ADDICTION-SPECIFIC SUPPORT GROUP USE, PERSONALITY CHARACTERISTICS AND RECOVERY STATUS IN SUBSTANCE ABUSERS: A FOLLOW-UP STUDY

By

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A thesis submitted in conformity with the requirements for the degree of Doctor in Education
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ABSTRACT

This thesis is a prospective, three-month follow-up study of 228 of mixed-substance, mixed-gender sample of substance-abusing clients who entered a private addiction rehabilitation hospital for residential treatment. The goal was to try and predict recovery status and use of addiction-specific supports (aftercare and 12-step programs) at the three-month follow-up point, as half of all relapses occur within this time frame. The variables tested were psychological and social.

Little is known about the psychological characteristics of those who maintain gains of treatment and of those who attend addiction-specific support groups following treatment. This study aimed at filling this void with useful and applicable findings.

The psychological factors examined here were Alexithymia (difficulty in identifying and verbally describing feelings) as measured by the revised Toronto Alexithymia Scale (TAS-20); optimism, measured by the Revised Life Orientation Test (LOT-R); and beliefs regarding the disease versus the free-will models of addictions, as measured by the Addiction Belief Scale (ABS). The use of support groups was used both as a potential predictor (of recovery status) and as an outcome variable.

Recovery status and the level of use of support groups were assessed from data gathered at the three-month follow-up telephone interview. To assess recovery status, baseline information was compared to post-treatment level of substance use. Multiple sources of confirmation of clients' reports regarding post-treatment behaviour were used.

The most striking finding of this study was the fact that all the clients who attended the aftercare program regularly or aftercare and 12-step groups combined, were in high recovery (abstinent or highly improved) during the first three months post treatment. Attendance in Alcoholics Anonymous (AA) groups alone was also significantly associated with recovery status at three months. In addition, two of the three psychological
variables (Alexithymia and Addiction Beliefs) were significantly associated with level of aftercare use.

Additional analysis included an examination of demographic data as potential predictors of outcome and a gender analysis which was limited in scope by the small number of women in the study. An added outcome variable was the completion of the initial treatment program. The significant findings of all analyses are reported and discussed.
ACKNOWLEDGEMENTS

First I would like to thank all the clients, staff and volunteers at Bellwood Health Services whose cooperation and help made this study possible. Among staff members I would like to highlight the role of Dr. Janice Hambley who offered me the opportunity to conduct this study at Bellwood and also continuously provided support and useful insight. As well, my gratitude to Susan Barnes who coordinated the work of the volunteers.

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On a more personal level I would like to thank all my friends for their continuous encouragement, patience and support especially Krista Soots, Mini Mamek and Ora Prilleltensky.

My deepest thanks to my husband who believed in me from the beginning and supported me all the way.

My mother had a critical role in my choice of an academic career and she took great pride in my achievements, merit scholarships and mostly in my entrance to the doctorate program. Unfortunately, she did not live to see this moment in my life. This achievement is dedicated to your memory. You were my source of inspiration, my guide when you lived and my muse since your passage to a better world.

Finally, my academic career was planned around the most important part of my life: my family. My beautiful six and a half year old daughter Sivan, was born between my M.A. degree and the doctorate program. She had brought me endless moments of joy that filled even the darkest days of despair after my mother's untimely death, with rays of hope. Appropriately so, since Hope is a her middle name. She has grown into an inquisitive, creative, smart and sensitive girl, a role model to her classmates and the pride and joy of her parents and teachers.

My three and a half year old daughter Maya was born during my doctorate program after the completion of all the courses and internship requirements. She inherited the beauty and many talents of her late grandmother and added a few of her own. Incidentally, her middle name is Tsipora after her late grandmother.

Many times I sat to work on my thesis only to be visited by Maya and eventually let her sit on my lap while I typed in new ideas. Sometimes her
heart-warming presence actually helped. It also did not hurt that Sivan often came to my study and asked "mommy can’t you just finish it already so you’ll have more time to be with us". In fact, this was my greatest motivation to bring this monumental project to completion. So girls, it’s now time to play!
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Close to two-and-a-half million Canadians report having problems with their drinking, and a quarter of a million Canadians report being current users of illegal substances such as LSD, amphetamines and heroin (McKenzie & Single, 1997, Health Canada, 1995). In addition, more than two and a half million Canadians report recent harm caused by their use of prescription medication (Health Canada, 1995). Clearly, substance abuse is a major cause of serious social and economic problems in Canada.

Although substance abuse results in great social, personal, and economic cost, the last few years have seen a constant depletion of financial resources for dealing with this problem. This reality calls for improved efficacy of existing treatments. Improved treatments require a knowledge base from which to build. Thus, we need to increase our understanding of the process of recovery and relapse.

Previous studies have shown that a high percentage of clients undergoing treatment for substance abuse relapse within the first three months following treatment (Hubbard & Marsden, 1986, Marlatt, 1985, Armor, Polich & Stambul, 1976). These three months appear to be critical in establishing a pattern of successful recovery. Little is known about the psychological differences between those who maintain sobriety after treatment and those who do not.

A number of studies revealed a better prognosis for recovery in clients who attend post-treatment support groups, such as aftercare and 12-step groups (Makela, 1994, Siegel, Alexander, & Shang, 1994, Hoffman, Harrison, & Bellile, 1983, Walker, Donovan, Kivlahan & O’Leary, 1983). However, many clients do not use any of these supports and thus lower their chances of successful recovery. Unfortunately, research focusing on the potential characteristics of frequent or infrequent users of supports is scarce. Consequently, little is known about the psychological characteristics of those who tend to use supports compared to those who do not.

This study was an attempt to fill the void of knowledge in these two important areas: one, specific psychological and social characteristics of clients who maintain sobriety following treatment and two, specific
psychological characteristics of clients who use addiction-specific support groups following treatment. As well, by studying both psychological characteristics and support-groups attendance patterns, of the same population, it was possible to examine the relative utility of these factors. Earlier studies examined these factors separately.

**Definition of Substance Abuse**

Substance-abuse is a complex human behaviour. The study and interpretation of any human behaviour is relevant to many social science disciplines dealing with mental health and illness (i.e. social work, psychology, medicine, psychiatry). However, each discipline uses a different language and professional terms to address the subject. Helping practitioners understand mental-health problems and communicate meaningfully between them about individuals, is a comprehensive manual, the Diagnostic and Statistical Manual of Mental Disorders (DSM) published by the American Psychiatric Association (APA). According to Lewis (1994a), the most commonly used approach to diagnosis is based on the DSM. The DSM provides names or labels for specific problems in human behaviour and helps practitioners assess an individual’s mental status (healthy or ill). The most current version of the DSM is the DSM-IV (APA, 1994).

Since the DSM is being widely used in North America as a diagnostic tool of mental difficulties by many health professionals, it seems to be a reasonable starting point for a discussion of the existing definitions of the terms relevant for this study, substance-abuse, substance-dependence and addiction.

The DSM-IV (APA, 1994) offers the umbrella definition of substance-related disorders, which “include disorders related to the taking of a drug of abuse (including alcohol), to the side effects of a medication, and to toxin exposure.” (P. 175). The DSM-IV lists 11 classes of substances in alphabetical order, though it is pointed out that certain substances can be grouped together. Thus, it is explained that alcohol shares features with sedatives, hypnotics, and anxiolytics, while cocaine shares features with amphetamines.
In the DSM-IV (APA, 1994), substance-related disorders are divided into Substance Use Disorders (Substance Dependence and Substance Abuse) and Substance-Induced Disorders (Substance Intoxication and Substance Withdrawal). Of particular relevance to this paper are Substance Dependence and Substance Abuse.

The criteria for the diagnosis of substance abuse, according to the DSM-IV, include a maladaptive pattern of substance use leading to clinically significant impairment or distress occurring within a 12-month period. These are manifested in adverse consequences in one or more of the following areas: work, school, health, legal and social (for the full criteria of Substance Abuse see the DSM-IV).

According to the DSM-IV (APA, 1994), the essential feature of Substance Dependence is "a cluster of cognitive, behavioral, and physiological symptoms indicating that the individual continues use of the substance despite significant substance-related problems. There is a pattern of repeated self administration that usually results in tolerance, withdrawal and compulsive drug-taking behavior." (P. 176). It is explained that dependence can be applied to all substances, except caffeine. As well, for certain classes of drugs, some symptoms are less salient and in some cases not all symptoms apply. (For the full criteria of Substance Dependence see the DSM-IV).

A review of the literature for this thesis revealed that researchers usually do not discuss or differentiate between substance abuse and substance dependence. In fact, most of the earlier studies used the terms addiction or substance abuse.

Washton, Stone and Hendrickson (1988) explain that "for clinical purposes, it can be said that 'abuse' is present whenever the person's use of a drug results in adverse effects to self or others, even though the user may be unwilling or unable to acknowledge that such adverse effects are occurring." (P. 367). They also mention that, in a legal sense, any use of any illegal substance is considered abuse. Washton et al. (1988) further explain that in contrast to abuse the terms addiction and dependency usually
have the connotation of a more serious problem. Addiction and dependency describe a situation where the person experiences craving and compulsion to use that may be out of his/her control.

Leading experts in this field are generally not in agreement in relation to the terms they use to describe what seems to be the same phenomena (see Rotgers, 1996, Landry, 1995, Moos, 1994, Miller, 1990, Donovan & Marlatt, 1988). Washton et al. (1988) explained that they chose not to dwell on the semantic distinctions between abuse, addiction and dependency and for the most part used the terms interchangeably. Similarly, throughout this paper, the terms addiction and substance abuse were used interchangeably when quoting different authors who used one term or another. Though, substance-abuse was the term of choice in the title and sub-titles of this paper.

**Prevalence and Cost of Substance Abuse**

**Alcohol Consumption in Canada**

According to a 1993 General Social Survey (cited in McKenzie & single, 1997), one in ten Canadians (or 9.2%) reported having problems with their drinking.

A Statistics Canada study (Single, Brewster, MacNeil & Hatcher, 1994) reported the estimated prevalence of drinking and heavy drinking among men and women (age 15 and older) in Canada in the 12 months prior to the survey (done in 1993). Fifty-eight percent of the men surveyed reported heavy alcohol consumption (5 or more drinks per occasion), at least once in the past 12 months. The mean number of such occasions in the past year was 19.4. For women, 33.1% reported heavy drinking in the past year and mean number of occasions was 8.4.

**Prescription Drug Use in Canada**

Abuse of prescription drugs is, as McKenzie and Single (1997) explain, difficult to describe because of the way use is measured. The information is obtained from industry-based sources and does not indicate hazardous behaviour. However, one can get a sense of the extent of problems associated with licit drug use from the harm reported from use.
According to the Health Canada report (1995), 15.7% of those who use medications reported at least one type of harm in their lifetime. When asked about the 12 months prior to the interview, 11.6% of users reported at least one type of harm. The most common harm in that 12 months period was on physical health (7.3%), this was followed by outlook on life (5.6%), work/studies (4.0%), financial (4.0%), family/home life (3.8%), and friendships (2.3%).

It may be still useful to report the available statistics on the usage of prescription drugs, as it may demonstrate the widespread consumption of these substances. The Health Canada survey of alcohol and other drugs in Canada (Health Canada, 1995), reported that in 1994, close to five million Canadians (20.8%) used one or more of the following medications: prescription pain killers (13.1%), sleeping pills (4.5%), tranquilizers (4.3%), anti-depressants (3.0%), and diet-pills/stimulants (0.9%). More women than men used medications (23.9% versus 17.7%). The biggest difference in rate of use between men and women is among users of anti-depressants with women being more than twice as likely as men to use them (4.2% versus 1.7%).

**Illegal Drug Use in Canada**

According to the Health Canada survey (1995), a quarter of a million Canadians (or 1.1%) reported being current users of LSD, speed (amphetamines) or heroin. More men (1.5%) than women (0.7%) reported using any of these drugs. Overall reported lifetime use of any of these drugs in 1994 was 5.9% (8.1% of men and 3.6% of women).

The Health Canada survey (1995) also reported that in 1994, 23.1% of Canadians (27.7% of men and 18.7% of women) reported using cannabis (also known as marijuana or hashish) in their lifetime and 7.4% had used it in the preceding 12 months (10% of men and 4.9% of women). In 1994, 3.8% of Canadians reported having used cocaine at least once in their lifetime. In Toronto specifically, a recent study reported in The Globe and Mail (Abbate, 1999) has shown an alarming increase in the number of young people
(25 years old or younger) seeking treatment for crack (88.2% increase) and cocaine (26.8% increase) in 12 months prior to September 1998.

**Intravenous Drug Use in Canada**

According to the 1994 Health Canada survey (1995), among the users of cocaine, LSD, speed, heroin, and/or steroids, 7.7% reported injecting drugs at some point in their lives. Of these 132,000 injection drug users, 41% reported sharing needles at some point in their lives (in 1992 there were 61 deaths from AIDS due to intravenous drug use).

**Social and Economic Costs of Substance Abuse**

There is no doubt that the cost of substance abuse to society is very high. It is manifested in a wide range of areas. On the macro level, it increases the cost of and burden on the health system, increases crime rates, and, overall, costs a great deal to society financially. On the micro level, substance abuse takes its toll on the health and financial situation of substance abusers. It also affects the psychological welfare of individuals and their families and friends.

According to McKenzie and Single (1997), in 1993 there were 56,811 drug-related offences in Canada. Of these, 63% involved cannabis and 22% involved cocaine. Two thirds of offences reported under provincial statute were liquor offences. More than half of the people accused of homicide in 1991 and 1992 used a substance at the time of the incident. As well, in 1993, 1,827 forgeries of prescription drugs were detected across Canada (McKenzie & Single, 1997).

Harwood (1994) outlined quantifiable consequences of substance abuse for the International Symposium on the Economic and Social Costs of Substance Abuse. First were health-related costs which included treatment for substance-abuse and for co-morbidities, premature mortality, lost employment or productivity, property destruction (from crime or accidents) and crime (legal expenses and incarceration costs). Additional costs were categorized as “other impact”. Examples are money paid through social welfare programs and cost of substances illicitly consumed. Finally, Harwood described non quantifiable
benefits and costs, pain and suffering, grief, psychosocial development and familial health.

The most tangible cost of substance abuse to society can be measured in monetary figures. A report by the Canadian Center on Substance Abuse (McKenzie & Single, 1997) revealed that in 1992 substance abuse cost $18.45 billion in Canada. This translates into an average of $649 per capita, or about 2.7% of the total gross domestic product. Alcohol abuse accounted for $7.5 billion in costs, illicit drugs $1.37 billion, and tobacco $9.6 billion.

A study in the United States (US) looked at financial cost through the examination of medical costs (Shuckit, 1978), "the estimated prevalence rate of alcoholics and drug addicts seen in medical and psychiatric practices ranges from 25% to 80%" (P. 41). The explanation for this wide range is the nature of the population studied and the methods used to identify addictions. However, even a rate of 25% is significant and costly enough to justify extensive research in the area. In Canada, in 1992 there were 86,076 hospital admissions related to alcohol abuse (McKenzie & Single, 1997).

The price individuals pay is more difficult to measure, as each situation is unique. Yet, anyone who has a substance-abusing friend or relative can attest to the many negative ways they are impacted by that person's addiction. Substance abusers themselves obviously suffer many consequences, usually in more than one area of their lives (e.g., health, social, psychological, financial).

Results from the Health Canada study (1995) reported data in relation to perception of harm from substances by individuals. They found that 19.8% of former and current individuals who drink alcohol (24.1% of men and 15.3% of women) said that their use had harmed them and 73.4% reported that they were harmed in some way in the past by someone else's drinking. Harm done by others includes being insulted or humiliated (49.4%), being a passenger in a vehicle operated by a drinking driver (34%), having serious quarrels (33.8%), being pushed or shoved (30.3%), experiencing family or marriage problems (18%), physical assault (15.4%), and sexual assault (2.7%).
As mentioned earlier, 15.7% of prescription medication users surveyed, reported at least one type of harm from medications in their lifetime and 11.6% reported harm in the preceding 12 months (Health Canada, 1995).

For those who reported using illegal drugs, 26.9% reported they were harmed by such use in their lifetime and 23.8% reported harm in the preceding 12 months (Health Canada, 1995). The specific harm in a lifetime reported by drug users, ranged from 17.6% for harm to physical health to 1.3% for harm to their children.

Death is the ultimate cost of substance abuse. In 1992, 40,930 deaths were attributed to substance abuse in Canada (Single et al., 1994). Of these, 6,701 were due to alcohol, 732 due to illicit drugs, and 33,498 due to tobacco abuse. Of the 732 deaths (641 men and 91 women) attributed to illicit drug use, 308 were due to suicides, 104 opiate poisonings, 68 cocaine poisonings, and 61 due to AIDS. A recent study regarding Toronto alone showed that while the prevalence of illicit drug use remained stable in 1997 compared to 1996, drug-related morbidity has been on the increase with 132 deaths in 1997 compared to 96 in 1996 (Abbate, 1999). Heroin alone was responsible for 36 deaths and cocaine for 27.

As for prescription drugs, in 1992-1993 there were 6,415 reported poisonings by analgesics, antipyretic and antirheumatic drugs across Canada. There were also 1,235 poisonings from sedatives and hypnotics (Statistics Canada, 1995). In 1992 there were a total of 556 deaths from prescription drugs. Most deaths were attributed to opiates and related narcotics, and antidepressants (Statistics Canada, 1994). A major cause of death is impaired driving. Forty-five percent of fatally injured drivers had some alcohol in their blood and 38% were over the limit of 0.8% Blood Alcohol concentration (McKenzie & Single, 1997).

McKenzie and Single (1997) discussed the issue of intangible costs of substance abuse. These costs are considered significant even if they cannot be described in terms of dollars. Death is the primary example. Pain, suffering, and bereavement are other examples. Another is the life-years lost due to
substance abuse; it is estimated that 23% of the number of years lost to any cause, are due to substance abuse.

The Impact of Treatment on Cost of Substance-Abuse to Society

Research shows that treatment of substance abuse can reduce the cost to society. Gerstein, Johnson, Harwood, Fountain, Suter and Malloy (1994), in their study done for a California state agency found that the benefits of treatment were seven times greater than the cost of treatment.

The study looked at five different types of treatment: residential, "social model" recovery houses, out-patient programs, methadone detoxification and continuing methadone maintenance. Follow-up interviews were done between 15 and 24 months following treatment. The cost of treating the group of individuals surveyed was $209 million. The savings to taxpayers totaled more than a billion dollars. In the year prior to treatment, those enrolled in the California treatment programs cost taxpayers $3.1 billion in crime- and health-related expenditures and lost productivity. The costs fell to $2 billion in the year following treatment.

Most of the costs were related to criminal activities; the percentage of individuals committing criminal activities dropped by 72% in the post-treatment year. As well, Gerstein et al. (1994) reported that use of alcohol and other drugs declined by 43% and hospitalizations declined about one-third following treatment.

Miller and Hoffman (1995) also demonstrated that recovering substance abusers show significant decreases in post-treatment medical care utilization of expensive hospital services, while relapsed patients show significant increase in hospitalization in the second year after treatment. The authors concluded that "medical cost offsets are directly proportional to recovery rate." (P. 52).

Therefore, successfully treating substance abusers and helping them maintain their recovery can have implications on both micro and macro levels - improving the well-being of the individual and that of society as a whole.
CHAPTER II
THEORIES OF SUBSTANCE ABUSE

Before discussing the history, theories, and treatments of substance abuse, it should be noted that most of the existing literature focuses on alcohol abuse. Alcoholism has been recognized as a problem for thousands of years. However, it has only been since the beginning of the 20th century that addictions to other substances have emerged as serious problems and have been grouped together with alcoholism under the rubric of substance abuse. To date, much less writing and research has been done on drug abuse alone, compared to alcoholism.

This paper then, reflects this bias in the sense that it refers most to literature on alcoholism. Often, a reference is made to a study or book about alcoholism, and generalized to other substances. The rationale for such generalization involves the theoretical assertion that there are more commonalties than differences among abusers of different substances. This issue is discussed in more detail in chapter III.

Introduction - A Historical Overview

Historically, while some cultures believed that behaviour was governed by internal forces, others held that external forces determined behaviour (Pervin, 1984). In Western culture, the idea that the individual's behaviour is determined by internal causes can be traced to ancient times. Aristotle, for example, argued that behaviour reflects the inherent nature of the individual; Hippocrates believed that bodily functions (humors) determine the temperament type specific to a particular individual (Pervin, 1984). In a way, these views can be linked to the development of psychology, medicine, and psychiatry, all of which traditionally emphasize internal causes of behaviours.

In contrast, Plato believed that individuals were molded by the society they lived in (Pervin, 1984). Sociology, anthropology and some modern theories of psychology (family systems, behaviourism, social learning) are examples of disciplines emphasizing the importance of external forces on the individual.
While addictive behaviours have been known to exist since ancient times, the field which developed from the study of addictive behaviours is relatively young (Shaffer & Milkman, 1985). Since the addiction field is rooted in a number of disciplines (i.e. medicine, psychology, sociology, chemistry, politics, social work), it is characterized by conflicting explanations.

In the 18th century, a concept of alcoholism as a disease was asserted by Dr. Benjamin Rush (Cox, 1987). He even proposed that hospitals should be established specifically for the physical treatment of alcoholics. Later, in the 19th century, scientists attempted to promote the idea of alcoholism as a disease by publishing the Journal of Inebriety - predecessor of the British Journal of Addiction. The term alcoholism was used for the first time in 1849, by the Swedish physician Magnus Huss, to describe the adverse consequences of excessive drinking (Miller & Hester, 1989).

According to Cox (1987), the first attempt to link alcoholism to psychology was Karl Abraham’s (1954) article which argued that alcohol problems were related to sexual difficulties. These views emerged against the background of the moral view of alcoholism.

During the 19th and early 20th century, the prevailing view held that alcoholism was a moral weakness, not amenable to psychological or medical treatment (Cox, 1987). In the United States, the predominant view from the late 19th century until 1933, was the temperance model (Miller & Hester, 1989). At first, the temperance movement emphasized temperance or moderation in alcohol use, recognizing the hazardous nature of alcohol and its potential for consequences of harm. This view evolved into the position that the only way to eliminate such risk was to render alcohol unavailable.

Prohibition resulted in 1920. It proved to be a disastrous failure and was repealed in 1933 (Cox, 1987). While the moral view has lost popularity today, it has not completely disappeared. For example, according to Miller and Hester (1989), a 1986 public policy statement of the Presbyterian Church in the United States "has set forth a contemporary theological conception of alcohol abuse (but not use) as sin, by virtue of the harm caused to oneself or
others." (P. 4). Furthermore, in some countries the mere possession or consumption of alcohol is considered a legal offense (Miller and Hester, 1989).

Following Prohibition, psychological and medical views were considered more seriously (Cox, 1987). The disease concept of addiction gained popularity again due to the formation in 1935 of the self-help organization Alcoholics Anonymous (AA). The founders of AA subscribed to the view that alcoholism was a disease and that abstinence was the only path to its remission. Since its inception, AA has grown into a worldwide organization with tremendous influence on the field of addiction. Its philosophy will be discussed later in this thesis.

According to Miller and Hester (1989), "the American disease model served as a useful transition from the period of Prohibition. Moderate drinking was reconstrued as impossible...only for certain people - namely, alcoholics." (P. 6). Furthermore, as Miller and Hester (1989) argue, this model absolved alcoholics of responsibility for their condition. It justified humane treatment instead of punishment. Eventually, the medical profession adopted the idea of alcoholism as a disease requiring medical treatment.

Callahan and Pecsok (1988) reviewed the history of use and perception of opiates in the United States. They explain that historically opiates were seen as powerful and useful. In Great Britain, as early as the 1700s, the common term for opiates was GOM, the abbreviation for "God’s Own Medicine". Only during the Civil War did morphine first appear as a serious problem. There were three reasons for this development. First, the introduction of the hypodermic syringe provided a more potent route for the ingestion of the substance; second, great numbers of injured people required methods of pain management; and third, opiates were sold in patent medicine to postmenopausal women to address their complaints. Since at that time it was not required to list ingredients on medicine, many were not aware they were using opiates. Thus, in the 1800s, the majority of opiate addicts were postmenopausal women, though their addiction went unnoticed.
Serious attempts to control opiate use began only when Chinese labourers recruited to build the railroads in the late 1800s brought the custom of opium smoking to the United States (Callahan & Pecskok, 1988); the first laws against opiate use were aimed at controlling the use of opium in this racial minority. In 1919-1920, a series of US Supreme Court decisions stripped away the physician’s license to prescribe opiates (with the exception of use during detoxification). Thus, another shift in the perception of the drug resulted: the opiate addict was no longer identified with the postmenopausal grandmother but with the criminal, usually a member of an ethnic minority. Since opiates ceased to be available through legal means, organized crime capitalized on this profitable opportunity. The target population was the ethnic minority community where there was the least police control (Callahan & Pecskok, 1988).

Later, during the turbulent 1960s, widespread use of drugs led to viewing addicted people with enmity (Landry, 1995). Addiction was largely seen as criminal, socially deviant and immoral. Consequently, the preferred intervention for addiction was the criminal justice system. During the 1970s, the field of addiction treatment began to mature. The 1980s witnessed a tremendous expansion in the public and private sectors of addiction treatment, partially as a result of increases in cocaine addiction and the rapid unfolding of employee assistance programs. It was also due in part to the growing public acceptance of addiction treatment, as popularized by Betty Ford (Landry, 1995).

A review of the literature of the past few decades showed a proliferation of theories and models attempting to explain and offer treatment for alcoholism. These ideas have been applied to abuse of other substances and even other compulsive behaviours such as eating disorders and sexual addiction. Many theories share common ideas; some contradict each other.

As an emerging field, the study of addiction suffers from identity problems, and according to Shaffer and Milkman (1985), is presently in a paradigm stage of scientific development. Kuhn (1962) described a paradigm as a framework of shared rules, commitments and standards of practice and
research for a particular scientific community. Kuhn also argues that "to be accepted as a paradigm, a theory must seem better than its competitors, but it needs not, and in fact never does, explain all the facts with which it can be confronted." (P. 17-18).

Shaffer and Milkman (1985) argue that those working in the addiction field currently do not share a unitary set of rules or standards for treatment of addiction problems. These disagreements manifest themselves in the multitude of explanations for the causes of substance abuse and the corollary treatment approaches, and in the prevalent inconsistencies in research methodologies.

However, as Donovan (1988) argues, this kind of fragmentation "is being reduced, with increased effort toward the development of general theories of addiction. A cornerstone in this effort is the emergence of a biopsychosocial model in the areas of health psychology and behavioural medicine." (P. 50). This theory seems better than its competitors. In fact, it seems to combine the best components of a number of competing theories of substance abuse, into an effective and comprehensive framework. The biopsychosocial model will be discussed further in section II.

**Controversies in Substance-Abuse Theories**

Generally, the field of addiction studies is plagued with controversies. Examples are the disagreement regarding the etiology of addiction, the multi-versus unidimensional nature of the problem, the appropriate treatments and goals for treatment.

The dichotomy between external and internal determinants of behaviours offers another case in point. According to Pervin (1984), the controversy of nature versus nurture falls under this categorization. Certain substance-abuse theories contend that behaviour is guided by internal causes (i.e. genetic, psychological) and therefore intervention should address these causes. Other theories emphasize external causes (i.e. social, cultural). A related controversy involves the person versus situation debate, where the emphasis rests on either individual characteristics or situational factors as
explanations for particular behaviour. However, there are also views that
dependent and external influences
(interactionist, biopsychosocial, multidisciplinary).

**Explanatory Models of Substance Abuse**

This section presents the different and sometimes conflicting theories of
substance abuse. Due to the volume of literature on the subject, not all
existing theories could be covered; the theories described here were chosen
for what appears to be their prominence in the field and on the basis of their
relevance to this paper. Each theoretical model yielded some important
treatment modalities. These are discussed here, as it is often difficult to
separate the theoretical orientations from the corollary treatment approaches.

**The Medical Model**

The medical model of substance abuse is founded on the assumption that
this disorder has a biological basis (Segal, 1988). According to this view,
alcoholism and drug dependence are symptoms of an underlying biochemical
dysfunction. The body chemistry of substance abusers renders them susceptible
to addiction to a particular substance, a predisposition that may be genetic.
Thus, the early biomedical model essentially excluded social and psychological
factors (Segal, 1988).

In the past two decades, revisions have been made to include non-medical
factors, resulting in a somewhat contradictory approach. Although there is an
assumption of biological causality, the medical profession presently
categorizes the diagnosis of alcohol and/or drug abuse under mental disorders
as outlined in DSM (Segal, 1988).

Around 1980, when reviewing its criteria for the diagnosis of psychiatric
disorders, the medical profession realized that a distinction was needed
between the problem and process of drinking and its effects (Segal, 1988).
Thus, two new diagnostic criteria were established in the revised DSM (DSM-
III) of 1980. Alcoholism and other drug-related disorders were still
classified as mental disorders ("Substance Abuse Disorders"), while a new
category "Organic Mental Disorders" provided seven diagnoses attributed to the
consequences of drinking (including alcohol intoxication and alcohol amnesic disorder).

Segal (1988) pointed to another emerging dichotomy in the medical model: substance abuse and substance dependence. Three criteria distinguish substance abuse from nonabuse:

1. Pattern of pathological use, loss of control over when and how much is used, use in spite of health risks;
2. Impairment in social or occupational functioning resulting from the use.
3. Pattern of use lasting at least one month.

Substance dependence is diagnosed when physiological tolerance, or the presence of a withdrawal syndrome, is evident.

Segal (1988) argued that the new definitions "provide a justification for, or legitimation of, medical involvement in the treatment of alcohol and drug-related problems" (P. 201). While the old model described substance abuse as a symptom of physical illness, the new model allowed the inclusion of social and psychological factors. Segal also argued that this traditional medical explanation for addiction is extremely limited, mainly due to the creation of the dichotomy between abuse and dependence. A more recent approach considers substance abuse as multivariate syndromes with multiple causes, which are manifested differently in different people.

An important contribution of the medical approach was its explanation of the physiological processes involved in addiction and recovery. It elucidates the important physiology-based reinforcing properties of substances and the conditioned associations between specific cues and physiological reactions (Brownell, Marlatt, Liechtenstein & Wilson, 1986). The medical model also provides insight into the physiological processes causing withdrawal symptoms, physiological dependence and cravings (Brownell et al., 1986). All of these help to account for not only the developments of an addiction, but also for the difficult recovery process.
Medicine also recognized the role of detoxification prior to treatment, as well as the medical supervision of clients in withdrawal from any substance. In some cases, for instance, it is dangerous to stop abruptly the use of the substance and it may be necessary to undergo gradual withdrawal under medical supervision. Medicine provides the tools necessary to ensure the safe process of detoxification and rehabilitation from drug and alcohol addiction.

The medical model produced a great deal of research, some of it leading to the development of specific treatment modalities.

**The Pharmacological Model**

The pharmacological approach relies on biochemistry alone, as seen in methadone treatments and use of antagonists. Methadone and other agents such as clonidine and buprenorphine are typically used for management of opioid withdrawal (Carroll, 1996). In the case of withdrawal from high levels of alcohol consumption, the client is treated with barbiturates or long-acting benzodiazepines.

When treating alcoholism, the pharmacological approach also uses antidipostropics such as Disulfiram (also known as Antabuse) and Temposil (Carroll, 1996, DeJong, Finn, Grand & Markoff, 1994). These drugs create an unpleasant physiological reaction to the targeted substance. The idea here is that anticipation of unpleasant reactions in the body can prevent a relapse. Used as a deterrent, this strategy gives the recovering alcoholic the security that he/she will not succumb to impulse drinking. The objective is to discontinue the medications after building a stable sobriety. It is a behavioural-medical approach to the treatment of substance abuse.

In the case of opioids, antagonists (medications that block the effects of various drugs), are used to unreinforce their effects. Within the context of a behavioural approach, these agents allow the extinction of the relationship between the conditioned drug cues and drug use (Carroll, 1996).
At the core of the nature versus nurture controversy regarding human behaviour, resides the question of whether or how much genetics is involved in human behaviour. A rapidly growing science attempting to resolve this issue is called behaviour genetics (Collins, 1995). The research strategies used to study the role of genetics in behaviour are family studies, adoption studies, twin studies, and twins-reared-apart studies. Overall, the strongest findings in this field involve alcohol and nicotine abuse.

Family studies aim at ascertaining whether certain phenotypes (traits) run in the family and have a heritable basis. Cotton (1979) reviewed 140 studies and concluded that there is indication of increased incidence of alcoholism with one or more diagnosed alcoholics in the person’s family. It was found that a child of an alcoholic parent has up to four times the probability of becoming an alcoholic, compared to the general population.

Adoption studies address the “similar environment in families” issue (Collins, 1995). In these types of studies, the degree to which an adoptee differs from both his/her biological and adoptive parents is a measure of the genotype-by-environment interaction. There are some impressive findings in this area. For example, Goodwin, Schulsinger, Hermansen, Guze and Winokur (1973) compared 55 male adult adoptees with an alcoholic biologic parent, to 78 adoptees with nonalcoholic parents. The incidence of alcoholism in the first group was nearly four times greater than that of the second group (nonalcoholic parents). A number of other adoption studies found similar findings and as a whole indicate that genetics does play a role in the development of alcoholism (Collins, 1995). At the same time, some studies indicate (especially in the case of females) that the environment also plays a critical role.

