) believed that failure to complete treatment has long-term deleterious psychological effects for the drop-out. Simpson (1979) concluded that the length of stay in treatment was the major variable predictive of long-term successful outcome for clients treated in residential or out-patient drug-free modalities. Recently, Condelli and Dunteman (1993) reviewed the literature and also concluded that longer time in treatment is associated with lower rates of drug use, unemployment, and criminal behaviour; whereas, early treatment drop-out predicts negative short and long-term outcome.

4.3 Inconclusiveness of past findings regarding client psycho-social resources which define dropouts from treatment

Since early treatment drop-out is correlated with negative short-and long-term outcome, it becomes important to try and identify the psycho-social resources of clients likely to drop out of treatment early. If the client likely to drop out of treatment early can be clearly identified, then perhaps steps may be taken to maximise client retention or permit the structuring of a programme to suit the needs of clients who are "at risk" of drop out. In the past, studies which have attempted to identify drop-outs have focussed almost exclusively on client "fixed" input variables such as
demographic data. Dynamic client psycho-social resources, on the other hand, such as beliefs, expectations, attitudes, affect, and social functioning have been largely neglected where attrition from treatment is concerned. Condelli and DeLeon (1993) argued that assessing "dynamic" changing client resources appears more relevant than studying their unchanging "fixed" demographic information.

Condelli et al. (1993) assessed the value of examining fixed and dynamic variables together for predicting the retention of 753 clients in five therapeutic substance abuse programmes. Fixed variables included demographic and background resources. Dynamic variables included circumstances under which the clients joined the programmes and their motivations for seeking treatment. Although both fixed and dynamic variables predicted client retention, the strongest predictors were two dynamic variables: ex-addict interviewer's predictions of whether clients would stay long in the programme to benefit from treatment; and whether clients had spent most of their time with large groups of people, with small groups of people, or alone, before using drugs.

Hubbard, Marsden, Rachel, Harwood, Cavanaugh, and Ginzburg (1989) maintained that a better understanding of client social and psychological functioning at treatment commencement may lead to better treatment retention rates and better outcomes for those who remain in treatment. Assessing client psycho-social functioning at treatment commencement may lead to a more robust identification of the client resources which are associated with treatment attrition and retention. For example, in the psychological functioning domain, Prasadora and Mishra (1992) used a "dynamic" variable of client functioning when they examined the differences on drinking-related locus of control between 30 male completers and 20 male drop-outs from a 5-week, broad spectrum alcohol treatment programme. All subjects had been diagnosed with alcohol dependence and had undergone detoxification prior to the
treatment programme. The drop-outs had significantly more external drinking related locus of control than did treatment completers.

According to Stark and Campbell (1988), studies that have examined demographical influences such as age, employment status, social class, level of social stability, race, and nature of referral (Baeklund and Lundwall, 1975; Beck, Shakim, and Fraps et al., 1983; Gossop, 1978; Hahn and King, 1982; Leigh, Ogbourne, and Clelland, 1984; Linn, 1978; Steer, 1983; Wexler and DeLeon, 1977) have produced inconsistent findings. On the other hand, examination of dynamic client resources has produced more interpretable findings. For example, retention in drug/alcohol treatment has been consistently associated with high levels of anxiety, depression, impulsivity (Baeklund and Lundwall, 1975; Farina and Wragg, 1993; Robinson and Little, 1982), and general severity of psychological symptoms (Keegan and Lachar, 1979; O'Leary, Rohsenow, and Chaney, 1979; Robinson and Little, 1982; Steer, 1983; Wragg and Farina, 1994). Thus it becomes evident when one considers the inconclusive findings of studies that have examined the variables associated with attrition and retention that an examination of client "fixed" and "dynamic" variables might prove more fruitful than using either "fixed" or "dynamic" variables only.

4.4 Other explanations for the inconclusiveness of past findings

Wickizer, Maynard, Atherly, Frederick, Koepsell, Krupski, and Stark (1994) offered another explanation for the disparate findings of past studies. They argued that inconsistency in findings has arisen as a consequence of a lack of conceptual clarity in regards to the definition of what precisely constitutes a "drop-out". Almost twenty years earlier, Baeklund and Lundwall (1975) argued that a distinction between immediate and late treatment dropouts may be useful in explaining inconsistent results. In 1985, Stark and Campbell tested Baeklund and Lundwall's (1975) hypothesis and found no important difference between early treatment drop-outs and late treatment drop-outs on fixed client resources. However, these authors did find
significant interactions between treatment attrition and drug type used on six of the eleven subscales of the Hopkins Symptoms Checklist - 90 - Revised (SCL-90-R) which measures psychiatric symptom severity.

4.5 Early and late treatment drop-outs, duration, philosophy, and retention/attrition

The findings of Stark and Campbell (1988) suggested that an examination of early and late treatment drop-out's relationship to a greater range of dynamic client resources should produce more robust predictors of treatment retention and attrition. Also, given questions of the effect of treatment duration and philosophy of treatment on client functioning, it would be interesting to examine retention in in-patient alcohol treatments of differing durations and philosophy. Hence, the psycho-social predictors identified earlier in Chapter 2 appear useful in an investigation of client resources predictive of treatment retention or attrition. As discussed in Chapter 2, dynamic client resources such as self-efficacy, locus of control, depression, a ratio of positive-negative automatic thoughts, a global index of psychiatric symptom severity, social support and other variables seem to be the most useful to use in this first study. This study also compared treatment completers to early and late treatment drop-outs following the foregoing discussion concerning the advantages of distinguishing between early and late dropouts.

At this point it is important to note once again that data for this study comes from two treatment centres. Centre 1 comprised a rehabilitation programme of 8 weeks duration based on a cognitive-behavioural philosophical framework. Centre 2 comprised a rehabilitation programme of 12 weeks duration based on a traditional disease model philosophical framework. The issue examined in this first study concerned in-patient alcohol/drug treatment retention/attrition. To do so, this study examined the interaction between retention/drop-out and the psycho-social resources and pre-treatment substance use that clients bring to treatment. Although this study
compared groups in psycho-active substance use prior to treatment commencement, it particularly focussed on alcohol use prior to treatment commencement. It is also important to note that the data in this study comes from two treatment centres of different duration and philosophy thus answers to questions regarding these issues are confounded in this study.

In order to examine the psycho-social resources that clients bring to in-patient alcohol/drug treatment in relation to attrition and retention, a number of variables were chosen. These are:

1. self-efficacy to resist the urge to drink (alcohol) heavily;
2. locus of control;
3. depression;
4. a ratio of positive-negative automatic thoughts;
5. a global index of psychiatric symptoms;
6. social support; and,
7. ratings of self-perceived levels of alcohol problem severity.

In-patient alcohol/drug treatment completers and drop-outs were also compared on the amount of daily use and frequency of alcohol consumption per week, and on a composite measure of substance use prior to treatment commencement and the following fixed variables:

1. Age;
2. Length in years of alcohol use;
3. Age at which alcohol use was commenced.

The following research questions form the basis of this first study:

1. (a.) What percentage of clients drop-out and remain in alcohol/drug in-patient treatment?  (b.) Are clients more likely to complete in-patient treatment in relation to its duration or philosophy?
2. Do treatment drop-outs (TD-O) and treatment completers (TC) differ in psycho-social resources and alcohol use at treatment commencement?

3. To what extent do early treatment drop-outs and late treatment drop-outs differ in psycho-social resources and pre-treatment alcohol use at treatment commencement?

4. To what extent do early and late treatment drop-outs differ from treatment completers in psycho-social resources and pre-treatment alcohol use measured at the commencement of 8 week cognitive-behavioural (8CBT) or 12 week traditional disease model treatment (12TT)?

5. What is the most robust predictor of treatment retention and how is it related to the other predictor variables?

4.6 Study 1 - Method

The information regarding subject selection, procedure of data collection, instruments used to measure psycho-social resources, treatment of data, and other relevant information has already been examined in Chapter 3 - “Thesis Method”. In Study 1, although groups were compared on a composite measure of substance use, alcohol use was focussed upon given that it is the most commonly abused and misused substance in Australia.

4.7 Comparison groups

Study 1 population was derived from the overall sample (N= 458) (See Chapter 3.3., p. 44).

Subjects in study Research Questions 1. were classified as either:

- Treatment Drop-Outs - TD - (n= 312);
- Treatment Completers - TC - (n= 146);

Subjects in Research Questions 2. and 3. were classified as either:

- Early drop-outs who remained in treatment less than four weeks - ETD-O - (n= 139); or
• Late drop-outs who remained in treatment at least four weeks but did not complete treatment - LTD-O - (n= 173).

Figure 4.1 - Comparison Groups Categorised as Early and Late Treatment Drop-Outs and Treatment Completers

4.7 Results and discussion

Research Question 1.

(a.) What percentage of clients drop out and remain in alcohol/drug in-patient treatment?

Table 4.1 displays treatment retention and attrition percentages and reveals a high level of treatment drop-out and a low percentage of treatment retention. As can be seen in the Table, overall attrition percentages are in the vicinity of 70%.
Table 4.1. - Percentage of Client Retention and Attrition from In-patient Alcohol/Drug Treatment

<table>
<thead>
<tr>
<th></th>
<th>Number</th>
<th>Retention</th>
<th>Attrition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Early Drop-outs</td>
<td>139</td>
<td></td>
<td>30.34%</td>
</tr>
<tr>
<td>Late Drop-outs</td>
<td>173</td>
<td></td>
<td>37.77%</td>
</tr>
<tr>
<td>Completers</td>
<td>146</td>
<td>31.88%</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>N= 458</strong></td>
<td><strong>31.88%</strong></td>
<td><strong>68.11%</strong></td>
</tr>
</tbody>
</table>

(b.) Are clients more likely to complete in-patient treatment in relation to its duration and philosophy?

A chi-square test was applied to the relationship between treatment retention/attrition and treatment duration and philosophy to determine the likelihood of treatment remainder and drop-out for the two treatment programmes. The relationship between treatment retention/attrition and treatment duration and philosophy was not found to be statistically significant, \(X^2 (2, \text{N}= 458) = .149, p=.928\). The observed frequencies for the six cells can be found below in Table 4.2.

As indexed by Cramer's statistic, the strength of the relationship between treatment retention/attrition and treatment length/philosophy was .018. The observed frequencies displayed in Table 4.2 reflect the fact that individuals were no more likely to complete either the 8 week cognitive-behavioural treatment programme (8CBT) or the 12 week traditional disease model treatment programme (12TT).
Table 4.2. - Contingency Table for the Relationship Between Treatment Retention/Attrition and Treatment Length/Philosophy in Observed Frequencies and Cell Totals

<table>
<thead>
<tr>
<th>RETENTION/ATTRITION</th>
<th>8 Week CBT</th>
<th>12 TT</th>
<th>TOTALS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Early Drop-outs</td>
<td>73</td>
<td>66</td>
<td>139</td>
</tr>
<tr>
<td>Late Drop-outs</td>
<td>93</td>
<td>80</td>
<td>173</td>
</tr>
<tr>
<td>Completers</td>
<td>80</td>
<td>66</td>
<td>146</td>
</tr>
<tr>
<td>TOTALS</td>
<td>246</td>
<td>212</td>
<td>458</td>
</tr>
</tbody>
</table>

Table 4.3 displays treatment retention and attrition percentages for the 8 week cognitive-behavioural treatment programme and the 12 week traditional disease model treatment programme.

Table 4.3. - Percentage of Client Retention and Attrition for an 8 Week and a 12 Week In-patient Alcohol/Drug Treatment Programmes

<table>
<thead>
<tr>
<th>GROUPS</th>
<th>Total</th>
<th>8 Week CBT (n=246)</th>
<th>12 Week TT (n=212)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Early Drop-outs</td>
<td>139</td>
<td>29.67% (73)</td>
<td>37.73% (66)</td>
</tr>
<tr>
<td>Late Drop-outs</td>
<td>173</td>
<td>37.80% (93)</td>
<td>31.13% (80)</td>
</tr>
<tr>
<td>Completers</td>
<td>146</td>
<td>32.52% (80)</td>
<td>31.13% (66)</td>
</tr>
</tbody>
</table>

Table 4.3 reveals a similarly high level of treatment dropout and a low percentage of treatment retention for both the treatment programmes. Overall attrition percentages for both programmes is in the vicinity of 70%.

Research Question 1 discussion

Generally, the research literature also identifies 70% as a common in-patient treatment attrition rate. For example, Didcott (1989) stated that a high proportion of those in residential treatment in N.S.W. and elsewhere in the world stay in treatment only a short time. Considering attrition rates in the context of time remained in
treatment, Didcott found that approximately 60% stay for 14 days or less. Study 1 findings for both the 8 and 12 week in-patient alcohol treatment programmes agree with the general figure of 70%. The early treatment attrition rates found here of approximately 30% for the 8 week cognitive-behavioural programme and 38% for the 12 week traditional disease model programme are figures much below Didcott's (1989) findings.

Research Question 2. - Do treatment drop-outs (TD-O) and treatment completers (TC) differ in psycho-social resources and alcohol use at treatment commencement?

A multivariate analysis of variance using planned a prior contrasts between was conducted to compare treatment completers (TC) and treatment drop-outs (TD-O) from both treatment centres on the dependent variables social support, locus of control, depression, a ratio of positive-negative automatic thoughts, self-efficacy to resist the urge to drink (alcohol) heavily, a global index of psychiatric symptom severity, client's self-ratings of alcohol problem severity, the amount of years of alcohol use, days of alcohol use in a week and the amount of pre-treatment alcohol use on a day of use. The dependent variables self efficacy to resist the urge to drink (alcohol) heavily and depression were rank transformed because they were not normally distributed (See Thesis Method Section 3.10, p.54). The overall effect of the comparison between the TD-O and TC groups was significant (Wilk's Lambda (11, 446) = .8466, p < .0001). This result indicates that the treatment drop-out and completer groups significantly differed in psycho-social resources and pre-treatment alcohol use at treatment commencement.

The overall multivariate analysis merely presents one with a large block of variables which in linear combination distinguish between treatment drop-out and treatment completion. Clearly in the presence of such a large group, some variables
Table 4.4. - A Comparison Between In-Patient Treatment Drop-Outs (TD-O) and In-Patient Treatment Completers (TC) on Psycho-Social Resource and Alcohol Use Variables Measured at Treatment Commencement

<table>
<thead>
<tr>
<th>Measure</th>
<th>TD-O (n= 312)</th>
<th>TC (n= 146)</th>
<th>F.</th>
<th>p.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social Support</td>
<td>12.27 (6.96)</td>
<td>10.60 (6.87)</td>
<td>5.75</td>
<td>.0169*</td>
</tr>
<tr>
<td>Ranked Depression</td>
<td>198.6 (124.3)</td>
<td>295.5 (124.7)</td>
<td>60.36</td>
<td>.0001*</td>
</tr>
<tr>
<td>Automatic thoughts</td>
<td>102.1 (30.44)</td>
<td>113.6 (33.22)</td>
<td>13.10</td>
<td>.0003*</td>
</tr>
<tr>
<td>Psychiatric symptoms</td>
<td>110.2 (58.58)</td>
<td>139.2 (64.16)</td>
<td>22.85</td>
<td>.0001*</td>
</tr>
<tr>
<td>Years of Alcohol Use</td>
<td>16.81 (7.48)</td>
<td>18.36 (7.76)</td>
<td>4.16</td>
<td>.0420*</td>
</tr>
<tr>
<td>Alcohol Problem Severity</td>
<td>9.38 (2.41)</td>
<td>9.89 (2.44)</td>
<td>4.38</td>
<td>.0337*</td>
</tr>
<tr>
<td>Age</td>
<td>30.56 (7.80)</td>
<td>32.73 (7.93)</td>
<td>7.58</td>
<td>.0061*</td>
</tr>
<tr>
<td>Age Alcohol Use Started</td>
<td>13.75 (2.42)</td>
<td>14.37 (3.69)</td>
<td>4.54</td>
<td>.0337*</td>
</tr>
</tbody>
</table>

*Significantly different at p<.05*

Note: For all measures other than social support, lower mean scores are better than higher scores.

have little or no significant contribution to make. The univariate analyses presents a breakdown of the relative contribution of individual variables.

Univariate contrasts that were derived from the one factor multivariate analysis also revealed the variables upon which the TD-O and TC groups did not differ. TD-O and TC groups did not significantly differ in their locus of control orientation, their self-efficacy to resist the urge to drink (alcohol) heavily, the amount of alcohol they drank on an average day or the number of days per week on which they consumed alcohol prior to treatment entry. The TD-O and TC groups did not significantly differ in a composite measure of their pre-treatment substance use. Table 4.4 displays the variables upon which the two treatment groups did significantly differ at treatment commencement.
Perusal of Table 4.4 reveals that the TC group experienced significantly less social support, were significantly more depressed, had a significantly higher ratio of positive-negative automatic thoughts, had a significantly higher global index of psychiatric symptom severity, rated their alcohol problem as significantly more severe, had engaged in significantly more years of alcohol use and had started alcohol use at a significantly younger age prior to treatment commencement, and were significantly older than the TD-O group at treatment commencement. In short, the TC group had significantly less adaptive psycho-social resources at treatment commencement. Whereas, the TD-O group commenced treatment with more adaptive psychological resources and, counterintuitively, had used alcohol longer prior to treatment commencement than the TC group.

**Research Question 3. - To what extent do early treatment drop-outs (ETD-O) and late treatment drop-outs (LTD-O) differ in psycho-social resources and pre-treatment alcohol use measured at treatment commencement?**

The one factor multivariate analysis of variance using planned a priori contrasts between groups compared early treatment drop-outs (ETD-O) and late treatment drop-outs (LTD-O). In this comparison, the dependent variables self efficacy to resist the urge to drink (alcohol) heavily and depression were rank transformed because they were not normally distributed. The overall multivariate effect of the comparison between the ETD-O and LTD-O groups was significant (Wilk's Lambda (22, 890) = .6465, p < .0001). This result indicates that the ETD-O and LTD-O groups significantly differed in psycho-social resources at treatment commencement.

However, planned a priori univariate contrast revealed no significant difference to exist between ETD-O and LTD-O groups in alcohol use or a composite of substance use and other demographic variables. There was no significant difference between the two groups in the amount of alcohol they drank per day and
Table 4.5. - A Comparison Between Early Treatment Drop-Outs (ETD-O) and Late Treatment Drop-Outs (LTD-O) on Psycho-Social Variables Measured at Treatment Commencement

<table>
<thead>
<tr>
<th>Measure</th>
<th>ETD-O (n= 139)</th>
<th>LTD-O (n= 173)</th>
<th>F.</th>
<th>p.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social support</td>
<td>13.49 (6.93)</td>
<td>11.29 (6.84)</td>
<td>7.88</td>
<td>.0052*</td>
</tr>
<tr>
<td>Locus of control</td>
<td>24.16 (8.53)</td>
<td>28.38 (8.69)</td>
<td>17.16</td>
<td>.0001*</td>
</tr>
<tr>
<td>Ranked depression</td>
<td>119.6 (100.1)</td>
<td>262.1 (103.9)</td>
<td>129.4</td>
<td>.0001*</td>
</tr>
<tr>
<td>Automatic thoughts</td>
<td>90.81 (27.6)</td>
<td>111.3 (29.6)</td>
<td>35.49</td>
<td>.0001*</td>
</tr>
<tr>
<td>Ranked self-efficacy</td>
<td>264.0 (129.6)</td>
<td>206.9 (122.9)</td>
<td>14.77</td>
<td>.0001*</td>
</tr>
<tr>
<td>Psychiatric symptoms</td>
<td>91.55 (50.5)</td>
<td>125.1 (60.4)</td>
<td>25.01</td>
<td>.0001*</td>
</tr>
<tr>
<td>Problem severity</td>
<td>8.81 (2.37)</td>
<td>9.85 (2.34)</td>
<td>14.77</td>
<td>.0001*</td>
</tr>
</tbody>
</table>

*Significantly different at p<.01*

Note: For all measures other than self-efficacy and social support, lower mean scores are better than higher scores.

the number of days a week they drank alcohol before entering treatment. Both groups drank more than 12 drinks per day on 6-7 days a week prior to entering treatment. Furthermore, groups did not significantly differ in age, years of alcohol use or the age at which alcohol use was commenced. Thus, on these resources, the ETD-O and LTD-O groups were similarly matched.

Table 4.5 reveals that the ETD-O and LTD-O groups differed significantly on all psycho-social variables at treatment commencement. The ETD-O group had significantly higher levels of social support (mid range), significantly higher self-efficacy to resist the urge to drink (alcohol) heavily, were significantly more internally orientated, were significantly less depressed (mild range), their ratio of positive-negative automatic thoughts was in the normal range and significantly lower, and their general index of psychiatric symptom severity, although in the clinical range (T=71), was significantly lower than the LTD-O group. Also, the ETD-O group rated
the severity of their alcohol problem significantly lower than the LTD-O group. Overall, Table 4.5 reveals that at treatment commencement the ETD-O group had significantly better psycho-social resources than the LTD-O group.

**Research question 3 discussion**

Treatment drop-outs, whether they be early or late drop-outs, from both treatment programmes had better psychological and social support resources than the treatment completers upon entry into treatment. On the other hand, it seems that the average in-patient treatment completer was an individual who had significantly less resources with which to cope with alcohol use compared to the average treatment drop-out upon entry into treatment.

Overall, these findings indicate that treatment drop-outs differed from treatment completers in relation to levels of psycho-social resources. Drop-outs had more adaptive psycho-social resources than treatment completers. Early treatment drop-outs appeared to have higher levels of social support, have a more internal locus of control, to be less depressed, have higher levels of positive and lower levels of negative automatic thoughts, have greater self-efficacy to resist the urge to drink (alcohol) heavily, report less psychiatric symptom severity, and rate their alcohol problem as less severe. In short, these individuals had more psycho-social resources than both late treatment drop-outs or treatment completers at treatment commencement. Put simply, research question 3 findings predict a negative relationship between psycho-social resources and time spent in treatment. The more psycho-social resources clients had at treatment commencement the less treatment they were likely to complete.
Research Question 4. - To what extent do early and late treatment drop-outs differ from treatment completers in psycho-social resources and pre-treatment alcohol use measured at the commencement of 8 week cognitive-behavioural (8CBT) or 12 week traditional disease model treatment (12TT)?

The one factor multivariate analysis of variance using planned a priori contrasts also compared treatment completers and early and late drop-out groups from the 8CBT and the 12TT programme on the dependent variables identified. The overall effect of the comparison between the treatment drop-outs and completers was significant (Wilk's Lambda (55, 2049.5) = .5268, p < .0001). This result indicates that the early and late drop-out and completer groups significantly differed in psycho-social resources at treatment commencement.

More results derived from the planned a priori contrasts between the individual treatment groups that were used in the one factor multivariate analysis of variance may be viewed in the appendix 2. An a priori contrast from this analysis revealed that 8 week cognitive-behavioural early treatment drop-outs had significantly more adaptive psycho-social resources and consumed less alcohol prior to treatment than both 8 week cognitive-behavioural late treatment drop-outs or 8 week cognitive-behavioural treatment completers. Contrasts also revealed that 8 week cognitive-behavioural late treatment drop-outs had significantly more psycho-social resources and consumed less alcohol prior to treatment than 8 week cognitive-behavioural treatment completers. These groups did not differ in their composite use of substances.

These trends were also evident in comparisons between the 12 week traditional disease model treatment drop-out and completer groups. However, dissimilarly, the early treatment drop-outs from the 12 week traditional disease model treatment programme did not significantly differ in alcohol consumption from the late treatment drop-outs prior to treatment entry. A contrast between early treatment drop-
outs from the two programmes revealed that the 8 week cognitive-behavioural treatment early drop-outs were significantly more internally oriented and thus believed themselves in more control than the 12 week traditional disease model treatment early drop-outs. Also, 8 week cognitive-behavioural treatment early drop-outs had a lower incidence of psychiatric symptom severity and consumed significantly less alcohol on less days per week than 12 week traditional disease model treatment early drop-outs.

**Research question 4 discussion**

Overall, the multivariate analysis of variance using planned a priori contrasts revealed similar trends. Treatment drop-outs, whether they be early or late drop-outs, from both treatment programmes had significantly more psycho-social resources upon entry into treatment than the treatment completers in both treatment programmes. This would suggest that these individuals were more likely to drop out of treatment early because they believed they were more capable of taking responsibility for themselves and their lives than the treatment completers in both programmes. These findings suggest that the length or philosophy of the treatment programme entered did not influence treatment drop-out or completion as much as did levels of psycho-social resources. As was found in Research Question 3, it seems that the average treatment completer in both treatment programmes is an individual who did not have the capacity to cope with alcohol use upon entry into treatment. By contrast, average treatment drop-outs had more psycho-social resources suggesting that they may have felt more confident in their own ability to cope without requiring as much treatment. Early and late treatment drop-outs from both treatment programmes appeared to have higher levels of social support, have a more internal locus of control, to be less depressed, display higher levels of positive and lower levels of negative automatic thoughts, have greater self-efficacy to resist the urge to drink (alcohol) heavily, reported less psychiatric symptom severity, and rated their alcohol problem as less severe.
Research Question 5 - What is the most robust predictor of treatment retention and how is it related to the other predictor variables?

The multivariate analysis of variance used to examine Research Questions 2, 3 and 4 where the dependent variable self-efficacy and depression were ranked revealed that ranked depression was the best predictor of treatment retention and attrition. It was found that depression explained 31.24% of the variance between drop-out and completer groups. Given the ability of this variable to predict retention and attrition in this study, the relationships between depression and the other predictor variables was explored. A multiple linear regression analysis using a step-wise selection procedure was used to examine the relationship between depression and the other variables examined in this study. A multiple linear regression was used to answer this research question because although the multivariate analysis of variance supplies intercorrelations of dependent variables, it does not control for the order of entry of variables in the saturated linear model. The multiple linear regression using a step-wise procedure does so and accounts for the effect on predictiveness due to order of entry of variables in the saturated model.

It will be noted that the variables were also rank transformed in this analysis because some variables were not normally distributed. A saturated general linear model was found to describe a statistically significant linear relationship between ranked depression and the ranked predictor variables including a ranked index of psychiatric symptom severity, a ranked ratio of positive-negative automatic thoughts, a ranked rating of alcohol problem severity, ranked social support, ranked locus of control, ranked amount of average daily alcohol use, $F_{(11, 446)}= 47.54$, $p<.0001$. The correlation co-efficient of determination, $R^2$, reveals that the linear combination of the the predictor variables explains 53.97% of the variance in the ranked depression scores.
Table 4.6. displays the linear regression equation derived from this analysis, and the significance of the relationships of the ranked predictor variables to ranked depression. The sign of the parameter and t statistic displayed in Table 4.6 for each predictor variable, reveals the direction of the relationship to ranked depression.

Perusal of Table 4.6 revealed that as ranked depression rose a number of variables rose or fell significantly. Changes in depression were significantly related to changes in social support, locus of control, a ratio of positive-negative automatic thoughts, psychiatric symptom severity, amount of alcohol consumed, and ratings of alcohol problem severity. Levels of depression were inversely (negatively) related to levels of social support, locus of control, levels of positive-negative automatic thoughts ratio. Levels of depression was positively with levels of psychiatric symptom severity, and ratings of alcohol problem severity. Unusually, amount of alcohol consumption prior to treatment was negatively related to higher levels of depression in this overall study sample.

<table>
<thead>
<tr>
<th>Dependent variable: ranked depression (N=458)</th>
<th>Parameter Est.</th>
<th>SE.</th>
<th>t for HO:</th>
<th>Prob &gt; t.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ranked Intercept</td>
<td>100.84</td>
<td>26.53</td>
<td>3.881</td>
<td>0.0002*</td>
</tr>
<tr>
<td>Ranked Index of Psych. Symptoms</td>
<td>.356</td>
<td>.0388</td>
<td>9.172</td>
<td>0.0001*</td>
</tr>
<tr>
<td>Ranked +/- Automatic Thoughts</td>
<td>.266</td>
<td>.0389</td>
<td>6.830</td>
<td>0.0001*</td>
</tr>
<tr>
<td>Ranked Ratings of Alcohol Problem</td>
<td>.205</td>
<td>.0390</td>
<td>5.264</td>
<td>0.0001*</td>
</tr>
<tr>
<td>Ranked Social Support</td>
<td>-.157</td>
<td>.0353</td>
<td>-4.44</td>
<td>0.0001*</td>
</tr>
<tr>
<td>Ranked Locus of Control</td>
<td>.005</td>
<td>.0339</td>
<td>2.49</td>
<td>0.0131*</td>
</tr>
<tr>
<td>Ranked Am. of Daily Alcohol Use</td>
<td>-.095</td>
<td>0.0480</td>
<td>-1.991</td>
<td>0.0471*</td>
</tr>
</tbody>
</table>

Significant at *p.<.05
A step-wise selection procedure revealed the order and strength of association between depression and the variables found to be significantly related to it. Figure 4a describes these relationships.

![Diagram showing the relationships between depression and various variables](image)

**Figure 4.2.** - A model of the variables that significantly predict depression in Study 1.

The model above shows that the best predictors of depression were the level of psychiatric symptom severity followed by the ratio of positive-negative automatic thoughts, ratings of alcohol problem severity, social support, locus of control, and the amount of daily alcohol consumption prior to treatment entry. However, as reported above, the direction of the relationship between depression and the amount of average daily alcohol consumed prior to treatment entry is unexpected.

**Research question 5 discussion**

Thus in the final question examined in Study 1 it was found that for a sample of 458 subjects who have an alcohol problem, depression was the most robust
predictor of treatment drop-out or remainder. In this sample, depression was significantly associated with psychiatric symptom severity, a ratio of positive-negative automatic thoughts, ratings of alcohol problem severity, social support, locus of control orientation, and the amount of alcohol clients drank prior to treatment. Furthermore, the results revealed that the more depressed the individual the more likely s/he was to remain in treatment. Furthermore, for the individual more likely to remain in treatment, depression is significantly related to higher psychiatric symptom severity; a higher ratio of positive-negative automatic thoughts (signifying low levels of positive and high levels of negative automatic thoughts); a perception of having more of a problem with alcohol; lower levels of social support; more externally oriented locus of control; and, contradictorily, less alcohol consumption prior to treatment.

Depression is known to be co-morbid with alcohol dependence (Araujo, Goldberg, Eyma, Madhusoodanan, Buff, Shamim and Brenner, 1996; Baving and Olbrich, 1996; Beck, Wright, Newman and Liese, 1993; Greeley, Swift and Heather, 1992; Kadden, Kranzler and Rounsaville, 1995). Also, levels of depression are negatively correlated with adaptive behaviour change (Beck and Steer, 1987; Hawton, Salkovskis, Kirk and Clark, 1993). Cognitive explanations of depression have been closely linked to the nature of adaptive or maladaptive schemas (Ingram, Smith, Kendall, Donnell and Ronan, 1987; Kendall, Howard and Hays, 1989). The relationship between maladaptive behaviour and depression has been well documented in the research literature, according to many researchers (Coyne and Gotlib, 1983; Hawton, Salkovskis, Kirk and Clark, 1993; Peterson and Seligman, 1984). Therefore, the finding that depression explains most of the variance in treatment retention/attrition between groups and that the treatment completers were significantly more depressed than treatment drop-outs presents an expedient way by which to identify potential treatment drop-outs. These findings suggest that a measure
of depression, such as that obtained via the use of such instruments as the Beck Depression Inventory (BDI), would enable fast identification of likely drop-outs.

4.9 Study 1 conclusion

Study 1 results reveal that clients who commenced in-patient cognitive-behavioural or traditional disease model treatment and dropped-out prior to treatment completion had significantly better psycho-social resources than individuals who remained to complete treatment. Furthermore, a priori contrasts between groups performed by the multivariate analysis of variance used to answer research questions 2, 3 and 4 revealed that at treatment commencement, early treatment drop-outs were significantly less psycho-socially distressed than late treatment drop-outs. Thus, in regards to the question of the psycho-social resources that clients bring to in-patient treatment, it was found in Study 1 that treatment drop-outs whether they be early or late drop-outs functioned better psychologically and had higher levels of social support than treatment completers at 8 week cognitive-behavioural or 12 week traditional disease model treatment commencement.

In Study 1 it was also found that the best predictor of treatment drop-out or retention was the clients' level of depression. A number of variables that significantly predict depression were identified. These were an index of psychiatric symptom severity, a ratio of positive-negative automatic thoughts, ratings of alcohol problem severity, social support, locus of control, and amount of daily alcohol consumption prior to treatment commencement.

