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INTERNAL COPING RESOURCES AS PREDICTIVE OF INDIVIDUAL OUTCOME IN OUTPATIENT DRUG REHABILITATION TREATMENT

by

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A dissertation submitted to the Graduate Faculty in Psychology in partial fulfillment of the requirements for the degree of Doctor of Philosophy, The City University of New York

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Abstract

INTERNAL COPING RESOURCES AS PREDICTIVE OF INDIVIDUAL OUTCOME IN OUTPATIENT DRUG REHABILITATION TREATMENT

by

Lauri Ellen Lee

Advisor: Professor Vera S. Paster

This investigation sought to determine to what extent a cocaine addict's sense of spirituality, orientation to life and attributional style predict his or her success in outpatient drug rehabilitation treatment. It was hypothesized that an individual with a strong sense of spirituality, a strong sense of coherence and an optimistic attributional style would achieve a greater number of consecutive clean days, stay in treatment longer and have fewer relapses than an individual with a weak sense of spirituality, a weak sense of coherence and a pessimistic attributional style.

The forty-nine male participants were recruited during their first two weeks of outpatient treatment for cocaine abuse or dependence. They were instructed to complete demographic and drug use questionnaires and three paper and pencil measures. Participants were then asked to respond to three open-ended questions about their drug use and about

their decision to enter treatment. Their length of time in treatment, number of consecutive clean days, and number of relapses were counted for 90 days following the interview and served as the dependent variables.

Demographic, drug use and outlook measures were used to determine the outlook and relative degree of positive psychological resources available to the participant. This investigation sought to determine whether longevity in the treatment program and positive response to it was a factor of the internal coping resources of sense of coherence, optimistic attributional style, and spiritual well-being.

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Table of Contents

List of Tables

List of Figures

Introduction

People who triumph over the most dire of circumstances are intriguing. It seems they have been recipients of some special quality that others in the same situation do not have available. One view is that these individuals possess a special spiritual quality and outlook on the world (Brown & Peterson, 1991; Chappel, 1994; Friedman & Benson, 1997). Medical practitioners have observed differences within their patient populations. People of faith appear to be experiencing greater clinical benefits than others. Mathews & Larson (1997) assert that these differences are in some way related to faith. Within the chemically dependent population seeking to break the cycle of addiction, those who are most successful, also seem to be the individuals who are most focused on their spirituality and who have a more positive world outlook, while those who are less successful appear to be less fortified by these buffers. It follows that if resources can be identified which may be encouraged or strengthened within this population, then the prevalence of relapse into active addiction may be lessened.

The primary prevention movement has gained strength in recent years. Primary prevention of psychopathology approaches integrate personal and family relationships,

individual psychodynamics, genetic dispositions, life events and social pressures as integral forces that lead to health or dysfunction (Task Force on Prevention 1984). Primary prevention seeks to lower the incidence of emotional disorders by reducing stresses and by promoting those factors that increase coping skills and competence. It is concerned with health and with those who function "normally". It seeks to strengthen the host against psychopathology and breakdown (Albee 1980, 1984a).

Secondary prevention seeks to shorten the duration and to lessen the consequences of identified dysfunctions. Tertiary prevention seeks to reduce the residual effects and adverse consequences of a rooted disorder (Cowen, 1983). Psychosocial disorders like chemical dependence are targets of primary prevention activities (Task Panel on Prevention, 1984). The task is to build resistance against and weaken the impetus to addiction. Tertiary prevention deals with relapse prevention. This investigation will consider the factors of resistance to pathological forces as fundamental to overcoming addiction, with an emphasis on bolstering benefits from successful treatment programs, an example of tertiary prevention.

A tertiary prevention focus, including relapse prevention, is to be considered according to a salutogenic

model as presented by Antonovsky (1982, 1987). Understanding how people resist or recover from adverse consequences of pathological forces is important. It is even more so during these times of decreased support of human services including those in the mental health domain.

Objectives

The objectives of this investigation are to determine whether and to what extent certain qualities of outlook predispose to successful response to the rehabilitation methods of the Minnesota Model. The particular outlook is one that can be characterized by "spirituality", "sense of coherence" as described by Antonovsky (1982, 1987) and an optimistic attributional style as described by Seligman (1979). These cluster to form a positive, stress resistant resource capacity for the chemically dependent person.

The Minnesota Model is chosen to more nearly provide consistence to the recovery programs experienced by the participants. Within chemical dependency treatment, the Minnesota Model is widely recognized as the most prevalent (Institute of Medicine, 1990b).

This investigation is designed to illuminate the internal characteristics of addicts that yield variables that are useful for treatment matching. The specific foci

for this study are the aspects of an individual's spiritual well-being, sense of coherence and attributional style as predictive components of treatment responsiveness among cocaine abusers.

Chapter 2

Review of the Literature

In order to become addicted to a drug, one must first experience the drug, but many people who have an initial experience with a particular drug, however, do not become regular users of that drug. The age of first drug use has been found to be a fairly strong predictor of drug use at age 20, but not at age 30 (Labouvie, Batest & Pandina, 1997). Furthermore many of those who become regular users of a particular drug do not become addicted to it (Chappel, 1994; Gorsuch, 1980; Shaffer & Jones, 1989). All addictive drugs are initially used for their positive effects and because the user believes the short-term benefits of the experience surpass the long-term costs (Gold, 1994). Shaffer (1992) has outlined a stage model of how chemical dependency occurs. During the initiation phase drug use begins. Phase 2 substance use produces positive consequences through the drug's pharmacologic properties and/or psychological reinforcement and/or through social rewards, like peer acceptance. For those who continue drug use, phase 3 may occur in which adverse consequences of the drug use develop, but remain largely out of the user's awareness. Phase 3 signifies the beginnings of drug abuse. Adverse

consequences may include poor health, financial difficulties and/or family disintegration. As long as the drug abuser can avoid acknowledging that these problems are related to drug use, or that they exist at all (commonly called "denial") there is little hope for recovery. If the abuser can admit that the cost of his or her abuse is greater than the rewards it gives, then he or she has reached a "turning point" (Shaffer, 1992), which is necessary for recovery to begin.

Why Some People Become Addicted

It is widely accepted that chemical dependence is multiply determined (Avants, Margolin, Kosten & Singer, 1993; Khantzian & Mack, 1994; Spotts & Shontz, 1980; Tarter, 1983) and that an interaction between biological, psychological, and social factors lead to substance abuse (McDowell, Galanter, Goldfarb & Lifshutz, 1996). Genetic predisposition and childhood antecedents predispose certain individuals to experience severe repercussions from substance use, including abuse and a poorer prognosis for recovery (Barbor, et al., 1992). There are many theories about the development of drug dependence from drug use and about the chioce of a particular substance for abuse.

Khantzian (1980) posits an interaction between drug effect and personality organization that predisposes an individual to dependency on a certain drug. Spotts & Shontz (1980) noted that long-term committed users utilize drugs to fill gaps in their personal structure, to chemically attain ego states that cannot be achieved by their own natural efforts, and to cope with deficiencies that have a developmental origin. Khantzian (1980) is in general agreement, positing that drug dependent people are predisposed to use and become dependent on substances because of severe ego impairments and disturbances in their sense of self. Wurmser (1980) outlined reasons for drug use a little differently, noting that drugs are used by addicts to forestall or soothe affective storms or nagging dysphoric moods. Although most chemically dependent people seeking treatment today are polydependent, that is, dependent upon more than one substance, (Kreek, 1992; Washton, 1989; Washton et al., 1988; Winick, 1974, 1992). Wurmser (1980) has posited that one's choice of drugs is related to the affects that s/he finds unmanageable: rage, shame and jealousy for the users of narcotics (such as heroin or opium), boredom and disillusionment for the users of psychedelics, guilt, loneliness and their related anxiety for the users of alcohol, and depression and weakness for

the users of stimulants (such as amphetamines or cocaine). Others found that the stimulants produce ego inflation or expansion, enhanced self-awareness and euphoria (Spotts & Shontz, 1980), not only a reprieve from weakness and depression. Their personalistic theory calls special attention to the numinous or spiritual aspects of human experience, suggesting that drug use is a way of seeking transcendental experiences.

The impact of the environment is also an important factor in drug use and dependence. Kreek (1992) notes that exposure to the addicting agent will unmask the vulnerability of dependence. Indeed, Winick (1974) posited that drug dependence would be in greater proportions in groups with: 1.) access to addictive substances, 2.) disengagement from proscriptions against use and 3.) role strain or role deprivation.

Addiction Criteria

The American Psychiatric Association (1994) has outlined the criteria for drug addiction, also known as substance dependence, (Diagnostic and Statistical Manual (4th edition) of The American Psychiatric Association, 1994). It is defined as a maladaptive pattern of substance use which leads to significant impairment or distress as

manifested by at least three of the following: 1) tolerance 2) withdrawal 3) Taking more of the drug than was intended or for longer periods of time 4) desire to cut down on consumption coupled with unsuccessful efforts to do so 5) spending much time in drug-seeking efforts 6) a reduction in important social, occupational, or recreational activities 7) substance use is continued despite knowledge of having a persistent or recurrent psychological or physical problem, likely caused or exacerbated by the substance. The World Health Organization (WHO) defines drug dependence as a "state of psychic and/or physical dependence on a drug, arising in a person following administration of that drug on a periodic or continuous basis" (Eddy et al, 1965 p.271).

Drug Use Epidemiology

The epidemiology of drug use and addiction has been well documented. The level of use of mood-altering substances in the United States is higher than it is in any other industrialized country (Winick, 1992). The largest ever NIMH epidemiologic study found that substance abuse affected 6.4% of the US population, second only to anxiety disorders as the most prevalent psychiatric disorder (Herz, 1985).

A recent report noted that worldwide, 140 million people smoke marijuana or hashish, 13 million use cocaine, 8 million use heroin, and 30 million use amphetamine-type stimulants. The international drug trade generates 400 billion dollars each year, 8% of all international trade. The same report also found cocaine use to be highest in North America (Wren, 1997, Jun 26).

Of special interest in this investigation is the use of cocaine. Cocaine addiction has been a major health and safety problem since the 1980's (Community Epidemiology Work Group, 1990). It has been estimated by various state and federal surveys that approximately 22 million people in this country have used cocaine, 2 million of whom have used cocaine regularly and 900,000 are daily users or intermittent binge users of cocaine (Kreek, 1992). Cocaine use patterns vary and there is no prevailing stereotype. Some use cocaine continuously for days (called binges or runs), some use at regular intervals, for example only on paydays. Some people use cocaine daily for prolonged periods of months or years if not interrupted (Gold, Miller & Jones, 1992).

Because cocaine use is illegal, it is difficult to assess the true rate of individual cocaine use in the United States (Gold, MIller & Jones 1992; Simeone, Rhodes & Hunt,

1995; Wren, 1997, Apr.20). But it is clear that the prevalences of drug use and abuse are great. The 1988 National Household Survey on Drug Abuse estimates that approximately one out of seven Americans over the age of 12 had used illicit drugs in the past year, nearly 28 million users (NIDA, 1990). Wheeler and Malmquist (1987) posit that between 6-10% of users become chemically dependent. Of the estimated 28 million illicit drug users in 1988, 1 million had used crack in the past year and 2 and a half million had used crack at some time in their lifetime (NIDA 1990). These statistics remained stable through 1996 (Wren, 1997, Aug 7). One recent estimate posited that Americans are using 240 tons of cocaine each year (Wren, 1997, Mar 4).