Twin studies offer another perspective on genetics, as the existence of identical twins reared apart provides the most powerful tool in the assessment of the nature versus nurture contrast (Collins, 1995). Unfortunately, there are only a few such studies in relation to alcoholism.
Thus far, the data collected supports the argument that alcohol consumption is influenced by genetic factors.

In summary, according to Collins (1995), there is considerable evidence that genetic factors play a role in addiction to alcohol and to some extent in nicotine addiction. However, as Collins argues, it is clear that neither alcoholism nor smoking are determined solely by genetics. Therefore, he argues that an important area of research in this field should involve identifying environmental factors that can reduce addictions in genetically susceptible people.

**The Disease Model**

As mentioned earlier, the notion of alcoholism (and later substance abuse) as a disease is attributed to Dr. Benjamin Rush. Segal (1988) explains that the model of alcoholism as a disease is a means of describing dependency on alcohol as an illness, attributable to the chronic consumption of alcohol. "The specific illness, alcoholism, is the person's inability to cope with alcohol, thereby resulting in a loss of control over drinking, and subsequent dependence on alcohol. This inability to control one's drinking is caused either by a genetic predisposition or as a result of a change in the body due to the chronic drinking itself." (P. 202).

Gorski (1996) explained that medical research and projects in the Yale and Rutgers Schools of Alcohol Studies starting in the early 20th century, resulted in a body of data supporting the disease model. Consequently, the US congress created the National Institute of Alcohol Abuse and Alcoholism to implement treatment programs based upon this model. This work was summarized in Jelinek's book *The Disease Model of Alcoholism*, published in 1960.

In his book, Jelinek outlined five types of alcoholism, Alpha, Beta, Gamma, Delta and Epsilon. Only gamma and its two related subtypes Delta and Epsilon represent the disease state. But, as Gorski (1996) explains, an event that occurred subsequent to the publication of the book left the alcoholism field with the impression that Jelinek asserted that anyone who has a drinking problem suffers from the disease of alcoholism. The event that led to this
mistaken notion resulted from the work of Maxwell Glatt who was so impressed with the description of gamma alcoholism (the type representing a disease state) that he operationalized the symptoms and put them on a chart. He called the chart The Jelinek Chart.

However, as Gorski (1996) argues, you will not find such a chart in Jelinek’s book or other works. Gorski adds that Glatt “operationalized gamma alcoholism so well that everyone became hypnotized by it. Here was a fundamental error inadvertently interjected into the consciousness of the chemical dependency field: that there is only one type of alcoholism...” (P. 16).

The popularized idea of the disease model was adopted by Alcoholics Anonymous (AA) in the 1930s and is adhered to by its members to this day. The AA disease model includes the notion of a biological predisposition together with a personality defect that makes the person susceptible to addiction.

According to Hester and Miller (1995), the treatment implications of the disease model are straightforward: “persons with the disease of alcoholism must be identified, informed of their condition, brought to accept their diagnosis, and persuaded to abstain from alcohol for the remainder of their lives.” (P. 6).

According to Segal (1988), the disease model of alcoholism (and later substance-abuse) “has been a dominant force in shaping alcohol control policies, prevention efforts, treatment and research for over 40 years...” (P. 202). According to Peele (1984), public opinion polls following World War II showed continuous increase in the belief that alcoholism is a disease. In 1982, a Gallup poll found 79% of Americans accepted alcoholism as a disease requiring medical treatment (Peele, 1984).

Lawson, Peterson and Lawson (1983) argue that the disease model has been appealing for three reasons: “(1) it is easy to grasp conceptually; (2) it has, to some extent, removed the negative stigma associated with alcoholism; and (3) it calls for total abstinence from alcohol as the only plausible
treatment goal, which is also simple, straightforward, and therefore, attractive." (P. 5).

However, the validity of the disease theory is being questioned now, with one criticism being "that the disease model gives the false impression that alcoholism has an agreed-upon etiology and an appropriate form of treatment." (Segal, 1988, p.202). Segal explains that evidence was being gathered to support the idea that many different factors are involved in the onset of alcoholism.

**Alcoholics Anonymous**

Alcoholic Anonymous was founded in 1935 by two recovering alcoholics Bill Wilson and Bob Silkworth (Lawson et al., 1983). They hoped to create a fellowship of problem drinkers who would help each other conquer their obsession with alcohol. A set of rules called traditions and a procedure for rehabilitation, the twelve steps, has evolved over the years.

The disease model of alcoholism was adopted and advocated by the AA organization since its inception. As Lawson et al. (1983) explain, the AA philosophy holds the following beliefs "(1) alcoholism is an incurable, progressive disease that will result in death without therapeutic intervention; (2) the only remedy for alcoholism is complete abstinence from drinking; (3) once an alcoholic, always an alcoholic, no cure is possible, only remission; and (4) no one can cure his or her own alcoholism without help." (P. 17).

A key element in the AA philosophy is the view that the ultimate cause of alcoholism could be attributed to a personality defect, such as a personality structure (Cox, 1987).

Overall, the AA philosophy and etiological explanation of substance abuse has changed over the years. In its early years, AA advocated a disease model emphasizing biological causes of addiction to substances, coupled with a personality defect. However, as Wallace (1996) argues, in recent years, "theorists sympathetic to 12-step programs have contributed formal
biopsychosocial models." (P. 14). Consistent with the contemporary trend, the present AA model is multidimensional in nature.

According to Collins (1993), "AA offered a spiritual/behavioral framework through its Big Book, Twelve Steps, and Twelve Traditions for understanding, accepting, and recovering from the compulsion to consume alcohol." (P. 33). At a certain point, sober AA members took "inebriates" into their homes, thereby offering them an opportunity to sober up in a dry, protective environment, with the help of other AA members. This is considered to be the beginning of "alcoholism treatment" as we know it today.

Though there are overlaps in principles with some treatment modalities, according to Collins (1993), AA members typically do not consider it as a "treatment" per se, as the AA organization does not accept payment. However, many treatment centers and providers promote AA ideas and encourage their clients to attend 12-step meetings.

AA stresses the importance of social support, especially from those who have already taken the path to sobriety. This connection facilitates recovery for both mentor and beginner. AA recognizes that although it is necessary for each person to make his/her own decision to stop drinking, this is not a sufficient condition to achieve sobriety. Or as AA members put it: only you can do it, but you can’t do it alone. The founders of AA compiled the 12 steps required to reach sobriety. These have formed the foundation of discussions in many treatment centers.

Spirituality plays an important role in AA, though religious affiliation is not a requisite. Stated simply, one has to accept that a power greater than him/herself plays a role in his/her life and addiction. Having said this, AA asserts that in order to recover, the person him/herself has to take certain actions.

**The Psychological Model**

The field of psychology offers many different and sometimes opposing theories of addiction or substance abuse. One of the most popular areas of psychological research and theory of substance abuse involves what is called
"the addictive personality." Numerous personality types have been "found." For example, 139 typologies of alcoholics were devised between 1850 and 1941 (Babor & Laursen, 1986). This multitude of "alcoholic personalities" clearly indicates that there is not one personality that will fit all or even most alcoholics or drug abusers. Thus, discussing herein, the findings on this matter, seems unhelpful. This section attempts then, to present the major and most useful psychological theories of substance abuse.

According to Allport (1955), the controversy as to whether behaviour is governed from within or without seems to divide psychologists more than any other issue. According to Pervin (1984), it is clear that "there is both individual and environment, person and situation, nature and nurture, yet the tendency has remained to emphasize one or another set of variables." (P. 7). The Freudian and Skinnerian approaches represent the two extreme ends of the spectrum; Freud's argument that the individual is being "lived" by internal forces, contrasts Skinner's suggestion that "a person does not act upon the world, the world acts upon him" (Skinner, 1971, p.211). Two of the major psychological theories of substance abuse are linked to these arguments; the psychodynamic and the behavioural approaches. Another important theory of substance abuse is social learning theory which, like behaviourism, emphasizes the external influences, or more specifically, the social context, though not as rigidly as behaviourism. These three theories will be described in the following section.

**Psychodynamic Theories**

Although psychoanalysis is probably the best known theory and system of psychotherapy, it remains difficult to define (Leeds & Morgenstern, 1996). Using Leeds' and Morgenstern's broadest definition of psychoanalysis and psychoanalytic therapy, it is described as "a theory and practice with focus on making the unconscious conscious; in which the range of unconscious material extends from internal drives through representations of relations with others." (P. 69).
According to Leeds and Morgenstern (1996), psychoanalytic theories are theories of motivation which imply both needs and lack of awareness of these needs and their significance. As Leeds and Morgenstern argue, "such 'needs' often conflict with each other, with social norms...and come into awareness and behaviour first in the form of 'symptoms'." (P. 69).

In relation to substance abuse, psychoanalytic and psychodynamic theories examine why a person initiates or maintains dependency on a substance or substances (Leeds & Morgenstern, 1996). The behaviour of substance abuse is seen as a symptom: the outward expression of an internal conflict. It is a compromise, a product of conflict between a repressed idea and the defense against it.

Based on these concepts, psychoanalytic therapy aims to bring the underlying conflict into consciousness. But as Leeds and Morgenstern (1996) argue, while it is assumed that achieving this goal will alleviate the symptom (addictive behaviour), "the distance between insight and cure is often a wide and troubling one." (P. 69).

Historically, there was and there remains a wide range of ideas and techniques in psychoanalysis and this applies to the psychoanalytic treatment of substance abuse, as well (Leeds & Morgenstern, 1996). While contemporary psychoanalytic theory has made contributions to various disorders, it has made only meager contributions to the understanding of substance abuse. Whether due to the assumption that substance abuse renders one unsuitable for psychoanalysis, or to poor outcomes observed with these patients, psychoanalysts tend to refuse treating substance abusers and tend to send them to 12-step programs (Leeds & Morgenstern, 1996). Yet some current psychoanalytic theorists have made important contributions to the understanding of substance abuse. Of particular relevance to this paper are the ideas of Edward Khantzian and Henry Krystal.

**Substance abuse and regulation of feelings.**

According to Murphy and Khantzian (1995), "problems with affect are at the heart of substance dependence problems" (P. 166). The use of substances
have been adopted to protect against overwhelming, confusing or painful feelings.

Khantzian believes that deficits, not conflicts, are the root of substance abuse disorders (Leeds & Morgenstern, 1996). He sees the weakness and inadequacies of the "ego" or "self", rather than conflicts between the psychic agencies (id versus superego), as crucial. Khantzian believes that the specific way a person protects, regulates, cares for, and thinks of him/herself makes him/her look for particular effects of drugs. Take for example, the opiate user's need to counteract aggression, or the cocaine user's need to counteract hyperactive/restless/emotional liability syndrome or attention deficit disorder, depression, bi-polar depression (Leeds & Morgenstern 1996). Khantzian's view of the differential use of substances is called the self-medication hypothesis (Murphy & Khantzian, 1995).

The self-medication hypothesis holds that addicts are predisposed to use and become dependent on specific substances by their specific difficulties with drive and affect defense, self care, dependency and need satisfaction (Murphy & Khantzian, 1995). The individual choice of substance to alleviate specific problems is referred to as self-selection (Murphy & Khantzian, 1995).

Khantzian (1981) explains that the ego functions involved in the regulation of feelings "serve as signals and guides in managing and protecting against instability and chaos in our internal life." (P. 166). He adds that "feelings act as a guide or signal to mobilize ego mechanisms of defense in response to internal emotions and external stimuli." (P. 167). Alcoholics, in Khantzian's view, fail to use feelings in this way, either because they are unable to identify affects or because their feelings are unbearable or overwhelming. Consequently, "alcoholics use denial and/or the effects of alcohol to ward off overwhelming affects." (P. 167).

According to Murphy and Khantzian (1995), "the literature on infant research and affect development suggests that much of the substance abuser's experience of affects is painful, not only because feelings are intense and overwhelming but because feelings are often absent, confusing and without
words." (P. 167). Alexithymia, affect deficit, nonfeeling response are some of the terms used to describe this quality. This quality, according to Murphy and Khantzian, may explain why such patients often appear superficially to be free of distress.

According to Leeds and Morgenstern (1996), Krystal offers two theories of why people abuse substances. Of relevance here is his second theory that focuses on "alexithymia".

**Alexithymia.**

Alexithymia is a useful term as it offers a clear conceptual framework and definition for a complex phenomenon in human psychology. The term alexithymia was coined by Sifneos (1972) to describe a cluster of cognitive and affective characteristics observed among psychosomatic patients. The literal meaning of the term is "no words for feelings" and according to Taylor (1994) it referred to "a marked difficulty in identifying and describing feelings verbally, a reduced ability to create fantasies, and a thought content that revealed a preoccupation with the minute details of bodily symptoms and/or external events." (P. 61). Leeds and Morgenstern (1996) explain:

Krystal believes that addicts differ from others in that they do not recognize the cognitive aspects of feeling states. That is, instead of experiencing differentiated feelings as 'sad', 'angry', 'happy' and so forth, alexithymics experience global physiological states and tensions. This makes it difficult to use emotions as guides to self-understanding and eliminates or to some extent cripples an important source of information and feedback. It means one cannot read the significance of specific arousal states; and arousal itself becomes a source of anxiety, Therefore, one attempts to eliminate it by sedation or discharge. Substance abuse is one method of such sedation or discharge. (P. 74).

Different scales were developed to measure alexithymia. Most commonly used are the Scalling Sifneos Personality Scale (Apfel & Sifneos, 1979, Sifneos, 1986) and the Toronto Alexithymia Scale (Taylor, Ryan & Bagby. 1985, Taylor, Bagby & Parker, 1992). The most established and validated scale is the Toronto Alexithymia Scale (TAS).
Research using the Scalling Sifneos Scale found the prevalence of alexithymia in the general population to be 10%, to increase with age, and to be more prevalent in men (Rybakoski, Ziojokowski, Zasadzka and Brzezinski, 1988). Alexithymia has been observed in substance abusers and people who experienced severe trauma (Taylor, Ryan & Bagby, 1985, Krystal, 1979).

Rybakowski et al. (1988) used the Scalling Sifneos Scale to assess rates of alexithymia in alcoholic men and found a 78% rate in a sample of 100 clients.

When the TAS was used, alexithymia in the general population was reported to be 15% (Parker, Taylor & Bagby, 1989). Further, Taylor, Parker and Bagby (1990) found a 50% rate of alexithymia among 44 men with mixed substance-dependence disorders, compared to 35.1% in a group of general psychiatric male patients. Keller, Carrol, Nich and Rounsaville (1995) studied alexithymia rates among cocaine abusers and found a 39% prevalence of this characteristic. They explained that their sample was more heterogenic (they had more women and minorities) which might explain the lower prevalence (men were found to be higher in alexithymia in previous studies). Whichever measure or sample is used, it appears that alexithymia is significantly more prevalent among substance-abusers compared to the general population.

A study on recently sober alcoholics (Haviland, Hendryx, Cummings, Shaw & McMurray, 1991), examined the relationship between alexithymia as measured by the TAS and depressive symptoms as measured by the Beck Depression Inventory (BDI). It found that one of the sub-scales of the TAS (inability to identify feelings and distinguish them from bodily sensations), was related to depressive symptoms.

In summary, it appears that alexithymia is significantly more prevalent among substance abusers compared to the general population. This finding supports the claim of researchers such as Krystal and Khantzian (discussed earlier), that substance abusers experience difficulties in the expression and regulation of their emotions.
According to Rotgers (1996), behavioural theories of substance abuse are based on the principles of learning and behaviour changes in animals and humans, outlined by experimental psychologists. Rotgers lists the seven basic assumptions of behaviour theories of substance abuse and their treatment:

1. Human behaviour is largely learned rather than being determined by genetic factors.
2. The same learning processes that create problem behaviours can be used to change them.
3. Behaviour is largely determined by contextual and environmental factors.
4. Covert behaviour such as thoughts and feelings are subject to change through the application of learning principles.
5. Actually engaging in new behaviours in the contexts in which they are to be performed is a critical part of behaviour change.
6. Each client is unique and must be assessed as an individual in a particular context.
7. The cornerstone of adequate treatment is a thorough behavioural assessment. (P. 175).

At the centre of behavioural theories of substance abuse are three basic learning theory processes which are believed to be involved in the initiation, maintenance and change of behaviour: classical conditioning, operant conditioning and psychological modeling (Rotgers, 1996). Classical conditioning refers to a process in which a stimulus (the unconditioned stimulus-CS) that has been neutral before (did not elicit a particular unconditioned response of interest-UCR), is being repeatedly associated with another UCS. This repeated pairing of the CS with the UCS elicits a response that is similar to the response of interest. However, the conditioned response (CR) is usually somewhat different than the UCR. This idea has been applied to substance abuse. For example, as Rotgers (1996) explains, one can experience a physiological arousal (craving) in response to a cue such as money: an urge to purchase the drug of choice.

Classical conditioning theory is the basis for at least four important procedures in the treatment of addiction: cue exposure treatment, stimulus control techniques, relaxation training, covert sensitization and a number of aversion therapies. Aversion therapy strategies strive to create a negative response to the sight, smell, taste, and even thought of the substance. An
example is the nausea aversion achieved by pairing alcohol with a physically-induced nausea (Miller, et al., 1995).

Operant conditioning is another form of learning. It is most strongly associated with the work of Skinner (1953). This learning involves mostly voluntary behaviour which is either negatively or positively reinforced by an environmental (internal or external) stimulus (Rotgers, 1996). In the context of substance abuse, theorists focused mainly on the reinforcing properties of psychoactive substances. For many people, the substances carry powerful innate positive effects and remove subjective negative effects.

Treatment for substance abuse, from an operant conditioning perspective, involves rearrangements of environmental responses to drinking/drug use in such a manner that behaviour other than drug/alcohol use will become more immediate and obvious (Rotgers, 1996). In turn, this behaviour will replace the reinforcement, which was associated with substance abuse. Specific strategies are employed to recondition the person and stop the unhealthy substance abuse; examples are behavioural contracting, setting specific goals, and reinforcing approximations serve as examples (Miller et al., 1995). Cognitive therapies aim to alter beliefs and thinking patterns thought to underlie the addictive behaviour (Miller et al., 1995).

According to behavioural theorists, the learning process which appears to be the most efficient and rapid in producing new learning is modeling (Rotgers, 1996). It is believed that many new and/or complex behaviours can be learned with only a single or few observations. Modeling involves two subprocesses as outlined by Bandura (1977), observational learning and performance. A cognitive map is then created which stores the aspects of behaviour that can be reproduced later. The actual performance of the modeled behaviour depends on the characteristics of the model (desirable or not) and whether the model is seen to be reinforced or punished for the behaviour. It also depends on whether the person observing has an incentive to perform and whether he/she expects to be reinforced similarly for the same behaviour.
Modeling is also important in the maintenance of addiction, as in the example of the adolescent who starts to use a substance as a result of modeling after his/her peers, and continues the behaviour to ensure inclusion in the group (Rotgers, 1996). It is believed that addicts often lack skills which would allow them to refuse substance use. Addicts are also prone to inappropriate thought processes. Thus, teaching new refusal techniques and thought processes via modeling can help to counteract the old patterns. Adding new behaviours such as relaxation, coping self-statements, and anger management can enhance the process of learning, as one’s vocabulary of healthy behaviours expands.

According to Rotgers (1996), the following three core tasks of behaviourism are applicable to treatment of substance abuse:

1. Functional analysis - thorough assessment of client’s substance use behaviour, its triggering and maintaining factors.
2. Skills training - teaching the client an individually-tailored menu of techniques aimed at intervening in the problems identified in the assessment, closely linking assessment and treatment.

By their very nature, behavioural approaches to substance abuse emphasize matching treatment to the specific client characteristics and needs (Rotgers, 1996). Implied is flexibility in the selection of treatment objectives. An example is the goal of abstinence versus reduction in use. Behavioural theories allow for incremental approaches, starting with reduction in use, as long as it does not put the client at risk with respect to health. Attaining moderate use is considered a legitimate goal from this perspective, although typically, the objective of treatment is total abstinence and its maintenance. Reduction in use as a goal has been established as an acceptable approach to substance abuse (see the discussion on harm-reduction and controlled use below).
Substance-abuse disorders, according to behavioural theory, result from a combination of factors, interacting in different ways, depending on the individual's unique characteristics and environment (Rotgers, 1996). Behavioural theorists have officially endorsed a "biopsychosocial" perspective on addiction, though they tend to minimize genetic factors, while emphasizing the interaction between a person's biological makeup, environment and learning processes.

**Social Learning Theory (SLT)**

As Abrams and Niaura (1987) explain, like early behaviourism, "SLT rejects the notion that behaviour can be explained solely by a consideration of underlying motivational forces in the forms of needs, drives and impulses." (P. 131). At the same time, SLT "also rejects explanations of human behaviour based solely on classical conditioning, strict stimulus-response learning theory, or operant conditioning descriptions." (Abrams & Niaura, 1987, p. 131).


> Social learning theory approaches the explanation of human behavior in terms of a continuous reciprocal interaction between cognitive, behavioral, and environmental determinants. Within the process of reciprocal determinism lies the opportunity for people to influence their destiny as well as the limits of self-direction. This conception of human functioning then neither casts people into the role of powerless objects controlled by environmental forces nor free agents who can become whatever they choose. Both people and their environments are reciprocal determinants of each other. (P. vii).

Thus, social learning theorists argued that behaviour is a result of an interaction of intrapersonal factors with biological and/or psychological dispositions and social situations. The contribution of each factor varies according to the setting or situation. Thus, Abrams and Niaura (1987) argue that SLT can be considered an interactionist theory.

An important aspect of SLT is the emphasis on vicarious capability or learning through modeling (Abrams & Niaura, 1987). According to Abrams and
Niaura (1987), learning through modeling "is also at the root of the definition of SLT since social learning is fostered by observing others' behaviour and its consequences." (P. 133).

Peer pressure and the social environment in general, play an important role in alcohol abuse, according to social learning theory (Miller et al., 1995). Naturally, interventions from a social learning approach "focus on altering the person's relationship to his or her environment. Changes may be made in the person's circle of friends, to avoid exposure to negative models and further reinforcement for problematic drinking." (Miller et al., 1995, p. 5). As well, new coping skills can be taught to replace the drug as a coping strategy (Miller et al., 1995). Another aspect of treatment may include cognitive restructuring in an effort to create positive expectancies.

Social learning theory acknowledges the predisposing role of biology in modulating learning behaviour (Abrams & Niaura, 1987). However, the person is seen as acting in an adaptive and purposive way rather than in a passive fashion. Abrams and Niaura (1987) explain that "cognitive activities such as anticipation, expectancy, memory about history of use, and modeling play a primary role as determinants of behaviour. An individual chooses to use alcohol to obtain specific outcomes and can choose to use other, more adaptive or less damaging behaviours to achieve his or her goals." (P. 134).

According to social learning theory, biological-biochemical factors might influence the person's cognitions; an example is the expectancy of stress reduction (Abrams & Niaura, 1987). The solution is to offer alternative methods of coping to prevent relapse. Coping skills specific to drinking include awareness of cues related to intoxication, refusal skills, and so forth. There is also an emphasis on self-efficacy as an explanation for how thoughts affect action and how behaviour patterns are selected by the individual. Self-efficacy is essentially the "perception or judgement of one's capability to execute a particular course of action required to deal effectively with an impeding situation." (Abrams & Niaura, 1987, p. 134).
Situational factors play a significant part in social learning theory. As Abrams and Niaura (1987) explain, "the situational context (e.g., business lunch, Alcoholics Anonymous meeting, wedding, party) and the presence of drinking role models can influence drinking behaviour." (P. 154).

In summary, social learning theory integrates important elements of behavioural theory, psychodynamic theory and biology. It considers a person's biology, his/her social or situational context and personality. It is a model of interaction which is flexible, yet specific in its outline of social learning processes.

**SLT and the Therapeutic Community (TC) treatment modality.**

Social learning theory is the foundation of an important treatment modality: the Therapeutic Community (De Leon, 1995). In this approach, the primary "therapist" is the community itself. The "community" refers to the social environment, peers, and staff who serve as role models for successful change and as guides in the recovery process. As De Leon (1995) writes, "the community is both context in which change occurs and method for facilitating change." (P. 1606).

Over the years, the Therapeutic Community's (TC) basic model has been amplified with a number of components: family, education, vocational counseling, medicine, and mental health (De Leon, 1995). The result is a multidisciplinary treatment approach.

Within this approach, substance abuse is viewed as a disorder of the whole person (De Leon, 1995). The character is seen as multidimensional and change is viewed along several dimensions: behaviour, perception and experiences. The method for achieving change is the community which consists of multiple interventions. These interventions can be grouped under the following categories: 1. Therapeutic/educative, 2. Community enhancement, 3. Community and clinical management, and 4. Additional interventions.

TC treatment providers subscribe to the belief that a long treatment provides sufficient immunity to potential threats to recovery following treatment. This belief, according to De Leon (1995), has been supported by
evidence from research indicating the relationship between length of program and post-treatment success (De Leon, 1985, Simpson and Sells, 1982).

De Leon (1991) explains that “chemical abuse is a disorder of the whole person; detoxification is a condition for entering residential treatment; recovery is a developmental process of incremental learning toward a stable change in behaviour, attitudes, and values associated with maintaining abstinence” (P. 1228).

The structure and process of TC bears similarity to the larger macro-society with the deletion of drug use and antisocial behaviour (De Leon, 1985). As De Leon (1985) explains, “it presents all of social, emotional, and circumstantial situations that could constitute threats to abstinence with the exception of accessible drugs...” (P. 1228). However, a key difference between the TC environment and the macro-society is that the TC provides a trial-and-error learning process in which the individual can fail safely. Negative behaviours and attitudes are continuously observed and new learning is facilitated.

**SLT and stages of change.**

According to social learning theorists, the change of an addictive behaviour into a healthy behaviour involves several stages (Prochaska and DiClemente, 1983, Marlatt and Gordon, 1985). Prochaska and DiClemente (1983) propose that five stages are involved in the process of change: pre-contemplation and contemplation (prior to quitting the substance), action (the act of quitting), maintenance, and relapse. Marlatt and Gordon (1985) collapsed these five stages into three: the motivation and commitment to change, the implementation of change (quitting or using control strategies such as entering treatment) and maintenance of change.

Marlatt and Gordon (1985) argue that interventions have traditionally focused on the stage of implementation of change. This led to increasing components of treatments, which has not improved outcome (Hall, 1980).

In contrast, Marlatt and Gordon (1985) propose that to increase effectiveness, more emphasis should be placed on the maintenance stage. The
rationale for this is twofold. First, they argue that after treatment (the maintenance stage) the effects of treatment diminish. Second, during the maintenance stage, old maladaptive behaviour has to be unlearned and new adaptive behaviours have to be acquired and strengthened. Mistakes or relapse are consequently more likely to occur shortly after the implementation of change or treatment phase.

Prochaska and DiClemente (1984) made an important conceptual advance by suggesting a cyclical model of relapse, instead of the linear model which occurs in a specific order, with relapse being the last stage. In their cyclical model, relapse leads back to an earlier stage and the person can make another attempt to change.

The emerging interest in the maintenance stage may be the basis for developing aftercare programs in TC programs and in many treatment centres. At this point, it may be appropriate to discuss aftercare in general.

Aftercare.

Defining aftercare is somewhat problematic. As Zackon, McAulliffe and Ch’ien (1985) explain, "aftercare suggests different things to different people, and even treatment specialists are often unclear as to what the term means." (P. 5).

According to Ito, Dennis, Donovan and Hall (1988), aftercare “is conceptualized as those therapeutic activities that aim to maintain gains achieved in an earlier phase of treatment, as opposed to procedures which promote new therapeutic goals.” (P. 172). Mackay and Marlatt (1990-91) explain that the cessation of a target behaviour, such as substance abuse “may be governed by different principles than those associated or necessary for the maintenance of change.” (P. 1259). Thus the strategies applied in the primary treatment of addiction, may not be the same as those applied in the post-treatment stage.

Typical interventions in substance-abuse aftercare programs include: "educational remediation, vocational counseling, life-skills training, family assistance, psychotherapy, relapse prevention and recovery-based training" (De...

As Ito and Donovan (1986) explain, some authors argue that aftercare may be the active ingredient in successful treatment. Compared to long hospitalizations, aftercare has been found to be cost-effective when offered after brief hospitalization (Finney, Moos & Chan, 1981, Walker, Donovan, Kivlahan & O'Leary, 1983).

**SLT, the Therapeutic Community and aftercare.**

An important component of the TC treatment modality is aftercare following primary treatment. Aftercare is not unique to the TC treatment modality and is offered by many programs in a variety of settings.

De Leon (1990-91) outlined the five major areas of learning in the TC treatment modality that help prepare clients for aftercare issues:

1. Socialization: participation in a drug-free community and engagement in "right living".
2. Psychological improvement: awareness of self, others, and environment, insight into causes of negative behaviours; increased self-esteem and self-efficacy; maturity.
3. Recognition of the triggers or cues to drug taking: awareness of social, emotional, and cognitive circumstances which may lead to relapse.
4. New coping skills through direct instruction, rehearsal, imitation, and vicarious learning.

Generally, the goal of aftercare from a TC perspective is to facilitate the return of the recovering client to the larger society as a productive and useful member (De Leon, 1990-91). This is called the reentry stage (usually 13-24 months) as opposed to the primary treatment stage (usually 1-12 months).

**SLT and Relapse Prevention (RP).**

An important contribution of social learning theory is the work of Gordon and Marlatt (1985) on relapse. Marlatt and Gordon helped lay out the foundation for the entire field of Relapse Prevention (Rawson, Obert, McCann &
Marinelli-Casey, 1993). According to Rawson et al. (1993), there are different models of relapse prevention programs. Marlatt and Gordon (1985) offered the following definition of relapse prevention:

Relapse prevention is a generic term that refers to a wide range of strategies designed to prevent relapse in the area of addictive behavior change. The primary focus of RP is on the crucial issue of maintenance in the habit-change process. The purpose is two-fold: to prevent the occurrence of initial lapses after one has embarked on a program of habit change, and/or to prevent any lapse from escalating into a total relapse. (P. xii).

According to Ito, Donovan and Hall (1988), Marlatt and Gordon (1980, 1985) conceptualized relapse prevention “as a self-control program incorporating behavioural skill training and cognitive intervention techniques.” (P. 172). The goal is to provide the clients with the skills needed to anticipate, avoid, and/or cope with high-risk situations which may lead to relapse. A related goal is to help clients address a slip and prevent it from becoming a full-blown relapse.

According to Abrams and Niaura (1987) “Marlatt and Gordon’s model of relapse can be conceived as a comprehensive summary of a SLT of alcohol use and abuse.” (P. 168). The central assumption in that model of relapse is that the individual has voluntarily made a choice to abstain or control alcohol consumption. The choice to abstain or limit use leads to a sense of personal control and a growing mastery over high-risk situations. To achieve such control, a person must develop general and specific coping skills as alternatives to drinking. The combination of these coping skills and the perception of mastery determines which behaviour will be chosen. If a person manages to cope with a high-risk situation without drinking, self-efficacy is enhanced. This, in turn, increases the probability of more success in the future.

Usually, relapse prevention programs offer clients social support in addition to practical tools. Rawson et al. (1993) argue that outcome studies in relation to RP programs are preliminary and more research is needed as it is “very likely to produce valuable new models and treatment approaches for substance-abuse treatment.” (P. 94).
Other Psychological Treatment Modalities

In the above discussion of the psychological explanatory model of substance abuse, three major approaches were described with their corollary treatments. However, the number of psychological treatment modalities is probably as great as the number of treatment centres around the world. The approaches may vary in accordance with factors such as the philosophy of the providers, staff and available resources. Some of these may be extremely useful, but not specifically relevant for this study and consequently, will only be mentioned briefly.

For example, a number of programs are offered by the Center for Addiction and Mental Health - Addiction Research Division, in Toronto, such as Structured Relapse Prevention, Guided Self-Change, which are given in a one-on-one format. Other examples are Broad Spectrum Skill Training approaches which focus not on the consumption of the substance per se, but on other life problem areas often associated with relapse (Miller et al., 1995).

Marital or Family therapy is another treatment approach used in addiction treatment. These relationship therapies aim to promote sobriety by improving the quality of family and/or marital relationships. (Miller et al., 1995).

There are also addiction counselors and experts of different educational backgrounds and disciplines offering one-on-one and/or group treatment. As well, for treatment-shy individuals or those who cannot afford treatment, there are self-help resources such as 12-step groups, books, Internet resources, and organizations like the Center for Addiction and Mental Health, Addiction Research Division.

The Biopsychosocial Model: An Integration of Major Models

The biopsychosocial model of substance-abuse stems from the biopsychosocial model of health and illness, as addiction is predominantly perceived as an illness. This model recognizes that the mind and the body work together to determine health and illness (Taylor, 1991). The fundamental assumption belying this model is that "any health or illness outcome is a...
consequence of the interplay of biological, psychological and social factors” (Taylor, 1991, p. 11).