Study 1 findings indicate that the retention and drop-out rates for both 8 week cognitive-behavioural and 12 week traditional disease model treatment are similar to the rates reported in the research literature (Siegal, 1995). However, this finding may not be evidence of the ineffectiveness of treatment to keep clients. For example, Study 1 results indicate that the better the psychological resources, and the higher the
level of social support a client has, the less treatment the client is likely to complete. On the other hand, in this study, it was found that the client who stayed in in-patient alcohol treatment to completion was likely to be more psycho-socially distressed than those clients who dropped-out of treatment. These findings suggest that clients self-selected for the length of in-patient alcohol/drug treatment they completed on the basis of the psycho-social resources they had. However, since the data that comprised this study came from two treatment programmes of different duration and philosophy, question regarding the impact of treatment duration cannot be answered as they are confounded by the impact of treatment philosophy.

Thus, this finding raises questions regarding the relationships between client progress in treatment and type and duration of treatment completed. Given the current economic climate in Australia, the question of how treatment duration and philosophy affects psycho-social support resources is an especially pertinent one because it is important to treat those that choose to remain in in-patient treatment as cost-effectively as possible. Addressing these questions may add more evidence with which to answer how to increase treatment efficacy. The following chapter comprising Study 2 examines questions related to the interaction between the length of in-patient alcohol/drug treatment completed and client psycho-social resources. However, because the data which were examined in Study 2 came from two treatment programmes of different duration and philosophy, the impact of these two factors on client resources was addressed.

In Study 2 the impact of treatment duration and philosophy on client psycho-social resources was examined by comparing the progress, as measured by rates of change in psychological and social support resources, achieved by treatment late drop-outs and completers of the two in-patient treatment programmes of differing duration and philosophy examined in this study. It is also opportune that the interaction between treatment philosophy and client resources is examined in Study 2 because the
philosophy of treatment is known to have an impact on client resources (Mattick and Jarvis, 1993; Schaler, 1997). However, there is a paucity of research comparing the interaction between treatment philosophy and client resources in an Australian setting. In the following study, the late treatment drop-out groups examined in the study are identified as 4 weeks of cognitive-behavioural treatment completers and 6 weeks of traditional disease model treatment completers.
Chapter 5 - Study 2: How Does In-patient Alcohol/Drug Treatment Duration and Philosophy Impact on Client Psycho-Social Resources?

Study 2 examined the impact of in-patient alcohol/drug treatment's duration and philosophy on client progress (change) during treatment. It did so by comparing the treatment completion assessment scores to the treatment commencement assessment scores of clients who have completed different lengths of two treatment programmes of different philosophy and duration. As mentioned previously in this thesis, it is difficult to arrive at conclusions concerning the impact of treatment's duration on client resources. A debate ensues concerning whether more treatment is better than less treatment and centers on questions regarding the efficacy of length and intensity of treatment.

5.1 Past findings regarding the outcome of in-patient and out-patient treatment of differing durations

Recently, a researcher (Condelli, 1993, 1994) concluded that the length of stay in treatment is the major variable predictive of long-term successful outcome for clients treated in residential or out-patient drug-free modalities. The importance of retaining clients in treatment continues to be stressed (Ernst and Young Consulting Team, 1996). However, since the 1960s there has been inconsistency regarding the impact of treatment duration on client post-treatment functioning. Many researchers have found that the length or amount of treatment does not play a significant part in client functioning. For example, in 1966/1967 Edwards and Guthrie compared amount of treatment outcome for their samples of 'gamma alcoholics' in both in-patient and out-patient settings of eight weeks duration. Edwards and Guthrie found that one year after treatment there was no significant difference in drinking behaviour for the two treatment samples.
In a replication of the Edwards and Guthrie (1966/67) studies, with small modification to the designs which took into consideration the effect of length of treatment, Edwards, Orford, Egert, Guthrie, Hawker, Hensman, Mitcheson, Oppenheimer and Taylor (1977) found results similar to their 1966/67 findings. They found that in a comparison of two groups of alcoholics who either participated in six weeks in-patient treatment or a single advice session, no essential difference in outcome of drinking behaviour was evidenced at one and two year periods. This finding also suggested that the duration or amount of treatment did not significantly impact on drinking behaviour at post-treatment evaluation. More recently, Chapman and Huygens (1988), using a design similar to that of Edwards et al.'s (1977) study, also concluded that no significant difference between in-patient treatment or a single session of advice was evident.

Emrick, although finding similar results to those of Edwards and Guthrie (1977), did find that some treatment is better than no treatment. In his 1974/75 treatment evaluation study, Emrick conducted an extensive review of the outcome literature then available. He examined 384 pieces of work (dealing with alcohol dependency) which had taken place between 1952 and 1973. According to Gottheil, McLellan and Druley (1981), Emrick concluded that the evidence indicated that no type of treatment was especially superior to any other. However, on the basis of an examination of five studies where patients received no, or virtually no treatment, Emrick concluded that some treatment is better than no treatment. Emrick found that those patients who received no treatment did not fare as well, on a number of measures, as those who did.

As is evidenced by the findings of Emrick and others, the impact of treatment duration issue is clouded. The issue becomes even more unclear when one considers variables other than post-treatment substance use as measures of treatment impact and outcome. For example, studies that have examined treatment effectiveness using
other than alcohol/drug use criteria have found more positive results for longer
treatment durations or amount of treatment. Aron and Daily (1974), contemporaries
convictions as a measure of programme effectiveness, and after comparing a short and
long term therapeutic community programme, concluded that longer treatment is more
effective than shorter durations of treatment. Smart conducted a large scale study
involving 1091 subjects who were followed-up after one year. Smart's study
examined evidence concerning client characteristics, type and length of treatment
received, and outcome after clinical treatment. Smart (1978) found that longer
durations of treatment were more beneficial for clients. Smart concluded that "for a
client (longer treatment) bears a direct linear relationship with improvement. The
longer the stay, the greater the improvement" (1978, p. 72).

5.2 More recent findings regarding the effect of treatment duration are also
disparate

More recent findings and examinations of the research literature also fail to
agree concerning the comparative effectiveness of differing lengths of treatment
duration. For example, Mattick and Jarvis (eds.) (1993) in an extensive literature
review, cited a number of studies that found that longer treatment is no more effective
than shorter treatment. Mattick and Jarvis (1993) commenced their review by
referring to a number of researchers (Adelman and Weiss, 1989; Annis, 1986; ;
Edwards, 1980; Miller and Hester, 1986a; Mazza and Stevens, 1988) who have
examined the issue of treatment duration effectiveness. The researchers referred to by
Mattick and Jarvis found no significant difference whether treatment was longer,
shorter, intense, minimal, in-patient or out-patient. On this basis Mattick and Jarvis
(1993) concluded that the evidence indicates no real differences in treatment outcome
pertaining to its duration. A quote selected by Mattick and Jarvis (1993) from Annis
(1986), reflects their conclusions:
"It is concluded that: (i) in-hospital alcoholism programmes of a few weeks duration show no higher success rates than periods of brief hospitalisation of a few days; ... (iii)'partial hospitalisation' (day treatment) has been found to have equal or superior results to inpatient hospitalisation; (iv) well controlled trials have also demonstrated that outpatient programmes can produce comparable results to inpatient programmes ..." (Annis, 1986, p.175. In Mattick and Jarvis (eds.), 1993).

The general consensus of the studies reported by Mattick and Jarvis is that there is no evidence of benefit to psycho-active substance dependent individuals derived from intensive, long-term in-patient treatment. Thus Mattick and Jarvis (1993) suggested that the current evidence indicates no real differences in treatment outcome based on duration. More recently, Mattick and Jarvis (1994) reviewed the results of clinical trials and again concluded that there is no evidence that long in-patient stays are better than short in-patient stays.

Yet, as is the case when one examines the literature of past findings, there are a number of more recent studies that find that longer treatment can be better (Condelli, 1993, 1994; Condelli and DeLeon, 1993; Condelli and Dunteman, 1993; McClelland, Luborsky and O'Brien, 1986; Toumbourou, 1995). For example, McLellan, Luborsky and O'Brien (1986) found that longer treatment is more effective than shorter treatment. McLellan et al. found that longer treatment was generally associated with better outcomes for patients in the areas of employment, criminal behaviour, family relations, and psychological health. Recently, in Australia, Toumbourou (1995) argued that the length of time spent in treatment is the best predictor of success. Toumbourou asserted that "residential treatment has the greatest returns per day spent in treatment" (1995, p. 4). Also in Australia most recently, Mundy, in a review of the findings of the Ernst and Young Consultancy Team (1996)
for The National Drug Strategy, stated that "the most consistent factor identified by the research as being positively associated with good outcomes is the length of time the person stays in the treatment program" (1996, p.5).

Thus, the question of effective treatment duration is not as clear cut as one would hope. More recently, past studies have been re-examined taking into consideration the relationship between minimal or intensive intervention and the effect of treatment duration.

5.3 The relationship between minimal or intensive intervention and the effect of treatment duration

Armor, Polich and Stambul (1978), reporting the results of the Rand studies, found much the same outcome as the studies of Edwards and Guthrie (1966/67, 1977). Armor et al. concluded that there was no evidence of significant difference in client functioning as a result of treatment duration. However, they found that the amount of treatment proved to be statistically significant. On this basis, Armor et al. came to the conclusion that it may be easy to confuse length of treatment and amount of treatment and take it for granted that the two are synonymous. Sometimes, according to Armor et al., this may not be the case. It can be that long-term in-patient treatment is of less intensity than short term out-patient treatment. This may also be the case where in-patient programmes of longer duration have been compared to in-patient programmes of shorter duration. If Armor et al. are correct in their assertion, this might cast doubt on some of the findings that have compared in-patient and out-patient treatment settings, and short and long-term in-patient programmes.

More recently, Mattick and Jarvis (1994), in an examination of the evidence on the relative impact of intensive interventions and brief advice concluded that there is little advantage for intensive interventions over brief advice for alcohol dependent populations. However, Mattick and Jarvis (1994) suggest that this conclusion is based
on studies with serious methodological flaws and that a qualified interpretation is appropriate. Mattick and Jarvis (1994) argued that there is evidence that intensive intervention does benefit psycho-socially distressed chronically alcohol dependent individuals; less alcohol dependent individuals, on the other hand, do not require intensive interventions.

5.4 What is found in studies that control for the effect of treatment intensity?

When treatment intensity is controlled, longer periods of treatment are found to be more effective than shorter periods of treatment. For example, Bleiberg, Devlin, Croan, and Briscoe (1995) examined the relationship between treatment length and treatment outcome among those treated in a therapeutic community. The therapeutic community employed in the Blieberg et al. study had been changed from a six months to a one month programme, but had undergone virtually no other changes. Twenty two adult males who had received six months of treatment and 22 adult males who received one month of treatment were compared on the Addiction Severity Index. At post-treatment, the six months of treatment group had more subjects with a successful outcome than the one month group.

Charuvastra, Dalali, Cassuci, and Ling (1992) examined the impact of length of treatment on the effectiveness of residential alcohol/drug treatment programmes. Charuvastra et al.'s sample comprised 38 male veteran clients who had been admitted for treatment in 1985 and who were followed-up six months after discharge. These results were compared with those obtained from a follow-up study of clients who had been admitted to the same treatment centre in 1972 and 1973. In the interim, the length of stay at the treatment centre had been reduced from one year to three months. In 1972/73, the one year treatment programme at the centre had a failure rate of 26%. In 1985, the three month treatment programme at the treatment centre, on the other hand, had a failure rate of 47%. Charuvastra et al. (1992) concluded that this result
signified that the length of treatment is an important determinant of observed differences at follow-up.

In contrast to the above findings, French, Zarkin, Hubbard, and Rachal (1993) found that time in treatment had a negative and statistically significant impact on outcome variables for every modality. French et al. estimated the simultaneous effects of time in treatment and employment outcomes (weeks worked and total earnings) on post-treatment drug use and criminal activity for 2,420 clients from the Treatment Outcome Prospective Study (TOPS) who participated in a 12 months follow-up interview. French et al. found that residential clients experienced the largest relative impact and that the time-in-treatment relationship was an inverse one, the time-in-treatment effect was robust even when employment outcomes were modelled jointly with drug use and criminal activity outcomes.

It would seem from the foregoing sections, that issues concerned with treatment duration relative to end-state functioning are complicated by issues concerned with treatment intensity as a factor that can be either independent of duration or implicit within a time criterion. If other aspects of outcome including the choice of dependent variables of alcohol/drug use or psycho-social resources are added to the equation, then it becomes apparent that the question of treatment length remains far from resolved. Furthermore, the question of treatment philosophy adds to this confusion.

5.5 The impact of treatment duration and philosophy

As early as 1978, Reed stated that findings regarding the impact of treatment length on client functioning are often confounded by the fact that treatment programmes compared are sometimes based on different philosophical frameworks. Reed found:
"Disagreements persist on the importance of time in treatment as a factor contributing to positive client outcome. Partly this owes to the difficulty in finding programs within the same modality which embody similar philosophies and practices yet which differ significantly in treatment cycle time. Consequently, comparing differences in treatment time within a given modality often really means comparing those who stayed in a given treatment with those who left. Similarly, comparing graduates of different length treatment cycles often really means comparing products of very different programs. So, in fact, a host of factors may be subsumed in simple comparisons of time in treatment. The results are conclusions of considerable disparity" (1978, p. 158).

However, the conclusions of considerable disparity that Reed identified and which he stated existed as a consequence of the design of most time-in-treatment studies may be avoided by clearly stating from the outset the conditions of treatment that are being compared and by taking into account the conditions that were compared when concluding the meaning of results. Thus in order to control for the observation made by Reed (1978) in this study psycho-social resource data were obtained from groups who:

1.) completed 6 or 12 weeks of a traditional disease model based in-patient alcohol/drug treatment programme; or,
2.) completed 4 or 8 weeks of a cognitive-behavioural model based in-patient alcohol/drug treatment programme.

This study has therefore examined the impact of both time in treatment and philosophy of treatment of the same modality (namely, in-patient alcohol/drug treatment) on client psycho-social resource change. Furthermore, in comparing different lengths of same programme completion this study has also controlled for the impact of treatment intensity.
5.6 The impact of treatment duration and philosophy on psycho-social functioning

In Australia, as in the rest of the world (Finney, Hahn and Moos, 1996), drug and alcohol treatment units have not conducted evaluation studies which might have permitted conclusions to be drawn regarding the relative contribution of differing lengths of treatment duration whilst controlling for the effect of treatment intensity and philosophy (Ernst and Young Consultancy Team, 1996). Furthermore, most of the research literature addressing the effective treatment duration issue is generally taken from America or Europe, and although relevant, there is a need to examine evidence drawn from an Australian context. The current study will endeavour to provide some relevant findings with which to examine the nature of the effect of treatment duration and philosophy on client psycho-social resources in an Australian setting.

Measuring psycho-social resources may serve as useful criteria with which to identify the impact of treatment duration and philosophy. The relationship between psychological functioning, the environment, and behaviour has become most apparent with the work of Bandura (1977, 1982, 1986) who explained the relationships between person, environment and behaviour factors as one of 'reciprocal determinism' (Fig. 1).

![Figure 5.1 - Reciprocal Determinism links person, environment and behaviour](image)

Figure 5.1 - Reciprocal Determinism links person, environment and behaviour
Bandura argued that if one of these variables changes, the others also change. Other researchers (Andrews, Crino, Hunt, Lampe and Page, 1994; Bell, Richard and Feltz, 1996; Beck, Wright, Newman and Liese, 1993; Hawton, Salkovskis, Kirk and Clark, 1993; Pervin, 1990) have validated Bandura's assertion and have further identified and confirmed the reciprocal relationship that exists between behaviour, affect and cognition (Fig. 2).

![Figure 5.2 - Reciprocal Determinism links cognitive, behavioural and affective functioning](image)

These researchers referenced above have suggested that if cognition and affect change, behaviour changes. In fact, these researchers predict that if cognition and affect changes in an adaptive direction behaviour will also eventually change in an adaptive direction. Some also argue that as long as cognition and affect remain adaptive, behaviour should also remain adaptive (Monti, Abrams, Kaddens and Cooney, 1989). In this sense, the role of the treatment environment is to change person factors such as psychological and social support functioning in an adaptive direction so that behaviour will eventually change in an adaptive manner (Bell, Richard and Feltz, 1996; Bell, Williams, Nelson and Spence, 1995; Bell, Richard and Dayton, 1996).

There is evidence for the validity of this assertion. For example, Bell, Richard and Dayton (1996) found a strong positive relationship to exist between psychological
and social functioning. Bell et al. argued that social support resources are a good indicator of social functioning. In examining the impact of treatment on client resources in the psychological and social support domains, Bell et al. found indications that improvement in psychological and social support resources is mediated by changes in cognition. Bell et al. concluded that their results suggested that changes in cognitive resources may have mediated changes in self-esteem and emotional functioning, and in turn, changes in emotional functioning may have mediated changes in social support resources. On this basis, Bell et al. concluded that treatment does produce psychological and social support resource change. They hinted that the cognitive domain may drive most of this change.

Thus, if we accept the validity of the assertions above, treatment should endeavour to change certain aspects of a clients' cognition in order to change affect and social functioning. In the realm of cognition, a person must have self-efficacy in his/her own ability to control alcohol/drug use (Annis, 1986; Beck, Wright, Newman and Liese, 1993). To achieve this level of self-efficacy, a successful alcohol/drug treatment programme should bring clients to the understanding that the responsibility for change rests with themselves and that it is within their ability to attain such changes. In this sense, treatment must orient an individual toward an internal locus of control in order that the client may come to believe that s/he can control events sufficiently to warrant changing alcohol/drug use behaviour (Glanz, Lewis, and Rimer, 1991).

Further, an alcohol/drug dependent individual's sense of hopelessness and helplessness, and possible depression, must be addressed by changing the negative to positive automatic thoughts ratio that Kendall, Howard, and Hays (1989) argued leans so heavily toward negativity in depressed individuals. According to Beck (1987), lack of motivation for therapeutic behaviour change and increased susceptibility to abusive alcohol/drug use are both highly correlated with depression. Psychiatric symptom
severity, an indication of affective functioning, must also be reduced. Lastly, an individual must also believe that they have social support. In summary, the ultimate objective of treatment is to improve client psycho-social resources via cognitive change (Bell, Richard and Dayton, 1996; Schaler, 1997).

5.7 Two paradigms of alcohol/drug dependence and the philosophies of alcohol/drug treatment that they espouse

Schaler (1997) suggests that the philosophy underpinning treatment plays a large part in determining the degree of client cognitive change. According to Trinder and Keene (1997) "the two principal models of substance misuse are the 'disease' theory, commonly followed in the U.S.A., and the cognitive-behavioural model, popular with British professionals" (1997, p.24). Currently in Australia, in-patient alcohol/drug treatment programmes are based mainly on the disease model philosophy (Ernst and Young Consultancy Team, 1996). Treatments that adhere to disease model viewpoints regard the alcohol and other drugs dependent individual seeking treatment as having a disease called alcoholism/addiction which the individual cannot control without the continuous help of an external agent or agents. Thus, the disease model identifies treatment as deriving from external sources from the individual with the problem; individuals are taught that they have no control of an internal problem. A cognitive-behavioural philosophy perceives the alcohol/drug dependent individual as having learned a maladaptive coping behaviour due to environmental reinforcement which can be altered via the learning of adaptive coping behaviours. According to cognitive social learning theory, treatment derives of sources within the individual. Thus, individuals are taught to treat themselves and to take control of their problem. Cognitive-behavioural treatment developed within a cognitive social learning theoretical framework best exemplifies such a philosophy of treatment.

Traditional alcohol/drug treatment based on the disease model (as advanced by Alcoholics Anonymous and Narcotics Anonymous) insists that "alcoholics must
surrender to their disease of alcoholism" (Watson, 1991). The alcoholic/addict is regarded as being "powerless over alcohol" or other drugs and cannot control their use or cessation of use. Traditional treatment emphasises that alcoholics/addicts are not able to control their alcohol/drug problem by willpower; they are not able to exercise self-control where alcohol/drug use is concerned. Hence, according to traditional treatment based on the disease model as advanced by Alcoholics Anonymous (A.A.) and Narcotics Anonymous (N.A.), something must take the place of self-control. This something is what A.A. and N.A. refer to as a "higher power" or a "God as we understand him". To many members of A.A. and N.A., the "higher power" is represented in the spirit of the group. The traditional philosophy of treatment for an alcohol/drug problem teaches that in order to be successful in remaining abstinent from alcohol/drug use, abstinent alcoholics and addicts must continue to receive support and assistance from the group and the "higher power". This is based on beliefs such as "once an alcoholic, always an alcoholic". According to the disease model as espoused by A.A. and N.A., alcoholics and addicts are perceived to be sick people suffering from a progressive disease from which they will never be cured. According to the A.A./N.A. disease model, the "disease" may only be arrested via total abstinence and it predicts that should alcoholics/addicts take back their will and attempt self-control without the assistance of the "higher power", total loss of control of alcohol/drug consumption will occur and relapse is certain. According to traditional treatment as exemplified by A.A. and N.A., alcoholics and addicts are individuals who are genetically afflicted with a physical disease which, without the control of the "higher power", causes uncontrollable aberrations in mental, emotional and spiritual functioning (Watson, 1991; Rose-Colley and Cinelli, 1992).

At the core of the cognitive-behavioural model paradigm on the other hand, is the belief that addictive behaviours are habits which have been learned and can be unlearned. Clients are taught that they can take control of their psycho-social problem behaviour. According to Wragg et al. (1995),
much of cognitive behaviour therapy is based on the here-and-now, and it assumes that the main goal of therapy is to help individuals bring about desired changes in their lives. Treatment centers on the opportunity for new adaptive learning, and on bringing about change outside the clinical setting. Problem solving is also an integral part of treatment. A Cognitive-Behavioural model attempts to teach clients to identify distorted or maladaptive beliefs and to learn ways to dispute such beliefs or substitute more coping, self-guiding cognitions. It is essentially a psycho-educational method of teaching clients to become their own counsellors" (Wragg, DeFina, Parker, Crowe, Lucas and Green, 1995, p.56).

The cognitive-behavioural model emphasises situational and environmental antecedents, beliefs and expectations, and the individual's family history and prior learning experiences as determinants of the formation of addictive habits (Watson, 1991). Much research has been conducted which reveals the ability of inter- and intra-personal situations to trigger addictive habits (Araujo, Goldberg, Eyma, Madhusoodanan, Buff, Shamim and Brenner, 1996; Andrews, Crino, Hunt, Lampe and Page, 1994; Beck, Wright, Newman and Liese, 1993; Donohue, Acierno and Kogan, 1996; Hawton, Salkovskis, Kirk and Clark, 1993; Heather, Miller, and Greeley, 1991; Hoffman and Gressard, 1994; Hodgins, el-Guebaly and Armstrong, 1995; Greeley, Swift, and Heather, 1992; Walton, Castro and Barrington, 1994). The cognitive-behavioural treatment model is concerned with the active participation of the individual in learning to identify these situations. It argues that habits can be transformed into behaviours that are under the regulation of higher mental processes involving awareness and responsible decision-making (Beck, Newman, Wright and Liese, 1993; Heather, Miller and Greeley, 1991; Marlatt and Gordon, 1985). Marlatt and Gordon (1985) argued that:
"As the individual undergoes a process of deconditioning, cognitive restructuring and skills acquisition, he or she can begin to accept greater responsibility for changing the behaviour ... one can learn how to escape from the clutches of a vicious cycle of addiction, regardless of how the habit pattern was originally acquired" (Watson, 1991, p.844).

5.8 The effectiveness of treatment based on the disease and cognitive-behavioural paradigms

Currently, there is much doubt concerning disease model based treatment's ability to change addictive behaviour patterns (Watson, 1991; Ford, 1996). Some researchers (Marlatt and Gordon, 1985; Miller and Heather, 1986; Heather and Tebbutt, 1989) imply that for some clients the disease model has served its purpose. Its demise, they argue, is timely, as for the great majority of problem drinkers attempting behaviour change, it simply does not work. However, Ford states:

"Interestingly, as the disease concept has been called more and more into question by researchers (e.g., Donovan & Marlatt, 1980; Marlatt, Demming, & Reid, 1973; Peele, 1990), it has nevertheless, via a massive public education campaign, grasped an even firmer hold of the public's consciousness. Regardless of its truth or falsity, outside of mental research, the disease concept of addiction is virtually unquestioned today (Vatz & Weinberg, 1990)" (1996, p.152).

There is evidence to show that disease model treatment based on A.A. and N.A. principles does work at least during the course of treatment. Farina (1993) found that clients had sustained significant therapeutic change in psychological functioning over the course of six weeks of traditional, A.A. based in-patient alcohol treatment. According to Galanter (1989) there can be no argument that A.A., at least, works. Galanter maintained that A.A. changes the attitudes, beliefs and expectations of those who choose to embrace its principles. Alibrandi (1978, In Zimberg, Wallace
and Blume) states: 'Heavy emphasis is placed on letting go of old ideas. The newcomer is not asked to learn new ideas so much as to unlearn old and often defeating ones; "One of the major objectives of A.A. therapy is to help the alcoholic finally recognize these ideas and become willing to relinquish his death grip on them" ' (p.166). The A.A philosophy, according to Alibrandi, includes the belief that the alcoholic must change his/her thinking. In this it is in agreement with the cognitive-behavioural technique of cognitive restructuring which involves the reframing of the client's maladaptive belief system to a form which is more adaptive.

Cognitive restructuring approaches teach clients to replace negative, debilitating cognitions with positive, self enhancing thoughts and actions (Cormier and Cormier, 1991; Beck, Wright, Newman, and Liese, 1993; Andrews, Crino, Hunt, Lampe, and Page, 1994). Another emphasis of cognitive-behavioural treatment is upon the teaching of coping skills. A cognitive-behavioural theory of alcohol/drug dependence views coping skills deficits as major predisposing factors for initiation and maintenance of abusive drinking/drugging (Connors, Maisto, and Donovan, 1996). Skills deficits interact with situational demands, genetic vulnerability to stress, and maladaptive cognitive schema. These factors may undermine an individual's ability to cope effectively. Inter-personal and intra-personal skills deficits have been demonstrated to be predictive in the maintenance of abusive drinking (Monti, Abrams, Kadden and Cooney, 1989). These researchers argue that the teaching of coping skills is important for maintenance of behaviour change.

Mattick and Jarvis (1993) state that cognitive restructuring techniques in combination with social skills training can enhance the effects of treatment's impact on cognitive change which in turn may influence alcohol/drug use. Oei and Jackson (1982) found that subjects who participated in cognitive restructuring and social skills training in combination, were significantly more likely to achieve their goals where
alcohol use is concerned. They found that groups receiving this combination of techniques were significantly more likely (p<.01) than groups not receiving this form of treatment to reduce alcohol consumption over a twelve month period. Furthermore, this combination of techniques was also significantly associated with a reduction in alcohol consumption for periods commencing at twelve months after treatment. The study by Oei and Jackson (1982) has demonstrated that the treatment combination of cognitive restructuring and social skills training techniques can enhance treatment impact on long-term alcohol use behaviour change. These techniques achieve such success according to Gilliland, James and Boman (1989), by changing an individual’s perceptions, beliefs and attitudes in regards to alcohol use, him/herself, and other people.

Modern cognitive-behavioural therapy is based on the assumptions that: (1) maladaptive cognitions lead to maladaptive self-defeating behaviours; (2) adaptive, self-enhancing behaviours can be induced through the client’s learning to generate positive self-enhancing thoughts; (3) clients can be taught to shift from covert, self-defeating thoughts and attitudes to self-enhancing thoughts, attitudes and behaviours (Cormier and Cormier, 1991). The use of cognitive-restructuring and social skills training is based on the premise that a client’s problems derive from a deficit in information that precludes cognitive control over maladaptive responses. Thus, the solution is to increase the client’s awareness by providing the information necessary for cognitive control. In this instance, if a client is not aware that the control of his/her behaviour in relation to alcohol/drugs is possible, he/she is not likely to even attempt to initiate or maintain a desired goal.

From the foregoing section, it would seem likely that increased treatment impact on psycho-social resources can be achieved by using techniques such as cognitive restructuring and the teaching of interpersonal-intrapersonal coping skills. In so doing, an enhancement should result in the individual’s ability to stop or
moderate alcohol/drug use, stay stopped or to continue meeting his/her desired goal. Furthermore, according to many researchers, these techniques combined with other techniques that fall under the cognitive-behavioural rubric, increase a client's beliefs in his/her ability to control his/her alcohol/drug use behaviour (Annis, 1986; Bandura, 1977a, 1982; Beck, Wright, Newman, and Liese, 1993; Mattick and Jarvis, 1993; Marlatt and Baer, 1988; Marlatt and Gordon, 1985; Waisberg, 1990). In other words these techniques should be more effective in increasing the client's self-efficacy and locus of control pertaining to the control of alcohol/drug use behaviour (Annis, 1986; Bandura, 1982). In this manner, an increase in positive automatic thoughts capable of countering a prevalence of negative automatic thoughts should also ensue. Marlatt and Gordon (1985) have found that psycho-education, and the increased self-monitoring ability that this imparts also can help a client to identify high-risk situations for the urge to drink/drug. Drug education plus training in relaxation techniques, efficiency-enhancing imagery, behavioural skill training with rehearsal in coping with high-risk situations, and cognitive restructuring are highly correlated with significant change during the course of treatment and effective relapse prevention (Miller and Rollnick, 1991; Beck, Wright, Newman, and Liese, 1993).

Thus, it seems that both traditional disease model based treatment and cognitive-behavioural treatment are capable of producing therapeutic change in client psycho-social resources. However, it may be beneficial for future planning of in-patient treatment drug/alcohol rehabilitation programmes to compare traditional disease based in-patient treatment to cognitive-behavioural in-patient treatment impact on client psycho-social resource acquisition. Doing so presents an opportunity to examine the validity of recommendations by Mattick and Jarvis (1993) for quality assurance in the treatment of drug dependence. Mattick and Jarvis stated:

"It is recommended that a range of interventions for those experiencing alcohol dependence and associated problems, which provide a highly structured approach to intervention, and to the acquisition of skills,
including interpersonal skills, relaxation skills, and skills for coping with negative mood states, problem solving skills, and urges to drink be adopted in the management of these problem. These procedures fall within the cognitive-behavioural approach" (1993, pp. xiii & xiv).

5.9 Summary

An examination of the interaction between change in client psycho-social resources and differing lengths of in-patient treatment completed when the philosophy of treatment is accounted for may provide additional information with which to address the time-in-treatment debate. This can be especially valuable if the effect of treatment intensity is controlled for and different durations and philosophy of treatment are compared as is intended in this study. Unfortunately, there is a paucity of such research (Finney, Hahn and Moos, 1996). This second study has examined the question of the impact of treatment duration and philosophy of treatment on change in client psycho-social resources. To do so this second study compared samples of alcohol/drug dependent individual's psycho-social functioning change during periods of treatment completion in two treatment settings of differing duration and philosophy.

Hence, this study has compared alcohol/drug dependent individuals from the two residential treatment programmes described in Section 3.10 on changes in psycho-social functioning. In order to assess the way individuals changed psycho-socially and the degree to which an adaptive or maladaptive style of coping emerged at treatment completion, the following variables were selected:

1. self-efficacy to resist the urge to drink (alcohol) heavily;
2. locus of control;
3. depression;
4. a ratio of positive-negative automatic thoughts;
5. a global index of psychiatric co-morbidity;
The psycho-social resource variables listed above were selected (See Chapter 2) in order to examine the impact of:

(1.) treatment duration; and

(2.) treatment philosophy;

on change in client psycho-social resources.

5.10 Research questions

The following research questions therefore form the basis of this second study:

1. Did clients who completed different lengths of cognitive-behavioural or traditional treatment programmes differ in psychological and social support resources, and alcohol and other substance use at treatment commencement?

2. Did the treatment groups change psychologically and in social support over the course of in-patient treatment of varying lengths (4, 6, 8 & 12 weeks) and philosophy (cognitive-behavioural or traditional disease model)?

3. a.) What was the magnitude of change for each group?

b.) Are there differences in the magnitude of change sustained for the four treatment groups as a function of length, or philosophy of treatment completed? - Which group changed most?

4. To what extent are the treatment completer groups similar at treatment completion to treatment completers who were abstinent at 3-6 month post-treatment follow-up?

5.11 Study 2 Method

The methodology employed in this second study including subject selection, procedure of data collection; instruments used to measure psychological and social support resources and treatment of data is the same as for all other studies (See Chapter 3.- "Thesis Method").
The 4 weeks of CBT completers and the 6 weeks of TT completers in this study comprise the late treatment drop-out group identified in study 1. Unlike Study 1 where late treatment drop-outs as a group were compared to treatment completers as a group, in this study the late CBT drop-outs are compared to CBT completers and late TT drop-outs are compared to TT completers. In order to distinguish between the late treatment drop-out group in Study 1, and the two late treatment drop-out groups from the two programmes in this study, the two late treatment drop-out groups here are identified and renamed on the basis of the length and philosophy of the treatment programme they completed. A description of the comparison groups that resulted follows.

5.12 Comparison groups

In order to examine the research questions above, subjects in this research study were divided into four groups: two groups who completed differing durations of cognitive behavioural treatment in the same setting and two groups who completed differing durations of traditional disease model treatment in the same setting (See Chapter 3.3., p. 44).