Rice, Kelman & Miller (1991) report crack users flooding hospitals, emergency rooms, drug treatment centers and ultimately the nation's morgues. Indeed, over 6,100 deaths reported in 1985 were attributed to drug abuse. Seventy-five percent of these deaths occurred among the 15-44 year old age group, (Rice, Kelman & Miller, 1991). In a recent investigation using New York City Medical Examiner data, it was found that of the nearly 2000 accidental fatal drug overdoses between 1990-1992, cocaine had caused seventy-five percent of the deaths, even when mixed with other drugs (Tardiff, et al., 1996). Additionally, Offer &

Peterson (1982) noted that in the past two decades alcohol and drug use was a leading cause of adolescent deaths.

The Cost of Drug Abuse

When quantifying the cost of drug abuse and addiction, included are the medical resources used for care, treatment, and rehabilitation, reduced or lost productivity, crime enforcement, and also pain and suffering to drug abusers, their families and others with whom the abusers interact (Rice, Kelman & Miller (1991). These costs are divided into core costs, which are costs resulting directly from the illness, and related costs, which include morbidity, lost productivity by persons unable to perform to standard, and mortality, lost productivity due to premature death. In 1985, drug abuse cost the United States 44.1 billion dollars. Five percent of the costs went to direct treatment and support, with two million drug abusers being hospitalized and 125,000 outpatient visits associated with drug abuse. Twenty percent of the cost attributed to morbidity and mortality, while seventy-four percent of the costs were incurred through crime, property destruction, and the protective defense against abusers, and the productivity loss of those incarcerated who would otherwise be able to function. It is estimated that in 1988, drug abuse costs

had risen to 58.3 billion dollars. These staggering figures do not include the pain and suffering or the informal care given by friends and families of drug abusers (Rice, Kelman & Miller, 1991). Or the cost to children in the care of drug abusers. It has been reported that nearly 75% of people being charged with child abuse have drug or alcohol problems (Sullivan, 1997, Apr 17). Cocaine, and its derivative, crack, are current drugs of choice.

History of Cocaine Use

Cocaine is derived from the erythloxylon coca plant which is grown in the mountains of Central and South America. Cocaine is extracted from plant leaves and processed into a white powder, cocaine hydrochloride (Washton, Stone & Hendrickson, 1988).

Among the first documented uses of cocaine was the chewing of coca leaves by the Incas in Peru many years prior to the 1800's. By the mid 1800s, cocaine use had spread to Europe in the form of snuff and as an additive to wines and tonics. It was said to cure asthma and hay fever (Siegel, 1985).

In 1884 Sigmund Freud published a paper advocating the use of cocaine for many purposes including as a stimulant, aphrodisiac, local anesthetic and medicine for treating

ailments such as hysteria and syphilis (Kleber, 1988).

During the mid 1880's, a new beverage was patented in the United States, advertized as an intellectual beverage, called Coca Cola. This beverage contained approximately 60 mg. of cocaine per 8 ounce serving of the drink until Coca Cola voluntarily removed the drug additive in 1903, because of public pressures about the dangers of cocaine (Gold, 1992). Legal restrictions were finally imposed on the manufacture and distribution of coca products by the Harrison Act of 1914 in which cocaine was incorrectly listed as a narcotic (Petersen, 1977).

Cocaine was largely rediscovered in the 1970s. At that time it was posited that the greatest dangers of regular cocaine use were financial depletion and restlessness from overstimulation (Grinspoon & Bakalar, 1977). Winick (1992) reports that the 1970's saw a sharp increase in cocaine use. Use at this time was largely associated with wealth and the entertainment world. During these pre-epidemic years, cocaine was regarded as the "champagne of pharmaceuticals" (Gold, 1992).

In the 1980's there were more cocaine users seeking drug treatment. More specifically,

"Urban ghetto populations began snorting cocaine in 1975 and learned, around 1980, how to "freebase" the powder

so that when it was heated and the fumes were inhaled, euphoria resulted in a few seconds. Since 1985, crack, or chunks of free-base cocaine packaged in retail form and intended to be smoked in a special pipe, became available in many inner-city areas at very low prices - as little as $2" per dose. (Winick 1992, p.23). The marketing strategy of low price per dose made crack appealing to younger users (Gold, 1987) and people with less money. Cocaine use has caused devastating effects in many communities and although the use of both cocaine hydrochloride and crack cocaine has been declining nationally since 1988 (Winick, 1992), the decline has been slower in poorer communities. And although there has been a decline in the number of new cocaine users, the proportion of drug treatment clients with cocaine as their primary drug, has remained stable (Community Epidemiology Work Group, 1990).

A huge disparity exists between the penalties for possession and/or distribution of cocaine hydrochloride (powder) versus crack cocaine. In 1986, the federal government imposed mandatory sentencing for possession or distribution of cocaine. An individual arrested with 5 grams of crack cocaine (which is most prevalent in poor Black communities) received the same 5 year prison sentence as an individual arrested with 500 grams of cocaine powder

(more prevalent in White communities), a disparity of 100 to 1 (Holmes, 1997, July 24; Unfair Sentencing, 1997, Feb 6). This system has been criticized as unfair, as 90% of the people being arrested for distributing crack are Black (Panel Advises Balance, 1997, Apr 30).

While many politicians want to be viewed as "tough on crime" (Murphy, 1997, Apr 6) and assert the greater association between crack cocaine and violent crime (Rationality in Crack Sentencing, 1997, July 23) than between cocaine powder and crime, many government officials are seeking to lessen the disparity between punishment for the two forms of the drug, noting that the inequality of punishment is an example of racial injustice.

From 1981 to 1995 the number of non-violent drug-related incarcerations grew tenfold in New York, from 1,037 to well over 11,000. Nearly half of the 1995 prison sentences incurred were for drug offenses (Josephner, 1997, Apr 23). In Massachusetts, nearly half of the drug offenders sentenced to long mandatory prison terms have no record of violent crime. A recent study of 1175 inmates found 82.9% were Black or Hispanic, even though they comprise only 9% of the states population (Goldberg, 1997, Nov 25). In a recent national study, long-term prison sentences were found to be significantly less cost effective

than spending money on treatment for heavy users (Wren, 1997, May 13). In some states, there has been a move toward offering treatment instead of prison sentences to non-violent drug offenders. Two hundred "Drug Courts" have been set-up across the country and more are planned (Wren, 1997, Apr 21, May 27). These drug courts are intended to steer non-violent drug offenders into treatment, rather than prison.

Types of Cocaine Use

The two most popular current methods of cocaine use are 1.) The intranasal use of cocaine hydrochloride powder (Gold, 1987) in which inhaled (snorted) cocaine is absorbed into the small blood vessels of the mucous membrane lining of the nose (Washton, 1989). 2.) Cocaine can be processed or "cooked" into rock form and smoked in a special pipe. In order to convert cocaine into a smokable substance, the basic cocaine alkaloid needs to be chemically freed from the hydrochloride salt, thus the name "freebase" (Washton, 1989). Freebase, commonly known as crack is said to be like a fast food version of cocaine in that it is prepared, cheap per serving and readily available (Washton, 1989). The crack form of cocaine is named for the sound it makes in the glass pipe when it is heated for vaporization and

subsequently inhaled (Gold, Miller & Jones, 1992). This study will include as eqivalent, both forms of the substance.

Effects

The psychological and behavioral effects of cocaine depend on factors such as drug purity, route of administration, chronicity of use, the mental health and personality of the user, past and present use of other drugs, including alcohol and the environment in which the drug is used (Gold, 1992). Cocaine has two main pharmacologic actions. It acts as a local anesthetic and as a central nervous system (CNS) stimulant. It is the only drug known to do both (Washton, 1989). Cocaine effects 90 distinct parts of the brain ("Precise Effects", 1997, Sep 26). Cocaine exerts anesthetic actions by blocking the conduction of sensory impulses within nerve cells and stimulates activity in the peripheral nervous system (PNS) which leads to an increase in heart rate, blood pressure, breathing rate, body temperature, blood sugar and pupil dilation (Washton, 1989).

When inhaled (snorted), cocaine is absorbed into the mucous membrane lining of the nose. Within five minutes of snorting the user experiences a general euphoria, increased

energy and confidence (Gold, 1992; Washton, 1989),increased alertness, sexual arousal and talkativeness (Washton, 1989) and a higher self-image and sense of egocentricity (Gold, 1992).

The concentration of cocaine in the blood peaks between 15 to 60 minutes after ingestion. The high may last 20 to 30 minutes (Washton, 1989). The cocaine high is followed by a crash in which the user experiences a reversal of the euphoric affect into depression. The intensity of the cocaine crash increases as the dosage increases and as chronicity of use increases. The cocaine crash is even more intense with freebase (Washton, Stone & Hendrickson, 1988).

The effects from crack are more pronounced than from cocaine hydrochloride. Because it is smoked, the user feels high faster and the euphoria is more powerful, but wears-off sooner (Gold, 1987). The smoke is absorbed quickly from the lungs to the heart and to the brain, rather than passing slowly and incompletely through the nasal membrane on the way to the brain (Gold, 1987). The euphoric effects of crack last 5 to 10 minutes, then the user feels anxious, depressed and paranoid. This rapid shift between euphoria and crash makes the user crave another dose or "hit" to restore the euphoria (Gold, 1992). Smoked cocaine is rapidly addicting (Gold, 1987; Washton, 1989). It also

produces severe medical effects that were previously seen only in long-term intranasal users (Gold, 1987).

Complications

The medical and psychiatric complications associated with cocaine use are numerous. They include cerebrovascular effects like arrhythmias and myocardial infarctions, respiratory difficulties such as chest pain and respiratory failure, neurologic effects including seizure and headache, and gastrointestinal troubles such as abdominal pain and nausea (Gold, 1992) and liver damage (Uemura, et al., 1998). Following prolonged "binge" use of cocaine, symptoms of severe depression, paranoia and toxic psychosis may develop (Gold & Verebey, 1984).

Tolerance develops with continued use of cocaine. Doses produce decreasing euphoria and decreasing autonomic changes such as in heart rate and blood pressure (Washton, 1989). When cocaine use continues past the point of tolerance to euphoria, the user can experience a reversal of the expected affect wherein the expected mood elevation changes to depression and anxiety, alertness and spontaneity change to distractibility and mental confusion, the expected increase in energy and sociability change to apathy, fatigue and social withdrawal (Washton, Stone & Hendrickson, 1988).

Lifestyle

Cocaine addiction carries with it a lifestyle and a community outside of the mainstream. Stopping its use demands great adjustments to a new way of life in the larger community (NIDA, 1993). It has been posited by Shafer (1992) that a chemically dependent individual must reach a "turning point" in which he or she realizes that the drug abuse is directly responsible for the presence of negative life circumstances such as family problems, health problems and/or financial difficulties. The abuser begins to realize that the cost of their drug use is greater than any benefits that he or she is receiving from the continued use. Once the abuser accepts personal responsibility, the turning point has been reached, although abstinence may not be achieved for some time.