Unlike a reductionist medical model which explains etiology by reducing it to a low level and usually single-factor phenomena such as a disordered cell, the biopsychosocial model includes both macro-level and micro-level processes (Taylor, 1991). For example, it may recognize the role of social support (macro-level) and the role of chemical imbalances (micro-level) in depression. These are social and biological factors used to explain what may be seen as purely a psychological or medical problem. The model maintains that we cannot separate the mind from the body and that “health and illness are caused by multiple factors and produce multiple effects.” (Taylor, 1991, p. 12).

According to Chiauzzi (1991), researchers in substance abuse have increasingly begun to rely on biopsychosocial explanations. Theories that suppose only a single cause (biological, psychological, or social) are now being considered overly simplistic; “even strong advocates of the disease concept admit that there are powerful psychological and social factors that can lead to expression of a predisposition for alcoholism.” (Chiauzzi, 1991, p. x).

Donovan (1988) discusses the implications of the emerging biopsychosocial model to assessment in the field of addictions. He argues that since this model involves multiple systems and components, the assessment process should address this reality. The task of the clinician, according to Donovan (1988), “is to determine the unique contributions made to the addictive behaviour by each system, the way in which the different systems interact, and the system making the greatest contribution to the behavioural disorder.” (P. 17).

Chiauzzi (1991) explains that the biopsychosocial model is especially useful for relapse prevention as it “encourages relapers to evaluate mistakes made in different areas of their lives.” (P. x).

Thus, a biopsychosocial theory of addiction builds on and integrates the important concepts of other major models (some of which were discussed here).
It assumes multiple causes and interactions to explain the etiology and process of addiction and the processes of recovery and relapse.

As Donovan (1988) so succinctly argues, in the context of addiction, "an interactive biopsychosocial model provides a bridge across the varying perspectives of different disciplines, ideologies, and paradigms." (P. 5). Thus, the biopsychosocial model may help unite the various perspectives into a comprehensive paradigm.

The implication of this model for research is that to understand health outcomes, one must consider biological, psychological, and social processes together (Taylor, 1991). Thus, if researchers choose not to study any of these factors, they must recognize still that any generalizations on one variable assume certain biological, psychological, and social conditions (Taylor, 1991). Translating this to substance abuse, a researcher who studies only psychological and social variables presupposes a presence of biological conditions necessary to produce the problem.
CHAPTER III
TREATMENT AND ITS EFFICACY

Relapse Rates and Treatment Efficacy

Research has shown that relapse rates following treatment for alcohol or drug abuse are in the 40-90\% range (Paul, Barrett, Crosby & Stall, 1996, Hunt, Barnett & Branch, 1971) with most relapses occurring within the first three months following treatment (Hubbard & Marsden, 1986, Marlatt, 1985).

Relapse rates for alcohol dependency alone were found to be 45-60\% within the first three months following in-patient treatment (Armor et al., 1976, Hunt & General, 1973). As for drugs, three-months post-treatment relapse rates in injection drugs clients were found to be 60\% and 10\% in hallucinogen abusing clients (Paul et al., 1996). Relapse to cocaine use was found to be 44\% within the first three months following treatment (Monti, Rohsenow, Michalec, Martin & Abrams, 1997).

Results for one year follow-ups and longer indicate a gradual increase in relapse rates. According to Marlatt (1985), abstinence at one year for substance abusers in general is in the 20-35\%. One-year follow-ups of heroin addicts show only 20-21\% abstinence rates (Gossop, Green, Phillips & Bradley, 1987, Hunt, Barnett & Branch, 1971).

A national survey of 101 Veteran Association (VA) programs (N=40,747) in the US (Peterson, Swindle, Phibbs, Recine & Moos, 1994) examined outcomes over 30, 60, 90, 180 and 365 days intervals. They used readmission rates (to similar treatment programs) as the outcome variable and found that readmission at 180 days was 25\% (range 3-50\%) and 35\% at one year.

The reality of high relapse rates following treatment has led researchers to examine the issue of efficacy of treatment in preventing relapse or reducing substance consumption. Agosti (1995) conducted a meta-analysis to assess the relative efficacy of various treatments in reducing alcohol consumption over the short term (6 months and 12 months). All treatments were administered in well-controlled studies. When the studies were pooled,
analysis revealed that clients in experimental groups drank significantly less than those in control groups (no treatment) at both follow-up points. In Agosti’s (1995) view, the results suggested that, in general, “patients who received experimental treatments consumed much less alcohol than patients in the control groups.” (P. 1067).

Polich, Armor and Braiker (1980) examined patterns of alcoholism over four years. They followed up on 758 randomly selected male clients completing treatment. In addition, they had access to data regarding clients’ recovery status at 18 months post-treatment. They found that only 28% of the clients were in stable remission (abstained for at least six months) at both points in time. In summarizing their findings the authors wrote: “the results of the four year follow-up study imply one fundamental fact about the disorder: alcoholism is a chronic unstable condition.” (P. 415). Although they clarified that improvement does occur and remissions do happen frequently, their data showed that such remissions “are generally intermittent rather than stable.” (P. 414).

Miller and Hoffmann (1995) reviewed the alcoholism outcome literature and found that out of 211 studies, 146 or 69% reported a significant treatment effect on at least one alcohol measure, for at least one follow-up point.

Combining the above-mentioned findings with the data on the cost efficiency of treatments (discussed earlier), it appears that treatment does produce a positive outcome both to the addicted persons and society as a whole.

**Treatment Characteristics**

As Landry (1995) explains, “addiction treatment is not a single, homogeneous, or uniform technique. Rather, addiction treatment includes numerous interventions, methods, strategies, and techniques with differences in philosophies, goals, and to some degree, type of patients treated.” (P. 15). Consequently, it is extremely difficult to describe all existing treatment characteristics and components.
Individual and group therapy, family therapy, pharmacotherapies, brief therapy interventions, stress management, social skills training, relapse prevention, psychodrama, vocational rehabilitation, coping skills, behavioural contracting, are just a few examples of possible components or strategies of treatments. Since most treatment programs do not rely on one modality or philosophy and combine a number of components from different disciplines, it is problematic to discuss the superiority of one approach over another.

Notwithstanding these problems, many researchers attempted to rise to the challenge. A comprehensive review of this literature can be found in Miller and Hester (1986) which encompassed more than 600 references.

A comparison of all existing treatment modalities is difficult to accomplish. However, for the purpose of this study, it is worthwhile to review two general treatment characteristics: length of program and in-patient versus out-patient settings (residential versus non-residential). A short review of related findings is given next.

**Long-Term Versus Short-Term Treatment**

Treatment length varies from days to years. Landry (1995) summarized the previous literature and research concerning the effectiveness of four major forms of addiction treatments: methadone maintenance, therapeutic community, "traditional" chemical dependency treatment and out-patient drug-free non-methadone treatment. When discussing treatment length, Landry (1995) found that the length of treatment often plays an important role in treatment effectiveness.

Both methadone and therapeutic community treatments tend to be long-term treatments, usually measured in years (Landry, 1995). Although, because of costs, availability, and insurance reimbursement issues, there have been modifications to the therapeutic community model which include programs that are a few months long, rather than several years long.

Overall, Landry (1995) found that in the cases of methadone and therapeutic community treatments, longer treatments were clearly associated with positive outcomes. However, gains are obvious as long as patients stay in
the program. In the case of the therapeutic community, this may mean staying in a residential setting with other recovering patients.

In the case of the psychosocial, non-methadone treatment approaches, Landry (1995) explained that most early studies found that long intensive psychosocial treatment resulted in positive treatment outcomes. Landry also found that most of the recent controlled studies do not demonstrate an advantage of longer programs over the shorter ones in relation to outcome. An exception is the case of patients with significant psychopathology, social instability or criminal involvement, in which case longer and more intensive treatments are associated with significant improvements (Landry, 1995).

Finally, Landry (1995) explains that intensive psychosocial treatments may be shortened without reducing efficacy if they are accompanied by continuing out-patient care or aftercare services.

**In-Patient Versus Out-Patient Treatment**

As discussed earlier, there are a multitude of treatment modalities in the field of substance-abuse. Some of these treatments operate on an out-patient basis, some on an in-patient basis while others combine both. According to Finney, Hahn and Moos (1996), in-patient treatment can be defined as “therapeutic interventions provided in a residential setting where patients stay essentially 24 hours a day.” (P. 1774). Out-patient programs do not involve overnight stays.

Finney et al. (1996) summarized the rationales for both types of treatments. In the case of in-patient treatment, certain characteristics have been suggested to indicate superiority over out-patient programs. First, residential treatment provides a respite for patients and removes them from environments that perpetuate their alcohol abuse. Residential treatment also allows them to receive more treatment as they are less likely to drop out. Treatment is more intensive and patients are linked more effectively to aftercare. As well, in-patient treatment provides medical/psychiatric supervision, otherwise not available to many. Finally, compared to out-patient
care, residential treatment suggests to patients that their problems are more severe.

The argument in favour of out-patient treatments, as summarized by Finney et al. (1996), includes the ability to focus on the patient’s usual life situation without removing him/her from that context. It allows a more valid assessment of the patient’s environmental, cognitive and emotional antecedents of drinking. Out-patient treatment better mobilizes help in the patient’s natural environment (Finney et al., 1996). As well, Finney et al. suggest that the transitions from out-patient treatment to aftercare is easier.

In their review of the studies comparing the efficacy of in-patient versus out-patient alcohol treatments, Finney et al. (1996) discovered some advantage to in-patient treatment. They found five studies with findings significantly favoring in-patient treatment, two studies suggesting that day hospitals were significantly more effective than in-patient treatments and seven studies yielding no significant differences.

Methodological Challenges in the Outcome Studies and Treatment-Efficacy Literature

The literature reviewed for this study revealed a multitude of methodological problems in the area of substance-abuse outcome studies. Sobell, Brochu, Sobell, Roy and Stevens (1987), in their review of 37 alcohol treatment outcome studies conducted between 1976-1980, found they were plagued with problems such as idiosyncratic outcome categories. Other problems included "(1) insufficient reporting of subject background and drinking history variables; (2) inadequate descriptions of the treatment provided; (3) failure to gather pretreatment data for variables addressed in the follow-up, and failure to examine possible pretreatment differences among treatment groups; (4) drawing conclusions in the absence of any statistical analysis or the inappropriate use of statistics and (5) failure to quantitatively assess drinking behaviour." (P. 113).

In comparison to earlier studies, Sobell et al. (1987) noted some improvement in studies done between 1976-1980. Their next review addressed the
period of 1980-1984 and found that while there had been some methodological improvements, this period can be best described as status quo.

Of greatest relevance here, is the past and present disagreements among researchers in defining and measuring outcome. Other important challenges include the difficulty in recruiting clients for research, the insufficient data on clients in spontaneous remission, and the resulting sampling bias. These issues are considered in the following sections.

**Definitions of Outcome**

Inconsistencies in the literature regarding outcome definition is one of the major problems facing a researcher attempting to understand recovery from substance abuse. Examples of existing definitions are program completion, recovery status (abstinent versus not abstinent or levels of use), and levels of functioning in different areas (i.e. work, family).

Definitions of relapse (which are also plagued with inconsistencies) are invariably linked to definitions of outcome and will be discussed as well.

**Program completion.**

The first step in the recovery process is the completion of an initial program aimed at producing a behavioural change, namely cessation of substance abuse. Program completion is associated with lower relapse rates (and with other outcomes such as lower unemployment rates and fewer arrests) compared to those who drop out of initial treatments (Stark, 1992, Agosti, Nunes, Stewart & Quitkin, 1991).

A project in the US, titled the Comprehensive Assessment and Treatment Outcome Research (CATOR), evaluated outcomes of private sector treatment programs in 24 states over ten years (Hoffman & Miller, 1993). The population was predominantly working middle-class people, the majority of whom received in-patient treatment. The treatment completion rate for 15,841 inpatients was 75% and was 70% for the 3382 out-patients. These rates represent significant numbers of clients who did not complete treatment and they merit some attention. Unfortunately, the literature review reveals that these clients are rarely studied.
As Chiauzzi (1991) explains, despite the ubiquity of the phenomenon of relapse, there is little agreement as to what constitutes a relapse. The most far-reaching definition regards relapse as any use of a mind-altering substance following the cessation of use. This definition seems to assume that a single use leads to loss of control to the point of total relapse. If the relapse occurs after treatment, then treatment is seen as a failure. Chiauzzi (1991) explains that the other extreme considers actual substance use as secondary to other areas in a person’s life. The focus in this case is on psychological and social aspects, work and recreational functioning. Outcome is then measured in terms of quality of life rather than the amount of substance used. This approach to outcome represents the viewpoint of insight-oriented psychotherapists, where the first approach represents the most extreme form of the abstinence-oriented approaches.

Most contemporary substance-abuse treatment programs attempt to combine abstinence with self-knowledge (Chiauzzi, 1991). Alcoholics Anonymous recognized the difference between being abstinent and being “dry”. “Dry” alcoholics are those who simply stopped drinking while continuing other unhealthy or negative behaviours. Truly abstinent people are those who made meaningful changes in their lives and behaviour in addition to the cessation of drinking.

Miller (1996) discusses the difficulty with focusing on substance use alone when referring to relapse. He argues that relapse is not limited to substance use, but rather embodies a multitude of factors. These include social adjustment problems, dependence, physical sequelae, and neuropsychological impairment. Miller (1996) further argues that “successful behaviour change typically involves successive approximations to goals, and this process is not adequately captured in the value laden concept of ‘relapse’.” (P. 526).

Related is the differentiation between a ‘lapse’ and a ‘relapse’ as outlined by Marlatt (1985). A lapse is considered a ‘slip’ or mistake while a
relapse is viewed as a more serious regression or backsliding. I followed this approach by differentiating between lapses and relapses, and used the terms only in relation to substance use following treatment.

According to Marlatt (in DeJong, Grand & Markoff, 1994), a single lapse can escalate into a full relapse through a process he called the "abstinence violation effect" (AVE). This process happens when a person vows to achieve total abstinence. When a slip or lapse occurs, it contradicts the person's self-image of being a recovering addict. This, in turn, leads to guilt, shame or anxiety about the possibility of future sobriety. To find relief from these feelings, the client might continue to use drugs. Thus, AVE is also more likely to occur when a person attributes a lapse to internal, stable and global weaknesses. In other words, the person blames him/herself and sees his/her weaknesses as permanent and characteristic of his/her personality.

Miller (1996) explains that Marlatt’s AVE phenomena leads to a self-fulfilling prophecy whereby the belief that there are only two states, either total abstinence or out-of-control drinking, can cause a person to turn a minor slip into full-blown relapse.

**Total abstinence.**

As discussed earlier, the well-known assertion that the only way to recovery from addiction is total abstinence, originated with the early AA movement, and was later bolstered by the Disease Model of addiction. To this day, many treatment centres and providers adhere to this view. Moreover, according to Taylor (1991), research supports the belief that total abstinence is the best approach. Addiction is considered as a chronic problem and addicts, consequently, should abstain from all substances if they want to recover from their addiction. Hall, Havassy, and Wasserman (1990) found that a commitment to absolute abstinence reduced the possibility of relapse. Of those with the unconditional goal of abstinence, only 43% relapsed, compared to a 77% relapse rate in those who accepted the possibility of a slip.

The most impressive study thus far regarding the advantage of the total-abstinence approach is Vaillant’s (1996) recently published longitudinal study
of alcoholics. In Vaillant’s study, 456 of the subjects were inner-city adolescents who were recruited in 1940 and followed up for over 50 years. As well, a group of 268 college students were followed up. The two divergent groups were very similar in one important aspect: among those that became alcoholics, the highest rates of recovery were among those that chose to completely abstain. In fact, after five years of sobriety, relapse was rare.

Another study examined the role of the expressed goal of treatment (Foy et al., 1987). The researchers randomly assigned severely dependent subjects to behavioral treatments whose goals were either abstinence or controlled drinking. In the first six-month follow-up, they discovered that the controlled-drinking group drank more heavily. However, at the five- to six-year follow-up, they found virtually no difference. Most of the recoveries involved abstinence. The results of this study suggest that the majority of clients who recover eventually recognize that abstinence is their only solution, regardless of treatment goals (Sobell & Sobell, 1995).

Studies conducted from a total-abstinence perspective, usually accept an outcome as successful only if the client remained completely abstinent or experienced a minor slip. To date, the majority of outcome studies consider total abstinence to be the only acceptable definition of success. The problem is, as Chiauzzi’s (1991) argues, “in what other area of medical treatment is an outcome that falls short of perfection viewed as a failure?” (P. 4).

Indeed, some treatment providers and researchers believe that total abstinence is too rigid a definition of recovery. According to this approach alternative goals allow for Harm-Reduction and Controlled Use of alcohol and/or drugs.

**Harm-reduction and the controlled use approaches.**

The definition of successful recovery is quite different when described by practitioners and researchers working from the “harm-reduction” or “controlled-use” approaches.
The literature seems to describe harm-reduction in relation to illicit drugs and controlled use in relation to alcohol. In this section I follow the authors' differential terminology.

According to Erickson (1995), the ideas behind the terms ‘harm-reduction’ and controlled use have existed for over 20 years. She refers to Room (1974) who argued “a conceptualization like minimization, which legitimizes small steps and half-measures, will tend to be more useful than a conceptualization which implies the total eradication of the whole congeries of (alcohol) problems” (p. 13).

Such concepts sparked a bitter debate in the alcohol (and later drug) treatment field, which has continued throughout the last 20 years. The position that the only solution to alcohol dependence is abstinence, was challenged. One could argue that at the center of this debate are the questions: 1. should complete abstinence be the only acceptable goal of treatment? and 2. is complete abstinence the only solution to alcohol (and/or drug) problems?

Sobell and Sobell (1995) suggest that the controlled-drinking goal may have greater appeal to some clients who may not enter treatment if the only option is total abstinence. It is common knowledge today that some people cannot give up the drugs or alcohol they have been abusing. For this population the question becomes, can they at least reduce the damage they are causing themselves and others? Nowhere is it more obvious than with intravenous drug users. The rate of HIV infection in this group is very high and fatalities are many. Thus, reducing harm and fatalities has become a public health issue.

In the literature, harm-reduction essentially refers to policies regarding drug abuse. It has been applied primarily to intravenous drug use (IDU) with the goal of slowing the spread of AIDS (Riley, no date). Indeed, as Erickson (1995) explains, “Harm-reduction, in the historical view, is rooted in the century-old public health tradition, modified to emphasize the
social environmental and cultural dimensions which promote personal and community health.” (P. 284).

Duncan, Nicholson, Clifford, Hawkins and Petosa (1994) explain that “harm-reduction accepts as a fact that drug use has persisted despite all efforts to prevent it and will continue to do so. Further, it recognizes that measures to prevent drug use have often had the unintended effect of increasing the harms associated with drug use.” (P. 282).

In Europe (mostly Britain and the Netherlands) the first priority of harm-reduction has been to reduce negative consequences of drug use (Duncan et al., 1994). In North America, the traditional goal has been to reduce prevalence of drug use. In 1987 the Canadian government adopted harm-reduction as the framework for Canada’s National Drug Strategy (CDS). It defined harm as “sickness, death, social misery, crime, violence and economic costs to all levels of government.” (Riley, no date, p. 1). More common examples of harm-reduction strategies are needle exchange programs and methadone clinics.

Harm-reduction and controlled use theories and treatments have become more popular as economic realities have begun to dictate changes in approaches to health care.

Thus, harm-reduction and controlled use address the need to control and/or reduce damage together with the need to cut costs. It takes less time and money to convince people to reduce the level of use, it can be done on an out-patient basis, and the lifestyle changes required are less dramatic.

In summary, there are different approaches and definitions of recovery which seem to be primarily related to public health concerns and available resources. Longitudinal studies show that the best outcomes occur for those who totally abstain from substance use. Still, for some people it is better to reduce harm and use than to intimidate them with a total-abstinence approach, thus for those who will not accept the total-abstinence route, or are not yet ready for it, improvement should be acknowledged.

Considering the idiosyncratic definitions of outcome and recovery, it is no wonder that we find inconsistency in the measurement of outcome.

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Disagreements in the definition of recovery, relapse, and outcome in general, naturally result in inconsistencies in the measurement of outcome. Definitions of successful outcome depend on the theoretical orientation of the researchers or treatment providers. For example, in the view of those subscribing to the total abstinence approach, one slip may be considered a failure. Recovery is defined as the complete abstinence from any substance. Those working from the harm-reduction and controlled use perspective consider any improvement and reduction in use to be a success. These types of disagreements in the definition of recovery, relapse and outcome in general, naturally result in inconsistencies in the measurement of outcome.

Even within the different approaches, definitions of recovery and abstinence vary. Consequently, outcome studies cannot be meaningfully compared. Heather and Tebbutt (1989) reviewed earlier studies and demonstrated these difficulties. They compared major studies which gained acceptance in the field. Some of their findings are presented next.

Helzer, et al., (1985) in their five-to seven-years follow-up study of 1289 alcoholics, looked at the three years prior to the interview to determine outcome. They defined abstinence as totally abstinent in the last 36 months. In the Maudsley Hospital two-year follow-up study (Orford, Oppenheimer and Edwards, 1976), abstinence was described as total or virtually total. Virtually total abstinence was not defined but included two cases where the persons were totally abstinent for 51 of the 52 weeks of the previous year.

In contrast, Vaillant’s (1983) long-term follow-up study defined abstinence as “at least 12 consecutive months using alcohol less than once a month” (P. 87). As well, during each year the subjects were categorized as abstinent, they had not more than one episode of intoxication that lasted less than a week. Thus, drinking alcohol 11 times during the previous year and becoming intoxicated for six days or less during that year would still earn the subject the classification of abstinent. Clearly, this is quite different
than the requirements for abstinence in the Maudsley or Helzer et al.'s studies.

Definitions of improvement or successful controlled use are even more difficult to compare. For example, in the Maudsley study (Orford et al., 1976), controlled use (in an all-male population) was defined as "either those subjects whose wives considered that their drinking has never been 'unacceptable' to them during the previous year and who themselves reported that their drinking had never exceeded 200g on any single drinking day- or those whose wives considered that their drinking had been acceptable with the exception of a single's week's drinking and who reported that their drinking had always been within a 100g limit." (Heather and Tebbutt, 1989, pp. 84-85).

As Heather and Tebbutt (1989) show, the definition of 'controlled drinking' in Vaillant's (1983) study was quite different. In Vaillant's study, controlled drinking or asymptomatic drinking was defined as "drinking more often than once a month for 2 years without experiencing any problems on the PDS." (Heather and Tebbutt, 1989, p. 87). PDS refers to a 16-item Problem Drinking Scale Vaillant used to address physiological and social issues.

The above are just several examples of the idiosyncratic nature of definitions of outcome in previous studies. A true comparison and generalizing statements are almost impossible to make. Heather and Tebbutt (1989) in their attempt to create a unified system, offered a new classification of abstinent and non-abstinent outcomes. However, their proposal describes a complicated system requiring assessment of alcohol related problems and dependence in addition to assessment of consumption. These authors explain that they did not prescribe specific scales to measure these issues. They explain that "this clearly raises complex and contentious issues which cannot be solved here." (P. 92). Finding a solution requires developing a research project of great magnitude (which is obviously beyond the scope of this doctorate thesis).

**Reliability of Clients' Self-Reports**

An important issue facing researchers of human behaviour is the reliability of people's reports. Naturally, in an area such as substance abuse
one might expect reluctance to accurately report a behaviour such as relapse into drugs or alcohol. In the context of outcome research this issue is critical.

Toneatto, Sobell and Sobell (1991) argue that "all studies find that some alcohol abusers' self-reports are inaccurate". (P. 542). Though, they add that at the group level, alcohol abusers' reports are fairly valid. Recent studies support their assertion. For example, Miller and Hoffman (1995) found that in the case of the 625 clients they studied, family members of these clients agreed 88% of the time with clients' reports of abstinence. They concluded that self-reports can provide a good indicator of outcome, as long as questions are clear and focused on the overt behaviour rather than a subjective interpretation.

**Recruiting Clients for Research and Follow-Up**

By the nature of the issue, substance abusers are reluctant to participate in research. In the case of abuse of illegal drugs, obviously certain recruitment methods such as a newspaper ads will be inappropriate, and for the most part, unsuccessful. People engaging in illegal acts are not likely to identify themselves to anyone as such, unless they seek help or treatment. A similar problem is likely to occur when dealing with abuse of alcohol or prescription drugs. In these cases, shame and embarrassment will likely prevent people from volunteering for any study. Sometimes, the abuse of prescription drugs also involves illegal activities such as stealing or forging prescriptions.

Primarily for these reasons, it is very difficult to recruit subjects for research from this population on a purely voluntary basis. A researcher interested in studying this population must have contacts with a treatment program or centre, or at least a therapist/counsellor of some sort, to be able to reach subjects. Once such a contact is made, a researcher still faces additional resistance. Some of this resistance can be due to clients' fear of being identified at some point, resistance to engage in any "unnecessary" activities related to the addiction, or other unanticipated reasons. For
similar reasons, following up on substance abusers that completed treatment is also a challenge.

In summary, the clients recruited for addiction studies are those who receive treatment. Of this small group, those that participate in follow up studies are usually those who wish to be contacted or found. Vaillant (1984) discusses the difficulty with generalizing from characteristics of individuals who attend clinics to those who do not. He explains, "individuals who frequently seek help from clinics whether for heart disease, tuberculosis, alcoholism or any other chronic illness tend to be more dependent, more physically ill, and more psychologically vulnerable. Such individuals are oversampled... clinical samples tend to exclude those who die, spontaneously recover, or have alternative social support." (P. 272).

**Spontaneous Remissions – Recovery Without Treatment**

As Sobell, Sobell and Toneatto (1992) argue, most people with drinking problems (or substance abuse concerns in general for that matter) do not receive or pursue treatment and therefore, do not come to the attention of researchers. According to Taylor (1991), 85% of all alcoholics and problem drinkers do not receive any formal treatment. Consequently, the most frequently studied persons (i.e. treated people) are the minority of the total population of substance abusers. Generalizations on the larger group are often made from studies conducted on the smaller group.

Thus, outcome studies on substance abuse basically focus on recovery following treatment. As a result, little is known about people who manage to recover on their own. In fact, as Schaffer and Jones (1989) explain, the neglect of this population is due to the fact that most theorists, researchers and clinicians do not accept the idea that such people exist, or that the phenomenon of natural recovery is even possible. This situation is reinforced by the dominant view in the field of addiction (as discussed earlier) that the only way to recovery is through total abstinence.

To present a balanced view of the process of recovery it should be acknowledged that spontaneous recoveries from substance abuse do occur.
However, the data on this issue is scarce and problematic. It is based mostly on estimates rather than empirical data. For example, according to Smart (1976), an estimated 1% to 33% of alcoholics experience spontaneous remissions. This is a very wide range which does not reveal a great deal, other than the difficulty in assessing spontaneous remissions. In contrast, Hester and Miller (1987), argue that 19% of alcoholics report an average of one year of ‘abstinent and improved’ spontaneous remissions.

As Finney et al., (1996) argue and as illustrated above, one of the most significant problems in substance-abuse outcome studies is the pre-selection of subjects. Due to the difficulty in recruiting and following up on clients, on a voluntary basis, researchers have to rely on “captive” populations (i.e. clients entering treatments, mandatory clients). For the same reason it is difficult to conduct controlled or matched studies.

In summary, insufficient and inconclusive data on individuals who do not pursue treatment and the corollary problems with data on spontaneous remission rates make it very difficult to assess the absolute or even relative effectiveness of treatments in general, compared to lack of treatment (as the control group). It also creates a chronic bias in the literature in favour of treatment-seeking substance abusers. Therefore, when reporting recovery rates following treatment, researchers have to recognize their data’s bias and be cautious in their interpretations.

**Other Issues in the Substance-Abuse Outcome Research**

While the above-mentioned challenges in defining outcome, recruiting and following up on clients are critical, researchers in substance abuse face other important problems. They face such questions as: Should they study persons with addictions to different substances as one group or multiple groups? Should they study men and women separately?

**Studying a mixed-substance versus a single substance population.**

Traditionally, alcoholics and drug abusers have been perceived, researched and treated as separate groups. There is still a controversy as to whether sub-grouping in addictions is appropriate (i.e. differentiating
between alcohol, cocaine, heroin, prescription drugs etc.). However, there is growing support for emphasizing commonalities and many treatment centers today offer programs for a mixed-substance population.

Donovan (1988) discusses the issue of commonalities across addictive behaviours. He points out that “the addictive experience provides a potent and rapid means of changing one’s mood and sensations because of both direct physiological effects and learned expectations.” (P. 7). As well, addictive behaviours serve to alleviate various physical and emotional states such as stress, arousal, pain or a negative mood. Donovan (1988) also explains that addictive processes in general involve classical and instrumental conditioning.

Craig (1995) discusses the shortcomings in theories which argue that addictions to various substances should be treated differently. For example, he discusses the “self-medication hypothesis” (Khantzian, 1985); this theory claims that heroin addicts, for instance, would be more alike in personality structure than cocaine addicts. It argues that stimulants and cocaine are abused because they can relieve depression and dysphoria, while heroin and narcotics are selected because they help manage anger, rage and aggression. Craig argues that this theory has several problems. For example, there are individuals who abuse both opiates and cocaine or both alcohol and cocaine, thus combining stimulants with depressants, something the self-medication hypothesis cannot easily explain. Moreover, as Craig (1995) claims, research does not support the theory.

Craig recalls his previous research (Craig, 1988, Craig, 1982 and Craig & Olson, 1990) which compared three independent samples and three different assessment instruments (Adjective Check List, MMPI, MCMI). His results indicated that there was little difference between cocaine users and heroin users. In fact, they appeared to be more alike than different in personality.

Another rationale for grouping different substances together, is based on the finding that relapse rates appear to be similar for different substances (Brownell, Marlatt, Lichtenstein and Wilson (1986). As well, research shows
similarities in determinants of relapse across different substances (McLellan et al., 1997). Brownell et al. (1986) explain that while it is difficult to solve this controversy, it may be that there are common psychological adaptations to different physiological pressures.

**Gender issues.**

Data from the US, (National Institute on Alcohol Abuse and Alcoholism, 1990) shows women to represent approximately 25% of the clients in traditional substance-abuse treatment centers. According to Kaufman (1994), "women use more legal drugs, most of which are prescribed by male physicians to keep them calm (passive and depressed)" (p. 30). Women use more tranquilizers and sedatives (Almog, Anglin, & Fisher, 1993). Men, on the other hand, use more alcohol, marijuana, heroin, cocaine, hallucinogens and inhalants (Kaufman, 1994). In fact, alcoholic men outnumber alcoholic women three to one (Goodwin, 1988).

Women's use of illicit drugs has increased in recent years and they may use stimulants or illicit drugs such as cocaine and amphetamines in order to lose weight or overcome depression (Kaufman, 1994).

According to Ashenberg-Straussner (1997), while there is extensive literature on the differences between alcoholic men and women, literature on gender differences in relation to other substances is still limited.

The following is an early summary of the differences between alcoholic men and women (Lex, 1985). First, women typically consume less alcohol and drink less frequently. They begin drinking at a later age and progress faster to problem drinking. More stigma is associated with female alcoholism. Alcoholic women are more likely to have affective disorders while alcoholic men are more likely to have antisocial personalities. Women attribute the onset of drinking to life stressors or traumatic events and more frequently report anxiety, depression, and guilt compared to men. As well, women face more substantial consequences at home while men feel such consequences more in their jobs. Finally, women appear to experience more severe medical consequences from drinking compared to men.
Similar findings were reported in a study of women cocaine users with the exception being that in the cocaine sample, women started the use of the drug at an earlier age than men (Griffin, Weiss, Mirin & Lange, 1989). Addicted women are more likely to receive psychiatric treatment and are less likely to have legal problems (Luthar, Glick, Zigler & Rounsaville, 1993). Women are also more likely to report histories of sexual and physical abuse (Root, 1989).

An important difference between men and women substance abusers is the fact that women have fewer social and occupational resources (Chiauzzi, 1991), which limits their access to treatment and ongoing support after treatment. Women also often cite difficulties related to their dependency on men, and lack of support systems (Tamerin, 1985, Wilsnak, 1976). Mothers experience additional worries; they might, for example, feel they are abandoning their children if they go to treatment. Single mothers are in a worse situation as they may not have the financial resources to hire childcare help when they pursue treatment.

Substance-abusing women report greater levels of shame associated with their addiction and greater concern with the impact of the problem on their children (Bepko, 1991). The increased shame and stigma associated with substance abuse in women may also prevent some from seeking help or even admitting they have a substance-abuse problem.

As for prognosis, Annis (1990) explains that while it is frequently asserted that alcoholic women have poorer prognoses compared to alcoholic men, an earlier review of the literature shows no differences in prognoses (Annis & Liban, 1980).