The first of the cognitive-behavioural treatment groups (n=93) completed a minimum of 4 weeks of the cognitive-behavioural treatment programme (4CBT). In Study 1, this group comprised 53.76% of the late treatment drop-outs. The second group (n=80) completed the 8 week cognitive-behavioural treatment programme (8CBT). This group comprised 54.79% of the treatment completers.

The first of the traditional treatment groups (n=80) completed a minimum of 6 weeks of the traditional treatment programme based on a disease model (Traditional Treatment) theoretical framework (6TT). In Study 1, this group comprised 46.24% of the late treatment drop-outs. The second group (n=66) completed the 12 weeks of traditional treatment programme based on a disease model (Traditional Treatment)
theoretical framework (6TT). This group comprised 45.21% of the treatment completers.

A fifth group was employed solely for the purpose of comparing the four above groups to a group of successful treatment completers. This group consisted of 43 individuals (58.9%) from the Study 4 population of this thesis who were abstinent at 3-6 months post cognitive-behavioural treatment or traditional disease model treatment. A comparison sample derived from this 3-6 months post-treatment period was selected because according to many researchers, research has shown that relapse is most likely soon after treatment, often 3 to 6 months after change (Mardula, 1996; Saunders and Houghton, 1996; Hiltunen, Koechling, Voltaire-Carlsson and Borg, 1996).

Note* In this study the groups that comprised the late treatment drop-outs in Study 1 are identified as the 4 weeks of cognitive-behavioural treatment (4CBT) completers and 6 weeks of Traditional disease model treatment (6TT) completers.
LATE TREATMENT DROP-OUTS (N=173) & COMPLETERS (N=146)

STUDY POPULATION (N=319)

C.B.T. Treatment Programme

4 Weeks of Treatment Completers
n=93

8 Weeks of Treatment Completers
n=80

T.T. treatment Programme

6 Weeks of Treatment Completers
n=80

12 Weeks of Treatment Completers
n=66

Abstinent Treatment Completers
3-6 months post-treatment
n=43

Figure 5.3 - Comparison Groups Categorised by Programme Philosophy and Duration Completed

5.14 Results and discussion

Research Question 1. - Did clients who completed different lengths of cognitive-behavioural or traditional treatment programmes differ in psychological and social support resources, and alcohol and other substance use at treatment commencement?

A between subjects multivariate analysis of variance test using planned a priori contrasts compared the two cognitive-behavioural treatment groups to each other and the traditional disease model treatment groups to each other at treatment
commencement on the psychological and social support variables mentioned above (section 5.1). The a priori univariate contrasts that derived from the multivariate analysis of variance revealed the variables upon which the treatment groups differed at treatment commencement.

At treatment commencement, the 4 weeks of cognitive-behavioural treatment completer group (4CBT) did not significantly differ from the 8 week CBT programme completer group (8CBT) on any variable. At traditional disease model treatment (TT) commencement, the 6 weeks of TT completer group (6TT) did not significantly differ from the 12 weeks of TT programme completer group (12TT) other than on social support and depression. The 6TT group had significantly higher levels of social support ($F_{(1,144)} = 4.09$, $p = .0277$), and was significantly less depressed ($F_{(1,144)} = 10.13$, $p = .0016$) than the 12TT group. At treatment commencement, the 8CBT group had significantly higher levels of social support ($F_{(1,144)} = 4.75$, $p = .0301$), and were significantly less depressed than the 12TT group ($F_{(1,144)} = 10.11$, $p = .0001$).

**Research question 1 discussion**

Thus, essentially, all groups were similar at treatment commencement. In fact, even where groups significantly differed in social support and depression, the scores on the instruments that measured these two factors were in similar ranges of severity. For example, although the 6TT and the 8CBT groups significantly differed from the 12TT group on depression scores, all scores were within the moderate range of functioning.
Research Question 2. - Did the treatment groups change psychologically and in social support over the course of in-patient treatment of varying lengths (4, 6, 8 & 12 weeks) and philosophy (cognitive-behavioural or traditional disease model)?

In order to examine Research Question 2, repeated measures t-Tests were conducted to compare the scores of clients, on the five dependent psychological variables and a social support variable, taken at entry to in-patient alcohol/drug treatment (Time 1=T1) and upon completion of varying lengths (4, 6, 8 & 12 weeks) of in-patient alcohol treatment (Time 2=T2 and Time 3=T3) of different philosophy (cognitive-behavioural or traditional disease model) of treatment. In this manner, mean difference scores were computed (MDS= T2 - T1). Since each analysis consisted of six separate tests, the experiment-wise error-rate was set at Alpha=.008. This significance level was obtained by dividing the usual alpha level of .05 by the number of comparisons performed in the analysis.

A comparison between treatment commencement assessment (T1) and treatment completion assessment (T2) for clients who had completed 4 weeks of in-patient cognitive-behavioural treatment (4CBT) on five psychological variables and a social support variable revealed that the group had sustained significant change on all variables. At the completion of 4 weeks of CBT, the 4CBT group had attained significantly higher levels of social support (t (93)= 4.21, p<.0001), and their locus of control had become significantly more internally orientated (t (93)= -6.48, p<.0001). Their depression had significantly lessened to the mild range of functioning (t (93)= -8.65, p<.0001), and their ratio of positive to negative automatic thoughts had significantly improved to within normal levels of functioning (t (93)= -7.56, p<.0001). Their self-efficacy to resist the urge to drink heavily had significantly increased (t (93)= 5.86, p<.0001), and their level of psychiatric symptomatology had significantly dropped (t (93)= -4.06, p<.0001) to just within the clinical range (T= 70).
Mean difference scores obtained in a comparison between T1 and T2 (6 weeks of treatment completion) on the dependent variables for the 6 week of traditional disease model treatment completers (6TT) were also all found to be statistically significant. This finding indicates that the average 6TT completer's psychological and social support scores had significantly changed to a level indicative of adaptive functioning. At the completion of 6 weeks of traditional disease model treatment, the 6TT group had attained fair levels of social support ($t$ (80)= 3.99, $p<.0001$) and their locus of control had become significantly more internally orientated ($t$ (80)= -3.89, $p<.0001$). Their depression had significantly lessened to the mild range of functioning ($t$ (80)= -10.76, $p<.0001$) and their ratio of positive to negative automatic thoughts had significantly improved to within asymptomatic levels of functioning ($t$ (93)= -9.46, $p<.0001$). Their self-efficacy to resist the urge to drink heavily had significantly increased ($t$ (93)= 7.70, $p<.0001$), and their level of psychiatric symptomatology had significantly dropped ($t$ (93)= -8.86, $p<.0001$) to the upper limits of the normal range (T= 67).

A comparison between T1 and T2 (8 weeks treatment programme completion) for clients who had completed 8 weeks of a cognitive-behavioural treatment (8CBT) on the five psychological variables and a social support variable indicated significant psycho-social change. At the completion of the 8 week cognitive-behavioural treatment programme, the average 8CBT group's psychological and social support scores had significantly changed to a level indicative of adaptive functioning. At T3, the 8CBT group had attained good levels of social support ($t$ (80)= 8.34, $p<.0001$) and their locus of control had become significantly more internally orientated ($t$ (80)= -10.11, $p<.0001$). Their depression had significantly lessened to the normal range of functioning ($t$ (80)= -13.73, $p<.0001$) and their ratio of positive to negative automatic thoughts had significantly improved to asymptomatic levels of functioning indicative of optimism ($t$ (80)= -13.09, $p<.0001$). Their self-efficacy to resist the urge to drink heavily had significantly increased to an adaptive level ($t$ (80)= 10.69, $p<.0001$), and
their level of psychiatric symptomatology had significantly dropped ($t_{(80)} = -12.84$, $p<.0001$) to the middle upper limits of the normal range ($T= 60$).

The mean differences between $T_1$ and $T_2$ (12 week treatment programme completion) on the dependent variables scores for the 12 weeks of traditional disease model treatment (12TT) completers were all statistically significant. It was found that the average 12TT completer's psychological and social support scores had significantly changed to a level indicative of adaptive functioning. At 12 week traditional disease model treatment programme completion, the 12TT group had attained fair levels of social support ($t_{(66)} = 8.55$, $p<.0001$). Their locus of control had become significantly more internally orientated ($t_{(66)} = -3.11$, $p=.0028$) and their depression had significantly lessened to the mild range of functioning ($t_{(66)} = -15.92$, $p<.0001$). Their ratio of positive to negative automatic thoughts had significantly improved to normal levels of functioning ($t_{(66)} = -11.55$, $p<.0001$) and their self-efficacy to resist the urge to drink heavily had significantly increased ($t_{(66)} = 10.55$, $p<.0001$). Their level of psychiatric symptomatology had significantly dropped ($t_{(66)} = -12.79$, $p<.0001$) but continued to be in the clinical range ($T= 72$).

**Research Question 2 discussion**

It was found that in-patient alcohol/drug treatment significantly impacted on client psychological and social support resources in an adaptive direction regardless of the treatment length or philosophy. These results indicate that over a minimum period of 4, 6, 8, or 12 weeks of in-patient alcohol/drug treatment of either a cognitive-behavioural or a traditional disease model philosophical orientation, subjects had significantly improved on all psycho-social resources. Therefore, these results reveal that treatment completers had sustained a significant improvement on all psycho-social variables regardless of the length or philosophy of treatment completed. It now remains to examine the magnitude of psychological and social support resource
change for each group and to compare each group in magnitude of change as a function of treatment length completed or philosophy.

Research Question 3. - (a.) What was the magnitude of change for each group? (b.) Are there differences in magnitude of change sustained for the four treatment groups as a function of length, or philosophy of treatment completed? - Which group changed most?

In order to examine the magnitude of change for each treatment group on the psychological variables and social support between commencement (T1) and treatment length completion scores (T2 and T3) on the dependent variables, two effect sizes were generated using Cohen's method and the \( \eta^2 \) statistic. Table 5.1 below displays the two effect sizes for each group. The treatment effect size statistic (T.E.S.) supplies the magnitude of change and the \( \eta^2 \) statistic supplies the strength of the relationship between T1 and completion scores (T2 and T3).

As there was no control group for this study, the mean and standard deviations of the scores at T1 for each variable were substituted for a control group and were used to arrive at treatment effect sizes. Treatment effect size was calculated by dividing the mean difference between treatment commencement scores (T1) and treatment completion scores by the T1 mean standard deviation of each variable for all groups. It can be seen that there were considerable treatment effect sizes when T1 mean standard deviation was substituted for a control group. To further clarify and compare the magnitude of the overall change in psychological and social support functioning and the overall strength of the relationship between T1 and completion scores (T2 and T3) scores between groups, overall mean treatment effect sizes and mean \( \eta^2 \) for each treatment group were computed.
Perusal of mean treatment effect sizes for each group displayed in Table 5.1 suggests that the greatest magnitude of change in psychological and social support resources was sustained by the group who had completed 8 weeks of cognitive-behavioural treatment. This was substantiated by the results of all possible a priori comparisons between groups that derived of an analysis of variance between groups on mean treatment effect sizes. This analysis found that the 8 weeks of cognitive-behavioural treatment group was the only group that significantly differed in mean treatment effect size from the other groups. Table 5.1 also reveals that a strong overall relationship existed between T1 and completion scores for the 8 weeks of cognitive-behavioural treatment completion group. The mean $\eta^2$ effect size for the 8 weeks of cognitive-behavioural treatment completer group signifies that the proportion of variability in psychological and social support change due to having received 8 weeks of cognitive-behavioural treatment after the influence of client individual differences have been removed, represents a strong effect.

### Table 5.1. - A Comparison of Treatment Effect Sizes and Strengths of the Relationship Between Treatment Commencement and Treatment Completion Psychological and Social Support Functioning Resources

<table>
<thead>
<tr>
<th>Measure</th>
<th>4CBT (n= 93)</th>
<th>T.E.S.</th>
<th>$\eta^2$</th>
<th>6TT (n= 80)</th>
<th>T.E.S.</th>
<th>$\eta^2$</th>
<th>8CBT (n= 80)</th>
<th>T.E.S.</th>
<th>$\eta^2$</th>
<th>12TT (n= 66)</th>
<th>T.E.S.</th>
<th>$\eta^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social support</td>
<td>.54</td>
<td>.16</td>
<td>.54</td>
<td>.17</td>
<td>.96</td>
<td>.47</td>
<td>.92</td>
<td>.53</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Locus of control</td>
<td>.88</td>
<td>.31</td>
<td>.56</td>
<td>.16</td>
<td>1.37</td>
<td>.56</td>
<td>.32</td>
<td>.13</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Depression</td>
<td>1.17</td>
<td>.49</td>
<td>1.30</td>
<td>.59</td>
<td>1.82</td>
<td>.70</td>
<td>1.36</td>
<td>.80</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Automatic thoughts</td>
<td>.93</td>
<td>.38</td>
<td>1.27</td>
<td>.53</td>
<td>1.65</td>
<td>.68</td>
<td>1.23</td>
<td>.67</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Self-efficacy</td>
<td>1.21</td>
<td>.27</td>
<td>1.08</td>
<td>.43</td>
<td>1.29</td>
<td>.59</td>
<td>1.07</td>
<td>.63</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Psychiatric symptoms</td>
<td>.55</td>
<td>.15</td>
<td>1.03</td>
<td>.50</td>
<td>1.33</td>
<td>.68</td>
<td>.86</td>
<td>.72</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean T.E.S.</td>
<td>0.88</td>
<td>.29</td>
<td>.96</td>
<td>.40</td>
<td>1.40</td>
<td>.61</td>
<td>0.96</td>
<td>.50</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
In order to further examine research question 3 and to determine if differences exist in change between groups as a function of treatment length or philosophy, the change in psychological functioning and social support for the treatment groups was compared via the use of Mean Difference scores, signifying change over the course of treatment (See Section 3.11., p.54). A negative Mean Difference score indicates a decrease and a positive mean difference score indicates an increase having occurred in the psychological and social support functioning variables over the course of treatment. Therefore, for all measures other than self-efficacy and social support, higher negative Mean Difference scores are better than lower negative mean difference scores. These Mean Difference scores were compared among the four treatment groups and the results appear below.

(b.) A between and within subjects multivariate mixed design analysis of variance of mean difference scores was used to examine Research Question 3b. The results indicate that a significant difference exists in the change over the course of treatment for the linear combination of the psycho-social variables (dependent variables) between the completers of different lengths and philosophy of treatment groups. The overall possible comparisons between groups effects for the linear combination of the dependent variables are tabulated in Table 5.2. below.

**Table 5.2. - The Overall Effects of Comparisons Between Completers of Different Lengths of In-patient Alcohol/Drug Treatment on the Linear Combination of the Dependent Variables.**

<table>
<thead>
<tr>
<th>Comparisons</th>
<th>F</th>
<th>d.f.</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. 4 weeks CBT completed vs 8 weeks CBT completed</td>
<td>5.46</td>
<td>(6, 310)</td>
<td>.0001*</td>
</tr>
<tr>
<td>2. 6 weeks TT completed vs 12 weeks TT completed</td>
<td>1.64</td>
<td>(6, 310)</td>
<td>.1346</td>
</tr>
<tr>
<td>3. 8 weeks CBT completed vs 12 weeks TT completed</td>
<td>5.68</td>
<td>(6, 310)</td>
<td>.0001*</td>
</tr>
</tbody>
</table>

*Significantly different at p<.01
Table 5.2 above presents comparisons between groups in length and philosophy of in-patient treatment. In table 5.2, comparison 1 and 2 presents comparisons for the impact of treatment length of the same philosophy. Comparison 3 on the other hand represents a comparison between the impact of treatment philosophy of different lengths. Comparison 1 reveals a significant difference existed in overall psycho-social resources at the completion of differing length of cognitive-behavioural treatment. As is evident in Table 5.2 the overall effect of comparison between 6TT group and the 12TT group on the linear combination of dependent variables was not significant. This means that for these two groups no significant difference in psycho-social functioning change existed as a function of treatment length. The size of the F. values in Table 5.2. comparison 3. indicates that the most significant differences between groups are those involving the completers of 8 weeks of cognitive-behavioural treatment programme group and the completers of 12 weeks of traditional disease model treatment programme group.

In Table 5.3, the overall treatment effects on the linear combination of the dependent variables are explored further using univariate contrasts that derived from the between and within subjects multivariate mixed design analysis of variance of mean difference scores used to examine Research Question 3b. These univariate tests revealed if any significant differences existed between the treatment groups on any of the psychological or the social support variables.
Table 5.3. - A Comparison Between Mean Difference Scores for the 4 Weeks of Cognitive-Behavioural In-patient Alcohol/Drug Treatment Completers (4CBT) and the 8 Weeks of Cognitive-Behavioural In-patient Alcohol/Drug Treatment Completers (8CBT) on Psycho-social Functioning

<table>
<thead>
<tr>
<th>Measure</th>
<th>4 weeks (n=93)</th>
<th>vs</th>
<th>8 weeks (n=80)</th>
<th>Mean Diff</th>
<th>SD</th>
<th>Mean Diff</th>
<th>SD</th>
<th>F.</th>
<th>p.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social support</td>
<td>3.68 (8.42)</td>
<td></td>
<td>6.60 (7.09)</td>
<td>6.37</td>
<td>.0121*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Locus of control</td>
<td>-8.03 (11.9)</td>
<td></td>
<td>-12.5 (11.1)</td>
<td>7.24</td>
<td>.0075*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Depression</td>
<td>-10.2 (11.4)</td>
<td></td>
<td>-15.8 (10.3)</td>
<td>14.29</td>
<td>.0002*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Automatic thoughts</td>
<td>-30.1 (38.4)</td>
<td></td>
<td>-51.9 (35.4)</td>
<td>16.19</td>
<td>.0001*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Self-efficacy</td>
<td>60.63 (99.7)</td>
<td></td>
<td>-64.42 (53.9)</td>
<td>0.12</td>
<td>.7245</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Psychiatric symptoms</td>
<td>-35.9 (85.3)</td>
<td></td>
<td>-86.3 (60.1)</td>
<td>24.63</td>
<td>.0001*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Significantly different at p<.05

** Whether negative or positive, higher Mean Difference scores indicate greater change between commencement and completion of treatment. Positive values indicate an increase and negative values indicate a decrease.

Table 5.3 reveals univariate results of comparison 1. The 8CBT group sustained a significantly greater therapeutic change than the 4CBT group. The 8CBT groups' social support increased, locus of control changed more toward an internal orientation, depression decreased more, the ratio of positive-negative automatic thoughts evidenced a greater decrease toward normal, and psychiatric symptom severity diminished more for the 8CBT group than for the 4CBT group. In this comparison, longer cognitive-behavioural treatment is related to better psychological and social support resources at treatment completion.

Table 5.4 reveals the results of comparison 2. The 12TT group sustained a significantly greater therapeutic change in social support than the 6TT group. However, the two groups did not differ in their change in any of the psychological variables. In this comparison, treatment length completed is not related to better
psychological resources at treatment completion. It is however related to more social support change. Thus in this comparison, more time in treatment is not related to significant psychological resources change.

Table 5.4. - A Comparisons Between Mean Difference Scores for the 6 Weeks of Traditional Disease Model In-patient Alcohol/Drug Treatment Completers (6TT) and the 12 Weeks of Traditional Disease Model In-patient Alcohol/Drug Treatment Completers (12TT) on Psycho-Social Functioning

<table>
<thead>
<tr>
<th>Measure</th>
<th>6 weeks (n=80)</th>
<th>vs</th>
<th>12 weeks (n=66)</th>
<th>E.</th>
<th>p.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social support</td>
<td>3.68 (8.23)</td>
<td></td>
<td>6.32 (6.00)</td>
<td>6.37</td>
<td>.0372*</td>
</tr>
<tr>
<td>Locus of control</td>
<td>-5.11 (11.7)</td>
<td></td>
<td>-2.89 (7.56)</td>
<td>1.50</td>
<td>.2215</td>
</tr>
<tr>
<td>Depression</td>
<td>-11.3 (9.39)</td>
<td></td>
<td>-11.8 (6.02)</td>
<td>0.09</td>
<td>.7620</td>
</tr>
<tr>
<td>Automatic thoughts</td>
<td>-39.8 (37.6)</td>
<td></td>
<td>-38.6 (27.2)</td>
<td>0.04</td>
<td>.8381</td>
</tr>
<tr>
<td>Self-efficacy</td>
<td>54.01 (62.7)</td>
<td></td>
<td>53.29 (41.0)</td>
<td>0.00</td>
<td>.9507</td>
</tr>
<tr>
<td>Psychiatric symptoms</td>
<td>-66.8 (67.4)</td>
<td></td>
<td>-56.1 (35.6)</td>
<td>0.93</td>
<td>.3355</td>
</tr>
</tbody>
</table>

*Significantly different at p<.05
** Whether negative or positive, higher Mean Difference Scores indicate greater change between commencement and completion of treatment. Positive values indicate an increase and negative values indicate a decrease.

Table 5.5 reveals the results of comparison 3. The 8CBT group sustained a significantly greater therapeutic change than the 12TT group. The 8CBT groups' locus of control changed more toward an internal orientation, depression decreased more, the ratio of positive-negative automatic thoughts evidenced a greater decrease toward normal, and psychiatric symptom severity diminished more than for the 12TT group. Thus in this comparison, treatment philosophy seems to have had a greater impact on client psychological functioning resources than the duration of the treatment.
Table 5.5. - A Comparison Between Mean Difference Scores for the 8 Weeks of Cognitive-Behavioural Treatment Completers (8CBT) and the 12 Weeks of Traditional Disease Model In-patient Treatment Completers (12TT) on Psycho-Social Functioning

<table>
<thead>
<tr>
<th>Measure</th>
<th>8CBT (n=80)</th>
<th>Mean Diff</th>
<th>SD</th>
<th>vs</th>
<th>12TT (n=66)</th>
<th>Mean Diff</th>
<th>SD</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social support</td>
<td></td>
<td>6.60</td>
<td>(7.09)</td>
<td></td>
<td>6.32</td>
<td>(6.00)</td>
<td>0.05</td>
<td>.8236</td>
<td></td>
</tr>
<tr>
<td>Locus of control</td>
<td>-12.5</td>
<td>(11.1)</td>
<td>2.89</td>
<td>-11.8</td>
<td>2.76</td>
<td>(6.02)</td>
<td>6.10</td>
<td>.0141*</td>
<td></td>
</tr>
<tr>
<td>Depression</td>
<td>-15.8</td>
<td>(10.3)</td>
<td>-38.6</td>
<td>(27.2)</td>
<td>5.05</td>
<td>.0253*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Automatic thoughts</td>
<td>-51.6</td>
<td>(35.4)</td>
<td>53.29</td>
<td>(41.0)</td>
<td>0.90</td>
<td>.3425</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Self-efficacy</td>
<td>64.43</td>
<td>(53.9)</td>
<td>-65.1</td>
<td>(35.6)</td>
<td>7.45</td>
<td>.0067*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Psychiatric symptoms</td>
<td>-86.3</td>
<td>(60.1)</td>
<td>-56.1</td>
<td>(35.6)</td>
<td>7.45</td>
<td>.0067*</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Significantly different at p<.05
** Whether negative or positive, higher Mean Difference scores indicate greater change between commencement and completion of treatment. Positive values indicate an increase and negative values indicate a decrease.

Research question 3 discussion

The impact of both treatment duration and philosophy on psychological and social support resources was examined in research question 3. It was found that the average 8 week cognitive-behavioural treatment completer had achieved a more significant improvement in psychological functioning than the average completer of 12 weeks of traditional disease model treatment. This result may be an indication of the greater impact of treatment philosophy over length of programme completed. If duration had had a stronger effect than philosophy, one would have expected that those who had completed the longer 12 week treatment programme would have sustained the greater resource change. In fact, the finding that the shorter programme completers had acquired significantly more adaptive psychological resources at treatment completion runs counter to the predictions made by those who find that the most positive and robust predictor of improvement in client functioning is length of treatment completed. Here, the results suggest that
philosophy of treatment may have had a greater impact on clients’ acquisition of adaptive resources than the length of a treatment programme completed.

**Research Question 4. - To what extent are the treatment completer groups similar at treatment completion to treatment completers who were abstinent at 3-6 month post-treatment follow-up?**

A multivariate analysis of variance compared the recent treatment completer groups to a separate group of treatment completers who were abstinent from alcohol and other drug use at 3-6 months post-treatment on psychological and social support resources at treatment completion. This test indicates that a significant difference exists between groups at treatment completion in the linear combination of the psychological functioning and social support variables (dependent variables), Wilk's Lambda \( (24, 1229.191) = .613, p > .0001 \). The overall possible contrasts between group effects for the linear combination of the dependent variables are tabulated in Table 5.6 below.

The size of the F values in Table 5.6 indicate that the contrast between the 8 weeks of cognitive-behavioural treatment completer group (8CBT) and the 3-6 month abstinent treatment completer (ATC) group was not significant. This means that at 8 weeks of cognitive-behavioural treatment completion, the 8CBT group was similar in psychological functioning and social support to the ATC group who were still abstinent at 3-6 months post-treatment.
Table 5.6. - The Overall Effects of Comparisons Between Completer groups and a 3-6 Month Post-treatment Abstinent Completer Group for the Linear Combination of the Psycho-Social Variables.

<table>
<thead>
<tr>
<th>Comparisons</th>
<th>F.</th>
<th>num &amp;den df.</th>
<th>p.</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 weeks CBT completed vs 3-6 mth abstinent completers</td>
<td>3.34</td>
<td>(6, 352)</td>
<td>.0032*</td>
</tr>
<tr>
<td>6 weeks TT completed vs 3-6 mth abstinent completers</td>
<td>3.02</td>
<td>(6, 352)</td>
<td>.0060*</td>
</tr>
<tr>
<td>8 weeks CBT completed vs 3-6 mth abstinent completers</td>
<td>1.38</td>
<td>(6, 352)</td>
<td>.2206</td>
</tr>
<tr>
<td>12 weeks TT completed vs 3-6 mth abstinent completers</td>
<td>9.42</td>
<td>(6, 352)</td>
<td>.0001*</td>
</tr>
</tbody>
</table>

*Significantly different at p<.01

Table 5.7. - A Comparison Between the 8 Weeks of Cognitive-Behavioural Treatment Completers (8CBT) and a 3-6 Month Post-treatment Abstinent Completers (ATC) on the Psycho-Social Variables' Change

<table>
<thead>
<tr>
<th>Measure</th>
<th>8CBT (n= 80)</th>
<th>vs</th>
<th>ATC (n= 43)</th>
<th>Mean Diff</th>
<th>SD</th>
<th>Mean Diff</th>
<th>SD</th>
<th>R</th>
<th>p.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social support</td>
<td>18.26 (4.17)</td>
<td></td>
<td>16.95 (4.72)</td>
<td>1.91</td>
<td>.1677</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Locus of control</td>
<td>14.13 (6.78)</td>
<td></td>
<td>17.53 (9.25)</td>
<td>5.61</td>
<td>.0184*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Depression</td>
<td>5.09 (4.89)</td>
<td></td>
<td>7.30 (7.48)</td>
<td>3.31</td>
<td>.0696</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Automatic thoughts</td>
<td>60.36 (17.5)</td>
<td></td>
<td>63.37 (22.2)</td>
<td>0.50</td>
<td>.4795</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Self-efficacy</td>
<td>178.9 (21.4)</td>
<td></td>
<td>165.5 (36.7)</td>
<td>2.04</td>
<td>.1544</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Psychiatric symptoms</td>
<td>43.73 (31.9)</td>
<td></td>
<td>55.12 (53.8)</td>
<td>1.07</td>
<td>.3023</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Significantly different at p<.05

** Note: For all measures other than self-efficacy and social support, lower mean scores are better than higher scores.

Table 5.7 displays means and standard deviations derived from a comparison of the 8CBT group and the ATC group. A priori univariate contrasts found no significant difference to exist between the 8CBT and ATC groups other than in locus of control. Table 5.7 reveals that the 8CBT group were significantly more internally oriented at treatment completion than the ATC group. In other words, the ATC group were more externally oriented than the 8CBT group indicating that the ATC group perceived itself in less control of their lives than the 8CBT group.
Perhaps this finding indicates a "wearing off" of treatment effect. In order to fully examine this question, subjects will need continued follow-up.

Table 5.7 reveals that the mean variable scores for the 8CBT and ATC groups are not significantly different. This signifies that at treatment completion the average individual who completed 8 weeks cognitive-behavioural alcohol treatment programme had similar psycho-social functioning to the average abstinent treatment completer at 3-6 months post-treatment. These two groups were not statistically different. Both groups had good levels of social support, internal locus of control, asymptomatic levels of depression, a positive-negative automatic thoughts ratio in the normal range, adaptive self-efficacy to resist the urge to drink (alcohol) heavily, and an index of psychiatric symptom severity in the non-clinical range. In short, the 8CBT group and the ATC group functioned significantly better and were more similar to each other in psychological and social support resources than the other three treatment completer groups.

5.15 Study 2 conclusion

This study compared four groups who had attended differing lengths of two treatment programmes on changes in psycho-social functioning. It was found that alcohol/drug dependent individuals significantly changed over the course of in-patient alcohol/drug treatment regardless of the length or philosophy of treatment they had completed. Study 2 results also suggested that the length of treatment did not significantly impact upon the changes in psycho-social functioning achieved to the same degree that the philosophy of treatment did. It also seems that irrespective of the treatment duration and philosophy of treatment studied here, clients changed adaptively over the course of treatment to a level which may have been conducive to adaptive functioning. However, it was also found that the greatest amount of change was sustained by the group who completed 8 weeks of cognitive-behavioural in-
patient alcohol/drug treatment and that this particular programme had the greatest potential for producing the initiation and maintenance of substance use change.

At treatment completion, the average 8 week cognitive-behavioural treatment completer had become an individual with an internal locus of control, who displayed an asymptomatic incidence of psychiatric symptoms, had a normal positive-negative automatic thoughts ratio, had adaptive self-efficacy to resist the urge to drink heavily, and who enjoyed an asymptomatic level of depression. Furthermore, most interesting was the fact that during the course of 8 weeks of cognitive-behavioural alcohol treatment, the average treatment completer’s scores had changed at treatment completion to resemble those of a 3-6 month post-treatment abstinent treatment completer group. On this basis, it could be inferred that this similarity of scores indicates that the average 8 weeks of cognitive-behavioural treatment completer’s thinking had changed during the course of 8 weeks of treatment to a way of perceiving one’s self in relation to alcohol/drug use similar to that of the average abstinent treatment completer. Given this similarity, it could be assumed that the average treatment completer’s cognitive schemata, emotional and social support functioning had changed from a style associated with maladaptive alcohol/drug use behaviour to a stage which suggests an ability to produce adaptive behaviour similar to that individuals still abstinent 3-6 months post-treatment.

One question which is of interest to treatment agencies was addressed in this study and focussed on the length and philosophy of treatment necessary to achieve clinically significant changes in psychological functioning and social support. The results for completers of 8 weeks of cognitive-behavioural treatment certainly show that these changes have occurred quite rapidly compared to the 12 week traditional disease model treatment completers. These preliminary results do suggest that an adaptive change in psycho-social resources may be achieved in eight weeks of cognitive-behavioural treatment. Tentatively, it seems that extending treatment
beyond eight weeks would not add anything to what has already been achieved. However, no firm conclusion can be drawn from these results. More CBT might produce even better results.

These results may also indicate that there are additional benefits to be gained from completing a cognitive-behavioural treatment programme. It is of course possible to re-examine the duration of treatment question with even shorter treatment lengths. However, as many current Australian rehabilitation programmes offer residential treatment of three months (or more) based on a traditional disease model philosophy, these results may certainly point to the need for a reduction in programme duration and a change in philosophy.

Thus, the results of this study indicate the presence of a strong treatment philosophy effect on individual psycho-social support resources. When overall psychological and social support variables are considered, there are indications that treatment philosophy had a markedly stronger effect than treatment duration. This strong philosophy effect was indicated where the cognitive-behavioural treatment group was found to have sustained a greater therapeutic change in psychological and social support resources than the longer traditional disease model treatment group. Furthermore, the finding that psychological functioning and social support resources did not significantly differ between the traditional treatment groups who have completed different durations of treatment, other than on social support, is also not indicative of a strong treatment duration effect.

The following study will examine the impact of treatment philosophy on client psycho-social resources. It will compare groups of alcohol/drug dependent individuals who hold disease, bad habit or a combination of both a disease and bad habit attributions for the cause of alcoholism and who have been in treatment prior to current treatment commencement.
Chapter 6. - Study 3: How Do Client Attributions for the Cause of Alcoholism Interact With Client Psycho-Social Functioning and Treatment?

The following study examined the nature of psycho-social functioning of clients at treatment commencement who have or have not attended past treatment. The study focussed on past treatment attenders and the relationship between the philosophy of treatment, attributions for the cause of alcoholism held by clients, psycho-social resources and alcohol/drug use prior to current treatment re-commencement.