Challenges to Break Addiction

For an addict to attempt to break his or her addiction is a drastic source of stress and challenge. It is hypothesized that the addict who can successfully break his or her addiction may possess certain qualities or characteristics that may aid in tolerating the stress and discomfort inherent in breaking the addiction. Central to this thesis is the addict's spiritual outlook, sense of

coherence and attributional style.

Salutogenic Model and Resilience

Salutogenic Model

Aaron Antonovsky (1982, 1987) has added to the literature on wellness with his salutogenic model of well being. According to his theory every person occupies a position on a continuum of ease-disease. Some people stay healthy in the face of ever-present stressors or pathogens because the health enhancing forces outweigh the stresses. This orientation not only seeks to see all people as existing along the same continuum, but to promote movement toward the healthy end of that scale. His work has focused not only on how one copes with stressors, but which factors act as buffers and contribute to health. Let the reader remember that Antonovsky includes all people on this ease-disease continuum, regardless of their current state of health-pathology. According to Antonovsky's theory, recovery from chemical dependency involves focus on health promoting factors such as spiritual faith and a positive outlook on life, including a strong sense of coherence and an optimistic attributional style.

Sense of Coherence

The central thesis of Antonovsky's salutogenic model is that a strong Sense of Coherence (SOC) is necessary to balance the ubiquitous stressors of living in order to maintain health (1987). This SOC results from and contributes to an individual's Generalized Resistance Resources (GRRs). GRRs keep the health-pathology continuum toward the health end of the continuum. They include social supports, ego strength, cultural stability and money, the resources that enable people to not just stay afloat in the river of life, but to swim successfully. Common to all GRRs is that they facilitate making sense out of the many stressors that people experience. They provide an individual with sets of life experience that are characterized by consistency, participation in the shaping of outcome and underload-overload balance. These repeated life experiences become generalized and build up the SOC.

The "..sense of coherence is a global orientation that expresses the extent to which one has a pervasive, enduring though dynamic feeling of confidence that one's internal and external environments are predictable and that there is a high probability that things will work out as well as can reasonably be expected" (Antonovsky 1982 p. 123).

According to Antonovsky, one's Sense of Coherence (SOC)

has three components: comprehensibility, manageability and meaningfulness. One who has a strong SOC has a strong positive outlook in each of these areas. Comprehensibility speaks to the extent to which one perceives stimuli (both internal and external) as making cognitive sense. The information appears ordered, consistent, structured and clear rather than chaotic, disordered, random and inexplicable. A person who is high in a sense of comprehensibility expects that the stimuli that she or he will encounter in the future will be predictable or at least when surprises do occur, they will be orderable and explicable. Even when stimuli are highly undesirable, as in personal failure, death or war, a person who has high comprehensibility can make sense of them (Antonovsky 1982, 1987).

The SOC component of manageability refers to the extent to which a person believes that he or she has adequate resources available to meet stimuli demands. These resources need not be in the hands of the individual at the time of need, but they are at their disposal. Maybe they are under their own control or they may be controlled by legitimate others whom they can count on like a spouse, friend, colleague, God or other spirit, party leader or physician. People who have obtained a high sense of

manageability believe there is a high probability that things will work out reasonably well (Antonovsky, 1982). Events in life are seen as experiences with which one can cope. They are challenges to be met. At worst they are seen as consequences that are bearable. Antonovsky notes that one who has a low sense of manageability is like a "sad sack" (p.17, 1987). They insist that things happened in life, invariably unfortunate, and this will continue to be their lot in life.

The final component of Antonovsky's SOC is meaningfulness. This component refers to the importance of being an interested, active participant in shaping one's destiny and also in one's daily experiences. The meaningfulness component speaks to the extent to which an individual feels that life makes sense emotionally. At least some problems are worth investing energy in. At least some challenges are welcomed rather than viewed as burdens. An individual who is strong in this component is willing to take up challenges and to attempt to overcome those challenges with dignity. The component of meaningfulness requires not necessarily control, but participation in decision making. This can be seen as an internal locus of control.

There are other theories that account for overcoming or

succumbing to the problems that bring on the kind of stress that is found in many who become drug addicted.

Coping and Stress

Lazarus (1984) has done important work in the area of stress and coping. According to Lazarus, stress occurs when demands exceed the resources of the system and there are no automatic adaptive responses to such demands (Lazarus & Cohen, 1977). Lazarus (1984) outlined the two major functions of coping. The first, direct coping, is to change a situation for the better, either by changing the environment, or by changing oneself in relation to the environment, or as Kobasa & Puccetti (1983) posit, transformational coping. Second, is to manage the somatic and stress-related emotions themselves. He notes that effective copers use both direct actions and palliative coping models (those that do not cure the source of stress, but relieve it). Spiritual faith would be one example of palliative coping. Lazarus differs from some others in his view that the best coping is not necessarily realistic and that engaging in some form of self-deception may help one to tolerate a high degree of ambiguity in life. Along these lines it is posited that even for individuals who disregard spiritual beliefs as wishful thinking or fantasy, for those

people to ignore the support experienced by the faithful, all in the name of science is unwise. Miller (1990) makes the point eloquently "..scientists (and therapists) do not and cannot proceed in a vacuum free of values and beliefs, the canons of science require no suspension of one's belief system, only a willingness to question and test it" p.260.

It has been shown repeatedly that stress can increase emotional disturbance and distress (Albee 1984). According to Antonovsky (1982, 1987), when the stress forces, or pathogens, outweigh coping resources, or salutogens, psychological or health breakdown result. On the other hand, even during times of crisis and heavy stress, when sufficient coping resources are available, the results can be a strengthening growth (Danish & D'Augelli, 1984; Fahlberg, Wolfer & Fahlberg, 1992; Kobasa, 1979, 1982a, 1982b, 1983).

Albee (1984) and Rutter (1987) describe the importance of improving coping skills by having the opportunity to prevail over occasions of distress. Managing under stress is also found to be improved by connecting a current crisis to a past crisis which had been successfully handled (Danish & D'Augelli, 1984). Antonovsky (1987) poses the question that it might not be which coping strategies a person uses,

but rather how many strategies in their repertoire. When searching for effective adaptation, one should look into love, play, meaning, will, and the social structures that foster them (1987). White (1984) notes the importance of remembering that competent behavior is self rewarding, but warns that it must come from the self. A person must experience his or her own initiative in relation to coping. "No one can give another person a sense of competence" (p.248).

Hardiness

Kobasa (1979, 1982a, 1982b, 1983) posits a construct of hardiness as a group of personality characteristics that work as a resistance resource when encountering stressful life events. She notes that there are ways of thinking, feeling and acting in relation to stressful circumstances that foster psychological and physiological resilience thus promoting health. These personality characteristics consist of commitment, control and challenge. In a preliminary study investigating the role of hardiness in substance use, investigators found that youngsters with low levels of hardiness were more likely to use drugs and alcohol, possibly increasing the likelihood of chemical dependence (Maddi, Wadhwa & Haier, 1996).

A hardy person is one who has an optimistic orientation toward commitment as opposed to a feeling of alienation, control rather than feeling powerless, and regards change as normal rather than threatening. A major difference between Kobasa's construct of hardiness and Antonovsky's description of coherence lies in the experience of the unexpected. Whereas Kobasa emphasizes that a hardy individual is attracted to new, and even unexpected experiences, Antonovsky points to the need for predictability and a structured, ordered world (Antonovsky, 1979, 1987; Kobasa & Puccetti, 1983).

Coherence and hardiness have much in common. Both concepts were developed as a result of investigations of the mechanisms which distinguish persons who stay healthy, rather than fall sick, in the presence of similar stress. Both posit multifaceted personality characteristics as the key to an understanding of stress resistance. Finally, both emphasize an interactional point of view of personality, and life situation, pointing to the appreciation of the salience of social contexts. "Hardiness and coherence are ways in which persons recognize and act on their environments" (Kobasa & Puccetti 1983, p 841).

Attributional Style

Attributional, or explanatory style is another way an individual recognizes and acts on his or her environment. A person's explanatory style is the habitual explanations that he or she makes for the good and bad events that occur (Schulman, Seligman & Amsterdam, 1987). These dispositions help to explain why different people have different reactions to the same event (Alloy, Peterson, Abramson & Seligman, 1984).

Abramson, Seligman & Teasdale's (1978) reformulation of the learned helplessness model of depression (Seligman, 1975), states that when a person is faced with an uncontrollable bad event, she or he will ask "why?". How a person answers that "why" question will help determine his or her generality of thinking as to helplessness or power. An individual may attribute the cause of the bad event to a stable or unstable cause, a global or specific cause, and an internal or external cause. The attributions chosen influence future expectations about personal control over events (Abramson, Seligman & Teasdale, 1978). Phares (1988) hypothesized that persons with internal locus of control attributions of self-responsibility for both good and bad events would have greater potential for effectiveness in their social environment.

The dimension of stability of cause of a bad event addresses the question of whether its cause will always exist, stable. (For example, a construction worker is too short to perform a certain job), or if the cause is transient. (For example, no construction work available because of the bad weather). The perception that the cause of negative events is stable leads to the chronicity of feelings of helplessness, and depression after bad events. If a bad event is caused by a persistent factor, depressive reactions are more likely to persist (Peterson & Seligman, 1984).

The dimension of globality of causal beliefs affects the pervasiveness of deficits after a bad event. If one believes that global factors have caused the bad event, then helplessness deficits tend to occur in different situations. If the cause is more specific, deficits tend to be more specific (Peterson & Seligman, 1984). An example of a global cause for the bad event of being out of work might be that ones skill is obsolete. A specific cause might be that ones profession is in its slow season.

The final dimension in the attribution of cause is the locus of the cause. To what extent is the bad event caused by the self (internal cause) and to what extent is it caused by the situation or other people (external)? An internal

cause for being out of work results from attributing the cause to a flaw within the person. An external cause might be that employers are biased against one's ethnic or gender group. Internal helplessness is grimmer because it is always perceived as within the self (Abramson, Seligman & Teasdale, 1978). It is noted that attributing lack of control to internal factors leads to lowered self-esteem while attributing lack of control to external forces does not (Abramson, Seligman & Teasdale, 1978; Peterson & Seligman, 1984; Seligman, Abramson, Semmel & von Baeyer, 1979).

People who give internal, stable and global explanations for bad events, called pessimistic attributional style (Abramson, Seligman & Teasedale, 1978; Seligman, Abramson, Semmel & von Baeyer, 1979), are more susceptible to helplessness and depression than people who interpret bad events as being caused by external, unstable and specific causes, called optimistic attributional style (Abramson, Seligman & Teasedale, 1978; Peterson & Seligman, 1984).

Evidence suggests that feelings of helplessness and uncontrollability are associated with increased morbidity (Peterson & Seligman, 1987) in a number of diverse samples. Explanatory style correlated with depressive symptoms in

children and is posited as a risk factor (Seligman, et al., 1984). In studies conducted with samples of college students, depressive symptoms recorded by the short form of the Beck Depression Inventory (Beck & Beck, 1972) correlated with pessimistic attributional style for bad events (Seligman, et al., 1979) as it did with a unipolar depressed sample (Raps, et al., 1982). An important study of nursing home residents lends further support to the ameliorative role of a feeling of control. Langer & Rodin (1976) enhanced self-control in a group of nursing home residents by giving them choices of activities, meals, and the arrangement of furniture in their rooms. Compared with the control group who did not have these choices, they were happier, more alert and healthier. In a follow-up study (Rodin & Langer, 1977) 18 months after the first experiment, it was found that 15% of the enhanced control group had died but a full 30% of the control group had died.