Women’s experiences in substance-abuse programs also seem to be gender-specific. In a study of women’s perceptions of their treatment effectiveness, 24 women in recovery were extensively interviewed (Nelson-Zlupko, Morrison Dore, Kauffman, & Kaltenbach, 1996). Five major themes were identified: 1. The crucial role of individual counseling whether the woman stays or leaves treatment, 2. The frequent experiences of sexual harassment in treatment, 3.
Childcare as central to recovery of mothers, 4. The failure of most co-ed treatments to provide a forum for open expression of women’s needs and experiences and 5. Lack of support and respect to women even in gender-sensitive programs diminishes their effectiveness.

Nelson-Zlupko et al. (1996) argue that it is not enough to offer childcare or women-only therapy when sexual harassment is experienced by the women in these programs. In fact, most disturbing was the fact that even though the women in this study were not asked about this issue, more than half of them reported having experienced sexual harassment in treatment programs they attended.

The above-mentioned characteristics and experiences of substance-abusing women may be the reason of the relatively smaller number of women who pursue, receive and complete treatment, resulting in fewer women being studied. Including women in substance-abuse research and reporting important findings can help improve future services and successfully address their specific needs.
CHAPTER IV

PREDICTION OF OUTCOME

So far, the majority of studies on clients' characteristics and relapse have focused on demographics and explored only a few psychological variables (Powell, et al., 1993). These are discussed next. Certain social variables have been explored, too, including use of addiction-specific supports following treatment. The roles of social support in recovery and health will be discussed separately.

However, prior to discussing these topics, two relevant issues of a more general nature should be considered: conducting prospective versus retrospective studies and the person versus situation controversy.

General Issues

Prospective Versus Retrospective Studies

When selecting variables as potential predictors of outcome, a researcher should also decide on the time of data collection. Should the data be collected before treatment, after treatment, or at the point of follow-up?

Retrospective data is affected by events at the point of follow-up, the recovery status of the individual and the client's ability to recall information accurately. Most of the existing relapse models are based on retrospective outcome studies using clients' self-reports (Miller, Westerberg, Harris & Tonigan, 1996). Vaillant (1984) so poetically addressed the issue and argued, "as water refracts the passage of light and so produces visual illusions, so do lives passing through time bend memory and understanding and thus produce cognitive illusions." (P. 265).

Miller et al. (1996) argue that while trying to establish predictors of relapse, the data should be taken when the predictions would normally be made and interventions could be taken. This is especially true when the variables studied are psychological. Treatment can temporarily affect the psychological state of the person.
Person and Situation in the Prediction of Outcome

One of the emerging controversies in the substance-abuse treatment outcome literature involves the debate regarding the impact of treatment variables versus client characteristics on recovery. Early studies typically ignored individual differences (with the exception of demographics) and focused on treatment modalities as predictors of outcome.

This debate can be understood in the context of the larger controversy in psychology, the person versus the situation (Pervin, 1984). While some psychological theories traditionally emphasized the person (i.e. psychodynamic theories) and others emphasized the situation (mostly behavioural theories), a new view has emerged in the past decade emphasizing an interaction of person and situation, the interactionist view. According to Pervin (1984), "the interactional view suggests that all behaviour reflects both person and situation. Within this context some behaviours may be more person determined for some people and other behaviours more situation determined for other people". (P. 27).

The Interactionists suggest that "instead of deciding whether behaviour generally is more person determined, the task of research becomes understanding the person and situation forces that account for the pattern of stability and change in behaviour." (Pervin, 1984, p. 27). This idea can be applied to addiction outcome studies whereby the behaviour of maintaining sobriety (maintenance of the earlier behavioural change from addiction to sobriety) is predicted from both personal and situational factors and their interactions.

In the past two decades, a number of researchers and theorists in the substance-abuse field have argued for and focused on clients' characteristics as potential predictors of outcome. For example, Ogborne (1978) argued that "the influence of patient characteristics on treatment outcome needs to be taken into account in treatment evaluation. The question of whether or not a treatment works then becomes one of whether or not treatment works for
particular populations.” (P. 178). This argument has been developed into what is called “the matching hypothesis” (Miller & Hester, 1986).

Earlier, in 1973, Annis formulated a related question: "what specific interventions produce specific changes in specific patients under specific conditions?” (P. 8). This research question is quite different from asking, which treatment approach results in better outcomes.

Ogborne (1978) argues that there is empirical and theoretical support for both views. For example, as Ogborne explains, findings from the Rand Report (Armor et al., 1976) suggest that "most interventions would produce some desirable changes in most patients under many conditions.” (Ogborne, 1978, p. 179). In contrast, Annis (1988) found that alcoholic clients with a specific profile based on the IDS (Inventory of Drinking Situations), did better in a specific modality of treatment compared to another. According to Donovan and Mattson (1994), patient-matching has gained prominence and is currently a major area of investigation in alcoholism outcome research.

Pervin (1984) reviewed the 15 years of research concerning the person-situation issue. Relevant to this thesis are the following conclusions: “there is considerable evidence for both person and situation determinants of behaviour” (P. 28), and “some situations have more powerful influences than others in reducing or maximizing the role of individual differences in personality” (P. 29). In the context of substance abuse, I believe that both approaches may be right. It makes sense that many interventions will produce some positive results in most people. At the same time, for some people, certain interventions may produce better or worse outcomes. The next sections address both person (psychological factors) and situation (social support) factors as potential predictors of recovery. Demographics are also discussed, as these have been the topic of many outcome studies in the past. Some demographic variables tend to fall under the “person” rubric (i.e. age, socioeconomic status), while others fit the “situation” category better (i.e. marital status, living arrangement).
Predictors of Recovery

Demographic Factors

Some demographic variables are quite established as good predictors of recovery status, for example, socioeconomic status and marital status. Baekland (1977) found that clients with higher socioeconomic status and social stability had success rates between 32% and 68%, while skid row (Baekland’s expression) patients had 0% to 18% success rates.

Another study (Evaluation Consortium, 1989), of a mixed-substance population found that clients who are older, married, and those possessing some postsecondary education had better rates of recovery. In a meta-analysis of predictors of continued opiate use the following factors were found be associated with outcome: occupational status, high level of pre-treatment opiate use, prior treatment for opiate addiction and no past abstinence (Brewer, Catalano, Haggerty, Gainey and Flemming (1998).

Marital status was found to be a good predictor of treatment outcome, with married men doing better than single or separated men (Brohet & Moos, 1977, Westermeyer, 1989). As well, living with others, or residential stability was shown to be related to outcome. Improved outcomes were shown for those living with a spouse, a friend, or a relative (McCance & McCance, 1969).

Although the above-mentioned demographic variables were helpful in predicting recovery, most demographic factors offer little or no room for intervention. Treatment providers cannot improve or change clients’ demographic characteristics such as age, educational level, income, and marital status. The exception is the variable of residential stability, whereby it can be suggested to clients to avoid living alone after treatment.

Psychological Factors

Certain personality characteristics such as coping styles, outcome expectancies, and self-efficacy, have been studied repeatedly. Generally, these were found to some extent to be useful predictors. A sample of relevant studies will be reviewed next.
Research shows that people who relapse have fewer coping resources (Miller et al., 1996) and tend to score lower on measures of coping with difficult situations (Rosenberg, 1983). According to Chiauzzi (1991), there is little evidence that substance-abusers lack a particular coping skill; rather deficiencies are unique to the individual. Marlatt and Gordon (1980) argue that 75% of all relapse episodes are linked to one of three types of events: 1. coping with negative emotional states, 2. pressure to drink, and 3. coping with interpersonal conflict.

Another area of psychological research focuses on cognitive variables. These include outcome expectancies by clients (Marlatt & Gordon, 1985, Brown, 1985), self-efficacy (Bandura, 1977), and cognitive appraisal variables (Miller et al., 1996). Brown (1985), for example, found that a positive expectancy score in alcoholics significantly predicted relapse at 12 months and frequency of drinking. Lower self-efficacy (at intake to inpatient treatment) was found to be associated with relapse at different points of post-treatment follow-up (Annis & Davis, 1988, Solomon & Annis, 1990, Rychtarik, Prue, Rapp & King, 1992).

In addition to the above-mentioned personality characteristics, the psychological variable of mood status was also found to be a significant predictor of relapse (Miller et al., 1996). Brewer et al. (1998), in their meta-analysis found depression and high stress to be longitudinal predictors of outcome. Though these cannot be considered to be personality characteristics, these variables pertain to the psychological condition of the person.

The review of the literature showed only one more personality characteristic which was studied directly in relation to recovery: alexithymia. This study will be reviewed next.

**Alexithymia, Treatment-Retention and Recovery**

Keller et al., (1995) examined the relationship between alexithymia (refers to difficulty in identifying and describing feelings) and treatment outcome. The authors compared recovery rates among alexithymics and non-
alexithymics participating in either a relapse prevention program or clinical management (the initial N was 121, data was analyzed on 93 persons who completed two or more sessions of treatment).

The relapse prevention treatment was a cognitive behavioral program based on Marlatt’s model. The goals of the clinical management treatment were to provide, “nonspecific elements of psychotherapeutic relationship, including supportive doctor-patient relationship, education, empathy and the instillation of hope, without providing the active ingredients specific to relapse prevention, to provide medication management and opportunity to monitor patients’ clinical status” (Keller et al., 1995, p. 237) and finally, to foster greater compliance with medication.

The results of the study showed significant and consistent interactions for alexithymia by treatment. Alexithymics had longer periods of abstinence when treated with clinical management (30.4 days compared to 16.7 days). Non-alexithymics, on the other hand, had longer periods of abstinence when treated with relapse prevention (27.5 vs. 21.1 days).

A similar pattern emerged for treatment retention and alexithymia. Alexithymics receiving clinical management treatment had better treatment retention rates, while non-alexithymics had better treatment retention in relapse prevention. Thus, alexithymic cocaine users had better outcomes when treated with supportive clinical management, rather than with relapse prevention treatment.

Keller et al. (1995), argued that the explanation for this pattern might relate to alexithymics’ difficulties with the type of psychotherapies that demand access to internal states. The cognitive-behavioral relapse prevention program requires clients to identify and articulate internal affective and cognitive states, which, as they argue, is exactly what alexithymic persons find most difficult. Clinical management functions more as a “holding environment,” requiring less internal focusing.
Social Support

Earlier in this study, a review of the literature showed high rates of relapse following treatments. This finding, coupled with the fact that it takes more than one attempt, usually several, over a long period of time to achieve successful recovery, strongly suggest that addiction is a chronic, rather than short term phenomenon. As Moos (1994) argues, "treatment lasts only a short time in people's lives and explains only a small part of the wide fluctuations in their long-term functioning." (P. 32).

Thus, it appears that on-going support following primary treatment may play a crucial role in the recovery process. To understand the role of support in recovery, one must turn first to the theory and research concerning social support and health in general.

The Role of Social Support in Health and Illness

According to Cobb (1976), social support means receiving information from others that one is loved, cared for, and valued. As well, it involves being part of a network of communication and mutual obligations. Cohen and Wills (1985) explain that the data collected in numerous studies on humans and on animals, the social-psychological analogue experiments; and prospective studies suggest that social support is a causal contributor to well-being.

Several studies found a relationship between degree of social support and health or illness. Kulik and Mahler (1989), found that higher social support increased the speed of recovery from surgery in individuals. Higher levels of social support were found related to fewer complications in pregnancies (Nuckolls, Cassell & Kaplan, 1972). Bruhn (1965) found lower rates of myocardial infarction in patients with higher levels of social support. An association was also found between social support and faster recoveries from various conditions such as congestive heart failure and kidney disease (Chamber & Reiser, 1953, Dimond, 1979). It appears that social support also reduces mortality from myocardial infarction (Robertson & Suinn, 1968).

Another important contribution of social support involves its impact on health habits. Individuals with high levels of social support comply better
with their medication regimens (Cobb, 1976). Patients with higher social support levels are also more likely to use health services, especially if the support people have a positive attitude towards these services (Geersten, Klauber, Rindflesh, Kane & Gray, 1975).

Furthermore, social support has been shown to be associated with improved psychological well-being in people suffering from various illnesses. Studies of AIDS patients showed that patients' perception of higher social support was associated with reduced depression and hopelessness (Zich & Temoshok, 1987). Researchers have also found a relationship between social support, stress, and psychological and/or physical well-being (Taylor, 1991, Cohen & Wills, 1985).

One of the topics of debate surrounding research on stress, social support, and health involves the issue of whether social support acts directly (the main-effect hypothesis) or indirectly (the buffering hypothesis). Research supports both hypotheses (Cohen & Wills, 1985, Taylor, 1991).

Cohen and Wills (1985) reviewed earlier studies on support and well-being and reported an interesting finding. In the case of the buffer hypothesis, a strong relationship is found when the support measured matches the coping needs elicited by the particular stressful events (Cohen & Wills, 1985). In the case of the main-effect model a stronger relationship is found when focusing on a wide range of social connections (social integration) than when measuring a relationship with a single item (one group, person or organization).

The main-effect hypothesis suggests that social support has beneficial effects on well-being because it "provides positive affect, a sense of predictability and stability in one's life situation, and a recognition of self-worth. Integration in a social network may also help one to avoid negative experiences (e.g. economic or legal problems) that otherwise would increase the probability of psychological or physical disorders." (Cohen & Wills, 1985, p. 311).

Cohen and Wills (1985) explain that under the main-effect hypothesis, social support could be linked to physical health through the emotionally
induced effects on the neuroendocrine or immune system functioning, or through influences on behavioural patterns.

The buffering hypothesis posits that social support is linked in two ways to the causal chain between stress and illness (Cohen & Wills, 1985). First, support may intervene between a stressful situation and a stress response by preventing the stress appraisal response. It is possible that the belief that others can help will redefine the situation and perception of potential harm. It may also bolster one’s perception of coping ability. The second mechanism involves the potential role of support in reducing or eliminating physiological stress responses. Social support may tranquilize the neuroendocrine system, leading people to be less reactive to perceived stress or facilitating healthier behaviours.

Taylor (1991) lists three types of benefits associated with social support: tangible assistance, information, and emotional support. However, as Taylor (1991) argues, the effectiveness of social support depends on how an individual uses the available social support network.

There are different ways to assess levels of social support. One might look objectively and quantitatively at availability and use of resources or qualitatively at the subjective perception of existence of social support in one’s life (Taylor, 1991). In a quantitative study, a researcher might count available resources in one’s community, number of organizations one belongs to, the number of people one describes as friends and so forth. Qualitatively, the emphasis is on the perceived level of support, i.e. how much support the person feels he/she has, how much is helpful and so forth.

According to Taylor (1991), providing effective support is not always an easy task. It requires substantial skill and, when provided by the wrong people, it can be unhelpful and even rejected. More importantly, Taylor (1991) explains that “social support may also be ineffective if the type of support provided is not exactly the kind that is needed.” (P. 247). This is especially true when dealing with the complex issues in recovery from substance abuse.
In addition to potential support from family and friends, there are specific types of support groups and networks available to recovering substance abusers. These are led, for the most part, by skillful, trained, and experienced people. As well, the self-help AA groups are available and these are led by recovering individuals following a strict code and rules called the "12-step" program.

**Social Support and Recovery**

Johnson and Herringer (1993) argue that "most treatment models, regardless of their theoretical orientation, recognize the role of social support in successful recovery, but although such support has been the topic of research in virtually all other arenas of human intervention, support specific to substance abuse and its importance in preventing relapse has received relatively little attention." (P. 74).

Indeed, a literature review revealed a small number, though usually comprehensive in magnitude (i.e. large samples), of outcome studies focusing on the role of addiction-specific supports following treatment in the form of aftercare, AA, or other types of relevant supports. A review of some of these studies is given in the next section.

**Addiction-Specific Support and Recovery**

The most well-known and well-established forms of social support available to substance abusers are AA groups (or 12-step groups) such as Alcoholics Anonymous, Narcotics Anonymous (NA). As well, aftercare groups are offered by many treatment centres or other organizations such as hospitals.

**AA programs - utilization and popularity.**

AA programs are widely utilized in North America and around the world. In 1990 membership around the world was estimated to be over two million in 93,914 groups, with the US membership alone being 676,000 (O'Brien, Cohen, Evans, & Fine, 1992).

According to Ogborne (1994), “in Ontario, 65% of all specialized addiction treatment programs incorporate 12-step activities...and at least 33% of all cases receiving treatment in specialized programs are referred to AA.”
In addition, professionals outside specialized addiction programs also tend to hold AA in high regard and frequently refer clients to AA groups. Ogborne’s (1994) summary of findings in this area included the following: over 50% of community health social service and criminal justice professionals reported “usually” or “always” referring alcoholic clients to AA; social workers regard AA as the preferred treatment for alcoholics; and “90% of Canadian family physicians rated AA as ‘effective’ or ‘very effective’ for helping patients reduce alcohol consumption.” (P. 4).

However, as Ogborne (1994) explains, not all practitioners dealing with substance abusers share this positive attitude toward AA. Criticism of AA ranges from describing it as merely a cult (Ragge, 1992), to arguing that it helps only a small group of people – typically those with a religious orientation (Peele, 1989). Whether or not AA is cult-like can be debated, however the argument that it only helps a small group of people contradicts research findings. A review of the data concerning participation in AA groups and recovery will show evidence of a positive association between attendance in AA groups and successful recovery.

**Participation in AA groups and recovery.**

A small number of studies examined the relationship between recovery and attendance in 12-step groups (i.e. AA, NA) alone. Information from Alcoholics Anonymous groups regarding members is generally unavailable or non-existent, due to the emphasis on anonymity. This explains why until recently, there was only a small number of studies on the topic.

Crossby-Ouimette, Moos & Finney (1998) studied 3,018 male VA substance-abusers who completed treatment. They classified the patients into those who later attended outpatient treatment, 12-step groups, both or none. The best outcomes (at one-year follow-up) were found in those who pursued both AA groups and outpatient treatment (63% abstinent compared to 49% in the outpatient-treatment-only group and 24% in the no-12-step group).

A multi-site study (N=2,029) of post-treatment continuing care and pre-treatment demographics in relation to recovery outcome, found AA group
attendance to be the best predictors of outcome (Miller, Klamen, Hoffman & Smith, 1997). They explained that AA attendance accounted for 16% of the variance in recovery status, with aftercare attendance adding another 2%. All of the other 28 variables combined, contributed no more than 1% to the variance.

Earlier, Makela (1994) used a creative approach (to overcome the problem of anonymity in AA) to assess rates of attrition and sobriety among members of AA in Finland. He used the anniversary announcements published in the national AA newsletter to analyze members' turnover and assess rates of sobriety. His study offers a great deal of information about trends in AA participation and recovery rates. However, he explained that his figures were based on "uncertain assumptions and relatively crude approximations." (P. 91). His conclusions were as follows:

* About half of those coming to AA for the first time drop out in less than 3 months. Early attrition is quite considerable.
* About 40% of the members with less than 1 year of sobriety will remain sober and active in the fellowship for another year.
* About 80% of the members between 1 and 5 years of sobriety will remain sober and active in the fellowship for another year.
* About 90% of the members with over 5 years of sobriety will remain sober and active in the fellowship for another year. (P. 91).

The above conclusions are quite impressive. Although, since calculations of sobriety rates are based purely on estimates (assuming that a certain percentage of those not attending also relapsed), one should be cautious in interpreting these numbers. Attrition rates, however, appear to be more reliable (they are based on AA names published in the newsletter) and, therefore, one can use the first conclusion with a greater degree of confidence. Clearly, a 50% (or so) rate of attrition within the first three months for first-time members indicates that this is an important time-frame on which to focus. It suggests a pattern of attendance is established during this period in a significant number of cases. Another possible conclusion can
be drawn from these findings. It appears that the longer a person managed to remain sober, the higher his/her chances of avoiding relapse become.

Another study of AA attendance and its effect on recovery from alcohol abuse was conducted at the Hazelden Treatment Center in the U.S. (Launderbergan, 1982). It was found that AA participation was associated with alcohol abstinence at 4, 8 and 12 months post-program discharge.

While there was some attrition in frequent AA attendance over the three follow-up intervals, Launderbergan, (1982) explained that there was remarkable stability overall, with 90% of frequent attendees at 4 and 8 months, remaining frequent attendees at 12 months post treatment. The author identified the need to further investigate what the characteristics of regular attendees of AA were.

A study of 900 inpatients in eight hospital-based treatment centers for substance abuse in the US showed a high correlation between total abstinence at six months post-discharge and weekly attendance in AA groups (Hoffman, Harrison & Belille, 1983). Seventy three percent of regular attendees remained sober, compared to 33% of non attendees. The authors concluded that the results "suggest that Alcoholics Anonymous is an appropriate and beneficial aftercare for the majority of treatment inpatients." (P. 311).

Kolb, Cohen and Heckman (1981) studied recovery rates among alcoholic Navy-enlisted men who completed treatment. They found a strong association between not drinking and AA attendance, especially among the older men (over 26 years of age). The authors concluded that "that alcohol treatment as presently provided with its heavy emphasis on AA is appropriate and effective for a reasonable percentage of the men being admitted, particularly among those over 26 years old." (P. 204).

In conclusion, research on AA and recovery indicates a strong relationship between AA attendance and recovery. Research also shows a high rate of attrition within the first three months of attendance, suggesting that this is a period in which a pattern of AA attendance is established.
The recent appearance of methodologically-sound research on AA may put the debate regarding AA's efficacy or lack thereof, into rest. However, as Collins (1993) argued "because any treatment method is as good as the amount of effort and energy put into it by a participant, there is some circularity to the answer to this question. AA works if the individual works at it." (P. 44). He asked, "does AA attendance produce good outcomes, or do alcoholics with a more favourable prognosis gravitate to and participate in AA?" (P. 44).

He explained that active participation in AA has been frequently identified in individuals who have good outcomes. It seems worthwhile to explore the potential characteristics of a client with a good prognosis for frequent use of supports. A review of some of the few studies which attempted to address this issue will be provided later.

**Participation in aftercare and recovery.**

Previous studies have shown aftercare to be significantly associated with better treatment outcome (Stark, 1992, Ito & Donovan, 1986, Walker, Donovan, Kivlahan and O'Leary, 1983).

Peterson et al. (1994) for example, examined potential factors affecting readmission rate following inpatient treatment for substance abuse in 101 VA programs. They found that programs where discharged patients attended at least two aftercare sessions in the month following treatment had a lower readmission rate. They found no significant differences on their predictor variables over the 30, 60, 90 and 365 days follow-up intervals, suggesting, in their view, substantial stability of these findings.

Interestingly, the percentage of clients attending two or more aftercare sessions in the first month was only 20% across the 101 programs.

Siegel, Alexander, and Shang (1994) examined the effects of service utilization (aftercare in this case) by 318 alcoholics on readmission to the public health sector. Readmission was used as the outcome measure, indicating clients' failure to remain sober. The results of the two-year follow-up showed that 45% of the 318 clients were readmitted to treatment in the public health
sector. However, according to an analysis including several variables, as many as 59% actually relapsed (not all relapsing clients readmit to treatments).

Siegel et al. (1994) found that for first admissions, the receipt of aftercare was associated with decreased likelihood of readmission. They stress that the transition to aftercare from treatment was a crucial point. Clients who established a pattern of chronicity, seemed to be resistant to aftercare services. Since 40% of first admissions did not use aftercare services at all, the authors concluded that it was important to put more effort into convincing clients admitted for the first time to aftercare programs.

Recovery and combined use of AA and aftercare groups.

Johnson and Herringer (1993), having identified the need to study the role of support specific to substance abuse in recovery, conducted a study looking at three types of supports. They examined the relationship between clients' recovery status at six months post-treatment to family attendance in the family program offered by the treatment center, attendance in AA or NA meetings, and attendance in the aftercare program. Although the number of subjects was quite small (N=50), they were able to detect a significant trend. They found that regular attendance in AA meetings and in an aftercare program were each individually and significantly related to greater abstinence.

Family support by itself was not significant. As well, there was an almost linear relationship between the number of supports used and recovery status. Of those who used no support at all, 22% were abstinent; of those who used any one support 44% remained abstinent, of those who used any two, 60% remained abstinent and of those who used three, 100% remained abstinent.

A large-scale study (Miller & Hoffman, 1995) further supports the above findings. This study of 6,508 inpatients and 1,572 out-patients treated in a number of substance-abuse treatment centers in the US revealed that attendance in AA and aftercare programs was an excellent predictor of abstinence. According to Miller and Hoffman, "one year of AA attendance in the absence of at least six months of aftercare yields an outcome of 69% abstinence. One year
of continuing care in the absence of continuous AA attendance yields an abstinence rate of 77%.” (Siegel et al., 1994, p. 50).

Even more impressive is the finding that “90% of those who attended both AA on a weekly basis and aftercare for the entire year maintained their abstinence.” (P. 50). Of those who received less than six months of continuing care and did not attend AA for the entire year, only 45% remained abstinent. It is evident that what happens during the transition period (from treatment to the outside world), is critical.

Similarly, based on their review of earlier aftercare studies, Ito and Donovan (1986) found that post-hospitalization support of any kind (i.e. out-patient, AA, family or church support) was associated with better outcome and drinking status.

In summary, attendance in post-treatment aftercare programs, 12-step programs and/or other forms of self-help groups is recommended to clients in most treatment programs (residential or out-patient). Overall, research supports the clinical observation that attendance in aftercare and AA groups is useful and a good predictor of recovery. While demographic predictors of recovery and use of supports may be useful in identifying high-risk clients, they are usually not amenable to treatment. It seems worthwhile then to explore potential personality characteristics and attitudes of those who more frequently use 12-step and/or aftercare groups. Identifying those with poor prognosis for using supports can help target them for relevant work during treatment and for additional encouragement to seek support. These clients should be identified as early as possible, preferably when they enter treatment.

**Predictors of Use of Supports**

Previous research on prediction of use of support from client characteristics is limited in scope. Researchers focused mostly on demographics, though a few studies examined psychological and social variables. A review of this literature is given below.
Demographic and Other Predictors of Participation in AA and Aftercare Groups

Galaif and Sussman (1995) reported some demographic characteristics of those who tend to use and benefit from AA. AA attracts certain types of people: “first, stable members of AA tend to share demographic characteristics including being middle class, male, single or estranged from one’s family, having familial problems, receiving less education, and being older than non-members or those who drop out of AA” (P. 171-172).

Shereen (1988) attempted to identify, quantitatively, which of the AA activities are most likely to be associated with higher rates of recovery. She studied relapse in relation to the degree of AA involvement in 59 recovering alcoholics attending five different AA groups and found that those who relapsed rated themselves lower in every area of involvement listed on the questionnaire. The greatest differences between those that did not relapse and those that did were in reaching out to other AA members for help, and in the use of a sponsor. This “sharing of self and helping each other” is, according to Shereen (1988), the “heart” of the AA fellowship. Her conclusion is that, in order to increase chances for recovery, this aspect should be highly stressed to the recovering members.

As for the demographic characteristics of those who are not likely to be helped by AA, they seem to be of non-Caucasian ethnic groups and lower socioeconomic status (Galaif and Sussman, 1995). As well, they report that women are also less likely to be helped by AA.

In a follow-up study of 37 male alcoholic patients, Costello (1980) attempted to predict outcome from aftercare attendance and from social stability and behavioural adjustment. The outcome measure was a composite score based on residential stability, interpersonal relationships, social activity, health, employment, and drinking status. Aftercare was defined as all post-treatment visits to the centre for social gatherings, disulfiram (antabuse) or for therapy.
The results of Costello's (1980) study show that general adjustment at intake predicted outcome at the 12- and 24-months follow-up points. As well, aftercare attendance in the first year was directly related to outcome at both follow-up intervals. However, none of the intake variables helped predict aftercare use, suggesting that aftercare effects were independent of the patients' prognostic variables.

Walker et al. (1983) examined the relationship between a number of patient characteristics and aftercare attendance. They found that longer aftercare involvement and completion of the program were associated with older age and higher income level prior to admission. These variables were not associated with drinking outcome, supporting Costello's (1980) assertion (mentioned earlier) that aftercare has an independent impact on outcome.

Pokorny, Miller, Kanas and Valles (1973), identified other demographic predictors for aftercare use. Their one-year follow-up of 91 VA alcoholics, found better pretreatment work history, and post-treatment marital and residential stability to be associated with more frequent use of aftercare.

Finally, Prue, Keane, Cornell & Foy (1979) found that number of miles to a freeway and miles on freeway (on the way to groups) was associated with aftercare attendance at three months. This suggests that accessibility plays a role in aftercare attendance patterns.

**Psychological Predictors of Use of Supports**

Within the field of psychology, personality characteristics are often examined as potential predictors of behaviour or outcome. Yet, as Powell et al. (1993) argue, "a literature search revealed no studies of the relationship between addicts' personality and their clinical prognosis following detoxification." (P. 475).

There has been research around the role of stress and the related issues of coping styles and self-efficacy in relation to relapse. However, generally there remains a void of knowledge when it comes to personality characteristics and use of supports.
Yet, as Craig (1995) explains, based on his experience in the field, when clients progress, their response to treatment and goal attainment is reviewed, and the focus of the clinical teams in the treatment centres is primarily on personality issues. These may include the manner of their approach to treatment, “or traits that impede recovery, or attitudes, behaviors and characteristics that block the development and maintenance of positive relationships.” (P. 25). Craig concludes that “clinicians seem to have learned the value of what is most salient to meet their needs. This is the lesson that researchers may need to learn as well.” (P. 25).

Only a few studies examined the possible relationship between personality characteristics and use of support groups such as AA groups and aftercare. These are reviewed next.

**Optimism and Participation in Aftercare**

A literature search revealed only one study examining personality characteristics in relation to aftercare attendance. This study examined the role of optimism in aftercare attendance.

Strack, Carver and Blaney (1987) focused on the role of dispositional optimism as measured by the Life Orientation Test (LOT) in predicting successful completion of an aftercare program following primary treatment for alcoholism. This aftercare program is quite different from most aftercare programs. It lasts only 90 days and involves offering clients room and board, medical care, and personal and vocational counseling as needed. Clients were asked to attend aftercare and AA groups and provide random urine samples (it is difficult to ascertain whether this is indeed an aftercare program or not).

Strack et al. (1987) defined failure as any of the following: relapse, unauthorized absence, disciplinary actions and failure to find work. Using this definition of success versus failure, the authors found a significantly positive association between optimism and successful completion of the aftercare program.

Dispositional optimism addresses a person's dispositional tendency to hold generalized expectancies for good versus bad outcomes in important
domains of his/her life. In contrast to outcome expectancy, one may have a
specific negative expectation, yet hold generally positive expectations in
life.

Optimism in general, according to Strack et al. (1987), has motivational
overtones, as people's outcome expectancies are an important determinant of
their "behavioral tendencies either to exert effort at goal attainment or to
disengage from such efforts and give up." (P. 579). Furthermore, it has been
shown in previous studies that optimists and pessimists rely on different
coping strategies when dealing with stressors (Scheier, Weintraub & Carver,
1986). Optimists tend to engage in problem-focused coping, a strategy that has
been shown to be more effective.

Chang, D'Zurilla and Maydeu-Olivares (1994), who studied the
dimensionality of optimism in general using several measures (including the
LOT mentioned above), point to an "optimistic advantage" related to improved
well-being. They explain that it seems to be due to differences between how
optimists and pessimists cope with stress; "optimists place the best face on
the problems that they confront...they also try to deal with problems head on,
taking active and constructive steps to make their situations better.
Pessimists are more inclined than optimists to engage in a variety of tactics
of avoidance coping, and are more likely to give up efforts to move toward
their goals." (P. 224).

They concluded that "optimists seem to be more fully engaged in their
lives and making the best of them; pessimists experience life as harder and
less manageable." (P. 224). Their findings might explain why optimism was
positively associated with attendance in aftercare in the study done Strack et
al. (1987). Optimistic clients are more likely to actively engage in what
seems necessary (support use) in order to meet their goal (recovery). Optimism
can be addressed in treatment, and treatment providers/therapists can help
clients bring effect changes.

It is important to note that the number of clients studied in Strack et
al. (1987) was quite small (total N=54, completers=18). It appears worthwhile
to examine the role of dispositional optimism in utilization of support and recovery with a larger and mixed-substance group of clients.

**In Search of Psychological Predictors of AA Groups Attendance**

An examination of the literature on the topic of potential personality predictors of use of AA groups, revealed studies which dealt with the issue on a qualitative or theoretical level but did not use quantitative measures to explore this relationship.

Hopson and Beaird-Spiller (1995) explored the addictive experience, qualitatively, from the addicts' subjective perspective, in an effort to explain the efficacy of AA groups. The results of their study indicated that "the addictive experience may be characterized by problematic modes of experiencing in four areas: (1) Intense feelings for which language is inadequate; (2) A disruption in the experience of time; (3) Alienation from oneself and others; and (4) Lack of sense of agency, self-efficacy and the capacity for self-regulation". (P. 5).

Further, Hopson and Beaird-Spiller (1995) explained that "the addicted person experiences intense feelings for which there seems to be no possibility of participation, control or titration. Language, as symbol, and as mode of participation and management of feeling states, seems unavailable to the addicted person in the grip of these feelings." (P. 8). The disruption in the temporal domain; feelings of alienation from self and others; and the lack of sense of agency, self-efficacy, and self-regulation emerge as a result of the affective difficulties.