6.1 Attributions for the causes of behaviour

Attributions are the explanations that humans make for the causes of their own behaviour and the behaviour of others. When an individual who is attempting to change alcohol/drug use behaviour explains the cause of his/her last "bust" as due to a lack of willpower, or to a disease for example, s/he is making an attribution about the cause of the drinking/drugging episode. Heider (1958), an early exponent of attribution theory, claimed that causal attributions may or may not allow individuals to understand the world in a predictable way, and thereby establish a sense of control over themselves in their physical and social environments. Heider also maintained that how an observer perceives the causes of events may influence the emotions and behaviours which are generated in response to these events (Coggins and Davies, 1988). According to Weiner (1985), individuals make attributions because they have a need to explain and thus understand their experiences. Attributions are made about both positive and negative events. Humans attempt to make sense of their own behaviour and the behaviour of others. For instance, an alcoholic trying to abstain from alcohol use may explain his lapse to old entrenched drinking behaviour as due to some personal factor (i.e. a disease) from which s/he suffers and will never be free and on that basis s/he may predict that eventual behaviour change is impossible (Beck, Wright, Newman, and Liese, 1993; Marlatt and Gordon, 1985; Schaler, 1996).
In a review of the attribution area, Kelley and Michela (1980) presented a model (Fig. 6a) which has relevance to the example just given above. This model places information, beliefs and motivation before (in a temporal sense) "attributions" (i.e. perception of causes), and sees behaviour, affect and expectancies as the consequence of the attributions. Thus in the case delineated above of the alcoholic who lapses, there is prior information about his/her style of use. There are existing motivational needs such as self-esteem and beliefs about the social context in which the explanation is being given. This produces a particular type of attribution (explanation) which influences expectancies concerning future alcohol using behaviour. Where the explanation places the cause beyond the alcoholic's own control, such an explanation may serve to perpetuate alcohol use through lowered expectancy for future control. Put simply, attributions serve the function of making sense of a given situation and, thereby, influence what the person thinks and does next.

Figure 6.1 - Kelley and Michela's (1980) model
6.2 The disease or learning debate

In the alcohol/drug field two essential attributions for the cause of alcoholism have come to hold precedence (Trinder and Keene, 1997). It may be that one of these attributions for the cause of alcoholism had its genesis when, in 1785, Dr Benjamin Rush presented a paper wherein he referred to drunkenness as an ‘odious disease’. It may be that at this time alcohol dependence commenced to be conceived of as a disease with its causes attributable to physiological mechanisms. Later, with the growth of behaviourism and its premise that all behaviour is learned (Leahy, 1987), alcohol dependence may have commenced to be regarded as learned behaviour. The behaviourist's conceptualisations have been much refined to date with the inclusion of cognitive mediating factors. Modern day cognitive-behaviourists propose that alcohol addiction is a learned behaviour. It is not regarded as a disease but a psychological and behavioural 'bad habit' (Beck, Wright, Newman and Liese, 1993; Marlatt and Gordon, 1985; Trinder and Keene, 1997). With the introduction of these conceptualisations, a controversy has developed.

This controversy has come to be known as the “disease or learning” debate. Some authors refer to it as the “disease model controversy” (Schaler, 1996; 1997). Those who adhere to a disease model of alcohol/drug dependence tend to argue that the alcoholic/addict is born with, or later develops due to metabolic changes, the physiological disease of alcoholism/addiction. Having the disease of alcoholism/addiction means that one can never be totally free of the problem. One can never be cured according to the disease model. Proponents of the disease philosophy believe that "once an alcoholic, always an alcoholic" (Alcoholics Anonymous cliche). On the other hand, exponents of the learned behaviour model argue that the individual learns to become alcohol dependent and in that sense, alcoholism is like a bad habit that has been acquired and can be removed to some degree. The two models are in opposition regarding the predictions they make where control of alcohol use behaviour is concerned (Trinder and Keene, 1997). According
to Schaler (1997), the disease model views addiction as an involuntary event, characterised by “loss of control”. Schaler states that the learned behaviour model may be termed a “free-will model” where addictive behaviour is considered the function of volitional control.

6.3 Does adherence to a particular philosophy regarding alcoholism help or hinder functioning?

Due to the "disease or learning" debate a significant body of evidence has accumulated regarding the etiology of alcoholism. However, very little (if any) research has been conducted to examine the consequences of attributing alcoholism to a disease orientation or to a learning orientation. This is unfortunate because the preceding section has noted that the type of the attributions people make for their behaviour appears related to their future behaviour. According to Saunders and Houghton (1996) "how a problem is understood dictates how it is responded to". Schaler (1996) discusses the power of “self-fulfilling prophecy” and states that “the beliefs people have about addiction, what they think about drinking, for instance, have a powerful effect on their behaviour” (1996, p.187).

The relationship between attributions for the cause of alcoholism and the subsequent behaviour of the problem alcohol user has not been sufficiently studied. However, in other areas of health psychology, the relationship between beliefs about an illness or disorder and the course of recovery in the illness or disorder, have been more clearly identified. For example, Glanz, Lewis and Rimer (1991) stated that ‘recent research in cancer, arthritis and heart disease has shown that attributions can have a powerful effect on psychological adjustment, behaviour, and morbidity ‘(p.102). Glanz et al. further stated that the most powerful attributions involve beliefs in controllability and the locus of causation of behavioural maladaptability or disease.

Farina, Fisher and Getter (1978) found that the beliefs that people hold about their illness determined the course of their recovery. Farina et al’s. (1978) studies
demonstrated consistently that beliefs or attributions about the nature of mental disorders impacted on an individual's cognitive and affective state which in turn mediated behaviour change. Farina et al. found that holding a disease conceptualisation of mental illness had a detrimental effect on future wellbeing; holding a social-learning conceptualisation produced better outcomes. Farina et al. concluded that believing mental illness to be a disease led to a sense of being in less control of illness, to poorer psychological adaptation, and a reduced likelihood of initiating or maintaining adaptive behaviour change. Farina et al.'s (1978) studies demonstrated consistently that the beliefs about the nature of mental disorders affect important self-directed messages and are related to future health behaviour.

6.4 Attributions for the cause of alcoholism, cognitive and affective state, and relapse.

Marlatt and Gordon (1985) argued that holding a disease attribution for the re-emergence of an alcohol problem may lead to high levels of psychological distress (or from another perspective, a lack of psychological resources) and relapse. For example, individuals holding such an attributional style may believe the teachings of the disease model and attribute the cause of the re-emergence of problem alcohol use to some innate physical feature about themselves which is present at all times and affects all areas of their life. Marlatt and Gordon (1985) contended that the holding of attributions suggestive of a disease model is associated with increased levels of negative affect in the event of alcohol re-use once a commitment to abstinence is made. Marlatt and Gordon argued that this is due to the individual's beliefs that his/her alcohol re-use behaviour is evidence that the alcohol problem is severe and uncontrollable, and thus, irreparable. According to Marlatt and Gordon (1985), such beliefs are likely to be associated with a sense of hopelessness of control over alcohol use. As a ramification depression, anxiety, hostility and other negative affects may ensue. Marlatt and Gordon (1985) argued that alcoholics who hold such an attributional style are more susceptible to a relapse to pre-treatment alcohol use
behaviour patterns in re-use situations. According to Marlatt and Gordon (1985) this is due to the increased likelihood of this individual giving up attempts to maintain new alcohol-use behaviour goals because s/he becomes convinced by his/her own behaviour that further endeavour in maintaining a specific alcohol use goal is futile. Thus such an attributional style may place the individual at "high risk" of relapse in the event of re-use.

Unfortunately, 'high risk' situations for relapse are not exclusively identified by the presence of environmental cues but include affective and cognitive factors such as negative affect and self-defeating beliefs. In fact, Marlatt and Gordon (1985) found that negative affect and its associated cognitions explains 35% of the variance in relapse. The psychological distress which may be related to disease attributions for the cause of alcoholism in the event of a return to alcohol use may itself lead to relapse. In this sense, the increased likelihood that may attend a disease attributional style for the cause of a lapse may be in itself a 'high risk' of relapse situation.

6.5 Why is it necessary to study the relationship between attributions for the cause of alcoholism, psychological resources and relapse?

Pervin (1990), in stating some of the tenets of attribution theory, argues that continued maintenance of a goal and eventual success in the pursuit of a behaviour change goal is associated with an attributional style wherein successes are attributed to internal, stable, and global causes, and failure is attributed to external, unstable, and specific causes. For example, alcoholics who adhere to this attributional style would attribute their maintenance of alcohol use goals as due to efforts that they make, which they can continue to keep making, and which will eventually affect all areas of their lives. On the other hand, this individual would attribute alcohol goal non-maintenance behaviour as attributable to an external event, which occurred in specific situations. This individual is likely to believe that future alcohol use behaviour may be controlled by avoiding the specific external event which led to alcohol use goal
non-maintenance. This is an attributional style associated with bad habit beliefs about the cause of an alcohol-use problem and cognitive-behavioural philosophy (Curry, Marlatt, and Gordon, 1987; Marlatt and Gordon, 1985).

On the other hand, an attributional style wherein successes are attributed to external, unstable, and specific causes, and failure is attributed to internal, stable, and global causes is not strongly related to the maintenance of a behaviour change goal and is inherent in a disease model philosophy and traditional disease model treatment (Curry, Marlatt, and Gordon, 1987; Marlatt and Gordon, 1985; Watson, 1991). For example, alcoholics who believe they have the disease of alcoholism are likely to attribute their maintenance of abstinence to an external agency (higher power) and may attribute their failure to maintain abstinence to an internal factor about themselves (my disease) which cannot be changed and which is present in all situations.

The findings of Walton, Castro, and Barrington (1994), have validated the relationship between success-failure assumptions identified by attribution theory and the predictions for holding the attributional styles described above in a psycho-active substance using population. Walton, Castro and Barrington (1994) have confirmed Marlatt and associate's theories where they found that relapsers to psycho-active substance use significantly attributed their inability to remain abstinent to internally caused, stable factors which are likely to affect them in all situations (global) in the future. Verifying Marlatt and Gordon's (1985) postulations, Walton et al. concluded that the holding of an internal, stable, global attributional style for failure to maintain abstinence was detrimental for their sample of individuals. Walton et al. stated: 'Clearly, this is a most negative psychological outlook for the recovering substance abuser' (1994, p.329). On the other hand, Walton et al. found that lapsers who attributed their failure to remain abstinent to external, unstable and specific factors fared better in the long-run; their lapse was significantly less likely to devolve into
relapse. The implications of the Walton et al. study are that the holding of internal, stable and global attributions for success and the holding of external, unstable and specific attributions for failure is more conducive to the maintenance of therapeutic behaviour change for the substance abuser. Walton et al's. findings appear to imply that holding a disease model philosophy may not be beneficial in the event of alcohol/drug use goal non-maintenance.

Having adaptive psycho-social resources appears to be related to the maintenance of behaviour change. As stated frequently in this thesis, the relationship between psycho-social resources (cognition, affect and social support) and behaviour has become most apparent with the work of Bandura (1977, 1982, 1986). Bandura explained the interaction between the person (cognition and affect), the environment (social support), and behaviour in terms of 'reciprocal determinism'. Bandura argued that cognition, affect and environmental variables are strongly related; if one variable changes, the others change also. The premise upon which the argument is based is that if cognition, affect and the environment change in an adaptive direction, behaviour will eventually also change in an adaptive direction (Monti, Abrams, Kaddens and Cooney, 1989; Heather, Miller and Greeley, 1991). Given this interaction, it becomes important to examine the relationship between beliefs or attributions about the cause of the re-emergence or cause of alcoholism that individuals hold, and how these beliefs or attributions are related to psycho-social state and goal maintenance behaviour. Many researchers have suggested that having this knowledge would allow a better prediction of how to change future alcohol-use behaviour. For example, Monti, Abrams, Kaddens and Cooney (1989) stated that adaptive behaviour change for "alcoholics" involves changing what they believe about their own ability to control their "recovery". It would be advantageous for the design of more effective treatment to be able to identify some beliefs related to increased likelihood of relapse to old alcohol-use behaviour patterns for the individual attempting alcohol-use behaviour change.
6.6 The relationship between past treatment, attributions for the cause of an alcohol-use problem, and psycho-social resources

One of the common occurrences in many treatment centres and rehabilitation units is the fact that some alcoholics/addicts have already participated in treatment prior to their current treatment. In this sense, these individuals are re-attending treatment after relapse to pre-treatment alcohol/drug use behaviour. In fact, Chiauzzi (1991) identifies the re-attending of treatment as a consequence of substance re-use and as a definition of relapse. Many of these individuals who have been in past treatment have adopted an attributional style regarding the cause of their addiction based on the kind of philosophy that they had been exposed to. An examination of the beliefs about the cause of alcoholism related to treatment re-attendance offers an opportunity to explore the relationship between beliefs and relapse. A traditional Alcoholics Anonymous based treatment would tend to deliver a disease model conceptualisation. Other treatment facilities may propose a Social Learning Theory habit model. It could be argued that for some addicts the sense of futility, of ever beating their alcohol problem that may be the product of seeing themselves re-attend for treatment, can be exacerbated for individuals who adhere to a disease explanation for their alcohol problem. For example, an individual who has attended past treatment and who is entering treatment yet again, may perceive this re-entry into treatment as evidence of having a disease and proof of an inability of ever controlling his/her alcohol-use problem.

Therefore, it is important to not only examine how psycho-social resources are related to attributions for the cause of alcoholism, but also to examine how these attributions are embedded within the treatment framework. According to Bandura's theory of 'reciprocal determinism', behaviour is determined by both environment and person factors. Thus it follows that in considering the relationship between a person's attributions for the cause of alcoholism and psycho-social resources, it is also important to explore how past treatment attendance is related to attributions regarding
the cause of and the re-emergence of an alcohol-use problem. Specifically, this study will examine the relationship between attributing the cause of alcoholism to a disease or a bad habit and post-treatment psycho-social functioning and alcohol/drug use prior to treatment recommencement.

6.7 Beliefs where alcoholism is attributed to a disease, a bad habit or a combination of a disease and a bad habit

Aside from examining the impact of disease or bad habit attributions, this study will also examine the relationship between holding a combination of disease and bad habit attributions for the cause of alcoholism. Some researchers have described an emergent, holistic, psycho-biological model, which it is argued, has been taught to the lay-person for perhaps the last two decades (Addinoff, O'Neill, and Ballenger, 1995; Connors, Maisto, and Donovan, 1996; Gorski and Miller, 1979; Ludwig and Wikler, 1974; Mossberg, Liljeberg, and Borg, 1985; Roelofs and Dikkenberg, 1987; Solomon, 1980; Wise, 1988). It is suggested that adherence to such a model for individuals who have been exposed to it would imply that alcoholism is both a disease (due to physiological-metabolic changes within the body) and a bad habit (learned maladaptive cognition, affect, and behaviour). For example, Ali, Miller and Cormack (1992) do not adhere to the disease or habit dichotomy. They argue that research indicates that solely disease or learned behaviour explanations of the etiology of alcoholism are not suitable. Ali et al. suggest that "current thinking about the nature of alcohol and other drug problems suggests that there are biological, psychological and social factors which contribute to patterns of alcoholism and other drug use". That is, that alcoholism is both a disease and a bad habit. Ali et al.'s argument raises a question which also needs to be answered. What is the relationship between believing that alcoholism is a combination of a disease and a bad habit, and the level of psycho-social resources of the individual attempting to remedy an alcohol problem and who lapses to the point of requiring treatment again?
Overall, this research study examines the relationship between the holding of either a disease, learned-habit or a combination disease and learned-habit attributions for the cause of alcoholism, psycho-social resources, alcohol use and relapse. In this study the relationship between attributions for the cause of alcoholism and treatment attendance and behaviour in the form of current treatment retention and attrition was examined.

The variables measured at treatment commencement were:

1. Disease, bad habit, and combined disease and bad habit attributions for the cause of alcoholism (See Appendix 1.);
2. subjects ratings of alcohol problem severity;
3. depression;
4. self-efficacy to resist the urge to drink (alcohol) heavily;
5. locus of control;
6. the ratio of positive-negative automatic thoughts;
7. the global index of psychiatric symptoms;
8. social support;
9. and, pre-retreatment substance use.

6.8 Research questions and hypothesis

This study addressed the following research questions.

1. What is the nature of the relationship between attributions regarding the cause of alcoholism and exposure to previous treatment modalities and their philosophy?
2. What is the nature of the relationship between attributions regarding the cause of alcoholism and past treatment attendance or non-attendance, psycho-social resources and pre-treatment alcohol use?
3. What is the nature of the relationship between attributions regarding the cause of alcoholism and treatment retention/attrition for individuals who have attended past treatment at treatment re-commencement?

Following the discussion in Chapter 6 and this study introduction, it was hypothesised that attributing the cause of alcoholism to a bad habit would be related to better psycho-social functioning and less alcohol/drug use than attributing the cause of alcoholism to a disease.

6.9 Study 3 - Method

The methodology employed in this third study including subject selection, procedure of data collection; instruments used to measure psycho-social resources and treatment of data is the same as for all other studies (See Chapter 3 - "Thesis Method").

6.10 Subjects

The Study 3 sample came from the overall subject pool comprising 458 observations which came from two Government funded in-patient alcohol/drug treatment agencies of different duration and different philosophies of treatment located in N.S.W., Australia. Of this overall sample, 227 observations were deemed as qualifying as post relapsers because they had returned to treatment as a consequence of alcohol/drug re-use.

6.11 Comparison Groups

Comparison groups were derived from the overall sample (N= 458) (See Chapter 3.3., p. 44).

Three comparison groups were initially examined in research questions 1 and 2. These groups and their categories are:
1. A group who attributed the cause of alcoholism to a disease and who had either:
   - attended past treatment (n= 128);
   - not attended past treatment (n= 98).

2. A group who attributed the cause of alcoholism to learned bad habit and who had either:
   - attended past treatment (n= 47);
   - not attended past treatment (n= 88).

3. A group who attribute the cause of alcoholism to a combination of both a disease and a learned bad habit and who had either:
   - attended past treatment (n= 52);
   - not attended past treatment (n= 87).

The study design diagram appearing below is generated to clarify the above comparison groups:
Figure 6.2 - Subject Numbers Identified by Attributions for the Cause of Alcoholism Held and Treatment Experience

6.12 Results and discussion

Research Question 1. - What is the nature of the relationship between attributions regarding the cause of alcoholism and exposure to previous treatment modalities and their philosophy?

A chi-square test of independence was conducted to answer this question. The Chi-square test was applied to the relationship between attributions for the cause of alcoholism and past treatment attendance or non-attendance, and was found to be statistically significant ($X^2 (N=458) = 49.299$, $p<.01$). As indexed by Cramer's statistic, the strength of the relationship was .312. Observation of expected minus
observed frequencies indicated that individuals who had attended a treatment programme prior to entry into the current treatment programme were significantly more likely to attribute the cause of alcoholism to a disease and less likely to attribute it to a bad habit. Individuals who believed that alcoholism is a bad habit were significantly less likely to have attended a treatment programme prior to entering the current treatment programme.

Research Question 2. - What is the nature of the relationship between attributions regarding the cause of alcoholism and past treatment attendance or non-attendance, psycho-social resources and pre-treatment alcohol use?

A General Linear Model two factor (3x2) between subjects multivariate analysis of variance was used to answer this question. This test revealed that a significant difference existed between the groups of alcoholics who held varying attributions for the cause of alcoholism on the linear combination of psycho-social resource and pre-treatment alcohol use variables (Wilk's Lambda (22, 884) = .73, p<.01). Furthermore, alcoholics differed in psycho-social resources and pre-treatment alcohol use on the basis of past treatment attendance or non-attendance (Wilk's Lambda (11, 442) = .93, p=.0003). However, the attributions for the cause of alcoholism and prior treatment attendance/non-attendance interaction was not significant. This indicates that the relationship between attributions regarding the cause of alcoholism, psycho-social resources and pre-treatment alcohol use did not significantly depend on past treatment attendance or non-attendance. Similar trends in the relationship between attributions for the cause of alcoholism and psycho-social resources and pre-treatment alcohol use existed whether clients had attended or not attended previous treatment. In simple language, it seems that psycho-social resources and pre-treatment alcohol use were clearly related to attributions held regarding the cause of alcoholism. Therefore, past-treatment attenders were examined separately to address the relationship between relapse, attributions for the cause of
alcoholism, psycho-social resources and pre-treatment re-commencement of alcohol/drug use.

A one factor (attributions) multivariate analysis of variance was used to examine the relationship between attributions regarding the cause of alcoholism, post-treatment (relapse), psycho-social resources and pre-treatment alcohol/drug use at treatment re-commencement. Attributions held regarding the cause of alcoholism by groups who had attended past treatment prior to attending the current treatment (relapsers) appear to be significantly related to psycho-social resources and pre-treatment re-commencement alcohol use (Wilk's Lambda \((22, 884) = .73, p<.01\)). A priori univariate contrasts which were generated by the multivariate analysis of variance were used to explore this significant relationship further. This indicated that clients who attributed the cause of alcoholism to a disease (disease group) had less psycho-social resources at treatment re-commencement than either the group who attributed the cause of alcoholism to a bad habit (bad habit group) or the group who attributed it to a combination of a disease and a bad habit (combination group).

Univariate tests that derived from the multivariate analysis of variance revealed that at treatment re-commencement, the three groups did not significantly differ in their locus of control orientation, ratio of positive-negative automatic thoughts, or self-efficacy to resist the urge to drink (alcohol) heavily. Neither did the three groups significantly differ in the amount of alcohol they drank on an average day (all three groups drank more than 12 standard drinks per day), or in the number of days per week on which they drank alcohol (all three groups drank alcohol on 7 days per week). Neither did the groups differ in a composite measure of their pre-treatment substance use. Thus all three groups were matched on their post-treatment alcohol/drug use at treatment re-commencement.
A priori univariate contrasts and means and standard deviations displayed in Table 6.1 revealed that at treatment re-commencement the disease attribution group had significantly lower levels of social support than the bad habit group, $F(1, 173)=7.61, p.=.0063$; was significantly more depressed than both the bad habit attribution group, $F(1, 173)=28.82, p.<.0001$ and the combination disease/bad habit group, $F(1, 178)=4.24, p.=.0406$. The disease attribution group manifested a significantly higher level of psychiatric symptom severity than the bad habit group, $F(1, 173)=7.61, p.=.0063$. The disease attribution group rated their alcohol problem as significantly more severe than both the bad habit attribution group, $F(1, 173)=17.23, p.<.0001$, or the combination disease/bad habit attribution group, $F(1, 178)=6.21, p.=.0134$. Lastly, the disease attribution group were significantly older, $F(1, 173)=6.23, p.=.0133$, and drank alcohol for significantly more years than the bad habit attribution group, $F(1, 173)=4.49, p.=.0351$.

Table 6.1. - A Comparison Between Individuals Who Attributed the Cause of Alcoholism to a Disease, or to a Bad Habit, or to Combination of a Disease and a Bad Habit on Psycho-Social Functioning at Treatment Re-Commencement.

<table>
<thead>
<tr>
<th>VARIABLES</th>
<th>Disease (n=128)</th>
<th>Bad Habit (n=47)</th>
<th>Combination (n=26)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social support</td>
<td>9.86 (6.90)</td>
<td>13.09 (6.63)</td>
<td>10.38 (6.86)</td>
</tr>
<tr>
<td>Locus of control</td>
<td>28.23 (9.30)</td>
<td>26.26 (11.0)</td>
<td>28.09 (9.00)</td>
</tr>
<tr>
<td>Depression</td>
<td>23.69 (9.38)</td>
<td>15.72 (7.05)</td>
<td>20.31 (9.88)</td>
</tr>
<tr>
<td>Psychiatric symptoms</td>
<td>131.7 (61.9)</td>
<td>103.7 (42.2)</td>
<td>132.2 (66.1)</td>
</tr>
<tr>
<td>Self-rated alcohol problem</td>
<td>10.81 (2.09)</td>
<td>9.28 (2.22)</td>
<td>9.92 (2.31)</td>
</tr>
<tr>
<td>Years of alcohol use</td>
<td>18.97 (7.57)</td>
<td>16.32 (6.78)</td>
<td>17.37 (7.26)</td>
</tr>
<tr>
<td>Age</td>
<td>33.00 (8.03)</td>
<td>29.66 (7.96)</td>
<td>31.02 (7.26)</td>
</tr>
</tbody>
</table>

The results of a priori univariate contrasts and Table 6.1 reveal that the combination disease/bad habit attribution group had more psychological resources
than the disease attribution group but less psychological resources than the bad habit attribution group. The combination disease/bad habit attribution group was significantly more depressed than the bad habit group, $F(1, 97) = 8.22, p = .0045$ and suffered significantly more psychiatric symptom severity, $F(1, 97) = 5.66, p = .0182$.

**Research question 2 discussion**

Thus, the bad habit group, although having relapsed and having used similar amounts of alcohol and other drugs to the other groups maintained significantly better levels of psycho-social functioning than both the disease attribution group or the combination of a disease/bad habit attribution group. These findings substantiate the hypothesis made. This result suggests that attributing the cause of alcoholism to a bad habit is related to having better psycho-social resources at treatment re-commencement after a period of relapse. This is so even though this group endorsed similar levels of alcohol and other substance use prior to treatment re-commencement.

As in Study 1 where depression was found to be the best predictor of the variance between treatment attrition/retention groups, depression was also found to be the best predictor of the variance between attributions for the cause of alcoholism relapse groups in this third study. The multivariate analysis of variance test used to answer Research Question 2 in this study revealed that among the psycho-social variables examined, depression explained the greater proportion (11.52%) of the variance between attribution for the cause of alcoholism groups. It was found that the relapsed disease attribution for the cause of alcoholism group was significantly more depressed than the other two attribution groups. This result may lend support to a Cognitive-Behavioural formulation of the relationship between cognition and negative affect. For example, Goldfried and Robbins (In Kendall, 1983) argue that a feeling of helplessness and hopelessness derived from beliefs about lack of control are related to depression. Furthermore, if this line of reasoning is followed, it could be concluded that the high levels of depression manifested by the disease attribution group were
related to feelings of helplessness that may have resulted from the disease model's predictions of lack of control of alcohol use in the event of re-use.

**Research Question 3.** What is the nature of the relationship between attributions regarding the cause of alcoholism and treatment retention/attrition for individuals who have attended past treatment at treatment re-commencement?

A chi-square test of independence was conducted to answer this question. The Chi-square test was applied to the relationship between attributions regarding the cause of alcoholism and treatment attrition/retention, and was found to be statistically significant ($X^2$ (N= 227) = 22.537, p<.01). As indexed by Cramer's statistic, the strength of the relationship was .217. Observation of expected minus observed frequencies indicated that individuals who had attended past treatment and who attributed the cause of alcoholism to a disease were more likely to drop out of treatment than both the bad habit attribution or the combination disease/bad habit groups. Individuals who attributed the cause of alcoholism to a bad habit were more likely to remain in treatment than the other two attribution groups.

**Research Question 3 discussion**

The finding that the more psycho-socially distressed disease group was more likely to drop-out of treatment, is contrary to the overall findings of Study 1 where it was found that clients having less psycho-social resources were more likely to remain in treatment. However, this result suggests that these individuals who had been in past treatment and who attributed the cause of alcoholism to a disease, and who were significantly more depressed, and who saw their alcohol problem as significantly more severe than both the other attribution groups, may have felt more hopeless about the possibility of the current treatment working for them. Perhaps they took their return to treatment again as evidence of having the disease of alcoholism from which they would never be free.
This result may explain the findings of Study 1 which were opposite to some research findings that found treatment drop-out to be related to high levels of psychopathology. It is possible to suggest that the research which finds that high levels of psychopathology is related to treatment drop-out comes from a context where the disease model is in ascendance among treatment providers. In fact, it may not be unlikely that the research which finds high levels of psychopathology and drop-out to be related has identified recidivists who attributed the cause of alcoholism to a disease, and who, similarly to the findings in this current study, may have felt hopeless about the benefits of remaining in treatment. The sample of drop-outs in Study 1, on the other hand, may have identified a population of problem drinkers dissimilar to that examined in the research that found that high levels of psychopathology is related to treatment drop-out. The Study 1 drop-out sample comprised treatment attenders and non-attenders and did not discriminate between observations on the basis of attributions held regarding the cause of alcoholism. Study 3, on the other hand, in categorising drop-outs on the basis of attributions held regarding the cause of alcoholism and having attended past treatment, was better able to identify how specific beliefs and conditions are related to treatment attrition.

6.13 Study 3 conclusion

This study examined some relationships between psycho-social resources, pre-treatment alcohol use and attributions held regarding the causes of alcoholism as they existed at treatment commencement for a sample of individuals who endorsed alcohol as their "drug of choice". The results of this study indicated that alcohol/drug problem users who had been in past treatment were significantly more likely to attribute the cause of alcoholism to a disease than to a learned behaviour. At treatment re-commencement, a group who attributed the cause of alcoholism to a disease entity had significantly less psycho-social resources than a group who attributed the cause of alcoholism to a bad habit, or a group who attributed the cause of alcoholism to a
combination of a disease and a bad habit. Furthermore, this relationship held whether subjects had been in treatment or not prior to entering the current treatment programmes. It was noted that alcohol problem users who had been in past treatment and who attributed the cause of alcoholism to a disease were significantly more likely to drop out of treatment than the other two groups. The results of this study also suggest that believing that alcoholism is a bad habit is related to having more adaptive psycho-social resources.

Specifically, in Study 3 it was found that attributing the cause of alcoholism to a bad habit was significantly related to having more social support, less severe beliefs about the severity of an alcohol problem, lower levels of depression, less psychiatric symptomatology, and more adaptive ratio of negative-positive automatic thoughts than attributing the cause of alcoholism to a disease. This finding is particularly relevant for the planning of alcohol/drug treatment programmes. These results imply that social support, perceptions of problem severity, depression, psychiatric symptomatology and automatic thoughts may be positively affected by teaching the alcoholic that alcoholism is caused by a learned behaviour and is a bad habit. If this is so, it is quite possible that the teachings of CBT philosophy may better equip the individual attempting alcohol/drug use behaviour change with the psychological resources with which to achieve adaptive change.

Another interesting finding in this study is that those subjects who had had past treatment attendance prior to entering the current treatment programmes were more likely to believe that their alcohol problem was attributable to a disease. One could argue that this is evidence of the result of the teachings of treatment programmes in Australia which, according to Mattick and Jarvis (1993), have mainly adhered to the traditional disease model treatment philosophy. This finding has some implications for relapse prevention. Since a lapse into old alcohol use behaviour is probable for the individual attempting alcohol use behaviour change (Marlatt and
Gordon, 1985; Mattick and Jarvis, 1993), the way an alcohol problem is viewed then becomes an important factor in determining whether a lapse becomes a relapse. According to disease model conceptualisations, the client is taught that a lapse to alcohol or other drug use will re-activate a disease process which will lead to inevitable relapse and loss of control over alcohol/drug use. On the other hand, Cognitive-behavioural relapse prevention models teach that alcohol/drug dependency is a learned behaviour and teach the client to distinguish between lapse and relapse (Marlatt and Gordon, 1985; Prochaska and Di Clemente, 1983, 1986; Beck, Wright, Newman and Liese, 1993). Cognitive-behavioural models allow for the possibility of a series of lapses in the course of alcohol/drug use behaviour change. According to these models, clients are taught that lapses are an unwanted but normal and sometimes temporary phase in the process of behaviour change. The lapser is taught to view self not as a treatment failure, but as an individual whom alcohol/drug treatment has set on the circuitous path to eventual maintenance of alcohol/drug use behaviour change.

It is evident that since a lapse to old alcohol/drug use behaviour may be common for most individuals attempting the maintenance of alcohol use behaviour change, continuing to teach them that one drink/drug will lead to total loss of control due to the re-activation of a disease process may be counter-productive. The results of this study may imply that programmes which teach disease philosophy may be linked to the adoption of disease attributions for the recurrence of alcohol or other drug use. This in turn appears linked to reduced psycho-social resources during relapse. In this sense, the results of this study suggest that disease model beliefs were related to lower levels of psychological resources for individuals who had attempted alcohol/drug use behaviour change and who had failed to do so. The results of Study 3 imply that treatment programmes should employ a relapse prevention strategy which teaches the client how to cope with a lapse so that it does not devolve into a relapse due to an abstinence violation effect.
Only a longitudinal study can provide an answer to the way treatment beliefs impact on behaviour or the way that behavioural events impinge on beliefs. However, another finding in Study 3 suggests that the teachings of cognitive-behavioural treatment philosophy may better equip the individual attempting alcohol/drug use behaviour change in the event of treatment re-attendance. In Study 3 it was noted that the relapsers who attributed the cause of alcoholism to a disease had significantly lower psychological resources than other relapser groups and were significantly more likely to drop out of the treatment early. Since the group who attributed the cause of alcoholism to a disease were also the group who had the least psycho-social resources among the attribution groups, this finding suggests that addressing psychological symptomatology in clients early in treatment is important. This finding suggests that the individuals who had attended treatment in the past and who attributed the cause of alcoholism to a disease may have been better equipped to at least remain in current treatment by addressing the meaning that they ascribed to their own behaviour and the predictions that followed for their future behaviour. Results further suggest that this could have been achieved by addressing attributions for the cause of alcoholism. Specifically, by teaching them a learned behaviour philosophy early in current treatment.