In longitudinal studies, the explanatory style of college students predicted an increase in depressed mood after receiving a bad test grade (Metalsky et al., 1982). In addition, explanatory style predicted the number of illnesses reported by students at one month and one year post-test (Suls & Mullen, 1981). It was the strongest predictor of post-partum depression, three months after

giving birth (O'Hara, Rehm & Campbell, 1982). These findings support the learned helplessness reformulation's claim to be a diathesis-stress model wherein the pessimistic attributional style (a characterological weakness) is the diathesis, and stressors such as poor test grades and new births are the stressors which interact to predispose to depressed mood (Metalsky et al., 1982).

The origin of an individual's explanatory style

The origins of an individual's explanatory style are of interest both for a greater understanding of explanatory style as well as for possible primary prevention interventions. Seligman, et al. (1984) found a significant correlation between the explanatory styles of mothers and their children. He posited that explanatory style, like other characteristics, may be learned from the primary caregiver. Dweck & Licht (1980) noted that explanatory style may be learned by the type of criticism leveled by teachers following a child's failure. They further noted interesting sex differences in attributions for failure made by elementary school children. Boys gave less internal, stable and global attributions for failure than girls did. Finally, Brown & Harris (1978) found that explanatory style may be influenced by the reality of ones first trauma,

meaning that if the causes were seen as internal, stable and global, then a more pessimistic attributional style would be expected to develop.

A wide range of factors are posited as linking explanatory style to illness (Peterson & Seligman, 1987), from interpersonal processes to biochemistry. It may be that people with pessimistic attributional styles become passive in the face of disease by not seeking or following medical advice. Becker (1974) posited that people with pessimistic attributional styles may neglect the basics of health care because they see no connection between actions they could take and illness offset. Those with pessimistic attributional styles tend not to be good problem solvers (Peterson & Seligman, 1987). Anderson, Horowitz & French (1983) found that loneliness may be a factor because those with pessimistic attributional styles tend to be socially withdrawn. Depression may be an important link, even though some studies have partialed depression out of the analysis (Seligman et al., 1979) and still found significant correlations between health and explanatory style. Finally, explanatory style may affect physiology (Chirban, 1992; Langer & Rodin, 1976; Laudenslager, et al., 1983; Rodin & Langer, 1977).

Spirituality as a Factor in Coping with Stress

Within medical and psychiatric establishments, as well as within the media, spirituality has been recognized as an important aspect of a person's well-being (Lukoff, Turner & Lu 1993; Seaward, 1995) a spiritual orientation has been noted to positively influence an individual's psychosocial and behavioral functioning (Corrington, 1989; Friedman & Benson, 1997). An individual's sense of spirituality or spiritual well-being (SWB) has been consistently found to play an ameliorative role in coping with stress (Maton, 1989; Zimmerman & Maton, 1992). Spirituality may enable the person to go beyond coping to transform the stressful event into a positive experience (Fahlberg, Wolfer & Fahlberg, 1992; Reed, 1994). Jenkins & Pargament (1995) suggested that both religion and spirituality are important resources for cancer patients and their families. It is posited that spiritual support may benefit people with high stress levels because they are more vulnerable to psychological distress (Dohrenwend & Dohrenwend 1981; Reed, 1994). Spiritual support may help people make sense out of traumatic life events as they search for explanations (Wortman, 1983). It gives hope, meaning and security to people (Hadaway, 1978). Hope has been noted to play an essential role in one's ability to deal with illness and suffering (Carson, Soeken &

Grimm, 1988).

People who participated in practices associated with spirituality, like seeking contact with God, experienced a marked decrease in distress (Finney & Maloney, 1985), more positive affect and less hostility toward others (Preston & Viney, 1986). Indeed, in a meta-analysis on subjective well-being, Witter, Stock, Okun & Haring (1985) found spiritual beliefs to be strongly associated with half of the predictor variables of subjective well-being. Reed (1994) queried if spirituality were best conceptualized as a coping strategy that emerges during stressful times and then becomes dormant, or is a phenomenon that is sustained throughout one's life, showing itself in different ways.

Spiritual well-being (SWB) has been found to be positively correlated with healthy psychological qualities (Landis, 1996; Watson, Morris & Hood, 1988), with hope in male AIDS patients (Carson, Soeken, Shanty & Toms, 1990), with dealing with uncertainty in women with multiple sclerosis (Jones Crigger, 1996), and in non-medical samples (Carson, Soeken & Grimm, 1988; Miller & Powers, 1988). Spiritual Well-Being is positively correlated with self-esteem (Paloutzian & Ellison, 1982), self-actualization in public university students (Watson, Morris & Hood, 1990), and with perception of marital adjustment in a sample of

church-goers (Roth, 1988).

Spiritual well-being has been negatively correlated with high blood pressure (Hawkins, 1988), trait anxiety (Baker & Gorsuch, 1981), and depression (Fehring, Brennan & Keller, 1987). Spiritual well-being is also negatively correlated with anxiety in dealing with a cancer diagnosis (Kaczorowski, 1989), and loneliness in chronically ill patients (Miller, 1985).

In summary, the literature supports the positive effect on resilience and coping by Sense of Coherence, spirituality and Optimistic Attributional Style. These are important components of positive strength for coping with and surviving illness. It would appear that those qualities predispose addicts to overcome their addiction in response to a sound rehabilitation program.

Recovery (Tertiary Prevention)

Prevention

Tertiary prevention seeks to reduce the residual effects and adverse consequences of a rooted disorder (Cowen, 1983). Recovery from drug addiction, including relapse prevention fits well within this framework. This goal differs from primary prevention (Albee 1980, 1984) where the point is to strengthen the host to resist the

causes of illness, and differs from secondary prevention, which seeks to keep less severe disorders from being prolonged or becoming debilitating (Cowen, 1983; Task Panel on Prevention, 1984).

Relapse Prevention

Since one who recovers from drug addiction must remain drug-free (Washton, 1989) to be considered rehabilitated, the focus of recovery from drug addiction (as with alcoholism) is to prevent relapse into any drug or alcohol-using behavior. There are high rates of relapse in treatment of addictive behaviors (Miller, 1992). Polysubstance abusers consistently have higher rates of relapse than those who abuse only alcohol (Brown, Seraganian & Tremblay, 1993; Hubbard, 1992; Lesher, 1994).

G. Alan Marlatt is credited with developing the most influential model of the relapse process to account for relapse with alcoholics (Marlatt 1985; Marlatt & George, 1984; Marlatt & Gordon, 1980). This model is also applicable to other addictions. Marlatt's model focuses on the events surrounding initial drug use after a period of abstinence. The process of relapse begins when the client is exposed to a high-risk situation which threatens his or her sobriety. A situation is deemed high risk if the

individual has not learned effective coping responses to deal with such a situation, or the individual expects to benefit from substance use in the situation.

Failure to negotiate the risky situation successfully may result in a relapse, which Marlatt calls the abstinence violation effect (AVE). The AVE has two components: the substance abuser's knowledge of having used the substance after a period of abstinence which directly contradicts his self-image as a recovering person, possibly causing feelings of guilt, shame and anxiety; and the second component which states that a more severe relapse is likely when the user attributes the failure to negotiate the risky situation as being caused by his internal, stable, and global forces, resulting in feelings of hopelessness (Bandura, 1982; Curry, Marlatt & Gordon, 1987).

To fortify clients to avoid and/or cope with such risky situations, three major approaches are used in relapse prevention programs (NIDA, 1994): Social Support Approaches, which focus on the client's need for emotional support from friends and family; Lifestyle Change Approaches, which focus on helping the user develop and sustain a new social identity as a drug-free person, developing new interests and social contacts and ways of coping with uncomfortable emotions; and Cognitive-Behavioral Approaches, which focus

on identifying both internal and external cues associated with craving and relapse, and learning to prevent and cope with them so that a severe relapse does not occur. These approaches may be used alternatively or in combination.

Why People Enter Drug Treatment

Chemically addicted people enter drug rehabilitation treatment for several reasons (Winick, 1992). There may be fluctuation in the availability of drugs, a threatening police action, effective treatment outreach, or the awaited availability of treatment beds or "slots". Motivations include wanting to get well, avoid jail, disappear from the community, or reduce the size of a habit.

Treatment Models

There are several models for recovery and a person may engage in more than one. Regardless of the modality, drug treatment has been found to be an effective, as well as cost efficient strategy (Hubbard, 1992; Lesher, 1994). Lesher (1994) noted that for every one dollar spent on drug treatment, between 4 and 23 dollars is saved in costs of lost labor, family support, court costs and imprisonment.

Minnesota Model

The Minnesota treatment model was developed in the 1940s in Minnesota for the treatment of alcoholics. As trends in substance abuse changed, the patient population came to include people abusing other substances as well. In the 1970s, patients whose primary drug of abuse was other than alcohol were utilizing this form of treatment (Geller, 1992). Although the Minnesota Model is predominant in both the public and private sector (Institute of Medicine, 1990b), it has been the least studied model of drug and alcohol treatment (Institute of Medicine, 1990a).

The key concepts of the Minnesota Model are: 1. The acceptance that alcoholism or chemical dependence is a disease that was not intentionally contracted by the patient. 2. Recovery is the patient's responsibility and there is no cure, only daily remission. 3. Total abstinence from all mood-altering substances is needed if recovery is to proceed. 4. The principles of AA are used, possibly with incorporation of the 12 steps of the AA program and/or the use of AA literature. 5. The use of recovering alcoholics and addicts as counselors. 6. The use of a multidisciplinary team. 7. An emphasis on group therapy and 8. An emphasis on the therapeutic milieu as a treatment tool (Geller, 1992).

While the basic Minnesota Model program philosophy and format has remained consistent since its inception over 50 years ago, some changes have occurred. They now accept into treatment dually diagnosed patients taking psychiatric medications (antidepressants, neuroleptics, lithium). There is greater awareness that chemically dependent patients may also have non-related psychiatric disorders. In facilities serving these dually diagnosed patients, appropriate staff members are employed to treat both disorders. Another notable change has been a greater influx of younger patients and more patients involved with cocaine hydrochloride or crack cocaine and other drugs (Geller, 1992).

Therapeutic Communities

Therapeutic Communities (TCs) are among the best represented in the literature (Winick, 1990). As the name implies, recovering addicts live together in a drug-free community for from a few months to several years. These non-medically based programs use one or more of several philosophies including spirituality, personal insight, and commitment to the recovery process (Chappel, 1992). TCs were designed for addicts who have significant psychosocial deficits, anti-social patterns and histories of criminal behavior. TC research has shown that clients improve in

less drug use, less criminal behavior and show increases in employment, education and homemaking activities. They also show gains in resocialization (O'Brien & Biase, 1992).