In the authors' view, the structure of AA addresses the vulnerability to intense affective experience and the failure of language by employing "the verbal band out of the spectrum of symbolic processes, as its fundamental tool. AA meetings offer a series of lessons in utilizing language to represent the self." (P. 10). The authors explain that the basic format of AA offers individuals an opportunity to speak of themselves and listen to others share their experiences. "New members often have the experience of 'hearing their
story’ in others who have spoken. This provides a powerful experience in modeling how to use language.” (P. 10).

To supplement the practice of speaking, cognitive strategies are taught to AA members. Members are taught certain phrases to utilize when they experience uncomfortable feelings. These self-talk strategies “serve to reduce the intensity of such experiences and the person is able to gain some objective distance from such overwhelming feelings.” (Pp. 10-11). Examples are phrases such as “take it easy” or ‘easy does it’ which provide cognitive strategies for dealing with potentially overwhelming emotions.

Considering the above, it seems reasonable to expect that people who experience difficulties in regulating emotions might appreciate and benefit from attending AA groups. However, it is also possible that some of them will be too overwhelmed by the emotional emphasis of these meetings and refuse to give them a chance, or withdraw before experiencing any benefits in this area. It might be illuminating to compare clients who tend to use AA groups more frequently to those who do not, on a scale measuring difficulties in the regulation of emotions.

Hopson and Beaird-Spiller (1995) identified other interesting aspects of the addictive experience and related them to AA structure. They pointed to lacking structure and regularity as important aspects of the addictive process. The regularity of AA meetings, they argue, provides members with an important dimension of temporality. Members get a chance to “practice a lifestyle of regularity and predictability rather than the erratic, unpredictable experience of the active phase of their addiction”. (P. 12).

As well, Hopson and Beaird-Spiller (1995) identified the sense of alienation from self and others as important aspects of the addictive experience. AA, they explain, is a “fellowship” emphasizing relationships. Once a new member joins, he/she is no longer alone. “AA provides an immediate submerging of the member into an extensive interpersonal support system.” (P. 14). The authors also point to the tradition of introducing new members by saying “My name is _______ and I’m an alcoholic”, a sentence which links the
individual to the community of alcoholics and reinforces his/her sense of self at the same time. Sharing of one’s own story and listening to others’ promotes connectedness in a similar fashion.

Galaif and Sussman (1995) asked: “For whom does Alcoholics Anonymous Work?”. Although their study is a non-experimental literature review, their extensive review does help to clarify some issues. According to the authors, “AA helps those who actively participate in the program and who become stable members”. (P. 171). This characteristic is important as it addresses several factors such as motivation and a person’s inclination to do what is necessary to achieve and maintain sobriety. In that context, one might look at regular attendance in aftercare and/or AA as indicators of degree of motivation and activity, or in substance-abuse lingo, “working one’s program.”

In Galaif and Sussman’s (1995) study, a second group of factors included social (or psychosocial) characteristics which were also associated with attendance. Stable members tend to be more socially stable, extroverted, and exhibit affiliative and group dependency needs. A third group of factors involves interpersonal similarities. Stable members tend to be more physically healthy, feel more comfortable with considerable self-disclosure, be more anxious, less cognitively complex, and more likely to disclose guilty feelings about past behavior. They are also more likely to report feelings of loneliness and be more religious than non-members or less stable members.

The final factors found to be associated with attendance were severity of alcohol abuse and belief in the disease model of alcoholism. Stable members tend to report higher incidence and severity of alcohol-related problems prior to treatment, compared to non-attendees. Galaif and Sussman (1995) suggest that the disease model basis of AA may provide addicts with a congruent explanation (i.e. loss of control) for severe alcohol-related problems.

Galaif and Sussman (1995) summarized the personality characteristics of those whom AA is not likely to help. These are people who are uncomfortable in large crowds or intimate meetings. They are not religiously oriented and are unsatisfied with the religious tone of AA. Dual diagnosis clients (having a
serious psychological problem in addition to substance abuse) that require psychological intervention are also unlikely to be helped. Finally, individuals who do not agree with AA’s definition of alcoholism and those who wish to maintain controlled drinking are not likely to find AA useful.

Some of the personality characteristics discussed above can be identified during treatment and can be addressed directly. It is possible to ask clients about their attitude towards the philosophy shared by AA programs (and many aftercare groups). Relevant issues are their opinions on the disease model, powerlessness, role of support in recovery, and so forth. Schaler (1995) developed a scale to assess the strength of the belief in the disease model of addiction versus the free-will model.

Identifying whether a person tends to believe that on-going support is crucial for recovery, for example, might help predict whether he/she will seek and use supports such as AA or aftercare and for how long. It might also predict recovery status, since research has shown that use of supports is strongly associated with recovery.
Rationale and Purpose of the Study

A review of the literature clearly demonstrates that substance abuse is a major social problem resulting in great social and financial cost to society. Generally, existing treatments for substance abuse effectively help clients achieve successful recovery and abstinence (Agosti, 1995, Miller & Hoffman, 1995). Research also demonstrates that recovering substance abusers show a reduction in criminal activity (Gerstein et al., 1994) and medical expenditures (Miller & Hoffman, 1995).

Clients are most vulnerable to relapse in the first three months following treatment (Marlatt, 1985). Unfortunately, resources for treating substance abusers and thus helping them avoid relapse into their substance of choice, are diminishing. Consequently, there is a growing and pressing need to increase our knowledge about the factors involved in recovery and to implement this knowledge to improve available services. Treatment providers can benefit from studies that could help them predict good or bad outcomes in their clients upon entering treatment, thereby allowing for targeting high-risk clients for additional help.

The literature surveyed illustrated the multifaceted nature of substance abuse. The etiology and maintenance of, recovery from and relapse back into the addiction in individuals may include any combination of biological, psychological and/or social factors. Controversies in the field relate to the relative significance of any of these areas and debate the role of the person versus the situation or internal versus external causes.

Generally, medical and some psychological theories (e.g. psychodynamic theories) emphasize the role of internal causes or a person's characteristics (physiological or psychological) in substance abuse. Other psychological theories (e.g. behavioural) perceive the situation or society to be the critical determinants in this area of human behaviour. Social-learning theory stresses the roles of both society and the individual in relation to the problem.
Integrating all of these, sometimes contradictory, theories is the biopsychosocial model. This interactive model bridges varying disciplines, uniting them into a comprehensive model. It emphasizes the need to consider biological, psychological and social processes together.

Past studies typically examined factors related to any of these disciplines separately. Social factors such as social supports in the form of aftercare and AA groups were found to be useful predictors of recovery status (Stark, 1992, Hoffman et al., 1993), though studies of AA participation often suffer serious methodological problems (due to the issue of anonymity).

A small number of psychological factors have been repeatedly explored in relation to recovery (e.g. coping styles, outcome expectancies and self-efficacy). Out of an endless array of possibilities, the literature review revealed only one more study looking at a potentially relevant psychological factor, alexithymia (difficulty in identifying and describing feelings). This characteristic was studied in a comparative analysis of two treatment approaches, successfully using it as a predictor of outcome (Keller et al., 1995).

Knowledge about characteristics of those who are likely to use addiction-supports is limited to a few demographics (i.e. gender, age, education level, marital status). An isolated study looked at optimism in relation to an unusual residential aftercare program (Strack et al., 1987). This study yielded a significant relationship between use of aftercare and optimism (the authors used a composite outcome rather than level of aftercare use as the outcome). It may be useful to examine it further as the theoretical basis for studying optimism (discussed earlier) involves its relationship to relevant factors such as coping styles.

In addition, a qualitative exploratory study in relation to the efficacy of AA groups identified difficulties in regulating feelings as characteristic of the addictive experience (Hopson & Beaired-Spiller, 1995). It was hypothesized that the process and content of AA meetings successfully address this difficulty. This may also be true about aftercare meetings. It may be
useful then to explore the role of affect regulation in relation to both types of support groups in addition to recovery status (discussed above).

Finally, Galaif and Sussman (1995) found that belief in the disease model of alcoholism was more typical of stable members of AA. This may also be true in relation to aftercare and recovery status.

Given the small number of studies on this subject, investigating potential psychological factors involved in the recovery process and the use of support systems is, for the most part, uncharted territory. Not surprisingly, an outcome study examining the potential role of both psychological and social factors is non-existent. Yet, as argued above, clinicians can benefit greatly from being better able to identify, early in treatment, clients who are unlikely to achieve the desired outcomes of regular use of supports and of recovery from substance abuse.

This thesis and study is informed by the biopsychosocial approach to substance abuse. It is assumed that biological factors such as genetics, biochemistry, and other biological processes (degree of physiological dependency and withdrawal symptoms, for instance) interact with psychological and social factors in the recovery process. For the most part, these biological factors are not investigated or assessed here, as they belong to a different discipline. The psychological aspect was addressed by studying characteristics such as optimism, alexithymia, and beliefs. The social realm was addressed by examining the role of participation in addiction specific support groups such as aftercare and 12-step groups.

To achieve the goals of this study, relevant scientific tools were used. Every effort was made to develop a methodologically sound study which would improve upon and add to past research. These improvements will be discussed in detail in the Methodology section.

An attempt was made to innovate by studying the role of both psychological and social factors in the same population providing the opportunity to weigh the relative importance of these factors. This study investigated the role of the two most popular forms of substance-specific
supports (AA and aftercare) which in the past have usually been studied separately.

In summary then, the purpose of this study was to answer the following questions:

1. Do identified psychological characteristics (alexithymia, degree of belief in the Disease Model of addiction and optimism) and the degree of use of addiction-specific support groups (12-step and aftercare), predict recovery status following in-patient treatment for substance abuse?

2. Do identified psychological characteristics predict use of addiction-specific support groups following in-patient treatment for substance abuse?
The Study

To achieve the above-mentioned goals the following prospective study was developed. Clients in a mixed-substance, mixed gender treatment facility in Toronto (N=228) were recruited for a three-month follow-up study. The clients were given three psychological tests during the first week of treatment. The tests addressed optimism (as measured by the Life Orientation Test Revised or LOT-R), alexithymia (as measured by the Toronto Alexithymia Scale or TAS-20) and beliefs regarding addiction (measured by the Addiction Belief scale or ABS). These tests were given at the point from which predictions about outcome should be typically made and interventions can be implemented.

In addition, a number of demographics were recorded from clients' files and explored in a statistical analysis. Thus, the study addressed both pre-treatment and post-treatment variables.

Clients who completed the initial program were followed up and contacted at three-months post-discharge. They were asked about their recovery status, use of supports (aftercare and 12-step groups) and a number of other relevant questions such as living arrangements after program completion, and use of an AA sponsor. Confirmation of their reports (specifically about their recovery status and attendance in support groups) was obtained for most clients, either through their recovery-counselor or a contact person they listed when they volunteered for the study (or both). Clients who did not complete the initial program were not discarded from the research, though they were not followed up. Some analysis was done to see whether the psychological tests scores and some demographic variables were significantly related to their failure to complete the program.
Hypotheses of this Study

Hypothesis 1

Recovery status will be associated with scores on the psychological and screening measures and with the degree of use of support systems (AA and aftercare).

This hypothesis has a number of sub-hypotheses:

A. High recovery status will be associated with regular attendance in aftercare and AA groups.

B. High recovery status will be associated with higher score on Dispositional Optimism (as measured by the LOT-R).

C. High recovering status will be associated with a higher score on the Addiction Belief Scale (ABS) showing greater agreement with the Disease Model of Addiction.

D. An exploratory hypothesis: recovery status will be related to alexithymia as measured by TAS-20.*

** The specific direction of that relationship is not clearly suggested from the literature. Therefore, no specific hypotheses are made, rather it will be explored in a statistical analysis.
Hypothesis 2

Scores on several psychological measures will be associated with attendance in aftercare and AA groups (use of supports). This hypothesis has several sub-hypotheses as well:

A. Regular users of supports will have higher scores on Dispositional Optimism (as measured by the LOT-R).

B. Regular users of supports (AA and aftercare) will tend to agree with the disease model of addiction (as measured by the ABS). A stronger relationship will occur between attendance in AA and ABS score.

C. An exploratory hypothesis: Utilization of aftercare and AA will be related to Alexithymia*, as measured by the TAS-20.

* The specific direction of that relationship is not clearly suggested from the literature. Therefore, no specific hypotheses are made, rather it will be explored in a statistical analysis.
CHAPTER V

METHODOLOGY

Sample

The Setting

Research participants were recruited from Bellwood Health Services, a private substance-abuse rehabilitation hospital in Toronto, Canada. Bellwood is a residential treatment center operating from a Therapeutic Community perspective, using a multidisciplinary approach. Medical doctors, psychologists and psychotherapists, nurses, a nutritionist, a massage therapist, a fitness and leisure instructor, recovery and addiction counselors, and other staff members all work together as one team. Team members meet regularly to review each case and address important issues.

During the study, clients' duration of stay in the program ranged from four to twelve weeks, depending on the substance used and other variables. Typically, clients treated for alcohol abuse were accepted to the four-week program. Clients treated for prescription drug abuse and/or cannabis use were placed in a seven-week program. Clients who had been treated in the past for alcohol abuse but relapsed were also placed in a seven-week program. Clients treated for drugs such as heroin, cocaine and other narcotics or hallucinogens were placed in the 12-week program.

Participants

Research participants were substance-abuse clients (men and women) entering treatment at Bellwood Health Services.

Bellwood's clients span the social spectrum. Some clients were referred through Employee Assistance Programs (EAP), some through the Canadian Armed Forces and the balance through other sources (i.e. family, friends, physicians, social workers, therapists). Military clients and EAP-referred clients shared the risk of job loss if they failed either to complete the program or to remain sober after treatment.

Clients at Bellwood constituted a mixed-substance population, which included abusers of alcohol, illicit drugs and prescription drugs. Some
clients abused multiple substances. Three clients who volunteered for the study were treated for addiction to gambling as well as alcohol.

Bellwood's clients constituted a mixed-gender population, although the majority of clients who pursued and entered treatment were men. The clients at Bellwood at the time of the study were adults and had to be at least 18 years old.

**Inclusion criteria:** All clients who entered treatment for substance abuse at Bellwood between March of 1996 and December of 1996, were asked to participate in the study. There were no exclusion criteria, as all potential clients were already screened during their initial interview at Bellwood and were assessed as to their competence to participate in and benefit from the treatment program.

If accepted into the Bellwood program, they were considered competent enough to participate in the study. The clients were then asked to participate in this research and if they agreed they were entered into the study. In summary, the inclusion criteria were: acceptance into treatment at Bellwood and agreement to participate in the research.

**Program Components**

Bellwood's program was based on a Therapeutic Community philosophy emphasizing the community (of clients and staff) as the teacher. Clients could safely explore issues in group therapy, psychodrama and other group activities. There was a strong educational component that included lectures, films and discussions on different topics from different disciplines: medical, psychological, spiritual and social. The topics of lectures and activities rotated on a weekly basis in a cycle of three weeks: physical week, mental (psychological) week and social week. During the social week, family members and/or friends were invited to attend group discussions and lectures.

The structure and content of the program depended on clients' length of stay. The first week was usually considered an orientation week where the client was slowly introduced to the community, its rules and structure.
Volunteers and "old" clients helped new clients feel comfortable by offering peer support and addressing questions or concerns.

Following orientation week, clients received a three-week cycle of physical, mental and social foci. All clients essentially received these same four weeks of treatment.

Clients who stayed for seven weeks received an additional component of relapse-prevention (called Coping-I) during their last three weeks of stay.

Clients who stayed for 12 weeks received an additional component of treatment called Coping-II which involves learning to cope with life problems such as budgeting, work-related issues, housing and scheduling of appointments.

The emphasis at Bellwood was on group work although some individual counselling was available, if needed or requested by the client. For clients referred by their employers, an Employment Assistance workshop helped clients achieve a smooth transition back to work as well as resolve outstanding issues with their employers.

All clients were encouraged to attend the aftercare program when they left treatment. The military clients received mandatory aftercare on their base and were not provided with the Bellwood aftercare program.

**Characteristics of Bellwood's Aftercare Program**

Ito and Donovan (1986) explain that a variety of services can be described as "aftercare". However, these services vary by 1. Modality (i.e. individual, group, family); 2. Organization (i.e. referral, staffing, continuity of care); 3. Time parameters (limited versus open-ended); 4. Therapeutic orientation (i.e. behavioural, insight, process); 5. Purpose (i.e. social support, psychotherapy, social services); 6. Attendance expectations (i.e. required versus optional, outreach efforts). Ito and Donovan (1986) argue that it is important to describe these aspects in studies of aftercare, as it will assist readers to understand conflicting or divergent results. Bellwood's aftercare program at the time of the study will be described along these dimensions next.
1. The modality of this program was a group format. Family members were invited to attend family group meetings at the same time and on the same day during the first and second years. During the third, fourth and fifth years the client and the family groups were combined and the groups were self-run (no staff were present).

2. Referral to aftercare was directly from the residential treatment program. The staffing formula was as follows: for first-year clients there were a recovery counselor and a volunteer assistant. The assistant was present at every meeting while the recovery counselor attended meetings every two weeks as he or she had two groups to supervise, scheduled at the same time and on the same day. Beginning the second year, meetings were held on a bi-weekly basis and the recovery counselor was present at each meeting.

3. The time frame for aftercare was five years.

4. The issue of a therapeutic orientation is not applicable here since aftercare was mandated to offer support, not therapy.

5. The purpose of the aftercare program was to offer clients support, help solve problems and help prevent a relapse or deal with one immediately and effectively if one occurs.

6. Clients were encouraged to attend all aftercare meetings. Some clients were mandated to attend by their workplaces and gave permission to their recovery counselors to report any missed appointments to their employers. Military clients had an aftercare program on their base and were expected to attend 40 out of 52 weekly meetings. If clients missed meetings, recovery counselors made an effort to contact them although there was some variability in their approach. For example, one recovery counselor might call the night of a missed meeting while another might have called only after two or three missed meetings.

   In general, aftercare at Bellwood was offered for five years to all clients who completed the residential treatment program (excluding military
clients who received aftercare on their bases). This aftercare program included weekly meetings with special group discussions addressing relapse problems and a focus group for clients using prescription drugs. The goal of the aftercare group was to provide support to the client during the recovery journey. The emphasis was on current practical issues of concern to the clients. If a client relapsed after treatment, he or she was invited to meet the recovery counselor one on one. The recovery counselor then may have suggested attending a special relapse prevention group, devised an individualized "mini-program" or offered him/her a few one-on-one meetings. The individualized "mini-program" could have been one to five days in length, whereby the client was asked to attend specific classes from the regular program such as Lifeskills sessions.

Measures

Outcome Measures

The two outcome measures used in this study were: 1. Recovery status at three months and 2. Degree of use of support systems (AA and aftercare) during the three month period, as reported at the three month follow-up contact.

Recovery Status

With the help of a staff psychologist at Bellwood, the operational definition of recovery status was developed. It is consistent with suggestions made in the literature and reflects the need to recognize the improvements clients manifest even if they fail to remain totally abstinent. The definitions of recovery status (at the three-month post-treatment point) are as follows:

Abstinent: a report of no relapse or one short lapse in substance use.

Improved: a report of a significant reduction in quantity and/or frequency of use, with a maximum of three short lapses.

Somewhat Improved: a report of some reduction in quantity and/or frequency of substance use compared to the pre-treatment level of use.
Unimproved: a report of the same level of substance use compared to the pre-treatment level, or very close to it.

To ascertain which category best described relapsed clients, they were asked in their telephone interview (at the three-month follow-up point) to describe what and how much they were using, how often and how soon after program completion use began.

To improve reliability of the findings, data regarding level of use prior to treatment was recorded for each client and compared to level of use at the three-month follow-up point. (The data regarding use prior to treatment was collected by Bellwood staff as part of the routine assessment procedure.) The details were specific and indicated type of substances used, frequency and quantity of usage. This information was compared to details collected at the three-month follow-up point before deciding on the appropriate score for the Recovery Status variable.

This method proved to be crucial in determining recovery status scores in several cases. For example, one client had a pattern of binge drinking every six months. At follow-up he reported one binge relapse. Without knowing his pattern of use prior to treatment one might have mistakenly categorized him as Improved, when, in fact, he had returned to his early level of use.

If a client managed to stay sober for a period of time, but was in active relapse at the time of follow-up, the score reflected the status at the time of the call. If the person relapsed for a period of time, but was sober for a while and at the time of the call, a score of Improved or Somewhat improved may have been assigned (depending on all details given).

To increase the reliability of this measure, the obtained scores were compared to an expert’s (from Bellwood) score whenever the score to be assigned was not obvious. Any difference was discussed to reach an acceptable score. There were only six cases where there was initial disagreement and all of them were resolved easily through discussion.
Use of Supports

The use of addiction-specific supports is reported for use of aftercare and 12-step groups individually. Categories were decided based on information obtained through follow-up phone calls, contact persons, recovery counselors, and in the case of in-town clients, aftercare computer data was available as well. The initial categories of support use were:

- **Attended regularly** (at least three times a month)
- **Attended regularly, but less frequent** (one or two times a month)
- **Attended regularly but stopped** (attended at least two times immediately after treatment, but stopped before the follow-up interview)
- **Did not attend** (zero to one meeting over the three-month period)

**Confirmation Methods of Clients’ Reports**

As mentioned earlier, Toneatto et al. (1991) argued that previous studies pointed to the fact that clients’ self-reports may be unreliable. As well, many researchers have encountered the problem of the high percentage of subjects lost to follow-up, which may in turn bias results in one direction or another (Sobell, Sobell and Maisto, 1984). A possible way to address this problem is to ask family members, friends for corroboration of clients’ reports and help locate the client if needed.

In this study, during the recruitment meeting for the research, clients were asked to provide one or two names of contact persons for the purpose of helping to locate them if they could not be found, as well as to help verify their reports. This was fully explained on the consent forms.

In addition, the recovery counsellors were asked about each client and served as another source of information whenever they were in contact with the client. Using multiple sources of information increased the reliability of the data as well as the number of clients who could be included in the study.

While every effort was made to ensure the highest reliability of the data, it was still expected that some clients would not give names of contact people and/or may not have been in touch with their Bellwood recovery
counselors. Thus, it was assumed that in some cases confirmation of clients' reports would be partial or not available at all.

For those cases where there was more than one source of information about clients' recovery status at three months, it was found that agreement levels were very high. There were only five incidences where the category had to be changed due to disagreement between data reported by the clients and data reported by the recovery counselors. Disagreement occurred in one direction only: clients presented themselves more favourably to the person who made the follow-up call, compared to what was known to the recovery counselor. Thus, if needed, recovery status categories were changed to reflect the less favourable status, as it was assumed that clients were more honest with the recovery counselor.

In cases where clients could not be found, their status was recorded as missing data.

**Materials**

The materials used in this study were psychological and screening measures, data from files and reports on a follow-up questionnaire developed for this study.

**Screening Measure**

**The Substance-Abuse Subtle Screening Inventory-2 (SASSI-2)**

Results from the SASSI-2 questionnaire were used to address severity of drug and/or alcohol use (over one's lifetime) in the study population. This instrument was administered to all Bellwood clients prior to entering treatment for substance-abuse and is recorded in their files. Reporting data regarding the severity of substance abuse in this population provides readers an idea of the nature of the population studied here.

The original SASSI scale was developed and later revised by Miller (1985, 1990). This well-established instrument has good reliability and validity. Validity of the total scale is considered high; the SASSI-2 correctly classified 88% of 708 clients as substance abusers (see additional validity
and reliability information of the total scale in Appendix A). It is also considered to be highly resistant to denial and faking (Creager, 1989).

The SASSI-2 scale is a True/False questionnaire and has several sub-scales. Specifically relevant for this study are the FVA and FVOD sub-scales. FVA stands for Face Valid Alcohol items endorsed by the clients. It is a measure of the severity of lifetime alcohol abuse. FVOD stands for Face Valid Other Drugs items and is a measure of the lifetime severity of drug abuse. Scores on these two sub-scales reflect clients' acknowledgment of usage, consequences and loss of control. Furthermore, some items indicate whether clients use substances to cope with issues such as stress and anxiety. A score of 12 or more on any of the two sub-scales suggests the person may be chemically dependent and a score of 20 and above suggests severity may be high enough to require detoxification, prior to treatment (Miller, 1985). These possibilities have to be explored further with an addiction counselor, since the whole scale assesses lifetime severity of substance abuse.

Test-re-test reliability alphas of the above SASSI-2 sub-scales, based on 32 subjects and 40 controls, are as follows: FVA=0.99 (n=33), FVOD=0.99 (n=33).

**Psychological measures**

**Toronto Alexithymia Scale-20 (TAS-20)**

This scale was developed by Taylor, Ryan and Bagby (1985) to measure the psychological tendency toward having difficulty identifying and describing feelings. As discussed earlier, this tendency has been identified in the substance abuse population and was shown to be related to recovery status in one study.

The newest version of the TAS (at the time of the study) was a 20-item scale, consisting of three factors measuring: "1) difficulty identifying feelings and distinguishing them from the bodily sensations of emotions 2) difficulty describing feelings to others and 3) an externally oriented style of thinking" (Parker, Bagby, Taylor, Endler & Schmitz, 1993, P. 221). It has been shown to have high internal reliability coefficients (mean alpha=0.79).
Alpha coefficients for the three factors are at an acceptable level, mean alpha for factor 1 is 0.78, for factor 2 is 0.73 and for factor 3 is 0.64 (Parker et al., 1993).

The TAS-20 uses a 5-point Likert response scale ranging from "strongly disagree" to "strongly agree." The higher the score the more alexithymic the person is. To obtain the score for the scale, a few answers must be reversed and then all answers added. The cut off score for clinical alexithymia is 61 and over. A score of 51 and below indicates the person is non-alexithymic. (The scoring method and cut-off points were provided by Dr. Graeme Taylor, one of the authors of the scale, when the scale was purchased for the study by Bellwood Health Services.)

This scale was chosen because of its direct relevance to the study, its good psychometric properties and its brevity (20 items).

The Addiction Belief Scale (ABS)

Schaler (1995) developed this relatively new scale. So far, it has been studied with treatment providers only in the substance-abuse rehabilitation field. However, as Schaler (1995) explains, it can be administered to both clients and treatment providers. It is a relevant scale, as it addresses the question of whether a person subscribes to the Disease Model’s assertion of loss of control (thus the need for treatment and support), or to the view that one has control over the behaviour and can stop the use of substances at will, without help (Free Will Model). Items on this scale address the issues of powerlessness versus control, need for support versus total reliance on self, temporary versus chronic nature of addiction, physiological versus psychological determinants, and denial.

It is an 18-item scale, with nine items addressing ideas related to the Disease Model of addiction and nine reflecting the Free-Will Model. After reversing scores on the Free-will items, as suggested by the author of the scale, an overall high score reflects disagreement with the Free-Will Model. A high score on the other nine items reflects agreement with the disease model of addiction. The scale has high reliability (alpha=0.91).
The ABS has three factors: power, dichotomous thinking, and a way-of-coping-with-life dimension (Schaler, 1995). According to Schaler, the first two factors are strongly correlated with one another and define two highly reliable subscales. Factor 3 was weakly correlated with the other two factors and moderately correlated to the total ABS. Factor 1 had five Free-Will items and seven Disease-Model items loading high on it. Factor 2 had only one Free-Will item loading high and the balance were Disease Model items. Factor 3 had only three items, all Free-Will.

The ABS scale was chosen for this study mainly because of what appears to be its high relevance to this study. It appeared to be one-of-a-kind, since no other scale specifically measuring the degree of belief in the Disease versus the Free-Will Model was found. Consequently, a comparison to other scales in terms of psychometric properties, simplicity and so forth cannot be made, although it appears to have good reliability as an overall scale.

**The Life Orientation Test-Revised (LOT-R)**

The LOT-R is a measure of dispositional optimism developed by Scheier and Carver (1985). The revised version consists of a total of ten items, six items measuring optimism and four filler items which are not included in the final score. Respondents select a number from a five-point continuum, ranging from "strongly agree" to "strongly disagree." The revised scale is reported to have acceptable internal consistency (Cronbach’s alpha=0.78) and a fairly good test-re-test reliability: r=0.68 after four months and r=0.60 after 12 months, r=0.56 after 24 months and r=0.79 after 28 months, as studied in a large college student sample (Scheier & Carver, 1985). The scale appears to be fairly stable across time, thus implying it measures dispositional, rather than state optimism.

The LOT-R scale was chosen for this study because of its suggested relevance to the topic of this research, its relationship to other relevant concepts (such as coping and motivation) that were shown to play a role in recovery, its reasonable psychometric properties and its brevity.
Tools Developed Specifically for this Study

Follow-up Questionnaire

At three months post-discharge (completion of program), clients were asked to answer a number of questions. A form was developed to record their answers. This follow-up questionnaire (see Appendix B) includes questions about the client’s recovery status, attendance in and satisfaction with support groups, sponsor use, employment status, living arrangement and use of protective drugs. This form was also given to all recovery counselors to fill out in relation to research participants who were under their care.

Contact Person Interview Form

A form was developed to record the information given by contact persons (the clients provided names and phone numbers when recruited for the study) or by recovery counselors (see Appendix C). The data regarding clients’ recovery status and use of supports (as reported by the individuals interviewed) was recorded on these forms.

File-Data Form

A form was developed for the purpose of recording data from clients’ files (see Appendix D). This form covers demographic and background variables and other relevant data (such as dates of assessment, admission, discharge date and reason). Also, clients’ scores on the severity of alcohol and/or drug use were taken from their SASSI-2 (discussed earlier).

Procedure

During the first week of their program at Bellwood, all clients were asked to participate in the study and were given information about it. Those who volunteered for the study were then asked to sign a consent form and answer three psychological questionnaires. On the consent form, clients were asked to provide one or two names and phone numbers of individuals who may be contacted to confirm their reports and help locate them if needed.

Three months after completing treatment, clients were contacted by phone and asked to provide answers for a follow-up questionnaire developed for this
study. Background data, demographics and SASSI-2 results were collected from files for each client who volunteered for the study.

Data on clients who failed to complete the initial program was retained and since group size allowed, some analysis was done. However, there was no follow-up for these clients.

The recruitment of clients and administration of the three questionnaires was done either by the author of this study, a trained volunteer, or a staff member. Volunteers who helped in the study were trained by the author of the study. As well, the supervisor of volunteers at Bellwood was trained and given copies of all forms and instructions. She supervised the volunteers and liaised between me and the volunteers when necessary.

During one of the recruitment sessions, a few clients misunderstood the explanation regarding the reason for contacting the contact-persons they listed. This mistake was caught early and was corrected immediately.

Clients who were successfully contacted for follow-ups were for the most part cooperative, with two exceptions. In one case, the client flatly refused to answer the questions and consequently was withdrawn from the study. In the other case, the client consistently avoided the caller by using different excuses each time (such as being busy, being tired, death of a relative, a visit from another relative). After the fourth phone call it was decided not to contact her anymore. Partial information was obtained from one of the contact people she listed. (The contact person told the interviewer that the client was in full-blown relapse, which started soon after the completion of the program.)

Most of the contact people were very cooperative and genuinely concerned about the client in question. Some provided a great deal of qualitative information, which was recorded but could not be analyzed in this research.

To summarize the procedure, data was collected in three phases:

**Time 1** - As part of Bellwood's routine assessment, prior to or on the day entering treatment, clients were interviewed and asked to report on a wide range of issues. Demographics were recorded on the assessment forms as well.
The SASSI-2 questionnaire was usually administered that day, or if time did not allow it, in the first few days of the program. (There were a few cases where the SASSI-2 was not administered at all, resulting in missing data.

**Time 2** - On their first or second week of program, clients were asked to volunteer for the study. A consent form was signed and they were asked to answer three psychological questionnaires.

**Time 3** - At three months post-discharge (completion of program), a follow-up phone call was made and clients were asked about their recovery status; frequency of attendance in aftercare, AA and other support groups; use of a sponsor; degree of satisfaction with aftercare and AA; employment status; living arrangements and use of protective drug (Antabuse or Temposil). As well, the individuals listed as contact people were called to confirm clients' reports on recovery status and use of supports. Data concerning attendance and recovery status of in-town clients were collected from aftercare records and recovery counselors who lead these groups. In addition, recovery counselors were asked about the recovery status and use of 12-step programs of their out-of-town clients who stayed in touch.
Summary

The Present Study in Relation to Previous Research

This study attempted to increase the understanding of what is involved in the recovery process of men and women following residential treatment for substance-abuse in a mixed-substance population. It focused on examining certain psychological and social variables to predict recovery status as well as to examine the possible relationship between the psychological variables and use of addiction-specific supports.

The study was designed to address and overcome some methodological problems of previous studies. The 12 most significant improvements over past research can be summarized in the following list:

* A prospective design;
* A large sample size;
* Inclusion of women;
* Report and study of both pre- and post-treatment variables;
* Mixed-substance population, not only alcohol abusers;
* Corroboration: use of multiple sources of information beyond the clients’ self-reports;
* Collection of baseline data (names of substances, quantity and frequency of use);
* Use of baseline data for recovery assessment (i.e. improvement in Relation to earlier pattern of usage);
* Clear definitions of outcome measures: recovery status and use of supports;
* Combined study of psychological and social variables relating to recovery status of the same population, allowing for a meaningful weighing of significance of those variables;
* Study of psychological variables in relation to recovery and as possible predictors of use of supports;
* A methodologically sound study of AA utilization.
Ethical Considerations

When clients were asked to volunteer for the study, they were given a consent form to read and sign (see Appendix E). This form was developed to inform the clients about what their participation would entail, protecting them from agreeing to do something they might regret later. It was also used for the protection of the investigator and the institutions involved.