This could be advantageous if adhering to a learned behaviour philosophy leads to a decrease in levels of depression as is indicated in this study. Greeley, Swift and Heather (1992) have shown that negative affects such as depressed mood are predictors of increased desire for alcohol. For example, according to Beck, Rush, Shaw, and Emery (1979), continued depression is not conducive to therapeutic behaviour change in two ways. They state that:

"The patient's lack of motivation to carry out even the most simple tasks is a major symptom of severe depression. The patient knows what he [sic.] has to do, but he doesn't have the internal desire or stimulus to carry it out. In most cases, the patient immobilizes himself by believing he is unable to
perform the activity or that he will not receive any satisfaction from doing the activity' (p. 182).

Second, Beck et al. argue that intensified dependency is a prevalent symptom of depression.

Therefore, the results of this study suggest that a treatment programme aimed at helping clients initiate and maintain alcohol/drug use behaviour change would need to increase clients' psychological resources. This study may indicate that this may be achieved by re-structuring cognition, particularly, by changing attributions for the cause of alcoholism to a learned habit orientation. This study suggests that doing so would lead to an alleviation of depressed mood and other negative affect. At this stage, the findings of Study 3 and the findings of the other studies that precede it imply that cognitive-behavioural treatment may be better able to facilitate clients' change in cognitions which are associated with an alleviation of negative affect. This in turn may better equip clients to achieve alcohol/drug use behavior change. In other words, Study 3 findings imply that it is important to ensure that an individual believes that an alcohol/drug problem is controllable. Study 3 further implies that this may be achieved by teaching that the cause of alcoholism is attributable to a bad habit or a combination of a disease and a bad habit. Such teachings are inherent in a cognitive-behavioural philosophy.

Thus, Study 3 findings suggest that the post-treatment resources of cognitive-behavioural treatment completers will be more adaptive than traditional disease model completers. Study 3 findings also suggest that the post-treatment resources of cognitive-behavioural treatment completers will be more adaptive than traditional disease model completers in the event of a return to post-treatment alcohol/drug use. The following Study 4 will test these hypotheses by comparing the 3-6 months post-treatment outcomes of clients who have attended traditional in-patient alcohol/drug treatment and cognitive-behavioural in-patient alcohol/drug treatment. In this
manner, it is intended to explore the impact of treatment philosophy further by examining the relationship between treatment philosophy and post-treatment outcome.
Chapter 7 - Treatment Outcome - Study 4: "How are Treatment Philosophy and Psycho-social Resources Related to Post-treatment Alcohol/Drug Use Behaviour?"

The previous studies have examined the impact of different lengths of treatment completed, philosophies of treatment, and attributions for the cause of alcoholism on a range of psycho-social variables. This final study examines psycho-social and substance use treatment outcome. To do so, the psycho-social resources and substance use of 12 week traditional disease model treatment completers and 8 week cognitive-behavioural treatment completers is reviewed at 3-6 months post-treatment. Although the programmes are of different durations, the impact of duration on client functioning needs to be seen in the light of Study 2 findings. Study 2 findings largely indicated that length of treatment (i.e. 8 or 12 weeks) was not as important as treatment philosophy in its impact on client functioning. Duration must still be noted, but it must be considered in light of Study 2 findings which suggested that it should not be regarded as a major factor related to client change.

Study 4 examined outcome data obtained from clients at 3-6 months post-treatment with the view to assessing the differing impact of treatment philosophy on subsequent psycho-social functioning and substance use.

7.1 Is Abstinence a valid criteria to use in determination of treatment effectiveness?

The introduction of this thesis identified that in the past, the effectiveness of in-patient alcohol/drug treatment has been rated largely on the basis of a measure of abstinence after treatment. However, in the last two decades there has been a growing understanding that since a return to old behaviour is common for alcohol treatment completers attempting to maintain behaviour change, abstinence is not by itself a valid criterion to use in determination of treatment effectiveness. For example, many
researchers argue that it is logical to assume that individuals attempting to maintain alcohol-use goals, if left to their own devices for any length of time, are likely to return to maladaptive alcohol use behaviour for at least brief periods of time (Galanter, 1989; Lowison, Ruiz, Millman and Langrod, 1992; Marlatt and Baer, 1988; Miller and Rollnick, 1991; Waisberg, 1990; Wragg, 1992; Yudofsky and Hales, 1994). However, it is not logical to assume that because these individuals may re-develop old behaviour it should then be permanently re-established (Bell, Williams, Nelson and Spence, 1995; Curry, Marlatt, and Gordon, 1987; Marlatt and Gordon, 1985; Walton, Castro, and Barrington, 1994). Therefore, non-abstinence may not be a useful definition of relapse. A more appropriate definition of relapse is discussed and identified for use as a measure of treatment outcome effectiveness in this study introduction.

7.2 Relapse as a measure of alcohol/drug treatment outcome

According to Allsop, "the prevention and management of relapse has become a central theme in the research literature of the addiction behaviours" (1990, p.143). There is a general consensus in the area of addiction treatment that the prevention of relapse is an important area of treatment and one that presents major difficulties. Perhaps the central difficulty presented may arise as a consequence of the fact that, unfortunately, a consensual definition of "relapse" is still to be agreed upon. For this reason, defining specific rates of relapse upon which to base the effectiveness of treatment is difficult because definitions of relapse vary greatly. For example, Litman, Stapleton, Oppenheim, Peleg and Johnson (In Chiauzzi, 1991) identified five among many definitions of relapse:

1. as a discrete event that is initiated with a return to substance use;
2. as a process that insidiously leads to substance use;
3. as a return to the same intensity of substance use;
4. as daily use for a sequential number of days;
5. as a consequence of substance use that is requiring re-admission for treatment.

Graham, Annis, Brett and Venesoen stated that "It has been recognized for some time that the majority of clients relapse following addictions treatment" (1996, p.1127). This assertion especially holds true if one adheres to a total abstinence criterion as an indication of relapse or one or all of the definitions stated above (Mattick, 1997). For example, using a total abstinence criterion, Ludwig (1972) found relapse rates of 91%. This was based on the finding that alcoholics returned to drinking at least once after making the decision to pursue abstinence. Also using a total abstinence criterion Armor, Polich and Stambul (1978) found a similar figure (90%) to Ludwig. More recently, Larimer and Marlatt (1990) stated that estimates of relapse rates generally range between 50% and 90%. However, Larimer and Marlatt (1990) argued that definitions of relapse vary: a single drink, one drinking episode or a return to regular drinking. Many theorists, Marlatt and Larimer argued, "fail to distinguish between incidence of nonabstinence (lapses) and the outcome of a return to regular substances abuse (relapse). Therefore, relapse rates found in the literature may be unnecessarily pessimistic because they usually include individuals who have experienced any substance use during the follow-up period" (1990, p.191).

A great many researchers (Lowinsohn, Ruiz, Millman and Langrod, 1992; Marlatt and Gordon, 1985; Miller, 1992; Prochaska and Di Clemente, 1984, 1986) currently view returns to old patterns of alcohol/drug use behaviour as a learning experience for the addict who may eventually achieve the maintenance of adaptive substance use behaviour change goals. Mattick and Jarvis (1993) argued that a temporary return to old behaviour is common for individuals attempting to control alcohol/drug use. Mattick and Jarvis (1993) cited Marlatt and Gordon (1985) who distinguished between the lapse (a temporary period of alcohol/drug use) and relapse
(a return to pre-treatment levels of alcohol/drug use). Marlatt and Gordon (1985) argued that a lapse is, for most individuals who are attempting substance use behaviour change, a part of the unlearning of old, deeply conditioned substance use behaviour. A lapse may end quickly or it may lead to a relapse.

Thus, it is evident that there is disagreement concerning what is relapse and when it has occurred. However if we are to accept a lapse-relapse argument as put forward by Marlatt and associates, then a more relevant definition of treatment effectiveness may be a lack of problem substance use post-treatment (Miller and Hester, 1980). Lack of problem drinking or drugging may be defined as asymptomatic levels of psychological functioning and adaptive levels of social functioning in the event of alcohol/drug use post-treatment. The following sections discuss this definition and establish a rationale for rating treatment's effectiveness on the basis of client post-treatment psycho-social resources, and not exclusively on measures of post-treatment alcohol/drug use.

7.3 The relationship between psycho-social resources, the abstinence violation effect and relapse

Some individuals who have completed treatment and who are attempting alcohol/drug use behaviour change, may go for lengthy periods of time without using, but then return to old patterns of alcohol/drug abuse behaviour for what sometimes may seem no apparent reason. According to Beck, Wright, Newman and Liese (1993) this may be because having completed treatment, the individual is free of physiological dependence, but at this stage, s/he must still contend with learning how to maintain new substance use goal behaviours. The individual must learn to deal with and replace habitual behaviour patterns which are precipitated by the unhelpful cognitions and affects which determine high risk of relapse situations (Beck, Wright, Newman, and Liese, 1993). Marlatt and Gordon (1985) described internal and external stimulus conditions which trigger craving and undermine control of
behaviour as ‘high risk’ situations. Internal and external stimulus situations include maladaptive cognition and affect, and lack of adequate social support. Maladaptions in these three domains of human functioning have been shown to be significantly related to high rates of relapse and thus must be viewed as "high risk" situations (Bell, Richard and Feltz, 1996; Bell, Williams, Nelson and Spence, 1995; Wotherspoon, 1995).

Many researchers have argued that whether a solitary drinking/drugging episode (lapse) becomes a relapse to pre-treatment levels of psycho-social and alcohol/drug use behaviour depends upon what the alcohol dependent individual believes will be the consequences of having taken that drink/drug (Beck, Wright, Newman, and Liese, 1993; Chiauzzi, 1991; Curry, Marlatt and Gordon, 1987; Marlatt and Baer, 1988; Marlatt and Gordon, 1985; Schaler, 1997). For example, Marlatt and Gordon (1985) considered that the effects of the initial lapse are mediated by the person’s affective and cognitive reactions to the lapse. Marlatt and Gordon argued that a relapse is more likely to occur with the person who has a strong perception of having violated an abstinence rule. These researchers referred to this as the abstinence violation effect (AVE). The AVE, beliefs about control, and other psychological factors are strongly related to whether the individual attributes the cause of his/her alcohol problem to a disease or a bad habit (Hodgins, el-Guebaly and Armstrong, 1995; Leitner and Dunnett, 1993; Marlatt and Baer, 1988; Marlatt and Gordon, 1985; Peele, 1988; Rose-Colley and Cinelli, 1992; Walton, Castro and Barrington, 1994; Simpson, 1995). In fact, Marlatt and associates have identified that disease model beliefs about the cause of alcoholism are related to severe AVEs in the event of non-abstinence. Study 3 of this thesis found that previous treatment completers who returned to treatment because of a return to substance use and who attributed the cause of their alcoholism to a disease had significantly less psycho-social resources than previous treatment completers returning to treatment who attributed the cause of alcoholism to a bad habit.
Disease model treatment teaches the client that anything other than total abstinence post-treatment is a relapse and that relapse means total loss of control of substance use. CBT, on the other hand teaches clients that a lapse will only become a relapse if the client chooses to not maintain new substance use goals after a lapse. The client is not taught that a lapse to pre-goal substance use signals loss of control and relapse. On this basis, it is possible to hypothesise that individuals who have completed cognitive-behavioural treatment (CBT) will have more adaptive psycho-social resources post-treatment than a group of individuals who have completed traditional disease model treatment (TT). Furthermore, following this rationale it is also possible to hypothesise that individuals who have completed CBT will have more psycho-social post-treatment resources in the event of a return to substance use than clients at post-TT.

7.4 Cognitive-behavioural treatment and relapse prevention?

It is possible to make the above hypotheses because according to the recommendations contained in the Mattick and Jarvis (1993) and the Ernst and Young (1996) monographs, a general cognitive-behavioural treatment framework offers the most valuable approach. This is said to be because a number of specific but interrelated social and cognitive re-appraisal skills are taught which are designed to equip the client to control alcohol/drug use post-treatment. Many researchers have argued that increased treatment impact on psycho-social resources and substance use can be achieved by using techniques that fall within the cognitive-behavioural rubric (Andrews, Crino, Hunt, Lampe and Page, 1994; Hawton, Salkovskis, Kirk and Clark, 1993; Jarvis, Tebbut and Mattick, 1995). Techniques such as cognitive restructuring, the teaching of interpersonal-intrapersonal coping skills, problem-solving and relapse prevention have been shown to have therapeutic impact on client post-treatment psycho-social and substance use resources. Drug education involving teaching the client how cognition and affect mediate substance behaviour plus training in relaxation techniques, efficiency-enhancing imagery, behavioural skill training with

All the above techniques employed by the cognitive-behavioural paradigm are designed to facilitate the ability of the individual with a substance abuse background to control the normal course of drug/alcohol use behaviour change. Watson argued that:

"the task of treatment is to ameliorate the addict's present suffering and to maximize the chances that it won't recur. As such, the "success" or "failure" of treatment, which might be defined according to whether or not the addict returns to a level of suffering measurable by his (sic.) terms, rests upon basic attitudes and assumptions the addict carries out of the treatment setting" (1991, p.839).

As was implied in Study 3, these attitudes and assumptions are closely related to the attributions a client holds for a problem behaviour and in turn determine expectations and anticipated effects of future behaviour and the likelihood of long-term goal-behaviour maintenance. Relapse prevention treatment, which is a feature of cognitive-behavioural treatment (CBT) strategies, identifies and teaches the client that attributions, assumptions, attitudes and expectations are learned cognitive processes that are therefore open to modification and change. Relapse prevention training involves the re-structuring of these cognitive processes and trains the individual in drug refusal and goal maintenance. This training of cognitive and social skills rests on the premise that the client can have ultimate control over his/her alcohol/drug use behaviour. In this way, in placing major emphasis on skills training, CBT recognises the impact of the person and the environment on the acquisition and maintenance of post-treatment psycho-social resources and substance use behaviour goals.
These techniques listed above, many researchers have adjured (Annis, 1986; Bandura, 1977a, 1982; Marlatt and Baer, 1988; Marlatt and Gordon, 1985; Mattick and Jarvis, 1993; Waisberg, 1990), are designed to change a client’s beliefs about his/her ability to control his/her alcohol/drug use behaviour in the event of post-treatment substance use. In so doing, these researchers have argued, an enhancement in the individual’s ability to continue meeting his/her desired goal regarding alcohol/drug use should result. The CBT programme post-treatment outcome that will be compared to traditional disease model programme post-treatment outcome in this study comprises all of the techniques mentioned above and a relapse prevention module.

There is evidence that cognitive-behaviourists’ assertions are correct about the outcome of the techniques that CBT comprises. As stated above, CBT relapse prevention largely comprises cognitive re-structuring and social skills training. The cognitive restructuring strategy teaches clients to replace negative, debilitating cognitions with positive, self enhancing thoughts and actions (Cormier and Cormier, 1991). Mattick and Jarvis (1993) state that cognitive restructuring techniques in combination with social skills training can enhance the effects of treatment impact on post-treatment interpersonal and intra-personal functioning and drug use behaviour. Oei and Jackson (1982) found that subjects who participated in cognitive restructuring and social skills training in combination, were significantly more likely to achieve their goals where alcohol use is concerned. They found that groups receiving this combination of techniques were significantly more likely (p<.01) than groups not receiving this form of treatment to reduce alcohol consumption over a twelve month period. Furthermore, this combination of techniques was also significantly associated with a reduction in alcohol consumption for periods commencing at twelve months after treatment (p<.001).

Mattick and Jarvis (1993) argued that the study by Oei and Jackson (1982) has demonstrated that the treatment combination of cognitive restructuring and social
skills training techniques can enhance treatment impact on long-term alcohol use behaviour change. Thus, it is also possible to hypothesise that clients who have completed CBT may function better and may use less alcohol/drugs in the event of post-treatment drug/alcohol use than clients who have attended a non CBT, traditional disease model treatment.

7.5 Treatment philosophy and psycho-social functioning

It was conjectured in the discussion in Study 2 that its findings may indicate that the consequence for alcoholics, of being taught during treatment, that a lapse is evidence of the re-activation of a disease, may be detrimental. This conjecture was substantiated to some degree in study 3 where it was found that for clients requiring re-admission for treatment as a consequence of substance use, high levels of psychological distress was associated with believing that alcoholism is a disease. Whereas, conversely, believing that alcoholism is a bad habit or a combination of a disease and a bad habit was found to be related to having more psychological resources in the event of re-admission for treatment. Study 4 examines the psycho-social functioning of clients who have completed treatments of differing philosophy (traditional disease model treatment and cognitive-behavioural treatment) as it relates to abstinence or a return to alcohol or other drug use.

Following the discussion in the introduction to this final study, it seems important to compare client’s post-treatment outcomes by measuring psychological, social support and other social functioning variables in relation to post-treatment alcohol/drug-use behaviour. Thus, the following variables will be examined for clients from a traditional disease model treatment programme and a cognitive-behavioural treatment programme:

1. depression;
2. self-efficacy to resist the urge to drink (alcohol) heavily;
3. locus of control;
4. a ratio of positive-negative automatic thoughts;
5. a global index of psychiatric symptoms;
6. social support;
7. employment and other demographic variables;
8. a composite measure of alcohol and other drug use.

### 7.6 Hypothesis and research questions

**Hypothesis:** Given cognitive-behavioural treatment’s (CBT) emphasis on cognitive re-structuring, skill training, relapse prevention and the meaning of alcohol/drug re-use post-treatment that this philosophy imparts, it was predicted that individuals who have attended cognitive-behavioural treatment would have more adaptive psycho-social resources whether abstinent or not than a group who have attended traditional disease model treatment (TT) at 3-6 months post-treatment.

The following research questions were examined in order to test the above hypothesis.

1. a.) What percentage of clients from the cognitive-behavioural treatment programme (CBT) and the traditional disease model treatment programme (TT) were abstinent at 3-6 months post-treatment outcome assessment?
b.) Do these percentages vary in relation to treatment philosophy?
2. Do psycho-social resources differ at 3-6 months post-treatment as a function of having attended treatment of differing philosophy (cognitive-behavioural and traditional disease model), and being abstinent or not abstinent?

### 7.7 Study 4 - Method

The methodology employed in this second study including subject selection, procedure of data collection; instruments used to measure psycho-social resources, treatment of data, and other relevant information, is the same as for all other studies (See Chapter 3.- "Thesis Method").
7.8 Post-treatment data collection procedure and treatment of data

Of the original overall sample of clients who commenced treatment in the two treatment programmes that have been examined in all the studies that comprise this thesis (N= 458), 146 clients remained in treatment until completion. There were 80 cognitive-behavioural treatment (CBT) completers and 66 traditional disease model treatment (TT) completers. At treatment completion, these clients (n= 146) were given a package containing post-treatment assessment questionnaires with return date noted. If treatment completers did not return outcome data on the date specified, follow-up was attempted by contacting last "forwarding address" or contacting "next of kin". These post-treatment data collection procedures resulted in a sub-sample of observations derived from treatment completers comprising 51.25% outcome assessment return rate for the cognitive-behavioural programme completers and a 48.48% outcome assessment return rate for the traditional disease model treatment programme completers (See Chapter 3.3., p. 44, and Figure 3.1., p. 46).

Post-treatment substance use was analysed and compared between treatment groups via the computation of a composite substance-use variable. The composite substance use variable consisted of a summation of all 3-6 months post-treatment average daily substance use and compared to a summation of pre-treatment and post-treatment average daily substance use. The composite measure accumulated the amount of alcohol, marijuana, tranquilliser, stimulant, sleeping pill, pain killer and other substance use per day.

7.9 Rationale for post-treatment assessment period selected

Outcome data were collected at 3-6 months post-treatment because according to many researchers, research has shown that relapse to pre-treatment levels of functioning is most likely 3 to 6 months after treatment (Hiltunen, Koechling, Voltaire-Carlsson and Borg, 1996; Mardula, 1996; Saunders and Houghton, 1996).
For example, Hiltunen et al. (1996) stated that "relapse rates as high as 50-60% have been reported within the first 3 months following in-patient treatment and 80% or more by 6 months following discharge from treatment (Armor et al., 1978; Gottheil et al., 1992)" (p.429, 1996). Saunders and Houghton (1996) referred to this post-treatment period as "The Sludge" and implied that this 3-6 months post-treatment period represents a window of intense difficulty for the maintenance of post-treatment substance use goals.

7.10 Comparison groups

Subjects in this research study were classified as either:

- Cognitive-Behavioural Treatment Group (n= 41): consisted of a group who completed an 8 week alcohol/drug in-patient treatment programme based on a cognitive-behavioural (C.B.T.) theoretical framework. They were categorised further as those who and were abstinent 3-6 months post-treatment and those who were not abstinent at 3-6 months post-treatment.

- Traditional Disease Model Treatment Group (N= 32): consisted of a group who completed 12 weeks of an alcohol/drug in-patient treatment programme based on traditional disease model treatment (TT) theoretical framework. These were categorised further as those who were abstinent at 3-6 months post-treatment and those who were not abstinent at 3-6 months post-treatment.
Figure 7.1 - Sub-Sample of Treatment Programme Completers Who Returned 3-6 Months Post-Treatment Assessment Data Categorised by Programme Completed and Abstinence/Non-Abstinence Status
7.11 Results and discussion

Research Question 1a. - What percentage of clients from the cognitive-behavioural treatment programme (CBT) and the traditional disease model treatment programme (TT) were abstinent at 3-6 months post-treatment outcome assessment?

Table 7.1 displays 3-6 months post-treatment abstinence and non-abstinence percentages. As can be seen in the table, overall abstinence percentages are in the vicinity of 60% for the two in-patient treatment programmes when data is combined.

Table 7.1. - Percentage of Client Abstinence and Non-Abstinence at 3-6 Months Post-Treatment

<table>
<thead>
<tr>
<th>Number</th>
<th>n</th>
<th>Abstinence</th>
<th>n</th>
<th>Non-A bstinence</th>
</tr>
</thead>
<tbody>
<tr>
<td>41</td>
<td>31</td>
<td>75.6%</td>
<td>10</td>
<td>24.39%</td>
</tr>
<tr>
<td>32</td>
<td>12</td>
<td>37.5%</td>
<td>20</td>
<td>62.5%</td>
</tr>
<tr>
<td>N= 73</td>
<td>Total</td>
<td>43</td>
<td>58.9%</td>
<td>30</td>
</tr>
</tbody>
</table>

1b. Do these percentages vary in relation to treatment philosophy?

A chi-square test was applied to the relationship between post-treatment abstinence/non-abstinence and treatment philosophy to determine the likelihood of post-treatment substance use status for the two treatment programmes. The relationship between post-treatment abstinence/non-abstinence and treatment philosophy was found to be statistically significant, \( X^2 \) \((2, N=73) = 10.78, p=.001\). The observed frequencies for the cells can be found in Table 7.1 above.

As indexed by Cramer's statistic, the strength of the relationship between post-treatment abstinence/non-abstinence and treatment philosophy was .384. The observed frequencies in Table 7.1 reflect the fact that individuals who had completed
the cognitive-behavioural treatment programme were significantly more likely to be abstinent at 3-6 months post-treatment assessment than individuals who had completed a traditional disease model treatment programme. This result suggests that the philosophy of the treatment programme may have been a factor in determining whether clients were abstinent at 3-6 post-treatment assessment or not.

**Research question 1 discussion**

Finding that the cognitive-behavioural treatment completers were significantly more likely to be abstinent at 3-6 months post-treatment outcome assessment than traditional disease model completers may seem counter-intuitive. One would have predicted that more traditional disease model treatment completers would have been abstinent at post-treatment outcome assessment. Given the disease philosophy's emphasis on total abstinence, one considered that non-abstinent individuals who had completed the traditional disease model treatment programme would not have returned post-treatment information.

**Research Question 2. - Do psycho-social resources differ at 3-6 months post-treatment as a function of having attended treatment of differing philosophy (cognitive-behavioural and traditional disease model), and being abstinent or not abstinent?**

**Characteristics of the Cognitive-Behavioural Treatment Group:**

At 3-6 months post-treatment assessment the cognitive-behavioural treatment group consisted of 41 subjects who were an average of 34.3 years old, who had started using alcohol and other substances at a mean age of 14.4 years of age, and who had used alcohol and other substances for a mean of 20 years. At 3-6 months post-treatment, 17.07% (7) were living with their parents, 7.32% (3) were living with close relatives other than parents, 11.90% (5) were sharing accommodation with friends, 21.43% were living with a spouse or de-facto partner, 9.76% (4) were living alone, 34.15% (14) were living in a boarding house or institution, and 1 endorsed "no fixed
abode. At 3-6 months post-treatment, 43.90% (18) were unemployed, 4.87% (2) were part-time students, 14.63% (6) were employed in the performance of home duties, 26.83% (11) were wage or salary earners, and 9.76% (4) were self-employed.

Characteristics of the Traditional Disease Model Treatment Group:

At 3-6 months post-treatment assessment the traditional treatment group consisted of 32 subjects who were an average of 33.3 years old, who had started using alcohol and other substances at a mean age of 13.3 years of age, and who had used alcohol and other substances for a mean of 20 years. At 3-6 months post-treatment, 21.87% (7) were living with their parents, 9.38% (3) were living with close relatives other than parents, 12.5% (4) were sharing accommodation with friends, 28.13% (9) were living with a spouse or de-facto partner, 12.5% (4) were living alone, 12.5% (4) were living in a boarding house or institution, and 1 endorsed "no fixed abode". At 3-6 months post-treatment, 71.88% (23) were unemployed, 9.4% (3) were retired or not working by choice, 15.63% (5) were wage or salary earners, and 3.125% (1) was a pensioner.

A multivariate analysis of variance revealed that the two treatment groups did not significantly differ at 3-6 months post-treatment in their ages, the age at which they had started alcohol and other substance use, and in the number of years of usage. Thus on these resources, the two groups were matched. A chi-square test was applied to the relationship between post-treatment employment/non-employment and treatment philosophy to determine the likelihood of post-treatment employment status for the two treatment programmes. The relationship between post-treatment employment/non-employment and treatment philosophy was found to be statistically significant, \( \chi^2 (2, N= 61) = 5.24, p= .022 \). As indexed by Cramer's statistic, the strength of the relationship between post-treatment employment/non-employment and treatment philosophy was .293. Perusal of observed frequencies minus expected frequencies reflected the fact that individuals who had completed the cognitive-
behavioural treatment programme were significantly more likely to be employed at 3-6 months post-treatment assessment than individuals who had completed a traditional disease model treatment programme.

In order to continue to fully address the hypothesis, it was important to examine the psycho-social functioning and pre-treatment substance use of the CBT and TT treatment groups regardless of whether clients were abstinent or not abstinent at 3-6 months post-treatment. In the following multivariate analysis, firstly, these groups were compared at treatment commencement. Secondly, the amount of change in psycho-social resources and substance use was then compared between treatment commencement (Time 1) and 3-6 months post-treatment (Time 4). Thirdly, multivariate analysis of variance tests compared the two treatment groups at 3-6 months post-treatment (Time 4). Lastly, a single variable was selected in order to compare the abstinent/non-abstinent groups with the two treatment groups at 3-6 months post-treatment. This single variable was selected due to the small numbers in the four groups that comprise the treatment (CBT or TT) and abstinent/non-abstinent conditions (See Figure 7.1).

A multivariate analysis of variance revealed that the post cognitive-behavioural treatment group (PCBT) and the post traditional disease model treatment group (PTT) differed significantly on the linear combination of the dependent variables at treatment commencement (Time 1), Lambda (7, 65) = .6975, p > .0010. Univariate tests that derived from the multivariate analysis of variance test revealed the variables upon which the two treatment groups differed significantly. Results are displayed in Table 7.2. It was found that at treatment commencement the PCBT group was significantly less depressed, manifested significantly less psychiatric symptom severity, and endorsed the use of significantly less substances prior to treatment commencement, than the PTT group. Thus at treatment commencement,
the PCBT group had significantly more psychological resources and engaged in significantly less substance use pre-treatment than the PTT group.

The finding that the two groups differed at pre-treatment in levels of depression, psychiatric symptom severity and in pre-treatment substance use was unexpected as the complete sample did not differ significantly at treatment commencement. This finding may present a problem from the outset for determining treatment efficacy on the basis of post-treatment data and may present limitations in this study. This statistical difference between groups makes it very difficult to test the hypothesis that one treatment philosophy might be superior to another.

Table 7.2. - A Comparison Between the Post Cognitive-Behavioural Treatment (PCBT) Completers and Post Traditional Disease Model Treatment (PTT) Completers on Psycho-Social Functioning and Substance Use at Treatment Commencement (Time 1.).

<table>
<thead>
<tr>
<th>Measure</th>
<th>PCBT (n= 41)</th>
<th>vs</th>
<th>PTT (n= 32)</th>
<th>F.</th>
<th>p.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean Diff SD</td>
<td>Mean Diff SD</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social support</td>
<td>11.78</td>
<td>(6.58)</td>
<td>9.09</td>
<td>2.70</td>
<td>.1051</td>
</tr>
<tr>
<td>Locus of control</td>
<td>26.39</td>
<td>(10.5)</td>
<td>28.25</td>
<td>.57</td>
<td>.4528</td>
</tr>
<tr>
<td>Depression</td>
<td>17.97</td>
<td>(9.68)</td>
<td>23.34</td>
<td>16.12</td>
<td>.0001*</td>
</tr>
<tr>
<td>Automatic thoughts</td>
<td>106.3</td>
<td>(35.6)</td>
<td>105.5</td>
<td>.01</td>
<td>.9227</td>
</tr>
<tr>
<td>Self-efficacy</td>
<td>114.7</td>
<td>(53.2)</td>
<td>101.9</td>
<td>1.06</td>
<td>.3059</td>
</tr>
<tr>
<td>Psychiatric symptoms</td>
<td>116.6</td>
<td>(60.4)</td>
<td>154.5</td>
<td>6.85</td>
<td>.0108*</td>
</tr>
<tr>
<td>Comp. substance use</td>
<td>8.707</td>
<td>(5.01)</td>
<td>13.16</td>
<td>12.51</td>
<td>.0007*</td>
</tr>
<tr>
<td>Alcohol use</td>
<td>4.56</td>
<td>(0.81)</td>
<td>4.72</td>
<td>.98</td>
<td>.3267</td>
</tr>
</tbody>
</table>

* Significantly different at p<.05

** Note: For all measures other than self-efficacy and social support, lower mean scores are better than higher scores.

However, although the treatment groups differed statistically perusal of means revealed that they did not differ greatly from a clinical point of view. For example,
perusal of Table 7.2 means and standard deviations reveals that the CBT group was mildly to moderately depressed at treatment commencement. Table 7.2 also reveals that the TT group was also moderately depressed. Furthermore, it reveals that the global index of psychiatric symptom severity for both groups, when converted to T scores, are in similar clinical ranges (T scores above 70). These groups were not overly dissimilar clinically in substance use although statistically significantly different. For example, among other substance use, the CBT group endorsed the pre-treatment use of 10 to 11 standard drinks of alcohol per day every day. Similarly, the TT group endorsed the use of 11 to 12 standard drinks of pre-treatment alcohol use per day. These are significant differences statistically, but in actuality are not of significant difference in practice.

Repeated measures t-tests revealed that the two treatment groups changed significantly on all measures between treatment commencement (Time 1) and 3-6 months post-treatment (Time 4) measures. Furthermore, this significant change was in an adaptive direction for both treatment groups. A Between and Within Subjects Multivariate mixed design Analysis of Variance of mean difference scores (See Section 3.11, p.54) was used to examine if the two treatment groups differed in the magnitude of change they had sustained. This test effectively controls for different treatment commencement resources between groups by measuring the amount of change between treatment commencement (Time 1) and 3-6 months post-treatment functioning (Time 4). This test indicated that the post CBT group and the post TT group did not significantly differ in the overall magnitude of change sustained between Time 1 and Time 4 for the linear combination of the dependent variables (Lambda $(7, 65)=.8122, p>.0508$). However, univariate tests that derived from this multivariate test revealed that the post CBT group had sustained a significantly greater magnitude of change in locus of control to an internal orientation than the post TT group ($F(1,71)= 6.39, p>.0137$).
Table 7.3 - A Comparison Between the Post Cognitive-Behavioural Treatment (PCBT) Completers and Post Traditional Disease Model Treatment (PTT) Completers on Psycho-Social Functioning and Substance Use at 3-6 Months Post-Treatment (Time 4.).