Inpatient Programs

Inpatient rehabilitation units inside hospitals and mental health centers are another option for those wishing to stop drug use. There exist both detoxification units (usually 5-7 days) as well as what was traditionally a 28 day inpatient rehabilitation program utilizing group therapy and often self-help groups like Alcoholics Anonymous, Narcotics Anonymous and Cocaine Anonymous.

The effects of cost containment efforts (Kaskutas, Weisner & Caetano, 1997) over the last decade have influenced length of stay. The average length of stay has declined to an average of just over 13 days (Mutual of Omaha, 1993).

Treatment for drug abuse, especially cocaine, has been provided in chemical dependency programs that were originally designed for alcoholism (Hubbard, 1992) and like alcoholism treatment, these programs regard drug addiction as a disease based on the alcoholic model advocated by the American Medical Association since the 1950s (Washton, 1989) and adopted by AA to emphasize the abuser's inability

to control their craving (Kemker, Kibel & Mahler, 1993).

Outpatient Programs

Prompted by economic concerns, the traditional 28 day inpatient programs have been largely replaced by outpatient programs of varying length (Malik, Washton & Stone-Washton, 1995). Some investigators have determined that for many patients, the setting (inpatient vs outpatient) does not seem to influence treatment outcome (Longabaugh, McGrady & Fink, 1983). For many, the outpatient treatment is more acceptable and is often less expensive (Washton, 1989). Outpatient treatment seeks to increase the patient's motivation toward change, teach how to break addictive cycles, remain abstinent, and to focus on relapse prevention (Malik, Washton & Stone-Washton, 1995). The chemically dependent person will go about his or her normal day and attend a treatment program for a few hours each day, or several times each week. Since outpatient programs have much less control over the clients' actions, they often utilize supervised urine testing as part of their regime. This enables the clinician to reliably detect the use of any drugs or to verify abstinence (Washton, 1989).

Non-Professional Support Groups

A number of addicts seek help through 12-step programs. The first of these fellowships was Alcoholics Anonymous (AA). Other fellowships, Narcotics Anonymous (NA), Cocaine Anonymous (CA) were modeled after AA.

AA was founded in 1935 by two alcoholics, Bill Wilson and Dr. Bob Smith (Kurtz, 1979; Galif & Sussman, 1995). AA's formation was influenced by a vacuum which had been created by traditional psychiatry and psychology in the treatment of alcoholics. Most alcoholics and other addicts in that time were regarded by mental health professionals as suffering from a mental illness in which drinking or drug use was a secondary symptom (Talbott, 1990). Many considered alcoholism and other addictions to be debilitating and progressive conditions with dismal prognoses (Khantzian & Mack, 1994).

Wilson found that through seeking out another alcoholic and sharing his experiences, his own compulsive desire to drink would be lifted for a time. AA began as one alcoholic's attempt not to succumb to the urge to drink. The circle grew from one man abstaining to two, ten and then came to include women as well. AA (as it was later called) grew slowly at first, with members in Akron, Ohio and New York City and then after the publication of the first

edition of Alcoholics Anonymous in 1939, growth became more rapid (Kurtz, 1979).

Currently, an estimated 96,000 AA groups exist in 134 countries including all of Europe, Mexico, Central and South America and in the Middle East (Galif & Sussman, 1995). AA has become one of the largest self-help treatment groups with membership estimated to be well over a million members (Berenson, 1987; McAuliffe, 1990). It has been estimated that over two million substance abusers belong to AA or NA combined (Humphreys, 1993).

The dominant premise behind AA is that alcoholics help one another to stay sober (Galif & Sussman, 1995; Reissman, 1986). They share their experience with each other and derive strength and hope from each other so that they can help themselves and others recover from their addiction (Gold 1994). The only requirement for AA membership is a desire to stop drinking. There is no discrimination due to ethnicity, age, sex or profession. AA has no political or religious ties and accepts no funding from non-members (Alcoholics Anonymous, 1976). Since its beginnings, AA has remained a non-profit group, supported only by members' contributions (Galif & Sussman, 1995). AA suggests practicing the 12 steps of recovery and adheres to 12 traditions to govern their groups (see Appendix F).

Individuals join AA as a form of aftercare, following professional treatment (Humphreys, Mavis & Stoffelmayr, 1991) or in lieu of professional treatment. Individuals have also been mandated to attend AA meetings by the criminal justice system (Speiglman, 1997). Khantzian & Mack (1994) posit that AA works because it provides ongoing support. The group model is effective because it creates a human contact for attending to the life experiences of others, providing a place to help people understand and express the feelings involved in their history. AA participation helps members with problems of self-regulation, affects and self-care. AA helps individuals to succeed not just in arresting the uncontrolled drinking and drug use but also in transforming their lives physically, emotionally and spiritually. It has been noted that for many recovering alcoholics, AA is perceived as the most powerful source of transformation in their lives (Buxton, Smith & Seymour, 1987), or more than a turning point, a primary identity (Peteet, 1993).

Empirical evidence for the effectiveness of AA is scarce. The guarantee of personal anonymity to AA members has limited its study. In a review of the current literature (Montgomery, Miller & Tonigan, 1995) researchers found that in controlled studies in which AA involvement was

mandated by the courts (Brandsma, Maultsby & Welsh, 1980) or by employers (Walsh, et al., 1992) AA showed no unique efficacy over other interventions while uncontrolled studies have reported a modest positive relationship between AA attendance and positive outcomes. The fact that AA was initially intended to work by voluntary attraction, rather than by promotion or coercion (Miller & Kurtz, 1994) makes random assignment to AA and other approaches difficult to achieve (Montgomery, Miller & Tonigan, 1995). This same research team found that in their sample of alcoholics who attended AA post-inpatient treatment, it was not the number of meetings that predicted treatment outcomes, but the degree of AA involvement. Working the steps, and using and becoming a sponsor were associated with more positive outcome. Humphreys, et al., (1994) found the same results.

In a meta-analysis of studies involving AA, Emerick, et al., (1993) found that individuals more likely to join AA had a history of: using external support to stop drinking, experienced loss of control when drinking, consumed greater amounts of alcohol, expressed distress about their drinking, were obsessively involved with alcohol, were more likely to believe that alcohol enhances their mental functioning and engaged in religious or spiritual activities prior to AA involvement.

The spiritual approach of Alcoholics Anonymous has discouraged many from joining. Indeed, 7 of the 12 steps mention God, a Higher Power, or a spiritual awakening (Hanna, 1992). In AA "God" is used interchangeably with "Higher Power" and is described as "a creative intelligence, a spirit of the universe underlying the totality of things" (AA 1976, p.46.). A.A. encourages members to define the Higher Power as they wish, however, and, thereby attempts to avoid the question of religion (Peteet, 1993).

Carl Jung was known as an advisor to Bill Wilson during the establishment of Alcoholics Anonymous and wrote to Wilson theorizing that the craving for alcohol was tantamount to the craving for wholeness (Hanna, 1992) "..put in Medieval language: The union with God" (quoted in Grof 1987 p.21). Jung and Wilson both considered the excessive use of alcohol to be a search for higher consciousness (Hanna, 1992).

Smith (1994) recently criticized traditional addictions treatment for rejecting the therapeutic value of the spiritual experience. He accuses current programs of failing to understand the essence of AA, confusing traditional religion with spirituality. As AA defines alcoholism as a spiritual, physical and emotional disease, it has been posited (Khantzian & Mack, 1994) that AA's

contribution to the spiritual understanding of addictions treatment may be its greatest achievement.

As the greater percentage of chemically dependent persons are polydependent (Kreek, 1992; Washton, 1989; Washton, Stone & Hendrickson, 1988), dependent on more than one substance, drug and alcohol programs have been consolidated (Hubbard, 1990; NIAAA, 1990), treating both alcoholism and other forms of chemical dependency. It is common for an individual with cocaine dependency to be involved in a treatment program addressing alcohol and drug problems together. Similarly, an individual may attend AA or other 12 step fellowships for support in abstaining from both alcohol and other drugs.

AA and other 12 step groups, such as Narcotics Anonymous (NA) and Cocaine Anonymous (CA) have been criticized (Curley, 1991; Galif & Sussman, 1995) for encouraging interdependence within their members. Alternative recovery groups such as the Secular Organization for Sobriety (SOS) regards independence, rather than interdependence as a primary goal for recovery from addiction. SOS is described as being free of any religious or spiritual undercurrent, encouraging self-reliance and free thought (Curley, 1991).

A wealth of information exists concerning the

usefulness of social support in making life changes (Albee, 1984a, 1984b; Danish & D'Augelli, 1984; Maccoby, 1984; Reissman, 1986). Much of this information is of specific applicability in the realm of recovery from addiction. The impact of stress inherent in a significant life change, like breaking an addiction, may be lessened by the availability of a strong support system (Albee, 1984a; Danish & D'Augelli, 1984). Social supports have also been found to foster the formation and maintenance of new habits (Maccoby, 1984).

Support groups are not only useful for the new member seeking assistance, but serve the older members as well. When people join and help each other, they feel empowered to be able to control some aspect in their lives that had previously seemed out of control (Riessman, 1986). This empowerment expands energy, motivation and help-giving power beyond helping oneself or receiving help. It is also of significance that people with common challenges and experiences who share a support group have special understanding of the problems faced by members and have some expertise in ways of dealing with those problems (Riessman, 1986).

Recovery rates

The literature on drug treatment success rates, and the non-uniformity among treatment programs is apparent (Craig, 1985). Some treatment programs consider decreased use as a success, while others consider treatment successful only if the client has achieved complete abstinence (Geller, 1992). Of those studies using abstinence as the earmark for success, the reporting of success rates is inconsistent as to whether short-stay, non-compliant clients, the elapsed time before follow-up data is collected, or other factors are considered as criteria.

Reported success rates have ranged from 2%-14% in alcoholism treatment programs including all clients at 1 year post-treatment (Keso & Salaspuro, 1990) to 57% abstinent at 6 month follow-up (Wallace, McNeil & Gilfillan, 1988), excluding non-compliant and short-stay alcoholics. One study of alcoholics found 22% of all clients abstained for 4 years after treatment (Pettinati et al., 1982). Outcome research has demonstrated that no single type of treatment has proven generally superior (Blomqvist, 1996).

The picture is similar with chemical dependence treatment, although only a few studies have addressed treatment retention among cocaine users (Gainey, Wells, Hawkins & Catalano, 1993; Means, et al., 1989) empirically

demonstrated the difficulty in engaging and retaining cocaine abusers in treatment. Researchers recorded abstinence rates of 31% and 43% respectively for 1 year (CompCare, 1988; Gilmore, Jones & Table, 1986), both excluded non-compliant clients. One large scale study of numerous treatment facilities found that 50% of clients who had been in treatment at least 3 months had remained drug-free for a year after treatment (The White House, 1989) emphasizing that treatment completion increases the likelihood of positive treatment outcome, whereas people who drop-out of treatment before completing the program have significantly poorer outcomes.

Treatment Matching

A relatively recent advance in the treatment of the chemically dependent is the concept of treatment matching. Litt et al., (1992) posit that sub-types of chemically dependent clients can be identified and that treatment programs can be devised to accommodate their specific needs and belief systems. This is called the "Treatment Matching Hypothesis" The importance of treatment matching has been noted by many (Aron & Daily, 1976; Gold, 1992; Kissin, Platz and Su, 1970; Litt et al., 1992; McLellan et al., 1983; Miller, 1990; Washton, 1989; Washton, Stone & Hendrickson,

1988; Wilkinson, 1995b). Miller (1990) emphasizes the consideration of an individual's spiritual perspectives as an aspect of treatment matching.