According to Keith-Spiegel and Koocher (1990), "ethical standards related to the conduct of research with human beings are easiest to apply to participants who are fully functioning, competent, free agents with a well-developed sense of autonomy and established reliable personal and financial resources" (P. 387).

The individuals asked to participate in this study were clients in a private, residential addiction rehabilitation treatment center. Although this is a voluntary treatment, some clients enter treatment with the sense of having no choice. These can be: clients referred by their workplace or the Employee Assistance Program (EAP) under threat of job loss if they refuse treatment; military clients whose careers were jeopardized; clients whose spouses warn of separation or divorce or whose parents threatened to cut off financial support. Under these circumstances, such individuals may not fit the definition of a free agent.

As well, some clients who enter treatment for substance abuse are far from being fully functioning as their addiction may have caused serious physical, social, financial and/or psychological consequences. This may also result in diminished competence. Other clients may lack a sense of autonomy as they have dependent personalities or became dependent on others as a result of their addiction.

Keith-Spiegel and Koocher (1990), explain that many research populations of interest to behavioral scientists "are restricted or vulnerable in ways that do not allow for large measures of self-determination" (P. 387). The population in this study appears to be vulnerable, or at least some of the clients are. Therefore, it was important to take these clients' vulnerability
into account and make every effort to ensure that their participation or refusal thereof did not compromise their welfare.

The consent form was constructed so as to describe in clear terms what the study involved. When they first met with a volunteer, some important points were verbally reiterated - the main one being their freedom to refuse participation and withdraw at any time without consequence. It was also explained that staff members would not have access to the individual data, only to the summary of results. During this meeting, potential volunteers were given the consent form to read first and ask any questions they might have. Attached to the consent form were the questionnaires they would be asked to complete, thereby allowing them to gauge the questions asked.

Other ethical considerations relevant to this study were the issues of privacy (a basic human right) and confidentiality. The identity of the research participants is completely protected by the researcher and Bellwood’s research coordinator. The precautions taken involved replacing clients’ names with a numerical code and separating the raw data from the key for the list of names and matching codes. Bellwood has the option of making a copy of the forms to be kept at Bellwood, separate from the list of names-codes. The original data was kept by the researcher separate from the key to names and codes.

The research also required access to data from clients’ files and to records of attendance in the aftercare program. On Bellwood’s consent form, which all clients sign when they enter treatment, there is a section on research and access to clients’ records (see Appendix F). Since this study was presented in clear terms as part of Bellwood’s research, the early consent to access records applied. The consent form developed for this study specified only the additional information that related to this study, which was new and could not be covered in Bellwood’s general consent form.

Protecting clients’ privacy by restricting access to the data and concealing their identity, allowed for the maintenance of confidentiality in the strictest sense. Clients may have been concerned about their spouse’s,
boss's or anyone else's access to data; thus clients were clearly informed, verbally and on the consent form, of who had access to the data.

Deception and concealment are other possible ethical problems in research. In this case, while clients saw some of the questionnaires, they did not know the specific questions they were going to be asked in the follow-up interview. The consent form indicated they would be contacted to see how they were doing. This is a general statement and might be considered problematic, since there are very specific questions they were asked at that time. Clients also were not informed specifically what the researcher was looking for. On the consent form it was clearly stated that it was an outcome study and that Bellwood was interested in the effectiveness of its treatment program and the recovery of their clients.

It should be noted that there was no manipulation of any kind in this research. As the consent form clearly indicated, the study involved questionnaires and a follow-up interview, with withdrawal permitted at any point. Thus, the only possible problem might have been that the research questions and hypotheses were not shared with the clients and that they did not precisely know what each specific scale was measuring.

Generally, the concern around deception and concealment relates to possible harm caused to clients without their ability to prevent it or protect themselves. However, it was believed that there was nothing (foreseen) in the content of the study that might have offended or harmed clients, even after they would learn of the specific research questions (hypotheses). As well, the first part of the study was conducted while clients were in treatment, thus help was immediately available if needed.

Finally, psychological ethical guidelines typically request that risks and benefits be assessed and balanced in order to determine the acceptability of a research proposal (Keith-Spiegel & Koocher, 1990). As mentioned above, it appears that no risk was involved in this research; however, sometimes risk becomes known only after the fact. Furthermore, there were possible benefits to conducting this study. First, increasing knowledge of the recovery process
can lead to improvements in treatment for future consumers of addiction rehabilitation services. People who help others often feel very good about themselves as a result.

As well, the clients who volunteered to participate in the study received follow-up phone calls which were often used to provide support and answer concerns. Experienced volunteers and/or practitioners trained to offer professional support made the calls.

Also, clients who expressed an interest in learning the results of the study, will be able to obtain a summary of results through Bellwood. It is possible, that reading the results will help them gain more insight into their addiction.
Data Analysis

To examine the degree of association between several variables and the outcome variables (recovery status and use of support groups), t-tests, Mann-Whitney confidence interval tests and Chi-Square analyses were conducted. The same approaches were taken when examining the association between high or low use of support groups and other variables.

Additional exploratory analysis examined the relationship between specific demographic variables and the outcome variables (recovery status and use of support systems).
CHAPTER VI

RESULTS

Demographic Information

A total of 228 clients were recruited for the study between March of 1996 and December 1996. Twenty-nine clients failed to complete the program, 14 of these clients returned, although only two of them subsequently completed the program. As well, two clients passed away during the treatment period and one died after the completion of the program, but before the follow-up interview. One person who completed the program refused to answer questions during the follow-up phone call and was withdrawn from the study as was promised on the consent form. Thus, a total of 224 clients were included in the main analysis. Clients who did not complete the program were not excluded from the study and some analysis was done on that group. It is important to note that the number of clients reported in each table varies, due to missing data in some cases.

General Demographics

Out of the total of 224 clients, 173 (or 77.2%) were men and 51 (or 22.8%) were women. Generally, men and women did not differ significantly on any of the hypotheses-related outcome variables or psychological tests. However, additional analysis of gender by a number of variables, revealed some significant results, including the outcome of program completion. These are reported later in this section.

The mean age of all clients who entered treatment was 38.7 (see Table 1 for demographic characteristics). The range of age was 19 to 73. The majority of the clients completed high school and 121 of them either completed or had some post-secondary or university education.

Out of 220 clients, 74 (or 33.6%) were single, 88 (or 40%) were married and 58 (or 26.4%) were either separated, divorced or widowed. In later analyses the groups of single clients and divorced/separated or widowed clients were combined.
The living arrangement of clients is categorized into five groups: living alone (61); living with family, spouse or with a common-law partner (143); living with friends (8); living in a residential group (2); and an “other” (8) category which includes those whose living arrangement could not be classified (see Table 1). Again, categories were combined here to represent living alone versus with someone. The “other” group was excluded.

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>%</th>
<th>Variable</th>
<th>N</th>
<th>%</th>
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<tr>
<td>Gender</td>
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<td>Marital Status</td>
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<tr>
<td>Men</td>
<td>173</td>
<td>77.2</td>
<td>Married/Common-law</td>
<td>88</td>
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<tr>
<td>Women</td>
<td>51</td>
<td>22.8</td>
<td>Single</td>
<td>74</td>
<td>33.6</td>
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<td>Divorced/Widowed/</td>
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<tr>
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<td></td>
<td></td>
<td>Separated</td>
<td>58</td>
<td>26.4</td>
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<td></td>
<td></td>
<td></td>
<td>Total:</td>
<td>220</td>
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</tr>
<tr>
<td>Education</td>
<td></td>
<td></td>
<td>Living Arrangement</td>
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<tr>
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<td>46</td>
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<td>Alone</td>
<td>61</td>
<td>27.5</td>
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<td>Secondary</td>
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<td>Family/Common-law</td>
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<tr>
<td>Some/complete</td>
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<td>Post-Secondary</td>
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<td>Friends</td>
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<td>3.6</td>
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<td>Other/unknown</td>
<td>8</td>
<td>3.6</td>
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<tr>
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<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>Mean</th>
<th>S.D.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>224</td>
<td>38.7</td>
<td>11.2</td>
</tr>
</tbody>
</table>

Clients' ethnicity was recorded during their initial assessment at Bellwood and was based on what the clients declared. Thus, this variable should be understood accordingly. A total of 150 or 69.1% clients described themselves as Canadians (see Table 2). Other reported ethnic groups were Aboriginal or Metis (3), British or Irish (12), Scottish (10), Italian (4), Greek (2), German (9), Dutch (3), Ukrainian (2), Scandinavian (2), Indo-Pakistani (3), Filipino (1) and others who could not fit Bellwood's categories (16).

Clients were typically referred to treatment by a health professional (i.e. physician, social worker, therapist), their workplace, or by themselves, friends or family. Seventy clients were referred by a health professional, 70
by their workplace and 69 by either a friend, family member or themselves (see Table 2).

Most of the clients recruited for the study were employed or self-employed (148 or 66.7%), while only 46 or 20.7% were unemployed (see Table 2). Nine clients were homemakers, six were students and ten were retired (three more clients were categorized as "other").

Approximately half of the clients (113 out of 222) had had past legal problems (mostly having had charges such as driving under the influence of alcohol and possession of illicit drugs). Thirty five (15.8%) clients had legal charges pending when they entered treatment.

Table 2

<table>
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<tr>
<th>Variable</th>
<th>N</th>
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<td>Referral Source</td>
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</tr>
<tr>
<td>Canadian</td>
<td>150</td>
<td>69.1</td>
<td>Health Professional</td>
<td>70</td>
<td>33.0</td>
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<tr>
<td>Native/Metis</td>
<td>3</td>
<td>1.4</td>
<td>Work</td>
<td>70</td>
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<tr>
<td>British/Irish</td>
<td>12</td>
<td>5.5</td>
<td>Self/Friends/Family</td>
<td>69</td>
<td>33.5</td>
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<td>German</td>
<td>9</td>
<td>4.2</td>
<td>Employment Status</td>
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<td>Dutch</td>
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<td>1.4</td>
<td>Employed/self-employed</td>
<td>148</td>
<td>66.7</td>
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<td>Indo-Pakistani</td>
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<td>1.4</td>
<td>Homemaker</td>
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<td>Ukrainian</td>
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<tr>
<td>Scandinavian</td>
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<td>Retired</td>
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<td>4.5</td>
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<tr>
<td>Filipino</td>
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<td>0.5</td>
<td>Unemployed</td>
<td>46</td>
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<tr>
<td>Greek</td>
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<td>0.9</td>
<td>Other</td>
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<td>1.3</td>
</tr>
<tr>
<td>Italian</td>
<td>4</td>
<td>1.8</td>
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<td></td>
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<tr>
<td>Other</td>
<td>16</td>
<td>7.4</td>
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<td>Total:</td>
<td>217</td>
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Legal Problems - Past

<table>
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<tr>
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<th>%</th>
<th></th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>113</td>
<td>50.9</td>
<td>No</td>
<td>187</td>
<td>84.2</td>
</tr>
<tr>
<td>Yes</td>
<td>109</td>
<td>49.1</td>
<td>Yes</td>
<td>35</td>
<td>15.8</td>
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<tr>
<td>Total:</td>
<td>222</td>
<td></td>
<td>Total:</td>
<td>222</td>
<td></td>
</tr>
</tbody>
</table>

Substance-Related Demographics

More than half of the clients (143 out of 223) recruited for the study reported alcohol to be their primary substance of choice (see Table 3). The remaining breakdown of primary substance of choice is as follows: 50 cocaine, nine heroin, nine marijuana or hashish and 12 prescription drugs. Three of the alcohol-abusing clients were also treated for gambling addiction. Client data was also analyzed according to whether clients abused a single substance or
multiple substances; 120 reported addiction to a single substance while 104 were addicted to multiple substances (see Table 3).

Abuse of substances in the family was also recorded. In the case of the present partner/spouse’s substance abuse, it was reported that 31 of the clients had substance abusing partners (see Table 3). As for parental substance abuse, 87 of the clients had one parent with a history of substance abuse, while 25 clients had two parents with history of substance abuse. A little less than half of the clients reported no parental history of substance abuse.

To assess the severity of substance abuse or dependence in the clients who volunteered for this study, the scores on the SASSI-2 sub-scale of FVA (Face Valid Alcohol items) and FVOD (Face Valid Other Drugs items) were collected from their files. The mean FVA for all recruited clients was 17.4 and the mean FVOD for all clients was 13.1 (see table 3). Both means are above the cut-off point of 12 which separates substance-abusers from the general population. Mean FVOD and FVA scores were also calculated separately (see Table 3) for clients whose primary substance of choice was either alcohol or drugs (cocaine and/or heroin). It was found that for the alcohol group the mean FVA score was 19.9 and their FVOD mean score was only 6.5. For the cocaine/heroin group the mean FVOD score was 24.6 which is above the cut-off point of 21 which is high enough to suggest the need for detoxification prior to treatment. This group had a mean FVA score of 14.7. The differences in means compared to the analysis of the whole population reflects the fact that, naturally, alcoholic clients would show greater severity of alcohol dependence compared to drugs, while drug abusing clients will show greater severity of drug dependence. As well, the analysis of the whole recruited group includes clients whose primary substance of choice might have been prescription drugs or marijuana.

Clients’ history of success in achieving sobriety from substances was recorded in their files. The mean of the longest number of weeks clients have managed to remain continuously sober in the past was 51.6 weeks (see Table 4).
The range of data here was from zero weeks to 999 weeks. As well, the mean number of days clients were sober immediately before entering treatment was 9.3 days (see table 3).

Table 3  Substance-Related Demographics

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>%</th>
<th>Partner Abuses Substance(s)</th>
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</thead>
<tbody>
<tr>
<td>Primary Substance of Choice*</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Alcohol</td>
<td>143</td>
<td>64.1</td>
<td>No</td>
</tr>
<tr>
<td>Cocaine</td>
<td>50</td>
<td>22.4</td>
<td>Yes</td>
</tr>
<tr>
<td>Heroin</td>
<td>9</td>
<td>4.0</td>
<td>Total:</td>
</tr>
<tr>
<td>Marijuana/Hashish</td>
<td>9</td>
<td>4.0</td>
<td></td>
</tr>
<tr>
<td>Prescription Drugs</td>
<td>12</td>
<td>5.4</td>
<td></td>
</tr>
<tr>
<td>Total:</td>
<td>224</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Single Versus Multiple Substance Abuse</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single Substance</td>
</tr>
<tr>
<td>Multiple Substances</td>
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<tr>
<td>Total:</td>
</tr>
</tbody>
</table>

* a rounding error occurred in this variable

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>Mean</th>
<th>S.D.</th>
</tr>
</thead>
<tbody>
<tr>
<td>SASSI-2: FVA</td>
<td>224</td>
<td>17.4</td>
<td>8.7</td>
</tr>
<tr>
<td>SASSI-2: FVOD</td>
<td>224</td>
<td>13.1</td>
<td>12.4</td>
</tr>
</tbody>
</table>

Separated by primary substance of choice

Alcohol group:

| SASSI-2 FVA     | 127 | 19.9 | 7.1  |
| SASSI-2 FVOD    | 56  | 14.7 | 9.1  |

Cocaine/heroin group:

| SASSI-2 FVA     | 127 | 6.5  | 9.8  |
| SASSI-2 FVOD    | 45  | 24.6 | 7.1  |

Longest number of weeks of sobriety in past

| 221            | 51.6 | 189.3 |

Number of days sober pre-treatment

| 222            | 9.3  | 12.7  |

**Psychological Tests Scores and History of Suicide Attempts**

The mean scores on the three psychological tests administered to all clients who volunteered for the study were obtained and are presented in Table 4. It should be noted that, unfortunately, some tests were either partially or totally incomplete, resulting in different group sizes or N's.

**LOT-R (Revised Life Orientation Test)**

The mean score on the LOT-R (measuring dispositional optimism) was 12.5 for 223 clients (see Table 4). It was difficult to make any meaningful
comments on this score since no comparable studies were found. Strack et al. (1987) used the LOT-R as a potential predictor of a residential aftercare-program completion in a population of recovering clients. In addition to studying a unique form of aftercare, they used a composite outcome score based on a number of variables. Furthermore, in their statistical analysis, they used a median split to differentiate between optimists and pessimists, while the present study used the mean score.

**TAS-20 (Alexithymia)**

The mean score on the TAS-20 (Toronto Alexithymia Scale) was 58 (see Table 4), which is three points below the cut-off point of clinical alexithymia. Clients’ scores were also divided according to the clinical definition of alexithymia. One group was that of clinical alexithymic scoring 61 points and above. The second group scored below 61 points. Using this sub-grouping, the prevalence of clinical alexithymia in the followed-up group was 44%, while 56% were non-alexithymic. This finding is consistent with earlier studies which yielded 39-50% rate of alexithymia in substance abusers (Keller et al., 1995, Taylor et al., 1990) and is much higher than the 15% prevalence rate of alexithymia in the general population (Parker et al., 1989).

**ABS (Addiction Belief Scale)**

The mean score of 213 clients who completed the questionnaire on the ABS was 59.5 (see Table 4). Since data on a similar population (substance abusing clients) is not available, a comparison of results is not possible. However, the mean obtained in this study is close to some of the means obtained by Schaler (1995) in a study of addiction beliefs (using the ABS), in a population of addiction treatment providers. While the mean score on the ABS for all the subjects in his study was 54.1 (n=295), the mean of those providers who were also in recovery from substance abuse was closer to the mean obtained in the present study. Their mean score on the ABS was 61.2 (n=100). The mean score of treatment providers who described themselves as abstinent was 58 (n=182).
Suicide Attempt History

Information regarding clients' history of suicide attempts was also collected from their files. Recent attempts (within 12 months prior to the assessment interview) were found in 22 of the clients (see Table 4). History of suicide attempts (more than 12 months prior to the interview) was reported for 18 of the clients (see Table 4).

Table 4 Psychological Variables and History of Suicide Attempts

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>Mean</th>
<th>S.D.</th>
</tr>
</thead>
<tbody>
<tr>
<td>LOT-R (Revised Life Orientation Test)</td>
<td>223</td>
<td>12.5</td>
<td>5.0</td>
</tr>
<tr>
<td>TAS-20 (Toronto Alexithymia Scale)</td>
<td>218</td>
<td>58.0</td>
<td>10.6</td>
</tr>
<tr>
<td>ABS (Addiction Beliefs Scale)</td>
<td>213</td>
<td>59.5</td>
<td>5.7</td>
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<table>
<thead>
<tr>
<th>Clinical Alexithymia</th>
<th>N</th>
<th>%</th>
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</thead>
<tbody>
<tr>
<td>Alexithymic</td>
<td>96</td>
<td>44.0</td>
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<tr>
<td>Non-alexithymic</td>
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<td>Total:</td>
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<table>
<thead>
<tr>
<th>Suicide Attempts</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>184</td>
<td>82.1</td>
</tr>
<tr>
<td>Past Attempts</td>
<td>18</td>
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<td>Recent</td>
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<tr>
<td>Total:</td>
<td>224</td>
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</tr>
</tbody>
</table>

Follow-Up Data Collection Methods

As expected in any follow-up research, a few clients (N=10) could not be located after treatment and it was not possible to acquire information about their post-treatment situation. In some cases information was obtained only from a contact person (N=4) or the recovery counselor who heard from or about them (N=27). The use of multiple sources of information resulted in a relatively high rate of follow-up contact (compared to earlier studies).

Most of the clients (N=155) were reached by phone and gave first-hand information. One person who was reached by phone refused to answer the questions and was withdrawn from the study at this point. The categories of data collection methods were: by phone, through recovery counselor, through
contact person or not found. A complete breakdown of whether or how the follow-up was done is presented next.

Table 5 Methods of Data Collection at Follow-Up

<table>
<thead>
<tr>
<th>Method</th>
<th>N</th>
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</tr>
</thead>
<tbody>
<tr>
<td>By Phone</td>
<td>155</td>
<td>79.1</td>
</tr>
<tr>
<td>Recovery Counselor</td>
<td>27</td>
<td>13.8</td>
</tr>
<tr>
<td>Contact Person</td>
<td>4</td>
<td>2.0</td>
</tr>
<tr>
<td>Not Found</td>
<td>10</td>
<td>5.1</td>
</tr>
<tr>
<td>Total:</td>
<td>196</td>
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</tr>
</tbody>
</table>

**Outcome Variables**

**Recovery Status**

The outcome measure of Recovery initially had four levels: Abstinent, Improved, Somewhat improved and Unimproved. Using this classification, the recovery rates at the three month follow-up point were as follows: 143 or 77.3% of the clients were Abstinent (or had one short lapse), eight or 4.3% were Improved (up to three short lapses), 11 or 6% were Somewhat improved (some reduction in frequency and/or quantity of use) and 23 or 12.4% were Unimproved (see Table 6).

Due to some very small cells sizes, the possibility of combining groups was explored. In a discussion with the psychologists at Bellwood who consulted on the research, it was suggested that the Abstinent and Improved groups were similar since the definition of three short lapses described clients who, while struggling, generally managed to maintain the gains of treatment and remain sober. The Somewhat Improved group was combined with the Unimproved group since both described clients who basically relapsed, though some of them were not using substances at quite the same level as before treatment. (Furthermore, the literature review has shown that clients attempting to control/reduce their use eventually relapse fully).

A preliminary statistical analysis (Analysis of Variance) showed that the first two groups were alike on all variables, while often different from the last two groups. The last two groups were alike as well. This finding supported the rationale for collapsing the four groups into two.
Thus, the new recovery status variable had two levels of High recovery and Low recovery. Using this classification, 81.6% of the clients were in high-level recovery and 18.4% were in Low level recovery (see Table 6). The high rate of recovery is a positive result in the real world, and may suggest that the treatment at Bellwood is very effective. However, it created a statistical problem in this research. Based on previous statistics, it was expected that at least 35% of the clients would fail to remain abstinent at the three-month follow-up point, allowing for specific statistical analyses such as gender analysis. The group of 34 non-abstinent clients (or 18.4%) is too small for a number of statistical analyses.

Table 6 Recovery Status

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>%</th>
<th>Collapsed Recovery Status</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abstinent</td>
<td>143</td>
<td>77.3</td>
<td>High Recovery</td>
<td>151</td>
<td>81.6</td>
</tr>
<tr>
<td>Improved</td>
<td>8</td>
<td>4.3</td>
<td>Low Recovery</td>
<td>34</td>
<td>18.4</td>
</tr>
<tr>
<td>Somewhat Improved</td>
<td>11</td>
<td>6.0</td>
<td>Total:</td>
<td>185</td>
<td></td>
</tr>
<tr>
<td>Unimproved</td>
<td>23</td>
<td>12.4</td>
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<td></td>
<td></td>
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<tr>
<td>Total:</td>
<td>185</td>
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</table>

Use of Support Groups

The attendance of clients in aftercare and 12-step groups is presented in Table 7. It was found that out of 160 clients, 89 clients attended aftercare meetings frequently (3 or more times a month) and 10 clients attended infrequently but did not stop (one or two times a month). Twenty-nine clients attended aftercare for a period of time but stopped before the three-month follow-up interview and 32 clients did not attend aftercare at all (or attended only once or twice in the three-month period).

Clients' attendance in 12-step had a similar distribution (see Table 7). Out of an N of 170, 109 clients attended 12-step groups frequently (3 or more times a month), nine clients attended infrequently (1 or 2 times a month), 16 clients attended but stopped and 36 clients did not attend (or attended only once or twice).
As in the case of recovery status categories, the problem of small cell sizes occurred. Therefore, the possibility of similar grouping in relation to aftercare and 12-step groups was entertained. In a discussion with the consultants from Bellwood it was proposed that clients who attended groups on a regular basis and did not stop were similar to one another even if they attended at various frequency levels (3 or more times a month compared to 1 or 2). They all shared the will to work their recovery program even though they did so to different degrees. Clients who attended but stopped were perceived as different in that they abandoned their plan of working their program. In that sense they were more like those clients who did not attend meetings at all.

The clients were divided therefore, into High Use (of support) and Low Use groups whereby clients who attended a group between one and three times a month were defined as High Users. Those who went for a while but stopped, or did not at all, were classified as the Low Users (see Table 7). Prior to collapsing groups in this fashion, an analysis was done to compare these groups on all of the important variables. Overall, it was found that the first two groups were more similar to one another than to the third and fourth groups.

Table 7  Use of Supports

<table>
<thead>
<tr>
<th>Variable</th>
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<th>%</th>
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</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Frequent</td>
</tr>
<tr>
<td>Aftercare Attendance</td>
<td></td>
<td></td>
<td>Infrequent</td>
</tr>
<tr>
<td>Frequent</td>
<td>89</td>
<td>55.6</td>
<td>Stopped</td>
</tr>
<tr>
<td>Infrequent</td>
<td>10</td>
<td>6.3</td>
<td>None</td>
</tr>
<tr>
<td>Stopped</td>
<td>29</td>
<td>18.1</td>
<td>Total:</td>
</tr>
<tr>
<td>None</td>
<td>32</td>
<td>20.0</td>
<td>Total:</td>
</tr>
<tr>
<td>Total:</td>
<td>160</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Collapsed Aftercare</th>
<th>Collapsed 12-Step</th>
</tr>
</thead>
<tbody>
<tr>
<td>High Use</td>
<td>99</td>
</tr>
<tr>
<td>Low Use</td>
<td>61</td>
</tr>
<tr>
<td>Total:</td>
<td>160</td>
</tr>
<tr>
<td></td>
<td>High Use</td>
</tr>
<tr>
<td></td>
<td>118</td>
</tr>
<tr>
<td></td>
<td>Low Use</td>
</tr>
<tr>
<td></td>
<td>52</td>
</tr>
<tr>
<td>Total:</td>
<td>170</td>
</tr>
</tbody>
</table>
Hypotheses Tests Results

**Hypothesis 1**

Recovery status will be associated with scores on the psychological and screening measures and with the degree of use of support systems (AA and aftercare). This hypothesis has a number of sub-hypotheses:

Hypothesis 1 was partially supported.

**Part A**

High recovery status will be associated with regular attendance in aftercare and AA groups.

This part of the hypothesis was supported. Higher proportion of clients attended supports regularly, compared to non-recovering clients. Table 8 presents the frequencies and p values for attendance in groups by recovery status.

The results clearly indicate an association between use of supports and recovery status. First, all 99 clients who attended aftercare regularly (frequent or infrequent and did not stop) were in high recovery. This 100% success rate for those who used aftercare regularly compared to a 51.7% success rate (high recovery) for those who did not attend aftercare regularly. These results were significant at the p<0.000 level (Chi-Square=57.66, DF=1).

For the regular users of 12-step groups, the high-recovery rate was 88.9% and for low users of 12-step groups the success rate was 66.7%. The relationship between regular attendance in 12-step groups and recovery status was significant at p<0.001 (Chi-Square=11.96, DF=1). It is important to remember here that some of the irregular users of aftercare used 12-step groups regularly and vice versa, while some used both regularly.

Overall, it appears that the best results were obtained for regular users of aftercare. A comparison of users of either aftercare alone, 12-step groups alone, both or none was done in an additional analysis and is reported later.
Table 8 Hypotheses-Related Findings: Recovery Status by Support Variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>%</th>
<th>N</th>
<th>%</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aftercare*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High</td>
<td>98</td>
<td>100.0</td>
<td>0</td>
<td>0.0</td>
<td>98</td>
</tr>
<tr>
<td>Low</td>
<td>30</td>
<td>51.7</td>
<td>28</td>
<td>48.3</td>
<td>58</td>
</tr>
<tr>
<td>Total:</td>
<td>128</td>
<td></td>
<td>28</td>
<td></td>
<td>156</td>
</tr>
<tr>
<td>12-Step**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High</td>
<td>104</td>
<td>88.9</td>
<td>13</td>
<td>11.1</td>
<td>117</td>
</tr>
<tr>
<td>Low</td>
<td>34</td>
<td>66.7</td>
<td>17</td>
<td>33.3</td>
<td>51</td>
</tr>
<tr>
<td>Total:</td>
<td>138</td>
<td></td>
<td>30</td>
<td></td>
<td>168</td>
</tr>
</tbody>
</table>

* p<0.000    ** p<0.001

**Part B**

High recovering status will be associated with higher score on Dispositional Optimism (LOT-R).

This part of the hypothesis was not supported. Recovering clients did not significantly differ from non-recovering clients on Dispositional Optimism as measured by the LOT-R. The mean scores were 12.3 and 12.9 respectively with p=0.5.

**Part C**

High recovering status will be associated with a higher score on the Addiction Belief Scale (ABS), showing greater agreement with the Disease Model of Addiction.

This part of the hypothesis was not supported. Recovering clients did not differ significantly from non-recovering clients on their beliefs regarding the Disease Model versus the Free-will Model of substance abuse. Their means on this test were 59.9 and 58.1 respectively with p=0.1.

**Part D**

An exploratory hypothesis: Recovery status will be related to alexithymia (difficulty in identifying and describing feelings) as measured by TAS-20.

This part of the hypothesis was not supported. Recovering clients did not differ significantly from non-recovering clients on alexithymia, as measured by the TAS-20 (their means were 58.5 and 56.4 respectively with p=0.3).
Hypothesis 2

Scores on several psychological measures will be associated with attendance in aftercare and AA groups. This hypothesis has several sub-hypotheses: Hypothesis 2 was partially supported.

Part A

Regular users of supports will have higher scores on Dispositional Optimism (as measured by the LOT-R).

This part of the hypothesis was not supported. Degree of utilization of aftercare or 12-step groups was not related to Optimism as measured by the LOT-R scale.

Part B

Regular users of supports (AA and Aftercare) will tend to agree with the Disease Model of addiction (as measured by the ABS: the Addiction Belief Scale). A stronger relationship between the ABS score and attendance in AA (compared to aftercare) is expected.

This part of the hypothesis was partially supported. Scores on the ABS were significantly related to aftercare attendance (see Table 9). Surprisingly, however, ABS scores were not significantly related to 12-step group attendance.

High users of aftercare had a mean score of 60.6 compared to 57.7 in the Low users group. The higher score indicates greater agreement with the Disease Model of addiction. This difference was significant at p=0.003.

Part C

An exploratory hypothesis: utilization of aftercare and AA groups will be related to alexithymia (as measured by the TAS-20). (A specific direction of that relationship is not clearly suggested from the literature. Therefore, no specific hypotheses were made regarding direction).

Part C of the hypothesis was partially supported.

The High users of aftercare had a mean score 58.9 compared to the mean score of 55.4 in the Low aftercare group (see Table 9). The higher score
indicates higher alexithymia, or greater difficulty in identifying and
describing feelings. Thus, regular users of aftercare appear to have been more
alexithymic than those who did not use aftercare regularly. This difference
was significant at the p=0.05 level.

Table 9 Psychological-Test Scores and Outcome Variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>ABS*</th>
<th></th>
<th>TAS-20**</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>Mean</td>
<td>SD</td>
<td>N</td>
</tr>
<tr>
<td>Aftercare</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High</td>
<td>96</td>
<td>60.5</td>
<td>4.7</td>
<td>95</td>
</tr>
<tr>
<td>Low</td>
<td>56</td>
<td>57.7</td>
<td>5.8</td>
<td>59</td>
</tr>
<tr>
<td>Total:</td>
<td>152</td>
<td>57.7</td>
<td>5.8</td>
<td>154</td>
</tr>
</tbody>
</table>

*p=0.003  **p=0.05

Additional Analyses

Recovery Status

Additional analysis of recovery status by a number of relevant
demographics and the sub-scales of two of the psychological tests used (TAS-20
and ABS) yielded a number of significant results. However, the first analysis
done was in relation to the relative effectiveness of using aftercare, 12-step
groups, both or none. Some of the results, though statistically significant,
may appear to be clinically meaningless. However, they are reported here and
discussed later (in the Discussion section) as to their potential relevance
and meaning.

Differential Use of Support Groups

A comparative analysis of support groups showed that aftercare use or
the combination of aftercare with 12-step group attendance were the most
effective with both yielding a 100% rate of recovery (see Table 10). The use
of 12-step groups alone yielded a 70.4% rate of recovery and the poorest
results were obtained for clients who did not attend any groups (42.4% rate of
recovery). These results were significant at p<0.005 (Chi-Square=57.8, DF=3).

Since both aftercare and the combination of aftercare and 12-step
yielded a 100% recovery rate there was no need to compare their effectiveness.
However, comparisons between the use of no supports and the use of 12-step groups alone as well as comparisons between 12-step groups alone and aftercare alone were done. The Chi-Square analyses yielded significant results in both cases. The use of 12-step groups alone (compared to no group) was significantly associated with higher recovery status at p<0.025 (Chi-Square=6.1, DF=1).