<table>
<thead>
<tr>
<th>Measure</th>
<th>PCBT (n=41)</th>
<th>Mean Diff</th>
<th>SD</th>
<th>vs</th>
<th>PTT (n=32)</th>
<th>Mean Diff</th>
<th>SD</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social support</td>
<td>17.48</td>
<td>(4.95)</td>
<td></td>
<td></td>
<td>13.69</td>
<td>(7.23)</td>
<td>7.59</td>
<td>.0074*</td>
<td></td>
</tr>
<tr>
<td>Locus of control</td>
<td>16.12</td>
<td>(9.05)</td>
<td></td>
<td></td>
<td>26.00</td>
<td>(12.8)</td>
<td>14.89</td>
<td>.0002*</td>
<td></td>
</tr>
<tr>
<td>Depression</td>
<td>4.00</td>
<td>(5.00)</td>
<td></td>
<td></td>
<td>13.53</td>
<td>(13.1)</td>
<td>18.22</td>
<td>.0001*</td>
<td></td>
</tr>
<tr>
<td>Automatic thoughts</td>
<td>61.15</td>
<td>(18.4)</td>
<td></td>
<td></td>
<td>91.28</td>
<td>(42.9)</td>
<td>16.38</td>
<td>.0001*</td>
<td></td>
</tr>
<tr>
<td>Self-efficacy</td>
<td>167.7</td>
<td>(32.1)</td>
<td></td>
<td></td>
<td>135.6</td>
<td>(59.8)</td>
<td>8.57</td>
<td>.0046*</td>
<td></td>
</tr>
<tr>
<td>Psychiatric symptoms</td>
<td>39.83</td>
<td>(40.5)</td>
<td></td>
<td></td>
<td>96.12</td>
<td>(80.9)</td>
<td>15.06</td>
<td>.0002*</td>
<td></td>
</tr>
<tr>
<td>Substance use</td>
<td>0.58</td>
<td>(1.20)</td>
<td></td>
<td></td>
<td>5.00</td>
<td>(5.97)</td>
<td>21.48</td>
<td>.0001*</td>
<td></td>
</tr>
</tbody>
</table>

* Significantly different at p<.05

** Note: For all measures other than self-efficacy and social support, lower means scores are better than higher scores.

A multivariate Analysis of Variance revealed that at 3-6 months post-treatment (Time 4) the overall between groups effect for the linear combination of the dependent variables was significant (Lambda (21, 101.5) = .6980, p > .0010). Table 7.3 displays the results of univariate tests that derive from this multivariate analysis.

Table 7.3 reveals that at 3-6 months post-treatment (Time 4), the post CBT group functioned significantly better than the post TT group. At post-treatment assessment, the post CBT group had significantly higher levels of social support and were significantly more internally oriented than the post TT group. The post CBT group were also significantly less depressed than the post TT group and manifested asymptomatic levels of depression; the post TT group manifested mild levels of depression. The post CBT group also differed significantly from the post TT group in its ratio of positive-negative automatic thoughts. The post CBT group had a ratio of
positive-negative automatic thoughts close to the normal range. The post TT group, on the other hand, had a ratio of positive-negative automatic thoughts close to the clinical range. The post CBT group differed significantly from the post TT group in self-efficacy to resist the urge to drink (alcohol) heavily, manifesting adaptive levels of self-efficacy. At post-treatment outcome assessment, the two groups also differed significantly in the severity of the psychiatric symptomatology that they manifested. The post CBT group manifested a lower severity of psychiatric symptomatology (T score= 59) than the PTT group (T score= 72) who manifested severity within the clinical range. In short, the post CBT group had achieved significantly more adaptive psycho-social functioning and engaged in significantly less substance use than the post TT group at 3-6 months post-treatment outcome assessment. Although it would be tempting to state categorically that the CBT group did appear to have benefitted more than the TT group from treatment, it is difficult to make this judgement because of the statistically significant differences that existed at treatment commencement between these two groups.

At this stage, to further address the question of client post-treatment psycho-social functioning and their relationship to post-treatment abstinence/non-abstinence, a univariate analysis was conducted. Because of the inclusion of another factor to the analysis (abstinence/non-abstinence) the use of a multivariate analysis to answer this question was not feasible due to low numbers of observations in each group fulfilling independent levels (See Fig. 7.1). Therefore, a single dependent variable was selected from the multivariate analysis conducted in the first part of this research question upon which to compare treatment (CBT and TT) and abstinence/non-abstinence groups at 3-6 months post treatment. Because depression best explained the variance (20.42%) between treatment groups at 3-6 months post-treatment among the variables examined, it was selected as the most appropriate dependent variable to use in order to further address research question 2.
An analysis of variance using a planned a priori contrasts between treatment (CBT and TT) and abstinence/non-abstinence groups revealed that the groups significantly differed in levels of depression at 3-6 months post-treatment assessment ($F(3,68)= 8.29, p>.0001$). In order to specifically address the hypothesis, a planned a priori contrast between non-abstinent post cognitive-behavioural treatment (CBT) completers and abstinent post traditional disease model treatment (TT) completers revealed that these two groups were not significantly different in the levels of depression they manifested at 3-6 months post-treatment. For example, the abstinent post TT completers mean of depression was 8.58 compared to the non-abstinent post CBT group's mean depression figure of 5.10 on the Beck Depression Inventory (BDI) at 3-6 months post-treatment assessment. This indicates that both the abstinent post TT group and the non-abstinent post CBT group were asymptomatic in levels of depression at 3-6 months post-treatment assessment.

A planned a priori contrast between non-abstinent post CBT completers and non-abstinent post TT completers revealed these groups to be significantly different in levels of depression ($F(1,71)= 10.17, p>.0021$). The non-abstinent post TT completers mean of depression was 16.5 compared to the non-abstinent post CBT group's mean depression figure of 5.10 on the BDI at 3-6 months post-treatment assessment. This result reveals that the post TT completers experienced markedly higher levels of depression than the post CBT completers due to non-abstinence. Furthermore, this difference was apparent clinically where the post CBT group manifested asymptomatic levels of depression and the post TT group experienced mild to moderate levels of depression.

The difference between levels of depression experienced by the treatment groups in association with being abstinent/non-abstinent was even more pronounced in a planned a priori contrast between abstinent post CBT completers and non-abstinent post TT completers. This contrast revealed a significant difference in the
levels of depression experienced by these two groups ($F_{(1, 71)} = 23.59, p > 0.0001$). At 3-6 months post-treatment assessment, the non-abstinent post TT completers mean of depression was 16.5, indicating mild-moderate levels, compared to the abstinent post CBT group's mean depression figure of 3.65 on the BDI, indicating asymptomatic levels of depression.

Table 7.4 displays depression means and standard deviations for the four groups and reveals that abstinent or non-abstinent CBT completers and abstinent TT completers all functioned within the normal range on the BDI at 3-6 months post-treatment. Table 7.4 also reveals that the non-abstinent TT completers had markedly higher levels of depression than the other groups. These findings may suggest that TT completers manifested normal levels of depression if they were abstinent, whereas the CBT completers manifested normal levels of depression whether abstinent or non-abstinent.

Table 7.4. - Depression Means and Standard Deviations at 3-6 Months Post-Treatment of Abstinent/Non-Abstinent Treatment (CBT/TT) Completers

<table>
<thead>
<tr>
<th>Group</th>
<th>Depression Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abstinent cognitive-behavioral treatment completers (n= 31)</td>
<td>3.64</td>
<td>5.25</td>
</tr>
<tr>
<td>Non-abstinent cognitive-behavioral treatment completers (n= 10)</td>
<td>5.10</td>
<td>4.20</td>
</tr>
<tr>
<td>Abstinent traditional disease model treatment completers (n= 12)</td>
<td>8.58</td>
<td>11.0</td>
</tr>
<tr>
<td>Non-abstinent traditional disease model treatment completers (n= 16.5 20)</td>
<td>16.5</td>
<td>13.7</td>
</tr>
</tbody>
</table>

In order to better explain the variance in depression for the four groups, the magnitude of change for each treatment/abstinent or non-abstinent group between commencement (Time 1) and post-treatment (Time 4) was examined. Magnitude of change is described by an effect size which was generated using Cohen's method. As there was no control group for this study, the mean and standard deviation for
depression at Time 1 was substituted for a control group and was used to arrive at treatment effect sizes. Treatment effect size was calculated by dividing the mean difference between treatment commencement scores (Time 1) and post-treatment (Time 4) scores by the Time 1 mean standard deviation of depression for each group.

Table 7.5 reveals that the greatest magnitude of change in levels of depression between Time 1 and Time 4 was sustained by the abstinent traditional disease model treatment completers. This finding is explained by the fact that the TT groups whether abstinent or not abstinent commenced treatment with significantly higher levels of depression and and the fact that the individuals that comprised the TT groups did not vary greatly in their levels of depression from the CBT groups.

Table 7.5. - Treatment Effect Size (T.E.S.) of Change in Levels of Depression Between Treatment Commencement and 3-6 Months Post-Treatment for Abstinent/Non-Abstinent Treatment (CBT/T) Completers

<table>
<thead>
<tr>
<th>Group</th>
<th>Depression</th>
<th>T.E.S.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abstinent cognitive-behavioral treatment completers (n= 31)</td>
<td>-1.69</td>
<td></td>
</tr>
<tr>
<td>Non-abstinent cognitive-behavioral treatment completers (n= 10)</td>
<td>-.93</td>
<td></td>
</tr>
<tr>
<td>Abstinent traditional disease model treatment completers (n= 12)</td>
<td>-5.14</td>
<td></td>
</tr>
<tr>
<td>Non-abstinent traditional disease model treatment completers (n= 20)</td>
<td>-1.05</td>
<td></td>
</tr>
</tbody>
</table>

Research question 2 discussion

Findings lend some support to the hypothesis which predicted that individuals who had completed cognitive-behavioural treatment would function more adaptively in the event of substance use or abstinence post-treatment than individuals who had completed traditional disease model treatment. It seems that adhering to a cognitive-behavioural philosophy is instrumental in adaptive post-treatment functioning whether one is abstinent or not abstinent. Perhaps a relationship between philosophy and post-treatment behaviour has been identified where individuals who completed cognitive-behavioural treatment were significantly less depressed than traditional disease model
treatment completers regardless of the substance use condition that existed for them at 3-6 months post-treatment. At 3-6 months post-treatment, these groups differed significantly in levels of depression statistically and clinically. This finding suggests that the post CBT group did not place the emphasis on abstinence that the post TT group did and suggests that post CBT group may have embraced the cognitive-behavioural treatment (CBT) philosophy concerning the meaning of post-treatment substance use.

However, this interpretation of the results should be considered with considerable reservations given the differences that existed between groups at treatment commencement and the small sub-sample size that finally resulted in this last study. Such a small sample size resulted in low statistical power and negated the use of a multivariate analysis in the testing of the hypothesis.

7.13 Study 4 conclusion

Overall, Study 4 results could suggest tentatively that clients may have derived a significant improvement in psycho-social resources and substance use behaviour by having completed in-patient drug/alcohol treatment based on a cognitive-behavioural philosophy. It may be valid to conclude this because it was found in Study 4 that the average cognitive-behavioural treatment completer had more adaptive psycho-social resources and engaged in significantly less substance use at 3-6 months post-treatment than the average traditional disease model treatment completer. Also, it was found that cognitive-behavioural treatment completers were significantly less depressed at 3-6 months post-treatment, whether they were abstinent from substance use or not, than the traditional disease model treatment completers. At 3-6 months post-treatment, this difference was significant not only statistically but also clinically. Furthermore, at 3-6 months post-treatment, the cognitive-behavioural treatment completers were significantly more likely to be employed, to be abstinent from substance use, and, if
using substances, to be using significantly less than the traditional disease model
treatment completers.

One must use extreme caution in accepting these results to suggest that the
cognitive-behavioural treatment programme had significantly more impact on the
post-treatment functioning and substance use behaviour of clients than did the
traditional treatment programme for three reasons. Firstly, the small group sizes
completing the treatment (CBT or TT) and abstinent/non-abstinent conditions
invalidated the use of a multivariate analysis. Secondly, the post-traditional treatment
groups used in this study were significantly more psychologically distressed at
treatment commencement and used significantly more substances prior to treatment
commencement than the post-cognitive-behavioural treatment group. Thirdly, when
measuring magnitude of change in levels of depression between treatment
commencement and 3-6 months post-treatment, it was found that the abstinent
traditional disease model treatment completers had sustained the greatest magnitude
of change. It may be that the post cognitive-behavioural group functioned more
adaptively post-treatment because this group had more psychological resources and
used less substances prior to treatment commencement. In other words, perhaps the
cognitive-behavioural treatment programme had more impact on the post cognitive-
behavioural treatment group's resources because they were better equipped to benefit
from treatment.

However, aside from the reservations that arise from finding that the groups
differed at treatment commencement, there are some indications to suggest that the
cognitive-behavioural treatment philosophy had significant impact on its clients' post-
treatment psycho-social resources and substance use. Firstly, although the CBT and
the TT groups differed significantly statistically at treatment commencement, the
difference was not as pronounced when considered clinically. On the other hand, the
groups differed significantly in their psycho-social functioning and substance use at 3-
6 months post treatment both statistically and clinically. Secondly, the CBT and TT groups differed significantly in the magnitude of change in their locus of control orientation between pre-treatment assessment and 3-6 month post-treatment assessment. The post CBT group also experienced a significantly greater change in locus of control in an internal direction than the post TT group. Thirdly, the post CBT group who were not abstinent were not as depressed as the post TT group who were abstinent. These three findings suggest that the post CBT group had embraced the cognitive-behavioural treatment (CBT) philosophy.

These study results may indicate that at 3-6 months post-treatment, the average 8 weeks of cognitive-behavioural treatment completer's thinking (schemata) in relation to the perceived ability to handle substance use or abstinence was more likely to have contained beliefs of personal cogency to initiate or maintain behaviour change than the average traditional treatment completer who had been taught a disease philosophy. With the reservations already discussed, what can be gathered from these results? Tentatively, it may be concluded that both treatment philosophies had a marked impact on client post-treatment functioning, but that the impact of the TT programme on its client's post-treatment functioning may have been determined as a function of their being abstinent or non-abstinent. These results may indicate that being taught that a lapse is evidence of the re-activation of an uncontrollable disease process is not as advantageous to the addict attempting behaviour change as being taught that a lapse is part of the unlearning of old, deeply conditioned substance use behaviour.

Therefore, one may tentatively conclude that the cognitive-behavioural alcohol/drug treatment programme examined had impacted on the average treatment completer's psycho-social functioning in relation to beliefs about control of substance use. Study 4 results may suggest that the CBT programme studied here may have impacted on its clients' behaviour in a manner which proponents of cognitive-
behavioural theories suggest is conducive to the initiation and maintenance of adaptive substance use behaviour change (Bandura, 1977, 1982, 1986; Beck, Wright, Newman, and Liese, 1993; Bell, Richard, and Dayton, 1996; Bell, Richard, and Feltz, 1996; Bell, Williams, Nelson and Spence, 1995; Glanz, Lewis and Rimer, 1990; Waisberg, 1990). Thus, in enjoying more adaptive psycho-social functioning and significantly reduced levels of substance use, and seemingly not placing as much emphasis on non-abstinence, the 8 week cognitive-behavioural in-patient treatment programme completers may have been better equipped at 3-6 months post-treatment than the average disease model treatment completers to attempt further behaviour change and to maintain any change which had already ensued. The question remains, however, whether the more adaptive psycho-social resources and reduced substance use enjoyed by the CBT completers post-treatment was due to the impact of CBT or to other factors not identified here. Unfortunately, the finding that the groups differed statistically on some variables at treatment commencement and the small sample sizes confounds the possibility of arriving at a clear conclusion about the meaning of Study 4 findings.
Chapter 8 - Thesis Discussion

8.0 The overarching goal of this thesis was that of in-patient drug/alcohol treatment evaluation

The overall goal of this thesis was to provide information useful for in-patient alcohol/drug treatment planning. This thesis did so by examining interactions between client functioning and in-patient drug/alcohol treatment at treatment commencement, at treatment completion and post treatment. An examination of the treatment literature identified a number of conceptual issues which required exploration at these stages of treatment. The issues identified were:

1.) treatment retention and attrition as a function of psycho-social resources at treatment commencement;
2.) the impact of treatment duration and philosophy on client psycho-social functioning at treatment completion;
3.) the impact and outcome of holding differing attributions for the cause of alcoholism at treatment recommencement.
4.) Finally, a comparison was made between having completed in-patient treatment of differing philosophy and duration at 3-6 months post-treatment.

8.1 In-patient treatment attrition/retention

The results of the comparisons in Study 1 between the scores obtained upon entry into treatment between completers and drop-outs identified that these individuals varied significantly. A significant difference in psycho-social resources was found to exist between completers and drop-outs upon treatment entry. Treatment drop-outs had more psycho-social resources than treatment completers upon entry into treatment.

Study 1 results suggest that the average in-patient alcohol/drug treatment drop-out was an individual who perceived him/herself to have had more capacity to cope with alcohol use and who had more of the psycho-social resources with which to do so than the average treatment completer did upon entry into treatment. At this time,
the average drop-out's thinking (schemata) in relation to the perceived ability to handle alcohol use or abstinence was more likely to contain beliefs of personal cogency to initiate or maintain behaviour change than the average treatment completer. Average treatment drop-outs displayed a psychological schemata and social support which suggested that they may have been more confident in their own capability to cope and had the social resources with which to cope. If this is correct, these individuals may have benefitted from a shorter treatment programme.

Another interpretation is that these drop-outs were really still in a denial state and believed that they could effectively 'handle' a return to alcohol or other drug use. Perhaps, these treatment dropouts attributed problems with alcohol/drugs as deriving from external factors. On this basis, it can be hypothesised that these individual would have believed that if external events were placed in order, alcohol/drug abuse would diminish. In this sense, these individuals would have perceived that control of alcohol/drug use would have been possible once life problems were corrected. It may have been that for these reasons these individuals were still not convinced they were in need of a long-term treatment. If such an explanation is correct, these individuals may have profitted from motivational interviewing techniques at treatment commencement.

Study 1. results may signify that the average treatment drop-out was not in need of more treatment. However, for whatever reasons these individuals dropped out of treatment, they may have gained more benefits from being given the option of a shorter-term in-patient or out-patient treatment programme. Certainly, this recommendation seems warranted where it was found that early treatment drop-outs had more psychological resources than late treatment drop-outs. This finding indicated that the level of psychological resources predicted time in treatment. It appears likely that clients were self-selecting for the length of treatment they completed on the basis of how much treatment they thought they required. An answer
to who goes and who stays seems to be closely tied to the resources that they bring to treatments. The higher the level of psycho-social resources at treatment commencement the earlier the client dropped out of treatment.

### 8.2 The impact of treatment duration and philosophy on client psycho-social resources

Study 2 addressed the issue of the impact of treatment duration and philosophy on client psycho-social resources at treatment completion. Study 2 results revealed that the in-patient alcohol/drug treatments studied effectively impacted on the psycho-social functioning and substance use of individuals who remained in treatment in a manner conducive to adaptive behaviour change. The results indicated that regardless of in-patient alcohol/drug treatment durations or philosophies examined, subjects had significantly improved on all psycho-social variables. The difference between the Time 1 (pre-treatment) and Time 3 (treatment completion) scores was significant for all treatment groups on all variables. This indicates that over the course of treatment these individuals had on average acquired more psycho-social resources. Study 2 results indicate that at treatment completion, the average treatment completer may have been in a frame of mind more conducive to the taking of responsibility for the maintenance of ongoing behaviour change. This finding suggests that in-patient alcohol/drug treatment improves the level of psycho-social functioning that completers ultimately enjoy.

However, it was found at treatment completion, that although all groups improved in the level of psycho-social functioning they experienced regardless of the duration or philosophy of treatment, the greatest amount of change in psycho-social resources had been sustained by a group of clients who had completed 8 weeks of cognitive-behavioural treatment. These clients had not only on average sustained the greatest amount of change in psycho-social functioning, but had acquired significantly more adaptive resources at treatment completion than other groups. In fact, these
clients had acquired significantly more adaptive psycho-social resources than a group of clients who had completed 12 weeks of traditional disease model treatment. At treatment completion, the 8 weeks of cognitive-behavioural treatment group functioned asymptotically on all psychological variables and had good levels of social support. Study 2 results indicated that at completion of 8 weeks of cognitive-behavioural in-patient alcohol/drug treatment this group were potentially the better equipped to initiate and maintain adaptive psycho-social and substance use behaviour.

There was more evidence to suggest that the above assertion has some validity. To examine further the issue of the impact of treatment duration and philosophy, Study 2 also examined how treatment completers who had completed various durations of treatment compared to treatment completers who were abstinent at 3-6 months post-treatment. A most interesting fact identified by these comparisons was that at treatment completion (Time 3), the 8 weeks of CBT completer group's psychological resource scores had changed to resemble those of the abstinent treatment completers at 3-6 month post-treatments follow-up (Time 4). In comparison, these two groups' did not significantly differ in psychological resources. It could be inferred that this similarity of psychological scores indicated that the average treatment completer's cognition and affect had changed during the course of 8 weeks of cognitive-behavioural treatment to a way of perceiving self-in-world similar to that of the average abstinent treatment completer. Therefore, Study 2 findings suggested that clients who remain in in-patient treatment may benefit more from 8 weeks of cognitive-behavioural treatment than longer periods of traditional disease model treatment.

8.3 The impact and outcome of holding differing attributions for the cause of alcoholism at treatment re-commencement

Study 3 findings may lend some further evidence to the validity of the suggestion that clients may benefit in the long term from engaging in cognitive-
behavioural in-patient substance abuse treatment. Study 3 examined the impact and outcome of holding differing attributions for the cause of alcoholism on client psycho-social resources and alcohol use post-treatment at treatment re-commencement. In study 3 a significant relationship was found to exist between attributions associated with a cognitive-behavioural philosophy and adaptive post-relapse psycho-social functioning. Study 3 findings indicated that individuals who had engaged in treatment prior to treatment re-commencement were significantly more likely to attribute the cause of alcoholism to a disease. Individuals who had relapsed and who attributed the cause of alcoholism to a bad habit had significantly more adaptive psycho-social functioning than individuals who had relapsed and attributed the cause of alcoholism to a disease. Individuals who had attended prior treatment and attributed the cause of alcoholism to a bad habit were significantly more likely to remain in treatment. On the other hand, it was also found in Study 3 that individuals who had had treatment prior to the current treatment re-attendance (and who had therefore experienced relapse) were significantly more likely to believe that alcoholism was a disease, had significantly less adaptive psycho-social resources, and were significantly more likely to drop out of treatment early. Furthermore, this group who had relapsed and attributed the cause of alcoholism to a disease used significantly more alcohol prior to treatment re-commencement than the group who had relapsed and attributed the cause of alcoholism to a bad habit.

Study 3 results may also augment and clarify Study 1 findings which to some degree were counter to the bulk of the retention/attrition research literature. Generally, the research literature finds that individuals who drop out of in-patient alcohol/drug treatment have less psychological resources than individuals who remain in treatment. Conversely, Study 1 found that drop-outs had more psychological resources than treatment completers. In Study 3, similarly to the literature, it was found that clients had significantly less psychological resources than other groups and were significantly more likely to drop-out of treatment early. However, this finding
specifically applied to a group who had been in past treatment and who attributed the cause of alcoholism to a disease. In the Study 3 discussion it was conjectured that these individuals dropped out of treatment early because they may have felt in a hopeless position about the possibility of the current treatment working for them. Perhaps they had taken their return to treatment again as evidence of having the disease of alcoholism from which they would never be free. If this hypothesis is correct, the key to keeping them in treatment may involve an early focus on changing the meaning they ascribe to their re-use of alcohol or other substances. As suggested by Study 3 findings, perhaps this may be achieved by challenging disease model explanations and the predictions that arise from these explanations for the consequences of substance re-use.

Thus, Study 3 research findings may indicate that a key to assisting clients to maintain psychological resources in the event of substance re-use post-treatment involves teaching clients that alcoholism is a bad habit which they can control. This teaching may also be related to keeping individuals who are low in psychological resources in in-patient alcohol/drug treatment. Since the findings of this thesis indicate that client attributions for the cause of a substance use problem may be related to psychological resources and may be instrumental in the decisions that clients make concerning remaining in treatment, these attributions should be examined and the client should be helped to challenge attributions when these may lead to hopelessness concerning the benefits of remaining in treatment. Specifically, disease model beliefs must be measured against the client's background and levels of psychological resources. For example, having been in past treatment, attributing the cause of alcoholism to a disease and being low in psychological resources may indicate a poor prognosis for long-term outcome of treatment.
8.4 The outcome of having attended alcohol/drug in-patient treatment of differing duration and philosophy on psycho-social functioning and substance use

Study 4 examined 3-6 months outcome functioning and lends some tentative support to the conclusion that the 8 weeks of cognitive-behavioural treatment completers were in a better position to achieve future therapeutic substance use behaviour change. However, the small sample size that finally eventuated in Study 4 and the comparison groups that comprised this small sample commenced treatment with significantly different psychological resources and substance use prior to treatment commencement, any conclusions that derive from Study 4 results can only be speculations which should be accepted tentatively and with reservation. Study 4 results indicate that at 3-6 months post-treatment outcome assessment, a group of cognitive-behavioural treatment completers (8 weeks programme) had significantly better psycho-social functioning, were more likely to be abstinent from substance use, were significantly more likely to be employed, and used significantly less substances (if not abstinent) than a group who had completed a traditional disease model treatment programme. At 3-6 months post-treatment assessment, the cognitive-behavioural treatment completers had maintained a statistically significant change on all dependent variables and had significantly more adaptive psycho-social resources and substance use that could be regarded as asymptomatic.

However, as discussed in the Study 4, the meaning of the Time 4 results is unclear because the post-CBT group had commenced treatment with significantly better psycho-social resources and used significantly less substances pre-treatment than the traditional disease model treatment group. This suggests that the CBT group may have acquired significantly more adaptive psycho-social resources and reduced their substance use because they were in a healthier position from which to reap the benefits of CBT. This finding casts doubt on the conclusion that CBT was more effective in facilitating the maintenance of client psycho-social resource and substance
use change at 3-6 months post-treatment. There is no doubt, however, that the CBT treatment completers had significantly more adaptive psychological resources at treatment completion (Time 3) than TT completers at Time 3. Furthermore, Study 2 findings suggested that CBT may have impacted on client psychological functioning in a manner which placed its completers in an optimum position from which to initiate and maintain adaptive behaviour change.

Thus, aside from the reservations expressed above, Study 4 revealed that after cognitive-behavioural in-patient treatment (CBT), the average completer was an individual who (at 3-6 months post-treatment - Time 4) displayed a significantly more internal locus of control than s/he did upon commencement. The CBT group also displayed a significantly more internal locus of control whether abstinent or not than the abstinent traditional disease model treatment completers at Time 4. This may suggest that the CBT group had been more likely to perceive themselves as more capable of taking control of future alcohol use behaviour. These postulations are given more weight of evidence when it is considered that by Time 4, the CBT completer group's depression had significantly decreased and continued to remain at asymptomatic levels. This may be indicative of a group which would have contained individuals who were more likely to be motivated to maintain behaviour change and who had become less dependent on substance use.

At Time 4, the CBT group's negative automatic thoughts had significantly reduced its positive automatic thoughts had significantly increased. The finding at this stage seems to describe an individual who may have been more capable of countering negative, self-defeating thinking in relation to substance use. At Time 4, the average CBT completer's self-efficacy to resist the urge to drink (alcohol) heavily had significantly improved to a level which was suggestive of a capacity to contend with 'high risk' alcohol use situations (Annis, 1986; Marlatt and Gordon, 1985). Lastly, at Time 4, compared to the traditional disease model treatment completers, the social
resources of the CBT group (as indicated by levels of social support, employment, and accommodation) had significantly improved. The CBT group's substance use had also improved and was significantly more adaptive than at treatment commencement and compared to the traditional disease model treatment completers. Given these results, it could be tentatively concluded that the average cognitive-behavioural treatment completer had attained significantly improved psycho-social resources and significantly reduced substance use at 3-6 months post-treatment. Yet one must again point out that this group had better psycho-social resources at treatment commencement than the TT group.

8.5 The significance of depression as a key predictor of treatment effectiveness

All the studies in this thesis found depression to be a robust predictor of the variance between the treatment-client interactions situations studied. For example, in the first study it was found that for a sample of 457 observations, depression explained a significant proportion of the variance between treatment remainder and drop-out groups. In the second study, depression was found to have achieved the greatest magnitude of change among groups between pre-treatment assessment and treatment completion assessment. In the third study, depression was found to explain the greatest proportion of the variance between groups who held differing attributions for the cause of alcoholism. Finally in the fourth study depression was found to explain the greatest proportion of the variance between 3-6 months post-treatment outcome groups who had completed cognitive-behavioural or traditional disease model treatment.

These findings suggest that depression may be a key variable to measure and target for the enhancement of treatment effectiveness in that it may assist in the identification of those likely to drop out of treatment early. Findings also suggested that treating depression in relation to the re-structuring of unhelpful attributions for problematic substance use may impact on relapse prevention.
8.6 Limitations of this thesis and suggestions for further study

It is important that all findings presented in this thesis be considered in light of the methods used. Therefore, in considering the implications of results obtained in this thesis for the improvement of in-patient alcohol/drug treatment, it is important to stress that the studies used a naturalistic, self-selection design rather than a randomised clinical trial design (RCT). With self-selection of treatment, it is possible that there are unmeasured client pre-treatment characteristics or differences among the treatment groups. Other problems can occur. For example, two problems that may be attributable to the use of naturalistic selection became evident in Study 4. Study 4 was hampered with a small sample size and with comparison groups which commenced treatment with differing levels of psycho-social resources and substance use. Both these conditions led to difficulty in making inferences based on Study 4 findings regarding the impact of treatment philosophy outcomes.

Study 4 throws into relief the difficulties met by researchers working with this population in relation to loss of data. At treatment commencement the overall sample was large enough to allow comparable multivariate analysis of treatment-client interactions in relation to psycho-social resources and substance use. However, by the time Study 4 was conducted, because of high attrition rates, follow-up difficulties and poor response rates from research subjects, the final sample was insufficient to allow robust multivariate inferential conclusions regarding the 3-6 month psycho-social treatment outcome. This made it extremely difficult to test the hypothesis that one treatment philosophy might be superior to another. This is unfortunate because the impact of treatment philosophy is an important question to address in order to improve the effectiveness of in-patient alcohol/drug treatment. This question could be re-examined in further research using larger data samples and controlling for the size of groups that fulfill treatment conditions and which can therefore permit the use of multivariate analysis.
Perhaps the problems that occurred within the naturalistic design in this thesis might be overcome by using randomised clinical trials (RCT). However, there are also disadvantages to using the RCT design method. RCTs have their own limitations in that they typically employ numerous inclusion and exclusion criteria, including the client's willingness to accept random assignment to treatment conditions. This makes it difficult to know the extent to which treatment effects may generalise to other populations. Because of random assignment some individuals may refuse to participate in a study. For example, problem alcohol drinkers seeking rehabilitation who have strong "disease" beliefs may refuse to participate in a non-disease model oriented treatment condition. Therefore because both self-selection and RCT designs have strengths and weaknesses further research aimed at optimising the delivery of inpatient alcohol/drug treatment may require the careful integration of the information supplied by the methods used in this thesis and the information acquired by RCT studies.

Although the design used in this thesis clearly had limitations it nevertheless highlighted the relationship between depression and in-patient alcohol/drug treatment evaluation. Findings in this thesis imply that this variable deserves further examination in the domain of treatment attrition/retention, and client attributions for the cause of alcoholism. Examination of these relationships may provide some conclusive answer to the inconsistency which manifests in the research literature and which was also evident in the findings of Studies 1 and 3 in this thesis. For example, Study 1 findings that supports the literature findings that those who complete inpatient substance abuse treatment present with high levels of psycho-social distress at treatment commencement (Clemens and Kahn, 1990; Farina and Wragg, 1994; Ravndal and Vaglum, 1991; Ryan, Plant and O'Malley, 1995). Some researchers explain this link between psycho-social distress and treatment retention in terms of motivation. Ryan, Plant and O'Malley (1995) argued that motivation to seek treatment is related to higher levels of psychological distress. These authors
considered that some level of psychological distress, life problems, and psychiatric disturbance may be necessary for clients to be sufficiently motivated to follow through with treatment. Furthermore, this perspective is in agreement with the tenets of the Health Belief Model (HBM). The HBM argues that individuals are more likely to present and remain for treatment if they perceive themselves as being susceptible to health problems and if they deem those problems as severe.