The knowledge of accurate treatment matching schemes may greatly increase the cost-effectiveness of treatment and decrease the discouragement experienced by clients who make repeated but failing recovery attempts (Miller, 1992). Indeed, treatment effectiveness may depend on where a client lies along one or more predictor variables (Miller, 1990; Nurco, et al., 1995). It is highly unlikely that any single treatment will be the best for all (Gold, 1992; Miller, 1992; Washton, 1989; Washton, Stone & Hendrickson, 1988). Investigations have shown that patients who were matched by treatment needs, whether inpatient versus outpatient and with or without methadone maintenance, (McLellan et al., 1983) personality structure with a focus on level of sociopathy, (Litt, et al., 1992) or social and psychological status, as in level of psychopathology, (Kissin, Platz & Su, 1970; Project MATCH Research Group, 1997) had better outcomes than patients who were mismatched. While patients have been matched by treatment needs and psychological status, Miller (1990) recommends the consideration of a patient's spiritual perspectives may improve the understanding of individual differences and that an

individual's religious and/or spiritual value systems may affect fit into treatment goals and strategies.

Wilkinson (1995b) criticizes the research supporting the treatment matching hypothesis, asserting that most results are correlational in nature and often post hoc. He adds that treatment matching may be impossible to truly measure empirically , since the patients themselves are 'matching' themselves by choosing the facility they contact. Others have called treatment matching a promising enterprise that is not yet fully realized (Project MATCH Research Group, 1997).

Success Variables

A number of predictive variables for treatment success have been posited by researchers in this area. Different variables have been found significant within different treatment modalities. In fact, Craig (1985) suggested that patients drop out of treatment for different reasons at different times, and that drop outs in one program may leave for different reasons than drop outs in another. Overall, there has been limited success in using demographic characteristics to predict program retention and drop-out rates (McLellan, et al., 1983). Within an inpatient veteran population, patients with comorbid medical diagnoses were

25% less likely to leave against medical advice (AMA) and veterans with a court referral to treatment were 50% less likely to leave treatment AMA. The research team found that being college educated, employed and having previous AMA discharges significantly increases the likelihood of AMA discharge for chemical dependency treatment (Loveland Cook, et al., 1994).

In studies of outpatient treatment, Agosti, Nunes, Stewart & Quitkin (1991) found no relationship between treatment retention and the client's age, employment status, marital status or education, but they found that a larger percentage of drop-outs were male and Black or Hispanic. Others, (McFarlain, Cohen, Yoder & Guidry, 1977) found early attrition to be associated with living alone and being unemployed in a sample of heroin addicts. In a Minnesota Model treatment facility in England, investigators found only the sex of the client and prior participation in a 12-step program to be factors in program retention and completion. Men were more likely to complete the treatment program and pre-treatment 12-step fellowship involvement was significantly higher for completers than for drop-outs $p<.01$ (Morojele & Stephenson, 1992). And in their inpatient sample, Steinglass, Grantham & Hertzman (1980) found that early attrition was associated only with higher social class

and higher education level.

Therapeutic Communities have been widely studied (Aron & Daily 1974; 1976; Winick, 1990). Within the therapeutic community treatment modality, different variables have predicted success for males and females (Aron & Daily, 1976). For males, treatment success (completion) was associated with sociological issues like drug abuse history and family drug and alcohol use history. For the females, variables seemed to associate more with psychologically oriented concerns like personal identity and also drug abuse history. For both sexes, time spent in the program was a consistent predictor of successful outcome (Aron & Daily, 1974). The variable of time spent in the treatment program has been a consistent predictor in different treatment modalities (Wells et al., 1994). One investigation found that nearly half of the clients who left inpatient treatment AMA during the first 7 days of treatment were readmitted within the following year for chemical dependency relapse or other related conditions (MedStat Systems Inc., 1991)

Sense of Spirituality as a Success Variable

In their 1976 investigation of success in a therapeutic community, Aron & Daily could account for less than 20% of the variance in outcome, indicating that there are many more

variables yet to be identified (Aron & Daily, 1976). Although this same investigation found religious/spiritual background to be unrelated to treatment success, it is posited here that this lack of correlation is due to the lack of clarity of the spiritual construct. The lumping together of religiousness and spirituality is an error in construct validity. Sirch (1994) has shown religiousness and spirituality to be distinct constructs.

Wills (1990) reported that spiritual issues are significant in the lives of most Americans. Other researchers have maintained that spiritual factors are relevant to the study and treatment of addictive behaviors (Miller, 1990; Shaffer, 1992) and has been a neglected area of research in addictions treatment (McDowell, Galanter, Goldfarb & Lifshutz, 1996).

The literature on religious and spiritual support is confusing because for decades, researchers have been using the two terms interchangeably (Sirch, 1994). Religiosity refers to adherence to a set of beliefs and practices of an organized church or institution (Shafranske & Malony, 1990; Sirch, 1994). Nelson (1984) warns that it ought never be confused with God. Spirituality addresses the transcendental relationship between an individual and a Higher Being that is not necessarily associated with a specific religious

affiliation (Peterson & Nelson, 1987). "Spirituality , as opposed to religion, connotes a direct personal experience of the sacred unmediated by particular belief systems prescribed by dogma or by hierarchical structures of priests, ministers, rabbis or gurus" (Berenson, 1990). Organized religion is but one of the many ways that spirituality can be channeled (Sirch, 1994).

There have been mixed results in studies investigating correlations between religiousness and mental and physical health. Gartner and his colleagues performed a meta-analysis on over 200 studies regarding correlations with religious commitment and mental health. The authors found mixed results in correlations, but determined that when religion was measured by "hard variables" such as real-life behavioral events, the correlations were consistently positive, linking greater health with higher levels of religious behavior (church attendance, prayer experiences) (Gartner, Larson & Allen, 1991). The authors were critical of using questionnaire data to determine an individual's religiosity or their mental health.

Spirituality and Religiousness as Distinct Constructs

Even before beginning this investigation into the literature on spirituality, the present writer found that

its distinction from religiousness seemed to exist in the minds of numerous subjects who participated in an unrelated research project. As part of a demographic questionnaire, participants were asked to specify the degree to which they considered themselves religious. A Likert-type scale from not at all religious to very religious was used. What was striking about the responses was not associated with the scale however. A number of respondents (nearly 20%) took it upon themselves to cross out the word "religious" and to write the word "spiritual" over the top. This phenomenon planted a seed in this researcher's mind that even in a self-report measure, people had a strong point of view about claiming spirituality rather than religiousness. The difference between the two was important enough for them to write in. Indeed, in the last 30 years there has been widespread development of spiritual practices not associated with religion (Anthony & Robins, 1981).

Since that time, other instances of distinctions between religiousness and spirituality have surfaced. Kellogg (1994) found a split in internal consistency in his measure of religiousness/spirituality in his study of identity among recovering addicts. This suggests an artificial mixing of the two different constructs. Sirch notes the increasing availability of research that targets

spiritual concerns as separate from religious concerns. Many have noted that distinctions between the two constructs are blurred in the literature (Lukoff, Lu & Turner, 1995; O'Murchu, 1994; Sirch 1994; Spitznagel, 1992). In her own investigation Sirch (1994) was able to demonstrate through factor analysis that a measure of spirituality (Spiritual Orientation Inventory) measures different dynamics than religious inventories (Religious Orientation Inventory or Religious life Inventory). Aponte (1996) suggests that people look beyond the narrow view that treats spirituality as formal religion. "I suggest that this broader view also depicts spirituality as an active, dynamic force that springs from within the core of the person, as well as from family and community. Consider spirituality as a complex dynamic in people's lives that develops, matures, and evolves through life's triumphs and hurts, changes and growth; think of it as so much a part of life that no emotional pain, psychological distress, or relationship struggle can be understood in depth without accounting for people's "spirituality" " p.495.

Part of the focus of this investigation is to determine the extent to which one's spiritual orientation can predict success in drug rehabilitation. Miller (1990) calls spirituality the silent dimension in drug rehabilitation

treatment and notes that spiritual aspects of addiction and recovery have been virtually unstudied, while psychological, biomedical and social factors have been well investigated. It has been established in the literature on coping that highly stressed individuals benefit from perceived spiritual support (Maton, 1989), be they victims of violence (Dohrenwend & Dohrenwend, 1981), bereaved parents (Wortman, 1983), or college freshmen (Maton, 1989). Each high-stress sample reported the ameliorative role of spiritual support. Aponte (1996) notes that people may need help to be able to use spirituality as a resource with their problems.

It is believed that cocaine addicts who are attempting to break their addiction will also feel more fortified if they possess a sense of spirituality. This spirituality should aid them in the stressful transition from active cocaine addiction to a life of recovery. Miller (1997) found that the process of recovery was associated with improvement on spiritual measures, but the findings did not determine the cause of the changes.

Stress of Breaking Addiction

The realization of the significant stressors involved in an addict's attempt to break his or her addiction is apparent. Physiological, social and psychological factors

are woven together and must be acknowledged (Spotts & Shontz, 1980). Despite the extreme discomfort experienced during the initial detoxification period, recovering addicts can experience strong cravings for drugs for months, or even years after the physiological withdrawal (NIDA, 1993).

The social and psychological factors involved in an addict's "getting clean" may be even more challenging for the individual. Addiction is most often a way of life with a distinct subculture. Stopping demands great adjustments to a new way of life in the larger community (NIDA, 1993). A recovering addict may need to distance him or herself not just from his or her friends and community, but also from family members who are still using. It is often necessary for recovering persons to need to leave their residences, distance themselves from their families, leave whatever money-making endeavor was supporting them financially, and be virtually thrust into a larger community, feeling completely ill-equipped to deal with the new environment. Indeed this is a time of great stress (Kellogg, 1993; Lamon & Alonzo, 1997; Peniston & Kulkosky, 1989).

In order for an individual to tolerate the stress and challenge of a life change, such as breaking free from chemical dependence, he must have both internal and external resources available. The resources of focus in this

investigation are the internal resources of spiritual faith, a sense of coherence and an optimistic attributional style.

A strong sense of coherence will be beneficial to a chemically dependent individual, struggling with the major life change of aspiring to abstain from drug use. Having the sense that life is meaningful, comprehensible and manageable can support an individual through difficult times, lending a sense of hope and the potential for feelings of competence.

An optimistic attributional style contributes to a persons ability to hope for brighter days, even in the midst of struggles. A person with a more optimistic attributional style will assess the cause of bad events not as internal, global or stable, thus leaving the individual with fewer feelings of helplessness.

Finally, a feeling of spiritual well-being contributes to a persons resilience by enveloping him or her with a faith that he or she is not alone or purposeless in the world. Even suffering or despair can contribute to the building or fortification of an individual. Chemically dependent persons seeking recovery will be fortified by these key resistors to stress.