A comparison of 12-step group attendance alone versus aftercare group attendance alone showed aftercare to have a superior impact on recovery status at p<0.01 significance level (Chi-Square=7.76, DF=1).

Table 10 Differential Use of Support Groups by Recovery

<table>
<thead>
<tr>
<th>Variable</th>
<th>High Recovery</th>
<th>Low Recovery</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N  %</td>
<td>N  %</td>
</tr>
<tr>
<td>No Supports</td>
<td>14 42.4</td>
<td>19 57.6</td>
</tr>
<tr>
<td>Only 12-step Groups</td>
<td>31 70.4</td>
<td>13 29.6</td>
</tr>
<tr>
<td>Only Aftercare</td>
<td>21 100.0</td>
<td>0 0.0</td>
</tr>
<tr>
<td>Both Groups</td>
<td>73 100.0</td>
<td>0 0.0</td>
</tr>
<tr>
<td>Total</td>
<td>139</td>
<td>32</td>
</tr>
</tbody>
</table>

*p<0.005

Pre-Treatment Variables

For convenience purposes (i.e. structuring of tables), the following findings were divided according to whether they describe continuous or categorical variables.

First, a t-test analysis showed that the High recovery group was significantly older (mean = 40.2) on average than the low recovery group (mean=35.6). A breakdown of age by recovery status by gender showed that men in low recovery were the youngest group, while women in low recovery were only slightly younger than women in high recovery (see Table 11).

The maximum number of consecutive weeks a client managed to remain sober in the past was found to be significantly related to recovery status. Since the standard deviation of the high recovery status group was almost 7 times
bigger than that of the low recovery group (138 compared to 20.4), a t-test was not appropriate here. Instead, the nonparametric Mann-Whitney confidence interval test was used. The comparisons of the medians in these groups were found to be significantly different at \( p=0.006 \) level. The median of the High recovery group was 12 weeks compared to four weeks in the Low recovery group.

As well, Factor 2 of the ABS was also found to be significantly related to recovery status at \( p=0.03 \) level.

Table 11
Recovery Status By Pre-Treatment Continuous Variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High recovery</td>
<td>151</td>
<td>40.2</td>
<td>10.8</td>
<td>149</td>
<td>14.1</td>
<td>2.5</td>
</tr>
<tr>
<td>Low recovery</td>
<td>34</td>
<td>35.6</td>
<td>10.7</td>
<td>32</td>
<td>13.1</td>
<td>2.2</td>
</tr>
<tr>
<td>Total:</td>
<td>185</td>
<td></td>
<td></td>
<td>180</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Previous Weeks Sober***
Mann-Whitney confidence interval test

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>Median</th>
</tr>
</thead>
<tbody>
<tr>
<td>High recovery</td>
<td>149</td>
<td>12</td>
</tr>
<tr>
<td>Low recovery</td>
<td>33</td>
<td>4</td>
</tr>
<tr>
<td>Total:</td>
<td>182</td>
<td></td>
</tr>
</tbody>
</table>

*\( p=0.03 \)  **\( p=0.03 \)  ***\( p=0.006 \)

As can be seen in Table 12, recovery status was found to be significantly related to referral source. Clients who were referred by their workplace had the highest recovery rate (91.7%) compared to those who were referred by a health professional (79.7%) or those referred by friends, family members or themselves (71.2%). This finding was significant at the \( p<0.025 \) level (Chi-Square=7.86, DF=2).

As well, employment status was significantly related to recovery status (see Table 11). Clients who were employed when entering treatment had an 83.6% recovery rate compared to a 63.6% success rate in the unemployed group. This difference was significant at the \( p<0.01 \) level (Chi-Square=6.41, DF=1).

Marital status at time of admission was also significantly related to recovery status. Clients who were categorized as "with someone" (married or common-law) had a 91.8% rate of recovery, compared to 75.9% in the "alone"
(single or divorced/separated) category (Chi-Square=7.52, DF=1, p<0.01). The majority of clients (N=26) in low recovery were categorized as “alone” (compared to N=6 in the married or common-law category).

**Post-Treatment Living-Arrangement**

Clients who lived with someone at the three-month follow-up point had an 89.6% rate of high recovery compared to a 72.7% recovery rate for those who lived alone. This finding was significant at p<0.025. (Chi-Sq=7.04, DF=1).

<table>
<thead>
<tr>
<th>Table 12 Recovery status By Pre- and Post-Treatment Categorical Variables</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td><strong>Referral Source</strong>*</td>
</tr>
<tr>
<td>Work</td>
</tr>
<tr>
<td>Health Professional</td>
</tr>
<tr>
<td>Self/friends/family</td>
</tr>
<tr>
<td>Total:</td>
</tr>
<tr>
<td><strong>Employment Status</strong>*</td>
</tr>
<tr>
<td>Employed</td>
</tr>
<tr>
<td>Unemployed</td>
</tr>
<tr>
<td>Total:</td>
</tr>
<tr>
<td><strong>Marital Status</strong>*</td>
</tr>
<tr>
<td>With someone</td>
</tr>
<tr>
<td>Alone</td>
</tr>
<tr>
<td>Total:</td>
</tr>
</tbody>
</table>

**Post-treatment Variable**

| Living Arrangement*** | | | |
|-----------------------| | | |
| With someone | 103 | 89.6 | 12 | 10.4 | 115 |
| Alone | 32 | 72.7 | 12 | 27.3 | 44 |
| Total: | 135 | | 24 | | 159 |

*p<0.025  **p<0.01
Use of Support Groups

The additional analyses of demographics in relation to use of support groups yielded some compelling results. Descriptions of the significant findings in relation to aftercare and 12-step group's attendance are presented next.

Aftercare

A number of pre- and post-treatment variables were found to be significantly related to degree of use of aftercare. First, High attenders were significantly older (mean age=41.3) than Low attenders (mean age=36.9). However, there was an interaction between gender, age and use of aftercare.

When the sub-scales of the psychological tests were examined, two emerged as significant in relation to aftercare use. First, clients' scores on Factor 2 (Dichotomous Thinking) of the ABS (Addiction Belief Scale) were significantly related with aftercare attendance at p=0.003. The High attenders group had a mean score of 14.4 compared to 13.2 in the Low attenders group. A higher score indicated greater agreement with items loading on the Dichotomous Thinking factor of the ABS.

The second sub-scale found to be significantly associated (p=0.02) with aftercare attendance was Factor 2 (Difficulty Describing Feelings) of the TAS-20 (Toronto Alexithymia Scale). High attenders of aftercare scored higher than Low attenders on this sub-scale (17.1 compared to 15.3) suggesting they had greater difficulty describing their feelings.

In a Chi-Square analysis, referral source was found to be significantly related to aftercare attendance at p<0.005 (Chi-Square=16.81, DF=2). It was found that 78.6% of clients referred to treatment by their workplace attended aftercare regularly, compared to 64% of those referred by a health professional and 38.6% referred by friends, family or themselves. These differences were significant at p<0.005.

Finally, the post-treatment variable of living arrangement was also associated with High attendance in aftercare. Clients who lived with someone during the three months following treatment had 71.1% of High attendance
compared to 52.6% in the clients who lived alone. This difference was significant at the p<0.05 level (Chi-Square=4.16, DF=1).

Table 13 Aftercare Use By Pre-Treatment Variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>High Attendance</th>
<th>Low Attendance</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>Mean</td>
<td>SD</td>
</tr>
<tr>
<td>Age*</td>
<td>99</td>
<td>41.3</td>
<td>10.5</td>
</tr>
<tr>
<td>Alexithymia-Factor 2**</td>
<td>98</td>
<td>17.1</td>
<td>4.6</td>
</tr>
<tr>
<td>ABS Factor 2***</td>
<td>98</td>
<td>14.4</td>
<td>2.3</td>
</tr>
<tr>
<td>Referral Source*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Work</td>
<td>44</td>
<td>78.6</td>
<td></td>
</tr>
<tr>
<td>Health Professional</td>
<td>32</td>
<td>64.0</td>
<td></td>
</tr>
<tr>
<td>Self/Friends/Family</td>
<td>17</td>
<td>38.6</td>
<td></td>
</tr>
<tr>
<td>Post-Treatment Living Arrangement**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>With Someone</td>
<td>69</td>
<td>71.1</td>
<td></td>
</tr>
<tr>
<td>Alone</td>
<td>20</td>
<td>52.6</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>89</td>
<td>46</td>
<td></td>
</tr>
</tbody>
</table>

*p=0.015 **p=0.02 ***p=0.003

12-Step Groups

Attendance in 12-step groups was found to be significantly related to referral source at p<0.025 level (Chi-Square=8.6, DF=2). Of the clients referred by their workplaces, 82.5% were attending 12-step groups regularly, compared to 66.7% of those referred by a health professional and 56.3% of those referred by friends, family or themselves.

The regular use of a protective drug during the first three months following treatment (i.e. antabuse or temposil) was also significantly associated with 12-step attendance. Eighty three percent of those who reported taking a protective drug regularly also attended 12-step groups regularly, compared to 66.3% of regular attendance in those who did not take the
protective drug. This difference was significant at p<0.05 (Chi-Square=4.81, D.F.=1).

Table 14  12-Step Groups Attendance By Pre- and Post-Treatment Variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>High Attendance</th>
<th>Low Attendance</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>%</td>
<td>N</td>
</tr>
<tr>
<td>Referral Source*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Work</td>
<td>47</td>
<td>82.5</td>
<td>10</td>
</tr>
<tr>
<td>Health Professional</td>
<td>34</td>
<td>66.7</td>
<td>17</td>
</tr>
<tr>
<td>Self/Friends/Family</td>
<td>27</td>
<td>56.3</td>
<td>21</td>
</tr>
<tr>
<td>Total:</td>
<td>108</td>
<td></td>
<td>48</td>
</tr>
<tr>
<td>Use of Protective Drug**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>44</td>
<td>83.0</td>
<td>9</td>
</tr>
<tr>
<td>No</td>
<td>67</td>
<td>66.3</td>
<td>34</td>
</tr>
<tr>
<td>Total:</td>
<td>111</td>
<td></td>
<td>43</td>
</tr>
</tbody>
</table>

* p<0.025  **p<0.05

Program Completion

In an additional analysis aimed at uncovering potential predictors of program completion, gender, referral source, program completion additional analyses employment status, education level and history of suicide attempts were all found to be significantly associated with this variable (see Table 15).

First, men were more likely to complete the initial treatment program (90.7%) compared to women (78.4%). The chi-square analysis yielded a value of 5.64 (DF=1) which was significant at p<0.025.

An analysis of referral source by program completion showed that clients referred by their workplace were most likely to complete the program (95.7% successfully completed the program). Those referred by health professionals had an 87.6% success rate and least likely to complete the program were those who initiated treatment themselves or were referred by friends or family members (79.7% success rate). A chi-square analysis yielded significant results at the p<0.025 (Chi-Square=8.19, DF=2). A visual examination of the table shows the biggest differences to be between workplace referrals and the other two categories.

Employment status was also significantly related to program completion (Chi-Square=11.69, DF=1, p<0.005). Employed or self-employed clients had a
92.6% rate of program completion compared to 73.9% for those unemployed. Clients with post-secondary education (some or completed) were also significantly (p<0.05) more likely to complete the program (Chi-Square=4.01, DF=1).

Finally, clients with recent history of suicide attempts were least likely to complete the treatment (68.2% success rate), followed by clients with past history of suicide attempts (83.3% success rate). Clients who reported no recent or past suicide attempts had a program-completion success rate of 90.8%. The Chi-Square analysis yielded a value of 9.84 (DF=2) and was significant at p<0.01.

Table 15  Program Completion by Pre-Treatment Demographics

<table>
<thead>
<tr>
<th>Variable</th>
<th>Completed</th>
<th>Did Not Complete</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>%</td>
</tr>
<tr>
<td>Gender*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Men</td>
<td>157</td>
<td>90.7</td>
</tr>
<tr>
<td>Women</td>
<td>40</td>
<td>78.4</td>
</tr>
<tr>
<td>Referral Source*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Work</td>
<td>67</td>
<td>95.7</td>
</tr>
<tr>
<td>Health Professional</td>
<td>61</td>
<td>87.6</td>
</tr>
<tr>
<td>Self/Friends/Family</td>
<td>55</td>
<td>79.7</td>
</tr>
<tr>
<td>Total</td>
<td>183</td>
<td></td>
</tr>
<tr>
<td>Employment**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employed</td>
<td>137</td>
<td>92.6</td>
</tr>
<tr>
<td>Unemployed</td>
<td>34</td>
<td>73.9</td>
</tr>
<tr>
<td>Total</td>
<td>171</td>
<td></td>
</tr>
<tr>
<td>Education***</td>
<td></td>
<td></td>
</tr>
<tr>
<td>High School or Less</td>
<td>82</td>
<td>82.8</td>
</tr>
<tr>
<td>Above High-School</td>
<td>111</td>
<td>91.7</td>
</tr>
<tr>
<td>Total</td>
<td>193</td>
<td></td>
</tr>
<tr>
<td>Suicide Attempts****</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No History of Attempts</td>
<td>167</td>
<td>90.8</td>
</tr>
<tr>
<td>Past Attempts</td>
<td>15</td>
<td>83.3</td>
</tr>
<tr>
<td>Recent Attempts</td>
<td>15</td>
<td>68.2</td>
</tr>
<tr>
<td>Total</td>
<td>197</td>
<td></td>
</tr>
</tbody>
</table>

*p<0.025  **p<0.005  ***p<0.05  ****p<0.01

An analysis of substance-related variables revealed a number of significant findings (see Table 16). First, clients who abused multiple substances were less likely to complete the program (78.8% success rate),
compared to clients who abused one substance only (95.8% success rate). A Chi-square analyses yielded a value of 15.17 (DF=1) which was significant at p<0.005.

As well, a comparison between clients whose primary substance of choice was alcohol versus cocaine or heroin showed that the alcohol-abusing clients were more likely to complete the program (93% compared to 79.7%). The Chi-square analysis produced a value of 7.67 (DF=1) which was significant at p<0.01.

Finally, whether a client reported having a partner who abused a substance when he/she entered the program was also significantly associated with program completion at the p<0.05 level (Chi-Square=5, DF=1). Clients who reported that their partners were not abusing a substance had a 89.8% success rate compared to 74.2% in clients whose partners were abusing a substance.

An analysis of program completion by all psychological tests and their sub-scales revealed that only Factor 2 (Difficulty Describing Feelings) of the Toronto Alexithymia Scale (TAS-20) was significantly related to this outcome variable. Program completers scored higher on this sub-scale suggesting they had greater difficulty describing their feelings (scores were 16.7 compared to 14.4). This difference was significant at the p=0.018 level.
Table 16  Program Completion by Substance-Related Variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>Completed</th>
<th></th>
<th>Did Not Complete</th>
<th></th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>%</td>
<td>N</td>
<td>%</td>
<td></td>
</tr>
<tr>
<td>Single versus Multiple Substance Abuse*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single Substance</td>
<td>115</td>
<td>95.8</td>
<td>5</td>
<td>4.2</td>
<td>120</td>
</tr>
<tr>
<td>Multiple Substances</td>
<td>82</td>
<td>78.9</td>
<td>22</td>
<td>21.1</td>
<td>104</td>
</tr>
<tr>
<td>Total:</td>
<td>197</td>
<td></td>
<td>27</td>
<td></td>
<td>224</td>
</tr>
<tr>
<td>Alcohol Versus Cocaine/Heroin As Primary Substance*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alcohol</td>
<td>133</td>
<td>93.0</td>
<td>10</td>
<td>7.0</td>
<td>143</td>
</tr>
<tr>
<td>Cocaine/Heroin</td>
<td>47</td>
<td>79.7</td>
<td>12</td>
<td>20.3</td>
<td>59</td>
</tr>
<tr>
<td>Total:</td>
<td>177</td>
<td></td>
<td>22</td>
<td></td>
<td>202</td>
</tr>
<tr>
<td>Partner Abuses Substance(s)***</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>97</td>
<td>89.8</td>
<td>11</td>
<td>10.2</td>
<td>108</td>
</tr>
<tr>
<td>Yes</td>
<td>23</td>
<td>74.2</td>
<td>8</td>
<td>25.8</td>
<td>31</td>
</tr>
<tr>
<td>Total:</td>
<td>120</td>
<td></td>
<td>19</td>
<td></td>
<td>139</td>
</tr>
</tbody>
</table>

*p<0.005  **p< 0.01  ***p<0.05

<table>
<thead>
<tr>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>196</td>
<td>16.7</td>
<td>4.6</td>
<td>27</td>
<td>14.4</td>
<td>4.4</td>
<td>223</td>
</tr>
</tbody>
</table>

*P=0.02

Summary: Characteristics of Clients High on the Outcome Variables

A summary of all the significant findings (demographics and psychological test scores), relating to outcome variables is provided next (see also a summary chart in Appendix G).

Completed Initial Program: clients who completed the program were typically employed and referred by their workplace. They attained post-secondary education (some or complete) and had no history of suicide attempt(s). Also, they used one substance (most likely alcohol) as opposed to multiple substances. These clients typically had a partner who did not abuse any substance. Finally, clients who completed the program had greater difficulty describing feelings (TAS-20 factor 2).

High Recovery: clients who attained high recovery-status were typically older, employed and were referred by their workplace. They achieved longer periods of abstinence in the past. They also tended to have dichotomous thinking regarding addiction (ABS Factor 2) and greater difficulty describing feelings.
**High Aftercare Attendance**: clients who attended aftercare regularly were typically older and were referred by their workplace. They lived with someone during the first three months following treatment. These clients also tended to have dichotomous thinking regarding addiction and increased difficulty describing feelings.

**High 12-Step Group Attendance**: clients who attended 12-step groups regularly were typically referred by their workplace and used a protective drug regularly following treatment.

**Prediction-Defying Clients**

A review of the tables of recovery status of the two support groups presents two intriguing facts. First and most interesting is the small group of clients (n=19) who did not attend any support group and still managed to remain sober. The second interesting group is that of clients who attended support groups regularly but did not fare so well (n=13). It seemed worthwhile to try and find out more about them.

First, a chi-square analysis was done on the two groups who were in high recovery. Clients in one group attended one or two groups regularly and are described as being high on "working their program." The second group was described as low on "working their program." The scope of exploration of possible characteristics of the prediction-defying group was limited by its small size (19 subjects). While it was not possible to conduct t-tests, some chi-square analyses were suitable.

The chi-square analyses yielded only one significant variable differentiating the two groups who did not work their program: education level (see Table 17). Among clients who did not attain education beyond high school, there was a greater incidence of low recovery (73.3%). Among those who attained post-secondary education, the majority were in high recovery (61.9%).

In the high work-program group, the prediction-defying group was smaller, yet a chi-square analysis yielded two significant and related variables: pre-treatment marital status and post-treatment living arrangement. Marital status was divided into the categories or single/divorced/separated or
married/common-law. Post-treatment living arrangement was divided into two categories as well: living alone or with someone (may include family, residential, friend).

Clients who worked their program but did not achieve high recovery status were more likely to live alone and be single, divorced or separated, compared to the group who did well. The differences between the groups in relation to marital status was significant at p<0.025 (Chi-square=6.6, DF=1). As for post-treatment living arrangement, the differences were significant at p<0.005 (Chi-square=9.0, DF=1).

Table 17 Prediction-Defying Groups and Demographics

<table>
<thead>
<tr>
<th>Low Work Program</th>
<th>High Recovery</th>
<th>Low recovery</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Education Level</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High-school education</td>
<td>4</td>
<td>26.7</td>
<td>11</td>
</tr>
<tr>
<td>Or less</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Post-secondary education</td>
<td>13</td>
<td>61.9</td>
<td>8</td>
</tr>
<tr>
<td><strong>Total:</strong></td>
<td>17</td>
<td>36</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>High Work Program</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pre Treatment Marital Status</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Married/common-law</td>
<td>59</td>
<td>46.8</td>
<td>67</td>
</tr>
<tr>
<td>Single/divorced/separated</td>
<td>1</td>
<td>8.3</td>
<td>11</td>
</tr>
<tr>
<td><strong>Total:</strong></td>
<td>60</td>
<td>138</td>
<td></td>
</tr>
</tbody>
</table>

| Post-treatment living** |               |              |       |
| arrangement |              |              |       |
| With someone | 88 | 74.6 | 30 | 25.4 | 118 |
| Alone | 4 | 33.3 | 8 | 66.7 | 12 |

*p<0.025  **p<0.005

**Gender Analyses**

While overall, women and men do not differ on the hypotheses-related outcome variables and on the psychological tests, a few gender differences were found on some demographics and on the additional outcome of Program Completion which was reported above (see table 15).

First, it was found that women were more likely to have a history of suicide attempts. A chi-square analysis yielded a value of 6.01, D.F.=1 which was significant at the p<0.025. Interestingly, suicide history was
significantly related to program completion and gender was also significantly related to program completion.

Men and women also differed on whether they had a partner who abused a substance. Women were more likely to have a substance-abusing partner at the time of admission. This finding was significant at \( p<0.025 \) level (chi-square=6.2, DF=1).

Women and men also differed on the maximum number of weeks they managed to remain sober in the past. Again, due to the large differences in the standard deviations, a Mann-Whitney confidence interval test was used. Men had a median of 10.5 weeks while women had a median of 4 weeks. This difference was significant at a \( p=0.007 \).

Table 18 Gender Differences in Program completion

<table>
<thead>
<tr>
<th>Variable</th>
<th>Men</th>
<th></th>
<th>Women</th>
<th></th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>( % )</td>
<td>N</td>
<td>( % )</td>
<td></td>
</tr>
<tr>
<td>History of suicide Attempts*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>148</td>
<td>80.4</td>
<td>36</td>
<td>19.6</td>
<td>184</td>
</tr>
<tr>
<td>Yes</td>
<td>25</td>
<td>62.5</td>
<td>15</td>
<td>37.5</td>
<td>40</td>
</tr>
<tr>
<td>Total:</td>
<td>173</td>
<td></td>
<td>41</td>
<td></td>
<td>224</td>
</tr>
</tbody>
</table>

| Partner abuses Substance*    |     |          |       |          |       |
| No                            | 89  | 82.4     | 19    | 17.6     | 118   |
| Yes                           | 19  | 61.3     | 12    | 38.7     | 31    |
| Total:                        | 118 |          | 31    |          | 149   |

<table>
<thead>
<tr>
<th>Previous weeks sober** Mann-Whitney confidence interval test</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Men</td>
<td>170</td>
<td>10.5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Women</td>
<td>51</td>
<td>4.0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total:</td>
<td>231</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*p<0.025  \( p=0.007 \)
CHAPTER VII

Discussion

This study attempted to broaden understanding regarding the psycho-social characteristics of substance-abusing clients who achieve high recovery during the critical three-month period following completion of a residential treatment program. It attempted to address the absence of studies weighing psychological and social variables, on the same population. This study also strived to contribute to knowledge of the psychological characteristics of clients who have the best prognosis for recovery, i.e. those who tend to use addiction-specific support groups.

The goals of the study were achieved as the social variable was found to be an excellent predictor of recovery status and two of the psychological variables examined emerged as significant predictors of attendance in aftercare groups. As well, two subscales from the two psychological tests were found to be significantly related to recovery.

The main findings of this study, then, can be summarized as follows: substance-abusing clients completing a residential treatment program, who regularly attended aftercare groups or both aftercare and 12-step groups, achieved a 100% rate of high recovery. Clients who regularly attended aftercare groups were characterized by increased difficulty in identifying and describing feelings and by greater agreement with the Disease Model of Addiction. Recovering clients were characterized by difficulty describing feelings and by dichotomous thinking regarding addiction. In addition, clients who completed the initial program had greater difficulty describing feelings, compared to those who did not complete the program.

General Discussion

The first research question indirectly addressed two very different approaches to theory, research and practice in psychology. One approach claims that psychological factors are crucial in maintaining any behavioural change (maintaining sobriety in this case). The other asserts that engaging a person in a desirable behavior (such as regular attendance at support groups),
regardless of any personality characteristics, is the key to sustaining a behavioral change (sobriety). These opposing views reflect the debate about the person versus the situation, or internal versus external causes of behaviour.

When the behaviour of maintaining the gains of treatment (i.e., sobriety) was studied in relation to factors representing these two views, the "situation" factor won the debate. Or did it? The social variable of regular attendance in support groups, especially aftercare or aftercare combined with 12-step groups, resulted in a remarkable 100% success rate. In contrast, none of the psychological variables reached significance in relation to recovery status. However, two of the psychological variables were found to be significantly related to aftercare attendance patterns.

Thus, it appears that attendance in support groups had an independent influence on recovery status, supporting earlier conclusions that aftercare contributes to treatment outcome, independent of prognostic variables (Ito & Donovan, 1986; Walker et al. 1983; Costello, 1980). Yet, aftercare attendance is affected by prognostic psychological factors. Put together, these findings support the biopsychosocial model, which also informed and helped shape this study. It seems that we must consider both dimensions (internal and external, or person and situation) as each plays a part in the realm of human behaviour (interacting with biology, too, of course). Potential explanations for the significant results in these areas will be discussed next.

**Why Are Support Groups So Important for Successful Recovery?**

This study strongly supports earlier research demonstrating that aftercare following treatment improves outcome. A possible explanation for the efficacy of support groups such as aftercare and 12-step groups is the overarching human need for support, companionship and contact, especially in trying times. As well, attending groups regularly creates some structure in a person's life, something that, as discussed earlier, is often lacking in the life of an addicted person. Groups also offer the camaraderie of peers who struggle with the same issues. Often, recovering substance abusers experience
shame and guilt and are uncomfortable discussing their feelings with people who do not share these experiences.

Similarly, addicted individuals are naturally hesitant to discuss important issues (such as lapses or the urges to use) with their families, as it may lead to withdrawal, rather than receipt, of much-needed support. The aftercare or 12-step group may be the only place an addicted person can feel safe and not embarrassed to discuss such important concerns.

Furthermore, group members and leaders can offer relevant advice on practical issues which many recovering clients have to deal with. They have each other as resources and often learn some coping skills from one another.

Ito and Donovan (1986) explained that ‘social support may be important because it provides the recovering alcoholic with (a) a nondrinking social network, and (b) a place for the patient to get support, help and assistance in coping with stress in new and nondrinking ways. These two functions of post-hospitalization social support can reduce the chances that the recovering alcoholic will relapse when coping with social pressure to drink or with negative mood states’ (Pp. 450-451).

In their review of earlier alcohol aftercare studies, Ito and Donovan (1986) suggested that aftercare use is associated with improved drinking status, though not with preventing a first slip. Thus, they argue that aftercare’s contribution is achieved by providing protection against full-blown relapse. In their view, “aftercare probably has as one of its important functions the early detection of and intervention of relapse” (Ito and Donovan, 1986, p. 448).

Ito and Donovan (1986) also explained that recovery often requires major lifestyle changes and add that “as recovering alcoholics attempt to find a new social role, aftercare may provide needed social and psychotherapeutic supports for such extensive life changes” (P. 453).

Janis (1983) found that social support helps recovering alcoholics adhere to their treatment goals. MacKay and Marlatt (1991) argue that such findings
indicate that social support acts as a buffer against relapse. This view concurs with the buffering hypothesis of social support (discussed earlier).

The other important result of the present study was the significant association between aftercare and alexithymia and belief in the Disease Model. Most intriguing was the fact that greater difficulty with identifying and describing feelings was associated with regular attendance in aftercare groups and that greater difficulty describing feelings (factor 2 of the Alexithymia scale) was associated with high recovery status, high attendance in aftercare and even program completion.

Finally, the finding that belief in the Disease Model of Addiction was significantly associated with aftercare, but not 12-step group attendance, was puzzling. Next is a discussion of possible explanations for these findings.

**Alexithymia: An Affect Disorder or an Effective Coping Mechanism?**

Traditionally, difficulty in identifying and describing feelings (formulated in the 70's as alexithymia and discussed earlier) is considered a disorder, specifically a disorder in affect regulation. Support for this comes from its association with problems such as psychosomatic disease, post-traumatic stress disorder, substance abuse and eating disorders (Parker et al., 1993).

How can a disorder in affect regulation then contribute to regular attendance and use of supports? At first glance, this particular finding is difficult to explain. It contradicts the commonly held view of most psychological approaches (and popular wisdom) that identifying and talking about our feelings is good for us. However, addiction is a unique condition and some of the popular views in psychology may not be applicable here.

It is proposed here that alexithymia develops as a survival or coping mechanism of children in a dysfunctional family. Later in life, substances may be used by these individuals to cope with or avoid emotional pain. When the substances are removed in detoxification and treatment, the person is stripped of his/her defenses. This happens during the very challenging, crisis-ridden phase of early recovery. At that point, the person may resort to earlier, even
unconscious, defenses such as alexithymia to cope with those crises. This helps him/her avoid resorting to the more dysfunctional and unhealthy defense of substance abuse.

This argument will be discussed next beginning with the potential origin of alexithymia and its role as a coping and/or survival mechanism in highly dysfunctional families.

**Emotional management in substance abuser’s family of origin.**

According to Lewis (1994b), the fact that the cycle of addictive behaviour passes down through generations and is related to family dysfunction, is well documented. Indeed, substance abusers have a higher incidence of parental substance abuse. Cotton (1979) reviewed previous studies and found that, on average, one-third of alcoholics studied had at least one parent who was an alcoholic (in the present study more than half of the clients recruited had at least one substance-abusing parent). Cotton also found that in every study comparing alcoholics to nonalcoholics, the incidence of family alcoholism was higher for alcoholics. Past studies also indicated that incidence of parental alcoholism in alcoholic groups were six times greater than that of nonpsychiatric patients and two times that of psychiatric patients (Cotton, 1979).

According to Robinson and Rhoden (1998), “alcoholism is a family disease - one that affects every member of the family system in a devastating way” (p. 34). They argue that no family member can be understood in isolation from the other family members. In the substance-abuse population there is a high prevalence of parental substance abuse. Landry, Smith and Morrison (1993) explain that “living with active addiction is traumatic. In many families, living with addiction is like living in a constant state of emergency, always prepared for the unpredictable” (P. 204).

Lewis (1994b) describes the emotional dynamics in addicted families and explains that “parents who use substances to cope with feelings of anger, intimacy, shame, sadness, stress or disappointment teach their children dysfunctional mechanisms for coping with life” (P. 14). These children then
learn dysfunctional ways of coping and later have difficulty with intimacy and
communication. The cycle of dysfunction created in addiction further
complicates matters. As Lewis (1994b) explains, addictive behaviour may be
used initially to deal with psychological discomfort. However, "as the
negative effects of behaviour increase, the addictive behaviour is used as a
mean of coping" (P. 14).

A family in which alcohol is being abused by someone to such an extent
that it becomes the organizing principle is called "an alcoholic family"
(Brown, 1985). An alcoholic family is characterized by denial, together with
shame, fear and tension. According to Brown (1985), such families are also
identifiable by chaos, inconsistency, unpredictability, illogical and
repetitious arguments and unclear parenting roles. Sometimes these
characteristics coexist with the possibility of violence and incest.

According to Family Systems theory, one of the four major family tasks is
the management of the family's emotional climate, which includes developing
strategies to manage conflict (Robinson and Rhoden, 1998). However, alcoholic
families are more likely to develop conflict-detouring strategies, rather than
ways to acknowledge and process conflicts. The most common means used in these
families to achieve this end is denial. It includes covert and overt "rules"
with "don't talk" as possibly the most common. When children try to speak
about the alcohol-related problems in the family they are likely to find their
reality invalidated (i.e., "it's not so bad"). Another detouring strategy
scapegoats someone to shift the focus from the alcoholic to another family
member.

Robinson and Rhoden (1998) argue that denial assists families to cope and
survive their pain, while helping the disease coexist. When children's
perceptions are continuously invalidated, they learn to distrust their
realities, repress their suspicions and subdue their feelings about it.
Consequently, according to Robinson and Rhoden (1998), "when conflict is
denied and detoured, children learn that it is something so dark and dangerous
that it must be avoided at all cost, and emotional wounds fester" (P. 58).
These children carry this lesson into adulthood; they view conflict as abnormal and unmanageable and deem themselves unable to deal with it.

Namie (1993) in her doctoral thesis studied antecedent familial factors in adult alcoholics and found significant similarities in their childhood experiences. She used the Family of Origin Scale (FOS) developed by Hoverstadt, Anderson, Piercy, Cochrane & Fine (1985). Of particular relevance here are her finding of alcoholics recalling that in their families it was not normal to show both positive and negative feelings (FOS item 1) and that certain feelings were not allowed to be expressed (FOS item 32).

Children growing up in substance-abusing families often do not feel safe or loved in their families which creates issues that need to be dealt with beyond the substance abuse. This type of emotional environment can be the breeding ground for a problem in affect regulation such as alexithymia. Indeed, Berenbaum and Taryn (1994) found alexithymia to be related to retrospective reports of diminished family expressiveness and with feeling less emotionally safe during childhood. They also found alexithymia to be significantly correlated with dissociative experiences.