However, Study 1 results are also opposite to the bulk of findings reported in the literature regarding the relationship between treatment retention/attrition. For example, Clemens and Kahn (1990) cited several studies that "reported generally consistent findings that program completers as compared to treatment dropouts have lower levels of measured psychopathology... " (1990, p. 36). Study 3, on the other hand, in discriminating between drop-outs and completers as a function of treatment re-attendance and holding differing attributions for the cause of alcoholism found results comparable to the bulk of the attrition/retention literature but opposite to the findings of Study 1. Study 3. found that treatment drop-outs who had attended past treatment and attributed the cause of alcoholism to a disease were significantly more psychologically distressed and likely to drop out of treatment. Thus the findings in Studies 1 and 3 of this thesis have reflected an area of inconsistency regarding the role of psychopathology in the tenure of clients in the Australian in-patient alcohol/drug treatment setting. The roles of depression (and other psychopathology), treatment re-attendance, and attributions for the cause of problem behaviour in treatment are areas which require further research. These areas may be examined in the future with a view to improving Australian in-patient alcohol/drug treatment effectiveness. Furthermore, research in the area of the relationship between psychopathology and alcohol/drug treatment may be especially indicated given the awareness that exists currently concerning the need to develop treatment for clients who fit a dual diagnosis.
Chapter 9 - Thesis Conclusion

It is often difficult to establish the best treatment practices from which to develop an efficient and effective alcohol/drug treatment service (Mattick and Jarvis, 1993). Generally, issues related to treatment effectiveness have in the past been examined using an abstinence criteria as a measure of success or failure. This thesis has studied a number of significant issues to determine what constitutes therapeutic and cost effective drug/alcohol treatment practice. The focus of research in the studies that comprise this thesis has been on who stays in treatment and how treatment impacts on the clients who remain in treatment.

This thesis found:

1.) that in-patient alcohol/drug treatment drop-outs had more adaptive psycho-social resources prior to treatment than treatment completers. Drop-outs who had attended treatment prior to re-treatment were more likely to attribute the cause of alcoholism to a disease. They were also more likely to have less adaptive psychological resources than treatment completers who had attended past treatment and attributed the cause of alcoholism to a bad habit;

2.) that the holding of a disease attribution for the cause of alcoholism was related to less adaptive psychological functioning and substance use in the event of relapse (post-treatment use requiring re-entry into treatment). These findings could imply that those in-patient alcohol/drug treatment centres which teach a disease belief about alcoholism may not be acting in their clients' best interests; and,

3.) that 8 weeks of cognitive-behavioural treatment may have been more effective than 12 weeks of traditional disease model treatment in equipping clients at treatment completion with the psycho-social resources required to eventually take control of substance use behaviour.
Lastly, these results may be taken as a demonstration of the importance of examining a wide variety of variables in treatment evaluation. This thesis has used psycho-social and substance use criteria as indicators of treatment/client interactions with which to examine issues related to treatment effectiveness. Using more than an abstinence criterion has been important in:

(a) measuring changes in psycho-social and substance use resources;
(b) discriminating between the psycho-social resources and pre-treatment alcohol/drug use of treatment completers and dropouts;
(c) discriminating between the impact of treatment duration and philosophy on client progress and outcome;
(d) discriminating between treatment attributions for the cause of alcoholism and substance use behaviour post-treatment;
(e) determining a key psychological variable (namely depression) and its relationship to treatment attrition/retention, attributions for the cause of alcoholism, substance use and behaviour.
REFERENCES


INTAKE INTERVIEW

CLIENT DETAILS
Date of admission..............................
New admission...........Y/N  Readmission......................Y/N

Given names................................. Surname.................................
D.O.B........................................ Sex.................................

Phone - Work.............................. Home.................................
Medicare no.................................

Next of kin................................. Phone.................................
Address.................................

Nationality................................. Country of birth.................................
Aboriginal/Torres Strait Islander.................................
Mother born................................. Father born.................................
Main language spoken at home.................................

What was your last address?.................................
Phone.................................

CIRCUMSTANCES OF ADMISSION
Please place a tick where applicable.

Main sources of referral?
   AA/NA contact.................................
   Personal Experience.................................
   Friend/Relative.................................
   General Practioner.................................
   Drug/Alcohol unit.................................
   Hospital.................................
   Telephone Counselling.................................
   Legal.................................
   Government Agency.................................
   Other.................................

Reasons for presentation?
Concerns about:
   Finances.................................
   Legal pressure.................................
   Health status.................................
   Family pressure.................................
   Unemployment.................................
   Other.................................
Why did you choose this treatment centre?
- Detox
- Close to home
- Length of programme
- Only option given
- Readmission
- Other

How do you think this centre can help you?
- Education
- Time out
- Accommodation
- Don't know
- Other

TREATMENT HISTORY

Previous Detox?
- Y/N
  - If yes, where?
  - When?
  - Duration?
  - Completed?

Previous Rehabs?
- Y/N
  - If yes, where?
  - When?
  - Duration?
  - Completed?

A.A/N.A. attended previously?
- Y/N

FAMILY HISTORY

Please place a tick where applicable.

Do any of the following members of your family have a problem with drugs/alcohol?
- Father
- Mother
- Sister
- Brother
- Child
DRUG/ALCOHOL HISTORY

Age when you began using drugs/alcohol?...........................years.

Age when you first realised drugs/alcohol had become a problem for you?
...........................................years.

Present drug/alcohol use?
  Periodic use........................................1
  Steady use......................................... 2
  Heavy use........................................2

How much of a problem do you have with alcohol/drugs?
  No problem........................................1
  moderate problem................................2
  bad problem......................................3
  I can’t handle it..................................4

What is your drug of choice?..........................................

Some people say that alcoholism is a disease or sickness, while others say it is not a disease, but rather it is more like a bad habit a person has learned. do you see it as a disease or as a bad habit? (Tick where applicable)
  Disease.............................................
  Bad habit.........................................
  Both..............................................
THE NEXT FEW QUESTIONS ARE ABOUT ALCOHOL - "piss", "grog". Circle the appropriate number...

1. In the last six months have you used alcohol?
   yes.................................. 1
   No.................................. 2

2. On how many days did you use alcohol in the last four weeks?
   None.................................. 1
   On 1 - 2 days.......................... 2
   On 3 - 5 days.......................... 3
   On 6 - 9 days.......................... 4
   On 10 - 19 days......................... 5
   On 20 or more days.................... 6
   Every day.............................. 7

3. On how many days did you drink alcohol in the last week?
   None.................................. 1
   On 1 - 2 days.......................... 2
   On 3 - 4 days.......................... 3
   On 5 - 6 days.......................... 4
   Every day.............................. 5

4. On a day when you had used alcohol, how many drinks would you usually have had?
   A few sips or mouthfuls.................. 1
   1 or 2 drinks........................... 2
   3 or 4 drinks........................... 3
   5 or 8 drinks........................... 4
   9 or 12 drinks.......................... 5
   Over 12 drinks.......................... 6

5. On a day when you had used alcohol what kind of effects would it normally have had?
   No effects.............................. 1
   Feel hardly any effects................ 2
   Slightly drunk/tipsy.................... 3
   A fair bit drunk........................ 4
   Very drunk................................ 5
   Passed out............................. 6
6. Have you used marijuana in the last six months?
   - yes.......................... 1
   - No........................... 2

7. On how many days did you use marijuana in the last four weeks?
   - None.......................... 1
   - On 1 - 2 days............... 2
   - On 3 - 5 days............. 3
   - On 6 - 9 days............. 4
   - On 10 - 19 days......... 5
   - On 20 or more days.... 6
   - Every day.................... 7

8. On how many days did you use marijuana in the last week?
   - None.......................... 1
   - On 1 - 2 days............... 2
   - On 3 - 4 days............. 3
   - On 5 - 6 days............. 4
   - Every day.................... 5

9. On a day when you use marijuana, how much marijuana would you usually use?
   - A few puffs................................. 1
   - Only a small quantity............... 2
   - A fairly large quantity............... 3
   - A large quantity........................ 4
   - Heaps.................................... 5

10. On a day when you had used marijuana what kind of effects would it normally have had?
    - No effects.......................... 1
    - Feel hardly any effects............ 2
    - Slightly stoned..................... 3
    - A fair bit stoned.................... 4
    - Very stoned........................... 5
THE NEXT FEW QUESTIONS ARE ABOUT TRANQUILLISERS - valium, benzodiazepams, serepax, rohypnol, librium.

11. Have you used tranquillisers in the last six months?
   yes............................ 1
   No............................. 2

12. On how many days did you use tranquillisers in the last four weeks?
   None............................ 1
   On 1 - 2 days.................. 2
   On 3 - 5 days................... 3
   On 6 - 9 days................... 4
   On 10 - 19 days................. 5
   On 20 or more days.......... 6
   Every day....................... 7

13. On how many days did you use tranquillisers in the last week?
   None............................ 1
   On 1 - 2 days.................. 2
   On 3 - 4 days................... 3
   On 5 - 6 days................... 4
   Every day....................... 5

14. On a day when you use tranquillisers how many pills would you usually have?
   A few pills...................... 1
   1 or 2 pills..................... 2
   3 or 4 pills..................... 3
   5 or 8 pills..................... 4
   9 or 12 pills................... 5
   Over 12 pills................... 6

15. On a day when you had used tranquillisers what kind of effects would it normally have had?
   No effects........................ 1
   Feel hardly any effects......... 2
   Slightly effected................ 3
   A fair bit effected............. 4
   Very effected.................... 5
   Passed out........................ 6
THE NEXT FEW QUESTIONS ARE ABOUT STIMULANTS - "speed", amphetamines, "ghee", "snort", ephedrine, benzedrine.

16. Have you used stimulants in the last six months?
   yes........................................... 1
   No........................................... 2

17. On how many days did you use stimulants in the last four weeks?
   None........................................... 1
   On 1 - 2 days.............................. 2
   On 3 - 5 days.............................. 3
   On 6 - 9 days.............................. 4
   On 10 - 19 days......................... 5
   On 20 or more days..................... 6
   Every day................................. 7

18. On how many days did you use stimulants in the last week?
   None........................................... 1
   On 1 - 2 days.............................. 2
   On 3 - 4 days.............................. 3
   On 5 - 6 days.............................. 4
   Every day................................. 5

19. On a day when you use stimulants how many pills/snorts/hits would you usually have?
   A few pills/snorts/hits...................... 1
   1 or 2 pills/snorts/hits................... 2
   3 or 4 pills/snorts/hits................... 3
   5 or 8 pills/snorts/hits................... 4
   9 or 12 pills/snorts/hits.................. 5
   Over 12 pills/snorts/hits.................. 6

20. On a day when you had used stimulants what kind of effects would it normally have had?
   No effects.................................... 1
   Feel hardly any effects.................... 2
   Slightly effected........................... 3
   A fair bit effected......................... 4
   Very effected............................... 5
   Wiped........................................... 6
THE NEXT FEW QUESTIONS ARE ABOUT HEROIN - "smack", "hammer", "scag", "horse".

21. Have you used heroin in the last six months?
   yes............................. 1
   No............................. 2

22. On how many days did you use heroin in the last four weeks?
   None............................. 1
   On 1 - 2 days..................... 2
   On 3 - 5 days..................... 3
   On 6 - 9 days..................... 4
   On 10 - 19 days.................. 5
   On 20 or more days............. 6
   Every day....................... 7

23. On how many days did you use heroin in the last week?
   None............................. 1
   On 1 - 2 days..................... 2
   On 3 - 4 days..................... 3
   On 5 - 6 days..................... 4
   Every day....................... 5

24. On a day when you use heroin how many hits/snorts/smokes would you usually have?
   A few hits/snorts/smokes................. 1
   1 or 2 hits/snorts/smokes............... 2
   3 or 4 hits/snorts/smokes............... 3
   5 or 8 hits/snorts/smokes............... 4
   9 or 12 hits/snorts/smokes.............. 5
   Over 12 hits/snorts/smokes............. 6

25. On a day when you had used heroin what kind of effects would it normally have had?
   No effects.......................... 1
   Feel hardly any effects............... 2
   Slightly stoned...................... 3
   A fair bit stoned.................... 4
   Very stoned.......................... 5
   Totally stoned...................... 6
THE NEXT FEW QUESTIONS ARE ABOUT SLEEPING PILLS - mogadon, mandrax, barbiturates, "dolls".

26. Have you used sleeping pills in the last six months?
   yes........................................ 1
   No......................................... 2

If you answered NO proceed to question 41. on the next page.

27. On how many days did you use sleeping pills in the last four weeks?
   None........................................ 1
   On 1 - 2 days......................... 2
   On 3 - 5 days......................... 3
   On 6 - 9 days......................... 4
   On 10 - 19 days...................... 5
   On 20 or more days.... .... 6
   Every day................................. 7

28. On how many days did you use sleeping pills in the last week?
   None........................................ 1
   On 1 - 2 days......................... 2
   On 3 - 4 days......................... 3
   On 5 - 6 days......................... 4
   Every day................................. 5

29. On a day when you use sleeping pills how many pills would you usually have?
   A few pills............................... 1
   1 or 2 pills.............................. 2
   3 or 4 pills.............................. 3
   5 or 8 pills.............................. 4
   9 or 12 pills............................ 5
   Over 12 pills............................ 6

30. On a day when you had used sleeping pills what kind of effects would it normally have had?
   No effects............................... 1
   Feel hardly any effects................ 2
   Slightly effected........................ 3
   A fair bit effected..................... 4
   Very effected........................... 5
   Passed out.............................. 6
THE NEXT FEW QUESTIONS ARE ABOUT PAIN KILLERS - paracetemol, aspirin, prescribed and other the counter pills/powders and mixtures.

31. Have you used pain relievers in the last six months?
   yes.................................. 1
   No.................................. 2

32. On how many days did you use pain relievers in the last four weeks?
   None.................................. 1
   On 1 - 2 days......................... 2
   On 3 - 5 days---------------------- 3
   On 6 - 9 days---------------------- 4
   On 10 - 19 days------------------- 5
   On 20 or more days................. 6
   Every day............................ 7

33. On how many days did you use pain relievers in the last week?
   None.................................. 1
   On 1 - 2 days......................... 2
   On 3 - 4 days---------------------- 3
   On 5 - 6 days---------------------- 4
   Every day............................ 5

34. On a day when you use pain killers how many tablets/powders/bottles would you usually have?
   A few pills/powders..................... 1
   1 or 2 pills/powders................... 2
   3 or 4 pills/powders................... 3
   5 or 8 pills/powders................... 4
   9 or 12 pills/powders................ 5
   Over 12 pills/powders............... 6

35. If you have used any of these substance in the last six months indicate how often. Circle appropriate number.

   Hallucinogens - "acid", LSD, PCP, DMA, "magic mushrooms", datura
   No.................................. 1
   Yes.................................. 2

   How often?
   1-2 times......................... 3
   3-5 times......................... 4
   6-9 times......................... 5
   10-19 times...................... 6
   20-39 times...................... 7
   40 or more.................... 8
Cough-cold preparations - Codral linctus, Nucosef, antihystamines.

How often?

No.......................... 1
Yes.......................... 2

Cough-cold preparations

Inhalants - petrol, glue, aerosols.

How often?

No.......................... 1
Yes.......................... 2

Inhalants

Cocaine.

How often?

No.......................... 1
Yes.......................... 2

Cocaine

Ecstasy.

How often?

No.......................... 1
Yes.......................... 2

Ecstasy
### Methadone.

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<th>How often?</th>
<th>Yes</th>
<th>No</th>
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<td>1</td>
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<td>3-5 times</td>
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<tr>
<td>6-9 times</td>
<td>5</td>
<td>1</td>
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<td>1</td>
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<td>40 or more</td>
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### Dilaudid.

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### Pethadine.

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<td>6-9 times</td>
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<td>40 or more</td>
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### Codeine.

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<td>6-9 times</td>
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<td>10-19 times</td>
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<td>1</td>
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<tr>
<td>20-39 times</td>
<td>7</td>
<td>1</td>
</tr>
<tr>
<td>40 or more</td>
<td>8</td>
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</table>

Other: ..........................................................................................................................
INSTRUCTIONS: This first questionnaire asks for some facts about yourself. Where the question requires a written answer just a few words will do. Where an age or number is required just write in the answer. Where a number of choices are given please circle the appropriate number on the right hand side of the page. Please read each question carefully before you answer.

1. What is your age (in years) ?
   and what was your date of birth ?
   are you male or female ?

2. What are your current living arrangements ? (circle more than one alternative if necessary)
   with your parent/s 1
   with relatives other than parents 2
   sharing with friends 3
   with your spouse or de-facto partner 4
   living on one's own 5
   in a boarding house or institution 6

If you circled 4 above, how long have you lived with your spouse or de-facto partner ?
   less than 3 months 1
   between 3 months and 1 year 2
   between 1 and 2 years 3
   more than 2 years 4

3. What is your current marital status ?
   never married 1
   now married 2
   separated 3
   widowed 4
   divorced 5

4. How many children, if any, do you have ?
   If you do have any children, what is their age (in years) and sex (circle M or F for male or female)?
   1st child age: _____ sex: M F 2nd child age: _____ sex: M F
   3rd child age: _____ sex: M F 4th child age: _____ sex: M F
   5th child age: _____ sex: M F 6th child age: _____ sex: M F

5. What is the highest level of education you have achieved ?
   primary schooling only 1
   1-4 years of high school 2
   5-6 years of high school 3
   trade or technical certificate 4
   bachelor degree or diploma 5
   post graduate degree 6

At what age did you leave High School ?
When you were in your last year at High School, how good were you at your schoolwork, compared with others in your year?

Well above average 1  
Above average 2  
Slightly above average 3  
Slightly below average 4  
Below average 5  
Well below average 6

What is your current occupation? (circle more than one alternative if necessary)

unemployed 1  
full-time student 2  
part-time student 3  
home duties 4  
retired or not working by choice 5  
wage or salary earner 6  
self-employed 7

If you are a wage or salary earner, or are self-employed are you working?

full-time 1  
part-time 2

What is your job title? ____________________________   |___|___|

What industry do you work in? ____________________________   |___|___|

If you are NOT currently a wage or salary earner or self-employed, when were you last in employment?

within the last 3 months 1  
between 3 and 12 months ago 2  
more than 1 year ago 3

If you are a full-time or part-time student are you currently attending a?

University or CAE 1  
Technical College 2  
High School 3  
Other recognised Training Course 4  
Other 5

Please describe the course? ____________________________   |___|___|

What is your religion? 
No religion 1  
Evangelical of Fundamentalist Christian 2  
Other Protestant (e.g., Anglican) 3  
Roman Catholic 4  
Jewish 5  
Greek or Russian Orthodox 6  
Moslem or Islam 7  
Buddhist 8  
Other (please specify below) 9

How often do you attend church or other religious observances?

More than once a week 1  
Once a week 2  
Every month or so 3  
Once or twice a year 4  
Rarely 5  
Never 6
INSTRUCTIONS: These questions are about social relationships. After each question, please CIRCLE the answer that would best apply to your circumstances THROUGHOUT THE PAST YEAR.

1. If something unpleasant or irritating happens and you get upset or angry about it, do you have someone you can go to who isn't involved and tell them just how you feel? YES NO

2. Would you say you have a single, lasting relationship, someone you intend to go on sharing your life with? YES NO

3. Is there anyone who lives near you who knows you very well as a person (this includes friends as well as family members)? YES NO

4. Is there any particular person you feel you can lean on? YES NO

5. Do you feel there is one particular person who feels very close to you? YES NO

6. When you are happy, is there any particular person you can share it with, someone whom you feel sure will feel happy simply because you are? YES NO

7. At present do you have someone you can share your private feelings with (confide in)? YES NO
INSTRUCTIONS: Below are a number of statements about how various topics affect your personal beliefs. There are no right or wrong answers. Using the 6-point scale shown below, please indicate how much you agree or disagree with each statement by circling one number on the scale beside the statement.

<table>
<thead>
<tr>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>strongly disagree</td>
<td>generally disagree</td>
<td>somewhat disagree</td>
<td>somewhat agree</td>
<td>generally agree</td>
<td>strongly agree</td>
</tr>
</tbody>
</table>

1. I can anticipate difficulties and take action to avoid them .................. 0 1 2 3 4 5
2. A great deal of what happens to me is probably just a matter of luck .................. 0 1 2 3 4 5
3. Everyone knows that luck or chance determines one's future .......................... 0 1 2 3 4 5
4. I can control my problems only if I have outside support ............................ 0 1 2 3 4 5
5. When I make plans, I am almost certain I can make them work .......................... 0 1 2 3 4 5
6. My problem(s) will dominate me all my life ........................................ 0 1 2 3 4 5
7. My mistakes and problems are my responsibility to deal with .......................... 0 1 2 3 4 5
8. Becoming a success is a matter of hard work, luck has little or nothing to do with it .... 0 1 2 3 4 5
9. My life is controlled by outside actions and events ...................................... 0 1 2 3 4 5
10. People are victims of circumstances beyond their control .............................. 0 1 2 3 4 5
11. To continually manage my problems I need professional help .......................... 0 1 2 3 4 5
12. I believe a person can truly be the master of their fate ................................ 0 1 2 3 4 5
13. I am confident of being able to deal successfully with future problems ............ 0 1 2 3 4 5
14. Maintaining control over my problem(s) is due mostly to luck ........................ 0 1 2 3 4 5
The questionnaire consists of 21 groups of statements. After reading each group of statements carefully, circle the number (0, 1, 2 or 3) next to the one statement in each group which best describes the way you have been feeling the past week, including today. If several statements within a group seem to apply equally well, circle each one. Be sure to read all the statements in each group before making your choice.

<table>
<thead>
<tr>
<th>Statement</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>I do not feel sad.</td>
<td>I feel sad.</td>
<td>I am sad all the time and I can't snap out of it.</td>
<td>I am so sad or unhappy that I can't stand it.</td>
<td></td>
</tr>
<tr>
<td>I am not particularly discouraged about the future.</td>
<td>I feel discouraged about the future.</td>
<td>I feel I have nothing to look forward to.</td>
<td>I feel that the future is hopeless and that things cannot improve.</td>
<td></td>
</tr>
<tr>
<td>I do not feel like a failure.</td>
<td>I feel I have failed more than the average person.</td>
<td>As I look back on my life, all I can see is a lot of failures.</td>
<td>I feel I am a complete failure as a person.</td>
<td></td>
</tr>
<tr>
<td>I get as much satisfaction out of things as I used to.</td>
<td>I don't enjoy things the way I used to.</td>
<td>I don't get real satisfaction out of anything anymore.</td>
<td>I am dissatisfied or bored with everything.</td>
<td></td>
</tr>
<tr>
<td>I don't feel particularly guilty.</td>
<td>I feel guilty a good part of the time.</td>
<td>I feel quite guilty most of the time.</td>
<td>I feel guilty all of the time.</td>
<td></td>
</tr>
<tr>
<td>I don't feel I am being punished.</td>
<td>I feel I may be punished.</td>
<td>I expect to be punished.</td>
<td>I feel I am being punished.</td>
<td></td>
</tr>
<tr>
<td>I don't feel disappointed in myself.</td>
<td>I am disappointed in myself.</td>
<td>I am disgusted with myself.</td>
<td>I hate myself.</td>
<td></td>
</tr>
<tr>
<td>I don't feel I am any worse than anybody else.</td>
<td>I am critical of myself for my weaknesses or mistakes.</td>
<td>I blame myself all the time for my faults.</td>
<td>I blame myself for everything bad that happens.</td>
<td></td>
</tr>
<tr>
<td>I don't have any thoughts of killing myself.</td>
<td>I have thoughts of killing myself, but I would not carry them out.</td>
<td>I would like to kill myself.</td>
<td>I would kill myself if I had the chance.</td>
<td></td>
</tr>
<tr>
<td>I don't cry any more than usual.</td>
<td>I cry more now than I used to.</td>
<td>I cry all the time now.</td>
<td>I used to be able to cry, but now I can't cry even though I want to.</td>
<td></td>
</tr>
<tr>
<td>I am no more irritated now than I ever am.</td>
<td>I get annoyed or irritated more easily than I used to.</td>
<td>I feel irritated all the time now.</td>
<td>I don't get irritated at all by the things that used to irritate me.</td>
<td></td>
</tr>
<tr>
<td>I have not lost interest in other people.</td>
<td>I am less interested in other people than I used to be.</td>
<td>I have lost most of my interest in other people.</td>
<td>I have lost all of my interest in other people.</td>
<td></td>
</tr>
<tr>
<td>I make decisions about as well as I ever could.</td>
<td>I put off making decisions more than I used to.</td>
<td>I have greater difficulty in making decisions than before.</td>
<td>I can't make decisions at all anymore.</td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>I haven't lost much weight, if any, lately.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>----</td>
<td>------------------------------------------</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>I have lost more than 5 pounds.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>I have lost more than 10 pounds.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>I have lost more than 15 pounds.</td>
<td></td>
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</tr>
</tbody>
</table>

I am purposely trying to lose weight by eating less. Yes ______ No ______

<table>
<thead>
<tr>
<th>20</th>
<th>I am no more worried about my health than usual.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>I am worried about physical problems such as aches and pains; or upset stomach; or constipation.</td>
</tr>
<tr>
<td>2</td>
<td>I am very worried about physical problems and it's hard to think of much else.</td>
</tr>
<tr>
<td>3</td>
<td>I am so worried about my physical problems that I cannot think about anything else.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>21</th>
<th>I have not noticed any recent change in my interest in sex.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>I am less interested in sex than I used to be.</td>
</tr>
<tr>
<td>2</td>
<td>I am much less interested in sex now.</td>
</tr>
<tr>
<td>3</td>
<td>I have lost interest in sex completely.</td>
</tr>
</tbody>
</table>

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**Subtotal Page 2**

**Subtotal Page 1**

**Total Score**
Listed below are a variety of thoughts that pop into people's heads. Please read each thought and indicate how frequently, if at all, the thought occurred to you over the last week. Please read each item carefully and circle the appropriate answers on the answer sheet.

RESPONSE

```
not at all  sometimes  moderately often  often  all the time
```

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<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

THOUGHTS

1. I feel like I'm up against the world.
2. I'm no good.
3. I'm proud of myself.
4. Why can't I ever succeed.
5. No one understands me.
6. I've let people down.
7. I feel fine.
8. I don't think I can go on.
9. I wish I were a better person.
10. No matter what happens, I know I'll make it.
11. I'm so weak.
12. My life's not going the way I want it to.
13. I can accomplish anything.
14. I'm so disappointed in myself.
15. Nothing feels good anymore.
16. I feel good.

Remember, each sentence that you read is a thought that you may have had often, less frequently, or not at all. Tell us now often over the last week you have had each of the thoughts.
<table>
<thead>
<tr>
<th></th>
<th>not at all</th>
<th>sometimes</th>
<th>moderately</th>
<th>often</th>
<th>all the time</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>2</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>3</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>4</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>5</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

17. I can't stand this anymore.
18. I can't get started.
19. What's wrong with me?
20. I'm warm and comfortable.
21. I wish I were somewhere else.
22. I can't get things together.
23. I hate myself.
24. I feel confident I can do anything I set my mind to.
25. I'm worthless.
26. Wish I could just disappear.
27. What's the matter with me?
28. I feel very happy.
29. I'm a loser.
30. My life is a mess.
31. I'm a failure.
32. This is super!
33. I'll never make it.
34. I feel so helpless.
35. Something has to change.
36. There must be something wrong with me.
37. I'm luckier than most people.
38. My future is bleak.
39. It's just not worth it.
40. I can't finish anything.
Situational Confidence Questionnaire

Listed below are a number of situations or events in which some people experience a drinking problem.

Imagine yourself as you are right now in each of these situations. Indicate on the scale provided how confident you are that you would be able to resist the urge to drink heavily in that situation.

Circle 100 if you are 100% confident right now that you could resist the urge to drink heavily; 80 if you are 80% confident; 60 if you are 60% confident. If you are more unconfident than confident, circle 40 to indicate that you are only 40% confident that you could resist the urge to drink heavily; 20 for 20% confident; 0 if you have no confidence at all about that situation.

I would be able to resist the urge to drink heavily

<table>
<thead>
<tr>
<th></th>
<th>Not at all confident</th>
<th>Very confident</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. If I felt that I had let myself down</td>
<td>0 20 40 60 80 100</td>
<td></td>
</tr>
<tr>
<td>2. If there were fights at home</td>
<td>0 20 40 60 80 100</td>
<td></td>
</tr>
<tr>
<td>3. If I had trouble sleeping</td>
<td>0 20 40 60 80 100</td>
<td></td>
</tr>
<tr>
<td>4. If I had an argument with a friend</td>
<td>0 20 40 60 80 100</td>
<td></td>
</tr>
<tr>
<td>5. If other people didn’t seem to like me</td>
<td>0 20 40 60 80 100</td>
<td></td>
</tr>
<tr>
<td>6. If I felt confident and relaxed</td>
<td>0 20 40 60 80 100</td>
<td></td>
</tr>
<tr>
<td>7. If I were out with friends and they stopped by a bar for a drink</td>
<td>0 20 40 60 80 100</td>
<td></td>
</tr>
<tr>
<td>8. If I were enjoying myself at a party and wanted to feel even better</td>
<td>0 20 40 60 80 100</td>
<td></td>
</tr>
<tr>
<td>9. If I remembered how good it tasted</td>
<td>0 20 40 60 80 100</td>
<td></td>
</tr>
<tr>
<td>10. If I convinced myself that I was a new person and could take a few drinks</td>
<td>0 20 40 60 80 100</td>
<td></td>
</tr>
<tr>
<td>Scenario</td>
<td>Confident Levels</td>
<td></td>
</tr>
<tr>
<td>--------------------------------------------------------------------------</td>
<td>------------------</td>
<td></td>
</tr>
<tr>
<td>I would be able to resist the urge to drink heavily</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. If I were afraid that thing weren't going to work out</td>
<td>0 20 40 60 80 100</td>
<td></td>
</tr>
<tr>
<td>12. If other people interfered with my plans</td>
<td>0 20 40 60 80 100</td>
<td></td>
</tr>
<tr>
<td>13. If I felt drowsy and wanted to stay alert</td>
<td>0 20 40 60 80 100</td>
<td></td>
</tr>
<tr>
<td>14. If there were problems with people at work</td>
<td>0 20 40 60 80 100</td>
<td></td>
</tr>
<tr>
<td>15. If I felt uneasy in the presence of someone</td>
<td>0 20 40 60 80 100</td>
<td></td>
</tr>
<tr>
<td>16. If everything were going well</td>
<td>0 20 40 60 80 100</td>
<td></td>
</tr>
<tr>
<td>17. If I were at a party and other people were drinking</td>
<td>0 20 40 60 80 100</td>
<td></td>
</tr>
<tr>
<td>18. If I wanted to celebrate with a friend</td>
<td>0 20 40 60 80 100</td>
<td></td>
</tr>
<tr>
<td>19. If I passed by a bottle shop</td>
<td>0 20 40 60 80 100</td>
<td></td>
</tr>
<tr>
<td>20. If I wondered about my self-control over alcohol and felt like having a drink to try it out</td>
<td>0 20 40 60 80 100</td>
<td></td>
</tr>
<tr>
<td>21. If I were angry at the way things had turned out</td>
<td>0 20 40 60 80 100</td>
<td></td>
</tr>
<tr>
<td>22. If other people treated me unfairly</td>
<td>0 20 40 60 80 100</td>
<td></td>
</tr>
<tr>
<td>23. If I felt nauseous</td>
<td>0 20 40 60 80 100</td>
<td></td>
</tr>
<tr>
<td>24. If pressure built up at work because of the demands of my supervisor</td>
<td>0 20 40 60 80 100</td>
<td></td>
</tr>
<tr>
<td>Scenario</td>
<td>Not at all confident</td>
<td>Very confident</td>
</tr>
<tr>
<td>------------------------------------------------------------------------</td>
<td>----------------------</td>
<td>----------------</td>
</tr>
<tr>
<td>I would be able to resist the urge to drink heavily</td>
<td></td>
<td></td>
</tr>
<tr>
<td>25. If someone criticized me</td>
<td>0 20 40 60 80 100</td>
<td></td>
</tr>
<tr>
<td>26. If I felt satisfied with something I had done</td>
<td>0 20 40 60 80 100</td>
<td></td>
</tr>
<tr>
<td>27. If I were relaxed with a good friend and wanted to have a good time</td>
<td>0 20 40 60 80 100</td>
<td></td>
</tr>
<tr>
<td>28. If I were in a restaurant and the people with me ordered drinks</td>
<td>0 20 40 60 80 100</td>
<td></td>
</tr>
<tr>
<td>29. If I unexpectedly found a bottle of my favorite drink</td>
<td>0 20 40 60 80 100</td>
<td></td>
</tr>
<tr>
<td>30. If I started to think that just one drink could cause no harm</td>
<td>0 20 40 60 80 100</td>
<td></td>
</tr>
<tr>
<td>31. If I felt confused about what I should do</td>
<td>0 20 40 60 80 100</td>
<td></td>
</tr>
<tr>
<td>32. If I felt under a lot of pressure from family members at home</td>
<td>0 20 40 60 80 100</td>
<td></td>
</tr>
<tr>
<td>33. If my stomach felt like it was tied in knots</td>
<td>0 20 40 60 80 100</td>
<td></td>
</tr>
<tr>
<td>34. If I were not getting along well with others at work</td>
<td>0 20 40 60 80 100</td>
<td></td>
</tr>
<tr>
<td>35. If other people around me made me tense</td>
<td>0 20 40 60 80 100</td>
<td></td>
</tr>
<tr>
<td>36. If I were out with friends 'on the town' and wanted to increase my enjoyment</td>
<td>0 20 40 60 80 100</td>
<td></td>
</tr>
</tbody>
</table>
I would be able to
resist the urge to
drink heavily

<table>
<thead>
<tr>
<th>Not at all confident</th>
<th>Very confident</th>
</tr>
</thead>
</table>

37. If I met a friend and he or she suggested that we have a drink together  
0 20 40 60 80 100

38. If I suddenly had an urge to drink  
0 20 40 60 80 100

39. If I wanted to prove to myself that I could take a few drinks without becoming drunk  
0 20 40 60 80 100
It is a list of problems people sometimes have. Read each one carefully, and blacken the circle that describes how much that problem has bothered you during the past 7 days including today. Blacken the circle for only one number for each problem and do not skip any items. If you change your mind, erase your first mark carefully. Read the example before beginning, and if you have any questions please ask them now.