This study is designed to explore the effectiveness of a spiritual orientation and the elements of stress

resistance factors as enhancers of success in completing drug treatment programs. The following hypotheses were tested:

HYPOTHESES

1. Program participants with a greater Sense of Coherence will stay in treatment longer (DV1), obtain more consecutive clean days (DV2), and have fewer slips (DV3) as evidenced by positive urine toxicology screenings than participants with lesser Sense of Coherence.

2. Program participants with a greater sense of spirituality will stay in treatment longer (DV1), obtain more consecutive clean days (DV2), and have fewer slips (DV3) than participants with a lesser sense of spirituality.

3. Program participants with a more Optimistic Attributional Style will stay in treatment longer (DV1), obtain more consecutive clean days (DV2), and have fewer slips (DV3) than participants with a less Optimistic Attributional Style.

Definitions of Constructs

Attributional Style or Explanatory Style

An individual's explanatory style is the habitual explanations that a person makes for good and bad events. According to the reformulation of the Learned Helplessness Model of depression (Abramson, Seligman & Teasdale, 1978). The three relevant aspects to a person's causal attribution are locus: the internality or externality of the cause, stability: will the cause persist or be transient, and globality: the degree to which the cause influences specific situations in life or all situations in life. An individual with a pessimistic attributional style view the cause of bad events to be internal, stable and global while an individual with an optimistic attributional style views the cause for bad events to be external, transient and specific.

Sense of Coherence

An individual's sense of coherence is a global orientation that expresses to what extent persons see their lives as comprehensible, or making sense; manageable, as having sufficient resources available; and meaningful, life makes sense emotionally and is worth investing necessary energy.

Spirituality

Spirituality addresses the transcendental relationship between a person and some form of higher being, or life force. It is not necessarily associated with a specific religious affiliation.

Cocaine

Cocaine hydrochloride is often referred to as cocaine powder. It is most commonly inhaled (snorted) by the user through the nose.

Crack cocaine was previously called freebase (when the user prepared or "cooked" it). Crack cocaine is the processed rock form of cocaine. It is intended to be smoked in a special pipe.

Chapter 3

Methodology

Subjects

Forty-nine male cocaine dependent outpatients of two Minnesota Model rehabilitation programs served as participants. They were mixed as to age, length of addiction and other demographic characteristics.

Males were chosen for study because they dominate the addict population and the treatment programs (Kaskutas, Weisner & Caetano, 1977; NIDA, 1975; Office of Disease Prevention and Health Promotion, 1987; Powis, Griffiths, Gossop & Strang, 1996; Reed, 1985; and Schober & Annis, 1996; Vannicelli, 1984). The greater prevalence of criminal behavior by drug using males propel them into drug treatment programs as alternatives to incarceration (Greenfield & Weisner, 1995; Powis, Griffiths, Gossop & Strang, 1996; Sutker, 1981) and the more severe punishment of males than females for drug offenses (Wren, 1997, May 27) also contributes to male predominence. The female addicts are not only fewer in occurrence, but also less likely to come to public attention, to voluntarily seek out program placement, or to be accepted in treatment in light of the

higher demand by males. Drug treatment outcome research included women only 7% of the time between 1952 and 1980 (Vannicelli, 1984) and has not yet increased proportionately.

Demographics of the sample (see tables 1 & 2).

Table 1.
Categorical Variables, Total Subjects Demographics.

Variable	n	%
Race		
Black non-Hispanic	14	28.6
Black Hispanic	4	8.2
White non-Hispanic	23	46.9
White Hispanic	7	14.3
Other	1	2.0
Income (in thousands)		
<$15	15	30.6
$15-25	6	12.2
$25-40	22	44.9
$40-55	1	2.0
>$55	2	4.1
Live with		
Alone	14	28.6
Spouse	13	26.5
Parents	12	24.5
Others	10	20.4
Employed		
Yes	29	59.2
No	20	40.8

(Table continues)

Table 1. (Continued)

Categorical Variables, Total Subjects Demographics

Variable	n	%
Permanent Residence		
Yes	43	87.8
No	6	12.2
Prior 12 step		
Yes	33	67.3
No	16	32.7
Current 12 step		
Yes	35	71.4
No	14	28.6
Use cocaine powder		
Yes	44	89.80
No	5	10.20
Use crack cocaine		
Yes	29	59.18
No	20	40.82
Use Etoh		
Yes	48	97.96
No	1	2.04
Use marijuana		
Yes	40	81.63
No	9	18.37
Use Pills		
Yes	8	16.33
No	41	83.67
Use Heroin		
Yes	7	14.29
No	42	85.71

Table 2.
Total Subjects Demographics.

Variable	n	Range	M	SD	Median	Mode
Age	49	18-62	36.41	8.99	35	35
Years at Address	49	0-38	6.01	8.88	2	1&2
Years of Education	49	7-20	12.71	2.56	12	12
Age of first cocaine use	49	9-59	23.18	9.62	21	15
Years using cocaine	49	0.10-28	9.39	7.12	9	2&10
$ per week spent on Cociane	43	10-1000	227.09	217.74	200	10
Age of first Alcohol use	48	4-23	13.73	3.51	14	12
Years using alcohol	48	1-42	18.00	9.39	18	20
# of alcoholic drinks per week	44	1-150	24.93	32.61	12	1
Age of first Marijauna use	39	9-39	15.67	5.71	15	16
Years using Marijauna	38	0.4-30	13.38	7.80	15	18
# of Mariajauna cigerettes per week	36	1-200	25.81	38.86	10	5
Years using Pills	8	5-38	16.50	10.45	15	5&15
# Pills per Week	8	1-50	10.00	16.49	4	1
Age of first Heroin use	7	14-29	18.57	5.29	16	16
Yrs Heroin	7	1-28	9.86	10.25	5	1
$ per week spent of Heroin	7	5-300	107.86	106.53	80	
Prior Treatments	49	0-32	3.51	5.32	2	1
Prior Detox	49	0-14	1.47	2.67	1	0
Prior Inpatient	49	0-14	0.90	2.12	0	0
Prior Outpatient	49	0-4	0.82	0.97	1	0
Prior Therapuetic Community	49	0-3	0.29	0.79	0	0
Prior Methadone Maintence	49	0-1	0.20	0.14	0	0
Years prior 12 step	28	0.01-10.0	1.84	2.30	1	1
Meetings per week	33	1-14	5.55	3.47	6	7
Self-report #days clean	49	1-515	46.20	106.07	15	1 / 2
Longest Sobriety (yr.)	43	0-8	1.94	2.00	1	2

Age: Subjects ranged in age from 18-62 years, with a mean age of 36 (sd 8.99). The median age was 35 years.

Race: Fourteen subjects were Black not Hispanic (28.6%), 4 were Black Hispanic (8.2%), 23 were White not Hispanic (46.9%), 7 were White Hispanic (14.3%) and 1 subject self-identified as Other (2.0%).

Living arrangements: Forty-three subjects (87.8%) reported having a permanent residence. The remaining 6 (12.2%) reported living in shelters and varying degrees of transitional housing (half-way houses, three-quarters way houses). Subjects had lived between 0 and 38 years at their current address with a mean of 6.01 years (sd 8.88). Within the sample, 14 men lived alone (28.6%), 13 lived with a spouse (26.5%), 12 lived with parents (24.5%) and 10 lived with others (20.4%).

Education: Subjects reported between 7 and 20 years of formal education with a mean 12.71 years (sd 2.56) and both a mode and median of 12.0.

Employment and income: Twenty-nine subjects were currently employed at the time of the interview (59.2%) and 20 were unemployed (40.8%). Of the 46 subjects who reported their income level, 15 (30.6%) reportedly made less than $15,000 in the previous year. Six subjects (12.2%) reported earning between $15,000 and $25,000, 22 (44.9%) reported

$25,000- 40,000 in earnings. One subject (2.0%) reported earning between $40,000 and 55,000, while 2 subjects (4.1%) reported earning over $55,000 in the previous year.

Drug use history: Subjects were asked to report their age at first use of different substances: cocaine (both cocaine hydrochloride and crack cocaine), alcohol, marijuana, pills and heroin. They were asked to estimate the number of years each group of substances had been used and the average amount of the substance used by them per week. Because of long drug use histories and the sporadic use of some substances, the overall average use per week may be lower than it had been in the months (or even years) preceding the interview.

As an inclusion criterion into this study, participants reported a history of cocaine use. Forty-four (90%) had used cocaine hydrochloride and 29 (59%) had used crack cocaine. Cocaine was the only substance that all subjects reportedly used in common. The age of first cocaine use ranged from 9 to 59 years, with a mean 23.18 years (sd 9.62) and a median age of 21 years. The subjects reported using cocaine for .10 years to 28.0 years with a mean 9.39 years (sd 7.12) and they spent an average of $227 a week on cocaine (sd $218), ranging from $10 to $1,000. The median

expenditure per week was $200.

Forty-eight of the 49 men sampled reported also using alcohol. Alcohol use was reported to have begun between the ages of 4 and 23 years, mean 13.73 (sd 3.51). Participants used alcohol an average of 18 years (sd 9.39) with a range from 1 to 42 years. They consumed an average of 25 drinks per week (sd 32.61). The number of drinks consumed per week ranged from 1 to 150.

Thirty-nine (80%) of the participants reported using marijuana. First marijuana use occurred between the ages of 9 and 39, mean 15.67 years of age (sd 5.71). The duration of marijuana use ranged from 0.4 years to 30 years with a mean 13.38 years (sd 7.80). Subjects reported smoking between 1 and 200 marijuana cigarettes (joints) per week, with a mean 25.81 (sd 38.86).

The reported use of non-prescribed pills was uncommon among the sample, as was the past use of heroin. (Current heroin dependence was criterion for study exclusion.) Pill users and past heroin users were 16% and 14% of the sample respectively. From the drug use histories listed above, it is clear that this sample consisted of men with serious polysubstance abuse problems.

Previous treatment episodes: For the majority of the sample (80%), the current treatment episode was not the

participant's first treatment experience. Participants were instructed to report the number of previous treatment episodes in different treatment modalities including detox, inpatient rehab, outpatient rehab, therapeutic community, and methadone maintenance. Participants did not need to complete the prior treatment program for it to be counted as a treatment episode.

Of the sample of 49 men, 39 had previously been in treatment (80%). The total number of treatment episodes for the sample ranged from 0 to 32, with a mean of 3.51 (sd 5.32) and a median number of 2 treatment episodes. Of the entire sample, 26 (53%) had been in detox. The sample ranged from 0-14 detox episodes, mean 1.47 (sd 2.67). The median number of detox episodes was 1. Twenty-three (47%) of the sample had been in inpatient rehab, with the full sample's range from 0-14 inpatient rehab episodes, mean .90 (sd 2.12). The median and modal number of inpatient rehab episodes were both 0. Twenty-six subjects (53%) had used one or more outpatient rehabs previously. Of the full sample, the number of outpatient rehab episodes ranged from 0 to 4, with a mean .82 (sd .97). The median number of outpatient rehab episodes was 1. Therapeutic community and methadone treatment had been utilized by 17% (7) and 2% (1) of the sample respectively.

Twelve-step participation: Thirty-three (67%) of the sample reported attending AA or NA meetings in the past. Of those who participated, length of participation ranged from .01 years to 10 years with a mean 1.84 years (sd 2.30). Current 12 step participation was affirmed by 35 (71.4%) participants. They currently attended between 1 and 14 meetings per week, mean 5.55 (sd 3.47), with a median number of 6 meetings per week.