**Emotional management in early recovery.**

Having been fortunate enough to work with the population researched here, I had the opportunity to learn a great deal from both clients and clinicians. One of the assertions of clinicians and returning clients I have met, was that following the completion of treatment, or in early recovery, clients should avoid dealing with certain psychological issues. For the most part, this refers to underlying psychological problems and emotionally loaded issues and memories stemming from factors such as childhood abuse, neglect and trauma. The rationale being that in the early stages of recovery, the client is most vulnerable and should concentrate on practical issues such as securing a job, finding a place to live and changing one’s lifestyle.

Furthermore, many recovering clients suffer from post-acute symptoms related to the physical withdrawal from the substances abused. They face a daily struggle and need to focus all their energy on resisting the temptation.
to use. Once they manage to stabilize on most levels and make the necessary changes in their lives, they may be ready to address the ghosts of their past. If done too early, facing the psychological issues can cause a negative chain of reactions eventually leading to relapse.

Bellwood’s approach is consistent with Landry et al. (1993) who described the early stage of recovery as biopsychosocial restabilization beginning with crisis management. They described this phase as “putting out fires,” fires which may involve withdrawal symptoms, medical, job, legal and marital problems. At this point, Landry et al. argued, many begin to realize how much harm they have caused their loved ones and may consequently experience intense guilt, low self-esteem, and a sense of worthlessness. They may also experience tremendous self-doubt about their self-efficacy in other areas of their lives.

Landry et al. (1993) summarized by explaining: “in other words, people may become overwhelmed when they finally become aware of the full extent and consequences of their addiction. Thus, at this point, the task of recovery is to become aware of the consequences of addiction while not being overwhelmed by this knowledge” (P. 161). The task of recognizing the consequences of one’s behaviour, yet not becoming overwhelmed by such knowledge, is difficult for most. For recovering substance abusers, however, this is a monumental task as many of them initiated substance use as a means of avoiding such unpleasant realizations or negative emotions. Once the substance is removed, the recovering person is often left more emotionally vulnerable, compared to non-substance-abusing persons.

When people are overwhelmed by severe or constant crises and conflicts they may not be able to deal with them by rational means (Landry et al., 1993). At such a time, largely unconscious and irrational defense mechanisms may present themselves. These irrational and unconscious defenses, according to Landry et al., "help to decrease or eliminate the anxiety caused by the conflicts and crises" (P. 195). One of the most common forms of defense in addiction is denial (Lewis, 1994b; Landry et al., 1993). Denial can be exercised on anything, from one’s own negative thoughts and feelings,
consequences of the addiction to even the reality of the addiction. Being unable to identify and describe feelings can be viewed as a form of denial or at least as a defense mechanism in itself, protecting one from the experience of negative feelings.

Thus, one might say that alexithymia is, in fact, what many clients may "need" to get through the first stage of recovery. Once they have "enough sobriety under their belts" (an expression used at Bellwood), the ability to talk about their feelings may become useful again. It is possible that those clients who tend to talk more about their feelings are too distressed to "work their program." Therefore, in some situations, talking about feelings, identifying and describing them, may, in fact, be a liability. (It might be interesting to study other situations in which this may be true).

**Addiction Beliefs**

As expected, the more a person believes in the Disease Model of Addiction, the more likely he/she is to use supports and recover. The Disease Model group of items of the ABS scale include the following ideas: addicts tend to deny their addiction and must be forced to recognize it (item 1), addicts exhibit lack of control over substances (item 2), treatment is the only solution to addiction (item 3), there is no such thing as a temporary drug addiction (item 5), addicts need to admit they are powerlessness over the addiction (item 9), abstinence is the only way to control addiction (item 10), physiology not psychology causes addiction (item 11) and, finally, addiction is a genetic disease (item 14).

Intuitively speaking, endorsing most or all of these items may suggest that a person will be more likely to seek support. Comparable items on the Free-Will group of items sanction ideas such as: the best way to overcome addiction is to rely on willpower (item 4), it is possible to achieve moderate substance intake (item 12), people often outgrow addictions (item 8) and addicts can recover without help (item 16).

The additional analyses revealed that of the three subscales of the ABS, only factor 2 (Dichotomous Thinking) was significantly associated with
aftercare attendance. All but one item (item 12) on this subscale endorsed the Disease Model (items 5, 10, 11, 14). The fact that this subscale includes the Free-Will item arguing that people can learn to control substance intake may seem contradictory, especially to item 10. However, one can hold both that it is possible to learn to control drug and alcohol use and that this will ultimately lead to relapse as implied by item 10. An item analysis may be useful here to see which items are most strongly associated with the outcome measure.

Indeed, it makes full sense that clients who believe that they cannot beat the addiction alone, that they need support and so forth, will be more likely to use support groups regularly, increasing their chances of remaining sober. Interestingly though, belief in the Disease Model of Addiction was not significantly associated with 12-step groups attendance. This result is quite puzzling, as AA is strongly associated in people's minds with the Disease Model. This finding merits further investigation. Exploratory research and interviews might help explain this phenomenon.

Integration of the Major Findings

Regular use of aftercare or both aftercare and 12-step groups increases chances of recovery to 100% in the first three months post-treatment. At the same time, increased difficulty in identifying and describing feelings and a belief in the Disease Model of Addiction significantly correlates with regular attendance of aftercare.

The following might tie together such findings: recovering clients who enter the first stage of recovery are highly emotionally vulnerable and at risk of being overwhelmed and, consequently, of relapsing. Clients who use social support are more likely to receive help before reaching the point of a crisis and relapse. Those who believe that addiction is a disease, that abstinence is the only way to recovery and that support of others is integral to the recovery process are likely to attend aftercare and receive timely assistance. While receiving this support and dealing with important issues in their lives at the early stage of recovery, those who tend not to enter the
realm of their feelings, have better chances of avoiding crisis. They avert the risky path of consciously experiencing painful feelings, thoughts and memories.

Landry (1993) adds another insight. He explains that through meeting other recovering individuals (including those in 12-step groups), recovering people realize that the destruction in their lives is similar to that in other people’s. He further explains, “as they identify with other addicted individuals, they become aware that other people have had similar experiences and that recovery is possible. In other words, a little hope goes a long way” (P. 161).

**Additional Findings in Relation to all Outcome Variables**

To facilitate a clearer understanding of the large number of significant findings in the additional analysis regarding outcome variables, results were grouped as follows: 1. Social demographics (pre-treatment marital status and post-treatment living arrangement) 2. Employment status and referral source and 3. Age and substance-related demographics.

**Social Demographics**

The two variables: pre-treatment marital status and post-treatment living arrangement can be described as social demographics, as both can tell us whether the person was alone or shared his/her life and/or home with someone. It may be argued, however, that there are exceptions, such as living alone yet having a best friend to rely on.

Being married or in a common-law relationship (when entering treatment) was associated with high recovery status, while living with someone during the three months following treatment predicted both recovery status and aftercare attendance. The association of marital status and living arrangement with recovery status reinforces the argument that social support is important in the recovery process.

It is possible, though, that the social demographics and the two outcome variables complemented each other and that the structure promoted by living with someone and being married/common-law improves chances of maintaining
regular use of supports, creating further structure in one's life. That, in turn, can lead to greater chances of successful recovery. Similarly, it is possible that in seeing that the client is "working his/her program," the person he/she lives with (spouse or otherwise) becomes more supportive and tends to stay with him/her. Again, this might be an interesting area of future investigation.

**Employment Status and Referral Source**

Being employed was significantly associated with both program completion and high recovery status. A related finding is that work-referred clients had the best results across all outcome variables (program completion, recovery status and attendance in each of the support groups).

The fact that the best outcomes were found for work-referred clients may be explained by the fact that often the employer issues an ultimatum to a client who is found to have an addiction problem. These clients may have been more motivated to complete the initial program, use supports and recover, as they feared losing their career, income and potentially personal/family relationships.

Finding that work-referred clients had the best outcomes can be useful to both clinicians and clients. While working at Bellwood, I often heard clients complain that they did not want to be there, that they were forced to enter treatment by their employer and that they deeply resented it. They argued that if they had come of their own accord they would have stood better chances of recovery. The study results clearly support the opposite. A sense of coercion definitely does not reduce likelihood of success. In fact, Freedberg and Johnston (1980) compared coerced to noncoerced alcoholic clients at 12 months post-treatment and found no differences between these groups in abstinence level.

**Age and Substance-Related Demographics**

Relatively older clients had consistently better results in relation to program completion, recovery status and attendance in aftercare groups. A possible explanation for the significance of age may be that older people tend
to have more to lose (i.e., jobs, relationships, property, money) and tend to have graver health consequences if they relapse.

As well, clients in high recovery had achieved greater success in the past in maintaining abstinence; they had had longer periods of abstinence compared to clients in low recovery. This finding suggests that repeated attempts to abstain increases chances of recovery. It may also indicate one's degree of readiness, commitment and motivation to change.

This idea is closely related to stages of change as formulated by Prochaska and DiClemente (1983) and Gordon and Marlatt (1985). Miller and Hester (1989) argue that motivation can be understood not as what a person has but rather as something that a person does. Past success in abstinence tells us that the person did take action to try and achieve sobriety. In fact, a system of matching clients to treatment (discussed earlier) has been developed around readiness to change, looking at the length of abstinence a client achieved prior to the interview with a counselor (Annis, Schober & Kelly, 1996).

Additional substance-related demographics were found to be associated only with the outcome of program completion. First, it was found that clients who abused one substance only (as opposed to multiple substances) and those who abused alcohol (as opposed to cocaine or heroin) were more likely to complete the initial program. Further, those who did not complete the program were more likely to have a partner who was also abusing substances, as well as a parental history of substance abuse. In other words, multiple drug-related problems decrease chances of completing the initial treatment program, thereby reducing chances of recovery. These findings strongly suggest that such clients should be identified early in treatment and given additional help.

The acknowledgement of substance-related variables is consistent with a biopsychosocial approach that recognizes the role of physiology in all stages of addictions and recovery. By using such data, it is possible to gain additional insight into biological factors that may affect clients' recovery.
12-Step Group Attendance and use of Protective Drugs

Clients who regularly attended 12-step groups tended to use protective drugs (temposil or anatabuse) consistently as well. It is possible that the use of protective drugs increases likelihood of attending 12-step groups. Both behaviours were recommended to many clients at Bellwood. However, it is also possible that clients who attended 12-step groups received greater support from their peers in the group to continue the use of the protective drugs. This issue may be clarified by interviewing clients and asking them about these factors in future studies.

Program Completion, Alexithymia and History of Suicide Attempts

The additional analyses revealed that clients who did not complete the program had a greater incidence of past and recent suicide attempts. As well, these clients had significantly less difficulty in describing their feelings (factor 2 of TAS-20), compared to program completers.

The first fact suggests that comorbidity may be important to explore during clients’ initial assessment. These clients may be suffering from depression, which, in turn, may interfere with their treatment. In accord with the ideas presented earlier in relation to alexithymia, the second finding may be related to the first. It is possible that those who did not complete the program were suffering from greater emotional pain (alluded to from past attempts to end their lives), while at the same time connected with these painful feeling more than those low on factor 2 of alexithymia.

Prediction-Defying Clients

Interesting groups to investigate were those who defied prediction especially those who worked their program yet did not achieve high recovery. The finding that these clients were more likely to be alone (single and live alone) is not surprising. In fact, it demonstrates the importance of social support in all forms. Living with someone and/or being married/common-law, may mean that these people received additional reinforcement to attend groups, or negative reinforcement for not attending.
Moos and Finney (1983) found that marital and family unity increased commitment to treatment goals and was related to better outcome at a two-year follow-up. The present study also showed marital status and living arrangement after treatment to be significantly associated with recovery status. Thus, it appears that a recovering person needs someone close to share his/her life with, and not only peers, to ensure recovery. At the same time, living with someone may provide needed encouragement to use support groups, which, in turn, also increases chances of recovery. This seems to be a circular relationship, with all three types of variables (recovery status, use of support and social demographics) reinforcing each other.

**Gender Differences**

As mentioned earlier, due to the small number of women and the very low relapse rate in this study, meaningful gender analysis was, for the most part, not possible. However, in certain cases group sizes were large enough for chi-square analyses, some of which yielded significant results. First, it was found that women had a lower success rate of completing the initial treatment program. This may be explained by particular issues faced by women as discussed earlier. These include childcare concerns and a feeling of abandoning one’s children when pursuing treatment, limited occupational and social resources and dependency on men.

Another possible explanation may involve the significantly greater incidence of history of suicide attempts in women (This variable was also significantly associated with program completion.). As suggested earlier, history of suicide attempts suggests comorbidity that seems worth exploring in future studies. Women also had greater incidence of partners who abused substances. Again, this may also explain their lower success rate in program completion. It suggests that they had lacked support needed to help them stay in the program. Finally, women also had less success in the past in maintaining sobriety. The fact that women face more obstacles compared to men on the road to recovery may explain this result. Having achieved less success
in past abstinence may have also lowered their sense of self-efficacy. Again, this could be an area worthy of future investigation.

**Implications**

Decisively, social support was found to be the best predictor of high recovery in this study. This reinforces not only earlier studies, but also clinical experience, specifically at Bellwood. The program at Bellwood often addresses the importance of continuing to work on one's program, after the initial treatment, by attending groups. Now, this can be backed by powerful research findings. Both clinicians and clients will gain from knowing the statistical facts.

As Peterson et al. (1994) argue, there should be increased efforts to encourage more clients to attend aftercare sessions following treatment. Lash and Blosser (1999) have shown that using simple and inexpensive means of providing feedback and prompts increased likelihood of attending aftercare meetings. Clients who received feedback and prompts had increased their initiation of aftercare group therapy to 100%, compared to 70% for those who did not receive feedback and prompts. Also, the experimental group had attended significantly more sessions during the 8-week follow-up period (4.38 compared to 2.35 sessions of the non-experimental group). As well, the experimental group had a much lower readmission rate (2/3 of the non-experimental group rate).

Another possible way of improving aftercare outcome is simply by telephone outreach to clients who completed a program encouraging them to use supportive services available. Intagliata (1976), examined this issue through an experimental design. He randomly assigned 40 VA male alcoholics to two kinds of outreach conditions. One group of 20 patients received 6 phone calls from staff in the first 10 weeks after discharge, while the control group received no telephone calls. The staff used the phone calls to express their concern about the welfare of the patient, as well as, remind and encourage patients to use the support services provided by the treatment program. The
results of the three-month follow-up showed that the experimental group made significantly more use of out-patient services.

Added to the equation is the importance of holding beliefs associated with the Disease Model. This finding complements the first one, as those who do not agree with ideas such as the need for others and support in recovery, powerlessness over addiction, are also the ones who tend not to use supports regularly, putting them at higher risk for eventual relapse. This finding can be useful for clinicians wanting to target high-risk clients for extra help before they leave treatment. Similarly, it will be wise to target clients who were single/divorced at the time of admission and/or plan to live alone after treatment. They can be offered extra help to increase their chances of recovery.

Treatment centers can administer the ABS, or part of it, to clients and follow up on it with a discussion of the importance of some of these ideas. It is assumed, however, that clients given questionnaires for the purpose of research only may answer more frankly than those who think their answers will be examined by staff. There are ways to bypass this obstacle. The staff person administering the questionnaire can tell the clients that it is for the clients themselves and that their responses will not be collected. Instead, a group discussion will follow test administration, exploring the most relevant items and what kind of answer is associated with a successful outcome.

At Bellwood, a few of these issues are explored in different classes, but certain clients (who are in short programs) may not get enough or any exposure to some of these important ideas. Other treatment providers who are presently not addressing these issues in great depth, may want to consider doing so.

The findings regarding alexithymia may seem difficult to implement, as the idea that having greater difficulty identifying and describing feelings can help recovering clients may not make much sense. However, if put in the context of the concepts already used in some programs, such as the importance of avoiding emotionally loaded issues in early recovery, alexithymia may start to make sense. Clinicians can discuss with clients the fact that there is
statistical data to support this. At the same time, explaining that once stabilization is achieved, connecting with and verbalizing feelings will become useful again.

As well, clinicians who had been taking the approach that clients should talk about their feelings as much as possible and typically pursue this in group or one-on-one sessions, may want to reconsider. It may be worthwhile to take a more cautious approach and follow the lead of the client. If the client shows resistance to the level of emotional exploration typical to many psychological modalities, the therapists may be wise to address issues on the level the client is more comfortable with.

The detrimental effect of multiple substance-related problems and other variables (history of suicide attempts, tendency to describe feelings) on program completion, can be a useful guide to staff at treatment centers. Most of these details are collected during assessments and therefore will not require additional work. This study added a great deal of data which can be used to identify clients at high risk for not completing a program.

**Limitations**

**Generalizability**

One of the important issues of concern to researchers is the degree of generalizability of their study. In this study the clients recruited were a mixed-substance population, who ranged in age from 19-73. The majority were men, Caucasian, employed and with at least a high school diploma. One might argue here that the findings apply then primarily to similar populations. However, there were virtually no significant differences between men and women on the outcome variables (excluding program completion) and the psychological variables (allowing the combination of these groups in the analyses).

Therefore, it might be argued that this study’s findings may not apply to specific populations such as the non-white, homeless, poor and uneducated, as there were only a few non-Caucasians, no homeless clients, and probably very few truly poor clients. The results and conclusions then are applicable mostly to clients who are close in socio-economic status to this group, thus
excluding the very poor and homeless. They are applicable to both men and women, employed or otherwise, with some degree of education. The results may be equally applicable to white and non-white clients, depending on the socio-economic background.

In summary, the results of this study are applicable to hundreds of thousands of people who underwent or will undergo treatment, but perhaps not much to those who are homeless or very poor and received little formal education. However, it will be difficult to find out whether this is really true, simply because most poor, homeless and uneducated clients do not have the privilege of receiving the type of treatment offered by Bellwood (and similar treatment centres), including the highly effective (as this research shows) aftercare program.

**Sample Size**

Based on past studies, it was expected that at least 35% of the clients who completed the treatment will be in active relapse at three months. By these calculations, recruiting 228 clients should have been enough for many meaningful statistical analyses. However, the actual relapse rate was exactly half the expected rate (17.5%). Consequently, possibilities for statistical analyses were limited and certain, potentially useful explorations such as gender analyses could not be done.

Though a positive result in the real world, the scope of the analyses was compromised seriously by the high rate of successful recovery. In some cases definite conclusions cannot be made, interpretations were based on unbalanced group sizes or very small versus very large groups. In future studies, it may be wise to recruit even more clients, assuming a recovery rate of 17.5% percent, rather than 35%.

A related problem is the large amount of missing data in many variables. In certain cases data was not recorded in clients' files. In the case of the psychological tests, some clients did not fill out some of the questionnaires, or only partially filled them out. Consequently, group sizes were decreased in some analyses.
Clients recruited for this study did not undergo a psychiatric assessment and there may have been some unidentified psychiatric comorbidities. It can be argued that outcomes for certain psychiatric groups can be quite different and therefore should be identified. Other data from the present study suggests that an important aspect may have been overlooked, as history of suicide attempt was significantly associated with program completion. It may be useful to assess depression and use a scale such as the Beck Depression Inventory (BDI) during the assessment interview to identify those who may be at risk of not completing the program.

Depression may not play a role in relation to other outcomes (perhaps due to the early dropout from treatment). Crossby-Ouimette, Moos and Finney (1998) in their study of 3,018 patients where psychiatric assessment of Axis I diagnoses (including psychotic, affective, and anxiety disorders) was done, found no differences in outcome. Also project MATCH (Project MATCH Posttreatment Drinking Outcomes, 1997) found that high psychiatric severity was not predictive of outcomes in 12-step and cognitive-behavioural aftercare groups. Crossby-Ouimette et al. (1998) argue that these findings suggest that substance abusers with comorbid psychiatric problems may benefit from both professional and community-based and 12-step groups.

Problems with the Addiction Belief Scale

Another problem with the study involved the Addiction Belief Scale (ABS). While items on the ABS addressed some important and relevant issues relating to the Disease Model versus the Free-Will Models of addiction, a few items were problematic. Two items associated with the Disease Model were especially problematic to both clients and staff. Items 11 and 14 represent the notion that addiction is caused by physiology only. Item 14 is worded: "The fact that alcoholism runs in families means that it is a genetic disorder," while item 11 reads, "Physiology, not psychology, determines whether one drinker will become addicted to alcohol and another will not." This item, as some staff
members pointed out, is particularly extreme and excludes the role of many other important factors that play a role in addiction.

Presently, even the strongest advocates of the Disease Model, or any other model for that matter, recognize that addiction is a multifaceted problem that is not caused by one factor alone. A future study may examine, item by item, relationships to outcome variables. This may result in a revised and smaller scale, which would be shorter to administer and potentially more useful, with improved face-validity.

**Suggestion for Future Research**

Addiction-specific support in general, was shown in this study to play a key role in recovery, consistent with earlier studies exploring the same phenomena. However, why and how these work is still something of a mystery. Why are these supports so effective regardless of individual differences such as personality characteristics and many demographic factors? Is it the process itself? Is it the camaraderie? Is it the fact that as social animals, we need each other more in trying times? Is it all of these factors and others? What are the most effective ingredients of aftercare? These are relevant questions that can be answered in future exploratory studies.

The finding that regular users of aftercare (the most powerful predictor of recovery in this study) tended to have greater difficulty identifying and describing feelings touched on the very popular view in psychology: that talking about feelings is good for us. We, as psychologists, should be open to challenge our views, even when it shakes the very foundation of our approach to clinical work and research. Exploring in greater depth affect regulation in relation to outcome variables may teach us a great deal about the recovery process. Future research may address the relationship between comfort level with emotional exploration and group process, the role of emotional expression in a person’s life and familial history of emotional expression.

Another area of interest involves the groups of clients who defied predictions, especially those who worked their program (attended at least one group regularly), yet failed to achieve high recovery status. While the fact
that they tended to live alone and be single is useful information, a larger scale study may allow additional analyses to reveal other significant factors. Similarly, studying clients who do not attend any group regularly yet remain abstinent can help increase our understanding of the recovery process.

**Conclusion**

The results of this study demonstrate clearly the crucial role of social supports to successful outcome following treatment for substance abuse, regardless of demographic and personality characteristics. Simultaneously, the data revealed interesting characteristics of clients who tend to use aftercare regularly, the most effective form of support identified in this study.

Most fascinating was the finding that increased ability to identify and describe one’s feelings can have a detrimental effect on outcome. It supported the notion that avoiding engagement with emotionally painful content during early recovery, can increase chances of recovery. In fact, it was argued here that alexithymia can be understood, in the context of early recovery from substance abuse, as an effective (though unconscious) coping skill, rather than an affective disorder.

This finding also challenges conventional wisdom and the traditional approaches in psychology, especially psychodynamic theory, from which the concept of alexithymia initially emerged. Future research may help understand this phenomena better.
Bibliography


Costello, R.M. (1980). Alcoholism aftercare and outcome: cross-lagged and


Luthar, S.S., Glick, M., Zigler, E. & Rounsaville, B.J. (1993). Social


three months. *Addiction*, 92(12), 1717-1728.

Moos, R.H. (1994). Why do some people recover from alcohol dependence, whereas others continue to drink and become worse over time? *Addiction*, 89, 31-34.


Riley, D. (no date). *The Harm Reduction model: pragmatic approaches to drug use from the area between tolerance and neglect*. Ottawa: Canadian Center on Substance Abuse.


**Index**

**ABS** - Addiction Belief Scale, a scale measuring the degree of belief in the Disease Model of addiction versus the Free-Will Model of addiction

**Alexithymia** - a concept describing the idea of having difficulty identifying and describing feelings

**Antabuse - aka Disulfiram** - a medication which can induce unpleasant physiological reactions if taken before alcohol consumption. Used as a deterrent as the person can anticipate the unpleasant results.

**FVA** - stands for Face Valid Alcohol (items), a sub-scale (from the SASSI-2) which measures the degree of severity of alcohol dependence

**FVOD** - stands for face Valid Other Drugs (items), a sub-scale (from the SASSI-2) which measures the degree of severity of drug dependence

**LOT-R** - Life Orientation Test- Revised, a scale measuring optimism

**SASSI-2** - stands for Substance Abuse Subtle Screening Inventory, an instrument used in many treatment centres to screen substance abusers

**TAS-20** - Toronto Alexithymia Scale, a 20 item scale measuring alexithymia levels

**Temposi1** - a medication (similar to antabuse) which can induce unpleasant physiological reactions if taken before alcohol consumption. Used as a deterrent as the person can anticipate the unpleasant results.

**VA** - stands for Veteran Association. In this study it refers to clients who belong to this organization as veteran of an American war.
# SUMMARY OF SASSI VALIDITY DATA

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708 subjects, 622 correctly classified (88%), 8% of cases false negative, 4% of cases false positive; 459 subjects substance dependent, 403 correctly classified (88%), 12% of cases false negative; 249 not substance dependent, 218 correctly classified (87.5%), 12.5% of cases false positive.

Updated 3/25/96
Appendix B

3 Months Follow-up Questions

Name:____________________ Code:______ Date: Y____M____D______

Telephone # Home ( )_________________________Time difference__________

Work ( )_________________________

Follow-up phone call made by:_________________________________________

How have you been doing since you left Belhivood? Did you manage to remain sober or partly sober?

Abstinent ____ Moderately Improved ____ Unimproved ____. 

Abstinent: virtually totally abstinent.
Moderately Improved: More than 1 lapse, significant reduction in use.
Unimproved: Continuing to use in a significant level.

If moderately improved or unimproved:

1. How many lapses did you have?____________________________________

2. A. When did you drink/use for the first time?__________________________

   B. What did you drink/use?__________________________________________

   C. How much did you drink/use?______________________________________

If more than one lapse:

3. A. How often did/do you use/drink (days per week)____________________

   B. What and how much did/do you drink/use?__________________________

   C. How often did/do you drink/use?__________________________________

Use of aftercare/12-step groups:

A. Did you attend Phase III meetings?
   1. Yes 2. Never

If answered 1

1. For how long?_______________________________________________________

2. How often (days per week/month)____________________________________

B. How satisfied were/are you with the Phase III program?


C. If relapsed: how long had you stopped attending before you relapsed?

   1. 1 week to 1 month before relapsed 2. Less than 2 months 3. Did not stop attending

D. If stopped attending or never attended, why? ____________________________

______________________________________________________________
Past 12-step involvement: 1. No 2. Yes

Sleep disturbances: 1. No 2. Yes


Partner abuses alcohol or drugs: 1. No 2. Yes

Parental substance abuse: 1. No 2. Yes
   1. Natural father: 1. No 2. Yes
   2. Natural mother: 1. No 2. Yes
   3. Adopting father: 1. No 2. Yes
   4. Adopting mother: 1. No 2. Yes


Ethnicity: Enter code: ______ (__________)

Legal: past charges: 1. No 2. Yes
   pending charges: 1. No 2. Yes

SASSI: ____________________________________________
_________________________________________________
_________________________________________________
_________________________________________________

At completion of program: number of infractions:

Reasons for infractions: 1. ____________________________________________
   2. ____________________________________________
Appendix C

Contact-Person

Client's name:______________________________

Contact person:__________________________ Tel:______________________________

Date of phone call:________________________

Call made by:______________________________

1. Do you know how (the client)________________________ has been doing since leaving Bellwood, did he/she manage to stay sober?

1. Yes  2. No

If no, do you know?  A. What he/she has been using______________________________

____________________________________

B. How much? (per day/week)______________________________

____________________________________

C. How often? (per day/week)______________________________

____________________________________

2. Is the client attending aftercare?

1. Yes  2. No

How often (per week/month)______________________________

3. Is the client attending AA?

1. Yes  2. No

How often? (per week/month)______________________________
Appendix D

OUTCOME STUDY/ Sara Aharon

File Data

Last name: ___________________________ First name: ___________________________ Code: __________

1. M 2. F  D.O.B: Y/____ D/____ M/____  Program: __________________ File # __________

Residence: City: _______________________ Province: _______________________ Tel: __________

Assessment date: Y/____ D/____ M/____  Recovery counselor: ______________________

Admission date: Y/____ D/____ M/____  Discharge date: Y/____ D/____ M/____

Early discharge: 1. Yes reason: __________________________ Date of discharge: Y/____ D/____ M/____

         a. Yes  When: __________ Complete prog: __________

         b. No

2. No

CHEMICAL USE:

1. Primary: __________________________ Last use: __________________________

Quantity: ____________________________ per ____________________________

For how long this pattern: ____________________________

2. Secondary: ________________________ Last use: __________________________

Quantity: ____________________________ per ____________________________

For how long this pattern: ____________________________

Other chemicals: 1. No  2. Yes (enter codes) ____________________________

Past Abstinence: 1. No  2. Yes.  Number of past treatments: ________________

Longest period of abstinence from all chemicals: ________________ When: __________

MENTAL HEALTH:

Psychiatric history: 1. No  2. Yes ____________________________

Diagnosis: ____________________________

Suicidal ideation: 1. No  2. Yes ____________________________

Suicide attempts: 1. No  2. Yes ____________________________

If yes:
1. How often (days per week/month)?

2. For how long?

F. If relapsed, how long did you stop attending before relapse?

1. Did not stop 2. 1 week to 1 month before relapse 3. 2 months or more before relapse

G. If stopped attending or never attended, why?

H. Do you have a sponsor? 1. Yes 2. No

Comments:

I. How satisfied were/are you with the 12 step program?


J. Are you attending/attended any other types of self-help groups or support?

1. Yes, describe:

2. Did, but stopped, why:

3. No

* As a service to those who participate in the research we can give a message to your recovery counselor to call you, do you wish to be contacted by him or her?

1. Wishes to be contacted 2. No need to contact

Name of recovery counselor:

EMPLOYMENT

1. Regular 2. Part-time 3. None

LIVING ARRANGEMENTS

What is your present living arrangement?

1. alone 2. with family, common-law 3. with friends 4. Institutional

5. residential 6. other 7. Unknown

Protective drug

Antabuse: regular: daily Sometimes (intermittent) Used but stopped Never

Temposil: regular: daily Sometimes (intermittent) Used but stopped Never
Appendix E

CONSENT FORM

BELLWOOD HEALTH SERVICES - OUTCOME STUDY

We are requesting your participation in a follow-up study.

Bellwood Health Services is concerned about the effectiveness of our treatment and the recovery of our clients. To this end, we are continuously conducting short and long-term studies. The data collected for this study will also be used for a doctoral dissertation done by Sara Aharon, at the Ontario Institute for Studies in Education. At the termination of this project, a summary of the overall findings will be available upon request.

As a participant, you are asked to complete the attached questionnaires. Follow-up will be made by phone, at 3 months post-discharge to find out how you are doing. Each contact will take approximately 15 minutes of your time.

It will be helpful (although, not necessary) if you could identify 1-2 persons close to you who could confirm your reports and help us contact you, if you relocate.

Confidentiality

The data collected for the purpose of this research will only be used to improve treatment and increase the understanding of the recovery process. The identity of the participants will be protected as the names will be replaced by a code. This code will be used for the purpose of statistical analysis. The list matching names to codes will only be used for research purposes and will be kept in confidence, and separate from data and files, by Sara Aharon and Dr. Janice Humbley the research coordinator at Bellwood.

Freedom of Consent

Your participation in this study is voluntary. You are free to deny consent or withdraw from the study at any time and this will not affect your treatment at Bellwood.

Informed Consent

I have read this form and I understand the research procedures. I consent to participate in this study.

Name of participant: ____________________________

Today's date: Month_____ Day_____ Year______

Name of individuals who may be contacted:
1. ____________________________ Tel: ( ) ________________
2. ____________________________ Tel: ( ) ________________

Signature of participant: ____________________________
Witnessed by: ____________________________
I HEREBY CONSENT TO TREATMENT AT BELLWOOD HEALTH SERVICES INC.

____________________________________  __________________________
WITNESS                                    SIGNATURE

____________________________________
DATE

I HEREBY GIVE PERMISSION TO BELLWOOD HEALTH SERVICES INC. TO USE MY RECORDS ANONYMOUSLY FOR PURPOSES OF EDUCATION AND RESEARCH

____________________________________  __________________________
WITNESS                                    SIGNATURE

____________________________________
DATE

I THE UNDERSIGNED, UNDERSTAND THAT BELLWOOD HEALTH SERVICES WILL NOT BE RESPONSIBLE FOR ARTICLES NOT ENTRUSTED TO THE ADMINISTRATOR FOR SAFEKEEPING

____________________________________  __________________________
WITNESS                                    SIGNATURE

____________________________________
DATE
### Appendix G

**Summary chart: characteristics of high outcome clients**

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Completed Program</th>
<th>High Recovery Status</th>
<th>High Aftercare Attendance</th>
<th>High 12-step Attendance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employed</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Work-referred</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Men</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Post-secondary education</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No suicide history</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single substance abused</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alcohol is primary substance of choice</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Partner not abusing a substance</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Higher score on the TAS</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Higher score on factor 2 of the TAS-20*</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Higher score on ABS</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Higher score on factor 2 of the ABS **</td>
<td></td>
<td>X</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Older</td>
<td></td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Longer periods of abstinence in past</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lived with someone post treatment</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Used protective drug post treatment</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>

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* Difficulty Describing Feelings (factor 2 of the Toronto Alexithymia Scale)

** Dichotomous Thinking regarding addictions (factor 2 of the Addiction Belief Scale)