**EXAMPLE**

**HOW MUCH WERE YOU DISTRESSED BY:**

<table>
<thead>
<tr>
<th>NOT AT ALL</th>
<th>A LITTLE BIT</th>
<th>MODERATELY</th>
<th>QUITE A BIT</th>
<th>EXTREMELY</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td></td>
</tr>
</tbody>
</table>

Bodyaches

<table>
<thead>
<tr>
<th>HOW MUCH WERE YOU DISTRESSED BY:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Headaches</td>
</tr>
<tr>
<td>2. Nervousness or shakiness inside</td>
</tr>
<tr>
<td>3. Repeated unpleasant thoughts that won’t leave your mind</td>
</tr>
<tr>
<td>4. Faintness or dizziness</td>
</tr>
<tr>
<td>5. Loss of sexual interest or pleasure</td>
</tr>
<tr>
<td>6. Feeling critical of others</td>
</tr>
<tr>
<td>7. The idea that someone else can control your thoughts</td>
</tr>
<tr>
<td>8. Feeling others are to blame for most of your troubles</td>
</tr>
<tr>
<td>9. Trouble remembering things</td>
</tr>
<tr>
<td>10. Worried about sloppiness or carelessness</td>
</tr>
<tr>
<td>11. Feeling easily annoyed or irritated</td>
</tr>
<tr>
<td>12. Pains in heart or chest</td>
</tr>
<tr>
<td>13. Feeling afraid in open spaces or on the streets</td>
</tr>
<tr>
<td>14. Feeling low in energy or slowed down</td>
</tr>
<tr>
<td>15. Thoughts of ending your life</td>
</tr>
<tr>
<td>16. Hearing voices that other people do not hear</td>
</tr>
<tr>
<td>17. Trembling</td>
</tr>
<tr>
<td>18. Feeling that most people cannot be trusted</td>
</tr>
<tr>
<td>19. Poor appetite</td>
</tr>
<tr>
<td>20. Crying easily</td>
</tr>
<tr>
<td>21. Feeling shy or uneasy with the opposite sex</td>
</tr>
<tr>
<td>22. Feelings of being trapped or caught</td>
</tr>
<tr>
<td>23. Suddenly scared for no reason</td>
</tr>
<tr>
<td>24. Temper outbursts that you could not control</td>
</tr>
<tr>
<td>25. Feeling afraid to go out of your house alone</td>
</tr>
<tr>
<td>26. Blaming yourself for things</td>
</tr>
<tr>
<td>27. Pains in lower back</td>
</tr>
<tr>
<td>28. Feeling blocked in getting things done</td>
</tr>
<tr>
<td>29. Feeling lonely</td>
</tr>
<tr>
<td>30. Feeling blue</td>
</tr>
<tr>
<td>31. Worrying too much about things</td>
</tr>
<tr>
<td>32. Feeling no interest in things</td>
</tr>
<tr>
<td>33. Feeling fearful</td>
</tr>
<tr>
<td>34. Your feelings being easily hurt</td>
</tr>
<tr>
<td>35. Other people being aware of your private thoughts</td>
</tr>
<tr>
<td>36. Feeling others do not understand you or are unsympathetic</td>
</tr>
<tr>
<td>37. Feeling that people are unfriendly or dislike you</td>
</tr>
<tr>
<td>HOW MUCH WERE YOU DISTRESSED BY:</td>
</tr>
<tr>
<td>----------------------------------</td>
</tr>
<tr>
<td>Having to do things very slowly to insure correctness</td>
</tr>
<tr>
<td>Heart pounding or racing</td>
</tr>
<tr>
<td>Nausea or upset stomach</td>
</tr>
<tr>
<td>Feeling inferior to others</td>
</tr>
<tr>
<td>Soreness of your muscles</td>
</tr>
<tr>
<td>Feeling that you are watched or talked about by others</td>
</tr>
<tr>
<td>Trouble falling asleep</td>
</tr>
<tr>
<td>Having to check and double-check what you do</td>
</tr>
<tr>
<td>Difficulty making decisions</td>
</tr>
<tr>
<td>Feeling afraid to travel on buses, subways, or trains</td>
</tr>
<tr>
<td>Trouble getting your breath</td>
</tr>
<tr>
<td>Hot or cold spells</td>
</tr>
<tr>
<td>Having to avoid certain things, places, or activities because they frighten you</td>
</tr>
<tr>
<td>Your mind going blank</td>
</tr>
<tr>
<td>Numbness or tingling in parts of your body</td>
</tr>
<tr>
<td>A lump in your throat</td>
</tr>
<tr>
<td>Feeling hopeless about the future</td>
</tr>
<tr>
<td>Trouble concentrating</td>
</tr>
<tr>
<td>Feeling weak in parts of your body</td>
</tr>
<tr>
<td>Feeling tense or keyed up</td>
</tr>
<tr>
<td>Heavy feelings in your arms or legs</td>
</tr>
<tr>
<td>Thoughts of death or dying</td>
</tr>
<tr>
<td>Overeating</td>
</tr>
<tr>
<td>Feeling uneasy when people are watching or talking about you</td>
</tr>
<tr>
<td>Having thoughts that are not your own</td>
</tr>
<tr>
<td>Having urges to beat, injure, or harm someone</td>
</tr>
<tr>
<td>Awakening in the early morning</td>
</tr>
<tr>
<td>Having to repeat the same actions such as touching, counting, or washing</td>
</tr>
<tr>
<td>Sleep that is restless or disturbed</td>
</tr>
<tr>
<td>Having urges to break or smash things</td>
</tr>
<tr>
<td>Having ideas or beliefs that others do not share</td>
</tr>
<tr>
<td>Feeling very self-conscious with others</td>
</tr>
<tr>
<td>Feeling uneasy in crowds, such as shopping or at a movie</td>
</tr>
<tr>
<td>Feeling everything is an effort</td>
</tr>
<tr>
<td>Spells of terror or panic</td>
</tr>
<tr>
<td>Feeling uncomfortable about eating or drinking in public</td>
</tr>
<tr>
<td>Getting into frequent arguments</td>
</tr>
<tr>
<td>Feeling nervous when you are left alone</td>
</tr>
<tr>
<td>Others not giving you proper credit for your achievements</td>
</tr>
<tr>
<td>Feeling lonely even when you are with people</td>
</tr>
<tr>
<td>Feeling so restless you couldn’t sit still</td>
</tr>
<tr>
<td>Feelings of worthlessness</td>
</tr>
<tr>
<td>The feeling that something bad is going to happen to you</td>
</tr>
<tr>
<td>Shouting or throwing things</td>
</tr>
<tr>
<td>Feeling afraid you will faint in public</td>
</tr>
<tr>
<td>Feeling that people will take advantage of you if you let them</td>
</tr>
<tr>
<td>Having thoughts about sex that bother you a lot</td>
</tr>
<tr>
<td>The idea that you should be punished for your sins</td>
</tr>
<tr>
<td>Thoughts and images of a frightening nature</td>
</tr>
<tr>
<td>The idea that something serious is wrong with your body</td>
</tr>
<tr>
<td>Never feeling close to another person</td>
</tr>
<tr>
<td>Feelings of guilt</td>
</tr>
<tr>
<td>The idea that something is wrong with your mind</td>
</tr>
</tbody>
</table>
POST-TREATMENT INTERVIEW

CLIENT DETAILS
Date of admission.................................

Given names........................................... Surname..............................................
D.O.B................................. Sex............

Phone - Work....................................... Home..............................................
Medicare no............................................

Next of kin............................................ Phone..............................................
Address................................................................

Nationality........................................... Country of birth...........................................
Aboriginal/Torres Strait Islander........................
Mother born........................................... Father born..............................................
Main language spoken at home..................................

What was your last address?........................................
Phone..............................................

DRUG/ALCOHOL HISTORY

Age when you began using drugs/alcohol?..........................years.

Age when you first realised drugs/alcohol had become a problem for you?
..........................years.

Present drug/alcohol use?
    Periodic use................................. 1
    Steady use.................................................. 2
    Heavy use.................................................. 3

How much of a problem do you have with alcohol/drugs?
    No problem.................................................. 1
    moderate problem....................................... 2
    bad problem............................................... 3
    I can’t handle it......................................... 4

What is your drug of choice?........................................
Some people say that alcoholism is a disease or sickness, while others say it is not a disease, but rather it is more like a bad habit a person has learned. Do you see it as a disease or as a bad habit? (Tick where applicable)

- Disease
- Bad habit
- Both
1. Have you used alcohol since participating in the (BLANK) Rehabilitation Program?
   yes.......................... 1
   No........................... 2

2. On how many days did you use alcohol in the last four weeks?
   None.......................... 1
   On 1 - 2 days............... 2
   On 3 - 5 days.............. 3
   On 6 - 9 days.............. 4
   On 10 - 19 days........... 5
   On 20 or more days...... 6
   Every day.................... 7

3. On how many days did you drink alcohol in the last week?
   None.......................... 1
   On 1 - 2 days............... 2
   On 3 - 4 days.............. 3
   On 5 - 6 days.............. 4
   Every day.................... 5

4. On a day when you use alcohol, how many drinks will you usually have?
   A few sips or mouthfuls........ 1
   1 or 2 drinks................ 2
   3 or 4 drinks................ 3
   5 or 8 drinks............... 4
   9 or 12 drinks.............. 5
   Over 12 drinks............... 6

5. On a day when you use alcohol, what kind of effects will it usually have?
   No effects...................... 1
   Feel hardly any effects..... 2
   Slightly drunk/tipsy........ 3
   A fair bit drunk............. 4
   Very drunk.................... 5
   Passed out................... 6
6. Have you used Marijuana since participating in the (BLANK) Rehabilitation Program?
   yes.................................. 1
   No.................................. 2

7. On how many days did you use marijuana in the last four weeks?
   None............................. 1
   On 1 - 2 days................. 2
   On 3 - 5 days................. 3
   On 6 - 9 days................. 4
   On 10 - 19 days............. 5
   On 20 or more days.... 6
   Every day...................... 7

8. On how many days did you use marijuana in the last week?
   None............................. 1
   On 1 - 2 days................. 2
   On 3 - 4 days................. 3
   On 5 - 6 days................. 4
   Every day...................... 5

9. On a day when you use marijuana, how much marijuana will you use?
   A few puffs................................. 1
   Only a small quantity............ 2
   O fairly large quantity............ 3
   A large quantity................... 4
   Heaps.................................... 5

10. On a day when you use marijuana, what kind of effects will it usually have?
    No effects............................... 1
    Feel hardly any effects........... 2
    Slightly stoned..................... 3
    A fair bit stoned............... 4
    Very stoned........................... 5
11. Have you used Tranquillisers since participating in the (BLANK) Rehabilitation Program?
   yes................................. 1
   No................................. 2

12. On how many days did you use tranquillisers in the last four weeks?
    None............................. 1
    On 1 - 2 days.................... 2
    On 3 - 5 days.................... 3
    On 6 - 9 days.................... 4
    On 10 - 19 days................ 5
    On 20 or more days............ 6
    Every day....................... 7

13. On how many days did you use tranquillisers in the last week?
    None............................. 1
    On 1 - 2 days.................... 2
    On 3 - 4 days.................... 3
    On 5 - 6 days.................... 4
    Every day....................... 5

14. On a day when you use tranquillisers, how many pills will you usually have?
    A few pills...................... 1
    1 or 2 pills..................... 2
    3 or 4 pills..................... 3
    5 or 8 pills..................... 4
    9 or 12 pills................... 5
    Over 12 pills................... 6

15. On a day when you use tranquillisers, what kind of effects will they usually have?
    No effects.......................... 1
    Feel hardly any effects.......... 2
    Slightly effected................ 3
    A fair bit effected.............. 4
    Very effected.................... 5
    Passed out....................... 6
THE NEXT FEW QUESTIONS ARE ABOUT STIMULANTS - "speed", amphetamines, "goee", "snort", ephedrine, benzedrine.

16. Have you used Stimulants since participating in the (BLANK) Rehabilitation Program?
   yes........................... 1
   No........................... 2

17. On how many days did you use stimulants in the last four weeks?
   None........................... 1
   On 1 - 2 days.................. 2
   On 3 - 5 days................... 3
   On 6 - 9 days................... 4
   On 10 - 19 days............... 5
   On 20 or more days....... 6
   Every day...................... 7

18. On how many days did you use stimulants in the last week?
   None........................... 1
   On 1 - 2 days.................. 2
   On 3 - 4 days................... 3
   On 5 - 6 days................... 4
   Every day...................... 5

19. On a day when you use stimulants how many pills/snorts/hits will you usually have?
   A few pills/snorts/hits........ 1
   1 or 2 pills/snorts/hits...... 2
   3 or 4 pills/snorts/hits...... 3
   5 or 8 pills/snorts/hits..... 4
   9 or 12 pills/snorts/hits... 5
   Over 12 pills/snorts/hits... 6

20. On a day when you use stimulants, what kind of effects will they usually have?
   No effects.......................... 1
   Feel hardly any effects........ 2
   Slightly effected................ 3
   A fair bit effected.............. 4
   Very effected.................... 5
   Wiped............................ 6
THE NEXT FEW QUESTIONS ARE ABOUT HEROIN - "smack", "hammer", "scag", "horse".

21. Have you used Heroin since participating in the (BLANK) Rehabilitation Program?
   yes............................ 1
   No............................. 2

22. On how many days did use heroin in the last four weeks?
   None............................ 1
   On 1 - 2 days.................. 2
   On 3 - 5 days.................. 3
   On 6 - 9 days.................. 4
   On 10 - 19 days.............. 5
   On 20 or more days... 6
   Every day...................... 7

23. On how many days did you use heroin in the last week?
   None............................ 1
   On 1 - 2 days.................. 2
   On 3 - 4 days.................. 3
   On 5 - 6 days.................. 4
   Every day...................... 5

24. On a day when you use heroin how many hits/snorts/smokes will you usually have?
   A few hits/snorts/smokes..................... 1
   1 or 2 hits/snorts/smokes................... 2
   3 or 4 hits/snorts/smokes................... 3
   5 or 8 hits/snorts/smokes................... 4
   9 or 12 hits/snorts/smokes................. 5
   Over 12 hits/snorts/smokes............... 6

25. On a day when you use heroin, what kind of effects will it usually have?
   No effects.......................... 1
   Feel hardly any effects............... 2
   Slightly stoned....................... 3
   A fair bit stoned...................... 4
   Very stoned.......................... 5
   Totally stoned....................... 6
THE NEXT FEW QUESTIONS ARE ABOUT SLEEPING PILLS - mogadon, mandrax, barbiturates, "dolls".

26. Have you used Sleeping Pills since participating in the (BLANK) Rehabilitation Program?
   yes........................................ 1
   No........................................ 2

27. On how many days did you use sleeping pills in the last four weeks?
   None........................................ 1
   On 1 - 2 days......................... 2
   On 3 - 5 days......................... 3
   On 6 - 9 days......................... 4
   On 10 - 19 days...................... 5
   On 20 or more days.............. 6
   Every day............................... 7

28. On how many days did you use sleeping pills in the last week?
   None........................................ 1
   On 1 - 2 days......................... 2
   On 3 - 4 days......................... 3
   On 5 - 6 days......................... 4
   Every day............................... 5

29. On a day when you use sleeping pills how many pills will you usually have?
   A few pills.............................. 1
   1 or 2 pills............................ 2
   3 or 4 pills............................ 3
   5 or 8 pills............................ 4
   9 or 12 pills........................... 5
   Over 12 pills.......................... 6

30. On a day when you use sleeping pills, what kind of effects will they usually have?
   No effects................................ 1
   Feel hardly any effects.............. 2
   Slightly effected........................ 3
   A fair bit effected..................... 4
   Very effected........................... 5
   Passed out................................ 6
THE NEXT FEW QUESTIONS ARE ABOUT PAIN KILLERS - paracetemol, aspirin, prescribed and other the counter pills/powders and mixtures.

31. Have you used Pain Killers since participating in the (BLANK) Rehabilitation Program?
   Yes.................................. 1
   No.................................. 2

32. On how many days did you use pain relievers in the last four weeks?
   None............................... 1
   On 1 - 2 days...................... 2
   On 3 - 5 days...................... 3
   On 6 - 9 days...................... 4
   On 10 - 19 days............... 5
   On 20 or more days.... 6
   Every day......................... 7

33. On how many days did you use pain relievers in the last week?
   None............................... 1
   On 1 - 2 days...................... 2
   On 3 - 4 days...................... 3
   On 5 - 6 days...................... 4
   Every day......................... 5

34. On a day when you use pain killers how many tablets/powders/bottles will you usually have?
   A few pills/powders.................. 1
   1 or 2 pills/powders.................. 2
   3 or 4 pills/powders.................. 3
   5 or 8 pills/powders.................. 4
   9 or 12 pills/powders.................. 5
   Over 12 pills/powders............... 6
35. If you have used any of these substances since participating in the (BLANK) Rehabilitation Program, please indicate how often. Circle the appropriate number.

**Hallucinogens** - "acid", LSD, PCP, DMA, "magic mushrooms", datura

No.................. 1
Yes.................. 2

How often?
1-2 times............ 3
3-5 times............ 4
6-9 times............ 5
10-19 times.......... 6
20-39 times.......... 7
40 or more.......... 8

**Cough-cold preparations** - Codral liinctus, Nucosef, antihystamines.

No.................. 1
Yes.................. 2

How often?
1-2 times............ 3
3-5 times............ 4
6-9 times............ 5
10-19 times.......... 6
20-39 times.......... 7
40 or more.......... 8

**Inhalants** - petrol, glue, aerosols.

No.................. 1
Yes.................. 2

How often?
1-2 times............ 3
3-5 times............ 4
6-9 times............ 5
10-19 times.......... 6
20-39 times.......... 7
40 or more.......... 8

**Cocaine.**

No.................. 1
Yes.................. 2

How often?
1-2 times............ 3
3-5 times............ 4
6-9 times............ 5
10-19 times.......... 6
20-39 times.......... 7
40 or more.......... 8
Ecstasy.
  No.................... 1
  Yes................... 2
How often?
  1-2 times............. 3
  3-5 times............. 4
  6-9 times............. 5
  10-19 times.......... 6
  20-39 times.......... 7
  40 or more........... 8

Methadone.
  No.................... 1
  Yes................... 2
How often?
  1-2 times............. 3
  3-5 times............. 4
  6-9 times............. 5
  10-19 times.......... 6
  20-39 times.......... 7
  40 or more........... 8

Dilaudid.
  No.................... 1
  Yes................... 2
How often?
  1-2 times............. 3
  3-5 times............. 4
  6-9 times............. 5
  10-19 times.......... 6
  20-39 times.......... 7
  40 or more........... 8

Pethadine.
  No.................... 1
  Yes................... 2
How often?
  1-2 times............. 3
  3-5 times............. 4
  6-9 times............. 5
  10-19 times.......... 6
  20-39 times.......... 7
  40 or more........... 8
**Codeine.**

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<tr>
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<tbody>
<tr>
<td>No</td>
<td>1</td>
</tr>
<tr>
<td>Yes</td>
<td>2</td>
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**How often?**

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<tr>
<td>1-2 times</td>
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<td>6-9 times</td>
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<td>6</td>
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<td>20-39 times</td>
<td>7</td>
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<td>40 or more</td>
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**Other**

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Appendix 2
To what extent do early treatment drop-outs and late treatment drop-outs differ from treatment completers in psycho-social resources and pre-treatment alcohol/drug use measured at the commencement of two treatment programmes of differing duration (8 weeks or 12 weeks) and philosophy (traditional disease model treatment or cognitive-behavioural treatment)?

A priori univariate contrasts obtained from the one factor Multivariate Analysis of Variance test conducted in Study 1 reveal the significant differences that existed between the cognitive-behavioural and traditional disease model treatment drop-out/completer groups at treatment commencement on the individual psycho-social and alcohol use variables stated above. A systematic reporting of the differences between the drop-out and completer groups follows below.

A comparison between early cognitive-behavioural treatment dropouts (ECBTD-O) and late cognitive-behavioural treatment dropouts (LCBTD-O)

An a priori univariate contrast revealed no significant difference to exist between ECBTD-O and LCBTD-O in either the frequency or the amount of their past alcohol consumption. There was no significant difference between the two groups in the amount of alcohol they drank per day and the amount of days a week they drank alcohol before entering treatment. Both groups drank more than 12 drinks per day on 6-7 days a week prior to entering treatment. Furthermore, groups did not significantly differ in age, years of alcohol use or the age at which alcohol use was commenced. Thus, on these characteristics, ECBTD-Os and LCBTD-Os were matched.

Table 1 reveals that the ECBTD-O and LCBTD-O groups differed on all psycho-social variables other than rated alcohol problem severity at treatment commencement. The ECBTD-O group had significantly higher levels of social support, significantly higher self-efficacy to resist the urge to drink heavily, were significantly
more internally orientated, were significantly less depressed (mild range), their ratio of positive-negative automatic thoughts was in the normal range and significantly lower, and their general index of psychiatric symptom severity, although in the clinical range (T score=71), was significantly lower. The two groups did not significantly differ in their rated severity of their alcohol problem. Overall, Table 1 reveals that the ECBTD-O group was significantly less psycho-socially distressed than the LCBTD-O group.

Table 1 - A Comparison Between Early Cognitive-Behavioural Treatment Drop-outs (ECBTD-O) and Late Cognitive-Behavioural Treatment Dropouts (LCBTD-O) on Psycho-Social Variables Measured at Treatment Commencement

<table>
<thead>
<tr>
<th>Measure</th>
<th>ECBTD-O (n=73)</th>
<th>LCBTD-O (n=93)</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social support</td>
<td>13.64 (6.98)</td>
<td>10.93 (6.79)</td>
<td>6.35</td>
<td>.0121*</td>
</tr>
<tr>
<td>Locus of control</td>
<td>22.35 (8.11)</td>
<td>28.47 (8.49)</td>
<td>19.37</td>
<td>.0001*</td>
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<tr>
<td>Ranked depression</td>
<td>118.9 (92.4)</td>
<td>247.0 (97.6)</td>
<td>58.03</td>
<td>.0001*</td>
</tr>
<tr>
<td>Automatic thoughts</td>
<td>86.38 (24.0)</td>
<td>109.9 (30.3)</td>
<td>24.99</td>
<td>.0001*</td>
</tr>
<tr>
<td>Ranked self-efficacy</td>
<td>276.4 (120.1)</td>
<td>207.2 (120.2)</td>
<td>11.54</td>
<td>.0007*</td>
</tr>
<tr>
<td>Psychiatric symptoms</td>
<td>82.06 (44.8)</td>
<td>114.15 (60.1)</td>
<td>12.43</td>
<td>.0005*</td>
</tr>
<tr>
<td>Problem severity</td>
<td>8.87 (2.51)</td>
<td>9.33 (2.52)</td>
<td>1.52</td>
<td>.2179</td>
</tr>
</tbody>
</table>

*Significantly different at p<.01*
Note: For all measures other than self-efficacy, lower means scores are better than higher scores.

A comparison between early cognitive-behavioural treatment dropouts (ECBTD-O) and cognitive-behavioural treatment completers (CBTC)

An a priori univariate contrast revealed no significant difference to exist between the ECBTD-O and CBTC groups in either the amount of their past alcohol consumption, their age, their years of alcohol use or the age at which alcohol use was commenced. The two groups did significantly differ in their use of alcohol per week. The CBTC group used on significantly more days per week than the ECBTD-O group $F_{(1,151)}= 14.78$, p<.0001.
Table 2 - A Comparison Between Early Cognitive-Behavioural Treatment Drop-outs (ECBTD-O) and Cognitive-Behavioural Treatment Completers (CBTC) on Psycho-Social Variables Measured at Treatment Commencement

<table>
<thead>
<tr>
<th>Measure</th>
<th>ECBTD-O (n= 73)</th>
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<th>CBTC (n= 80)</th>
<th></th>
<th>F.</th>
<th>p.</th>
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<tr>
<td>Social support</td>
<td>13.64 (6.98)</td>
<td></td>
<td>11.56 (6.13)</td>
<td></td>
<td>3.54</td>
<td>.0604</td>
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<tr>
<td>Locus of control</td>
<td>22.35 (8.11)</td>
<td></td>
<td>26.46 (10.1)</td>
<td></td>
<td>8.15</td>
<td>.0045*</td>
</tr>
<tr>
<td>Ranked depression</td>
<td>118.9 (92.4)</td>
<td></td>
<td>259.5 (132.7)</td>
<td></td>
<td>65.22</td>
<td>.0001*</td>
</tr>
<tr>
<td>Automatic thoughts</td>
<td>86.38 (24.0)</td>
<td></td>
<td>113.1 (34.3)</td>
<td></td>
<td>29.93</td>
<td>.0001*</td>
</tr>
<tr>
<td>Ranked self-efficacy</td>
<td>276.4 (120.1)</td>
<td></td>
<td>239.3 (140.2)</td>
<td></td>
<td>3.11</td>
<td>.0787</td>
</tr>
<tr>
<td>Psychiatric symptoms</td>
<td>82.06 (44.8)</td>
<td></td>
<td>132.1 (61.3)</td>
<td></td>
<td>28.17</td>
<td>.0001*</td>
</tr>
<tr>
<td>Problem severity</td>
<td>8.87 (2.51)</td>
<td></td>
<td>9.80 (2.37)</td>
<td></td>
<td>5.81</td>
<td>.0164*</td>
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*Significantly different at p<.01*

Note: For all measures other than self-efficacy, lower means scores are better than higher scores.

Table 2 above reveals that the ECBTD-O and CBTC groups differed on all psycho-social variables other than social support and ranked self-efficacy to resist the urge to drink heavily at treatment commencement. Table 2 reveals that the ECBTD-O group had significantly higher levels of social support, were significantly more internally oriented in their locus of control, were significantly less depressed (mild range), displayed a ratio of positive-negative automatic thoughts which was significantly lower and in the normal range, and manifested a significantly lower index of psychiatric symptom severity than the CBTC group. Overall, Table 2 reveals that the ECBTD-O group was significantly less psychologically distressed than the CBTC group.

**A comparison between late cognitive-behavioural treatment dropouts (LCBTD-O) and cognitive-behavioural treatment completers (CBTC)**

The LCBTD-O group did not significantly differ from the CBTC group other than in their index of psychiatric symptom severity and their weekly use of alcohol. The LCBTD-Os manifested a significantly lower index of psychiatric symptom severity than the CBTR group, $F(1,171)= 4.07$, $p=.0441$. The LCBTD-O group also used...
alcohol on significantly less days per week than the CBTC group, $F_{(1,171)}= 10.57, p=.0012$.

The result of this comparison indicates that although the LCBTD-O group are less depressed and used alcohol on less days per week, they are nevertheless more similar to the CBTC group than the ECBTD-O group in overall psycho-social and alcohol use functioning.

**A comparison between early traditional disease model treatment dropouts (ETTD-O) and late traditional disease model treatment dropouts (LTTD-O)**

An a priori univariate contrast revealed no significant difference to exist between ETTD-O and LTTD-O in either the frequency or the amount of their past alcohol consumption, in their age, in their years of alcohol use or the age at which alcohol use was commenced.

**Table 3 - A Comparison Between Early Traditional Disease Model Treatment Drop-outs (ETTD-O) and Late Traditional Disease Model Treatment Dropouts (LTTD-O) on Psycho-Social and Variables Measured at Treatment Commencement**

<table>
<thead>
<tr>
<th>Measure</th>
<th>ETTD-O (n=66)</th>
<th>Mean</th>
<th>SD</th>
<th>LTTD-O (n=80)</th>
<th>Mean</th>
<th>SD</th>
<th>F.</th>
<th>p.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social support</td>
<td></td>
<td>13.32</td>
<td>(6.92)</td>
<td>11.70</td>
<td>(6.93)</td>
<td></td>
<td>2.01</td>
<td>.1574</td>
</tr>
<tr>
<td>Locus of control</td>
<td></td>
<td>26.15</td>
<td>(8.61)</td>
<td>28.27</td>
<td>(8.94)</td>
<td></td>
<td>2.06</td>
<td>.1515</td>
</tr>
<tr>
<td>Ranked depression</td>
<td></td>
<td>120.3</td>
<td>(109.0)</td>
<td>279.3</td>
<td>(108.8)</td>
<td>79.31</td>
<td>.0001*</td>
<td></td>
</tr>
<tr>
<td>Automatic thoughts</td>
<td></td>
<td>95.71</td>
<td>(30.6)</td>
<td>112.9</td>
<td>(28.9)</td>
<td></td>
<td>11.68</td>
<td>.0007*</td>
</tr>
<tr>
<td>Ranked self-efficacy</td>
<td></td>
<td>250.3</td>
<td>(138.9)</td>
<td>206.6</td>
<td>(126.9)</td>
<td>4.07</td>
<td>.0442*</td>
<td></td>
</tr>
<tr>
<td>Psychiatric symptoms</td>
<td></td>
<td>102.0</td>
<td>(54.6)</td>
<td>137.8</td>
<td>(58.6)</td>
<td></td>
<td>13.66</td>
<td>.0002*</td>
</tr>
<tr>
<td>Problem severity</td>
<td></td>
<td>8.72</td>
<td>(2.20)</td>
<td>10.45</td>
<td>(1.96)</td>
<td></td>
<td>19.16</td>
<td>.0001*</td>
</tr>
</tbody>
</table>

*Significantly different at p<.01*

Note: For all measures other than self-efficacy, lower means scores are better than higher scores.
Table 3 reveals that ETTD-O and LTDD-O groups differed on all psycho-social variables except social support and locus of control at treatment commencement. The ETTD-O group were significantly less depressed (mild range), exhibited a significantly lower ratio of positive-negative automatic thoughts, had significantly higher levels of self-efficacy to resist the urge to drink heavily, had a significantly lower general index of psychiatric symptom severity, and rated their alcohol problem as significantly less severe than the LTDD-O group. In short, the ETTD-O group functioned better psychologically at treatment commencement than the LTDD-O group.

A comparison between late traditional disease model treatment dropouts (LTDD-O) and traditional disease model treatment completers (TTC)

At traditional disease model treatment commencement the LTDD-O did not significantly differ from the TTC group other than on social support, ranked depression, the amount of alcohol they used on an average day of use, and in their age. The LTDD-O group had higher levels of social support, $F(1,144)= 3.86$, $p=.05$; was significantly less depressed, $F(1,144)= 11.16$, $p=.0009$; and were significantly younger, $F(1,144)= 6.12$, $p=.0137$. However, contrary to the trend of the other variables, the LTDD-O group used significantly more alcohol on an average day of use than the TTC group, $F(1,144)= 4.84$, $p=.0283$.

A comparison between early cognitive-behavioural treatment dropouts (ECBTD-O) and early traditional disease model treatment dropouts (ETTD-O)

An a priori univariate contrast revealed that the ECBTD-O and ETTD-O groups did not significantly differ at treatment commencement other than in locus of control, the index of psychiatric symptom severity, the number of days per week of alcohol use, and in the amount of alcohol used on an average day of use. Compared to the ETTD-O group, the ECBTD-O group were significantly more internally oriented, $F(1,137)= 6.32$, $p=.0123$; evidenced a lower index of psychiatric symptom severity, $F(1,137)= 4.08$, $p=.047$. 
p=.0439; used alcohol on significantly less days per week, $F(1,137) = 8.79$, $p=.0032$; and, drank significantly less alcohol on an average day of use, $F(1,137) = 8.12$, $p=.0046$. 