Periods of abstinence: Ninety percent (44) of the sample had accumulated at least one period of abstinence prior to the current treatment episode. The longest period of abstinence for the entire sample was 0 to 8 years, mean 1.84 years (sd 2.0). The median longest period of abstinence was 1 year.

Self-reported number of clean days: As part of the interview, participants were asked to report the number of consecutive clean days (with no drug or alcohol use) that they had at the time of the interview. The number ranged from 1 to 515 days, with 4 outliers reporting over 90 days. For the entire sample the mean was 46.2 (sd 106) days. The median number of self-reported clean days at the time of the interview was 15, while the modal numbers were 1 and 2 days clean.

Instruments

Consent Form (see Appendix A)

Demographic and drug pattern questionnaire

The demographic and drug pattern questionnaire was developed by the investigator to provide self-report information regarding the areas of: age, education, socio-economic status, living arrangements, and employment. The questionnaire also recorded the number of years and extent of use of various drugs, and the number of prior treatment attempts and periods of abstinence from drugs and alcohol use.

Orientation to Life Questionnaire (Antonovsky, 1983; 1987)

The Orientation to Life Questionnaire (OLQ) was designed by Antonovsky to measure an individual's Sense of Coherence (SOC). The OLQ was first field tested in Hebrew, and has since been translated into English. The SOC questionnaire consists of 29 statements to which the subject rates his or her degree of agreement or disagreement on a 7 point Likert-type scale. The instrument contains 11 comprehensibility items assessing the degree to which the respondent finds stimuli explicable and orderable, 10

manageability items assessing the degree to which the respondent feels he or she has the means with which to cope with life, and 8 meaningfulness items assessing the respondent's sense of degree to which he or she participates in life's decision making. The three components of the SOC are not empirically separable. The Orientation to Life Questionnaire has a high degree of internal consistency (Cronbach's Alpha .84-.93) and strong criterion validity (Antonovsky, 1987).

Spiritual Well-Being Scale (SWBS) (Paloutzian & Ellison, 1982)

The Spiritual Well-Being Scale is a non-sectarian measure of spiritual well-being. It is the most extensively researched measure of the spiritual well-being construct and has been used in a wide variety of research pursuits in hundreds of studies (Ellison & Smith, 1991; Lukoff, Turner & Lu, 1993).

The SWBS is designed to systematically measure subjective quality of spiritual life which includes both religious and existential well-being. The SWBS consists of 20 items which divide into 2 subscales of 10 each. One subscale measures religious well-being (RWB), and the other, existential well-being (EWB). The RWB is to determine the

respondent's perception of their relationship with God or with their spiritual self. Existential well-being (EWB) measures satisfaction with life or a sense of purpose in life. Possible values for each subscale range from 10 to 60, with the high scores indicating "more" religious and existential well-being and lower scores indicating less (Ledbetter, Smith, Vosler-Hunter & Fischer, 1991).

The SWBS has high reliability, as do both subscales. Test to retest reliability coefficients across four studies with between 1 and 10 weeks between measures were between .99 and .88 for the RWBS, and .98 and .73 for the EWBS. For the total SWBS, the coefficients were .99 to.82. The SWBS also shows high internal consistency across samples (Bufford, Paloutzian, & Ellison, 1991).

The SWBS has good face validity, as evident by item content. Research has shown that the items cluster into RWB and EWB subscales as expected. It has also been shown that SWBS is a good indicator of well-being and is especially sensitive to lack of well-being. It has been shown that SWB, RWB and EWB are positively correlated with a positive self-concept, sense of purpose in life, physical health and emotional adjustment. They correlate negatively with ill health, emotional maladjustment, and lack of purpose in life (Bufford, Paloutzian, & Ellison, 1991). The SWBS has

demonstrated excellent ability to measure low scores, which may be clinically significant, but was not useful in highly religious samples (Ledbetter, Smith, Vosler-Hunter & Fischer, 1991).

Attribution Style Questionnaire (ASQ) (Seligman et al., 1984).

The ASQ is designed to assess habitual tendencies in the attribution of causes. This measure consists of 12 hypothetical situations (6 good, 6 bad) which the subject is instructed to imagine him or herself in. The individual is asked what the major cause of each situation might be and then about the degree of internality-externality, stability-instability, and globality-specificity of the cause of each good and bad hypothetical situation. This measure is used to determine if an individual has a optimistic or pessimistic attributional style for bad events. An optimistic attributional style for bad events would see them as externally caused, unstable in duration and occurring only in specific instances. A pessimistic attributional style would be evident in an individual who would see bad events as caused internally, with the cause being long-lasting, and global in its bad effect. The ASQ yields

reliabilities for individual dimensions ranging from .70 to .85 and has high test-retest reliability.

Interview:

Each subject was asked 3 open-ended questions:

1. "To the best of your understanding now, what prompted your involvement with drugs?"
2. "What prompted your entering treatment at this time?"
3. "What factors do you think will help sustain you as you attempt to remain drug-free?"

Procedure

Subjects were recruited during their first two weeks of participation in the first phase of treatment. During this phase, participants are oriented as to program procedures and what is to be expected of them. The first treatment phase generally lasts between 30 and 60 days. There was a brief presentation by the researcher, introducing the study as one that seeks to determine if different personalities of people have greater success in different types of treatment. Volunteers were told that whether or not they agreed to participate would not affect their standing in the program, and their responses would be kept confidential (see appendix

A). They were asked to complete the Demographic and Drug Pattern Questionnaires, the Orientation to Life Questionnaire, the Spiritual Well-Being Scale and the Attributional Style Questionnaires individually or in small groups without any communication among the subjects. The scales were administered by the researcher. Upon completion of the paper and pencil measures, the men were asked by the researcher to respond verbally and in private to the 3 open-ended questions. Their responses were recorded. Upon completion of the three verbal questions, the subjects were given five dollars remuneration and thanked for their participation.

The investigator was available for debriefing subsequent to each administration.

Program records were reviewed as to the number of days the participant stayed in treatment, the number of consecutive clean days he obtained, and the number of relapses that occurred within 90 days post-interview for those participants who completed the follow-up period in treatment. The ninety day follow-up time was chosen because ninety days in treatment has been shown to be the minimum treatment length for change to occur (Lesher, 1994; Roberts & Nishimoto, 1996). Patients who complete treatment are three times more likely to be drug free at 1 year post-

treatment than patients who drop out of treatment prior to treatment completion (Baekland & Lundwall, 1975).

Chapter 4

Results

The results of the statistical analysis are arranged in five sections. The first section presents a comparison of participants from the two facilities. The second section consists of overall scores on independent and dependent variables. The third section focuses on analyses of the hypotheses, the correlation of independent variable levels on measures of the dependent variables. The fourth section focuses on correlations between measures and the fifth section reveals results obtained from additional analyses.

Differences in samples by facility: Few significant differences existed between sample means on demographics and no significant differences existed between facility samples on measures of independent or dependent variables (see tables 3-4).

Table 3.
ANOVA: Intreval Variables by Facility.

Variable	Facility A (N=42) M	SD	Facility B (N=7) M	SD	F Ratio
Age	36.00	8.33	38.86	12.80	0.60
Prior Treatments	2.45	2.86	9.86	10.73	15.05***
Years at address	6.31	9.18	4.23	7.12	0.33
Educational level	12.74	2.51	12.57	3.05	0.03
Income	2.41	1.09	1.60	0.89	2.54
Self-report # clean days	19.67	27.33	205.43	84.85	29.22***
Longest period of sobriety (years)	2.05	2.10	1.18	0.91	0.99
Alcohol					
age of first use	13.61	3.51	14.43	3.69	0.32
number of years used	17.54	8.94	20.71	12.19	0.67
Avg. #drinks/wk	25.19	33.72	23.57	28.22	0.01
Crack/coke					
age of first use	23.33	10.05	22.29	7.02	0.0.7
number of years used	8.95	6.46	12.00	10.54	1.10
Average cost per week	205.69	209.28	337.14	243.91	2.20
Marijuana					
age of first use	15.38	5.00	17.00	8.64	0.46
number of years used	12.95	7.10	15.29	10.84	0.51
Average cigarettes per wk	27.49	42.39	19.00	18.92	0.26
Pills					
number of years used	16.14	11.23	19.00		0.57
Average per week	4.29	3.55	50.00		145.45***

(Table continues)

Table 3. Continued.

Variable	Facility A (N=42) M	SD	Facility B (N=7) M	SD	F Ratio
Heroin					
age of first use	20.00	5.70	15.00	1.41	1.35
number of years used	7.20	7.79	16.50	16.26	1.22
Average cost per week	77.00	79.03	185.00	162.63	1.62
Prior Treatments	2.45	2.86	9.86	10.73	15.05***
Detox	1.05	1.79	4.00	5.13	8.48**
Inpatient	0.60	0.91	2.71	5.09	6.68**
Outpatient	0.69	0.81	1.57	1.51	5.38*
Therapeutic Community	0.07	0.26	1.57	1.51	38.45***
Methadone Maintenance	0.02	0.15	0.02	0.14	0.16
12 step years	1.98	2.48	1.42	1.75	0.31
12 step/wk now	5.50	3.85	6.00	1.41	0.00

* $p < .05$. ** $p < .01$. *** $p < .001$.

Table 4.
Chi-Square Analyses Comparing Sample from Two Facilities on Demographic Data

Variable	Total Sample (N =49) n	%	Facility A (N =42) n	%	Facility B (N=7) n	%	χ^2
Permanent resident (yes)	43	87.8	38	90.5	5	71.4	2.03
Who live with							
alone	14	28.6	12	28.6	2	28.6	
spouse	13	26.5	11	26.2	2	28.6	.627
parents	12	24.5	11	26.2	1	14.3	
others	10	20.4	8	19.0	2	28.6	

(Table 4 continues)

Table 4. Continued.

Variable	Total Sample (N =49) n	%	Facility A (N =42) n	%	Facility B (N=7) n	%	χ^2
Employed (yes)	29	59.2	27	64.3	2	28.6	3.17
Income (in thousands)							
<$15	15	32.6	12	29.3	3	60.0	2.77
$15-25	6	13.0	5	12.2	1	20.0	
$25-40	22	47.8	21	51.2	1	20.0	
$40-55	1	2.2	1	2.4	0	0.0	
$55+	2	4.3	2	4.3	0	0.0	
Race							
Black/non-Hispanic	14	28.6	11	26.2	3	42.9	3.17
Black/Hispanic	4	8.2	4	9.5	0	0.0	
White/non-Hispanic	23	46.9	21	50.0	2	28.6	
White/Hipanic	7	14.3	5	11.9	2	28.6	
Other	1	2.0	1	2.4	0	0.0	
12-Step Treatment (yes)							
Prior 12 step	33	67.3	26	61.9	7	100.0	3.96*
Current 12 step	35	71.4	29	69.0	6	85.7	0.82
Substance Used							
Alcohol	48	98	41	97.6	7	100.0	0.17
Crack	29	59.22	22	52.4	7	100.0	5.63*
Coke	44	85.7	40	95.2	4	57.1	9.50**
Marijuana	40	81.6	33	78.6	7	100.0	1.83
Pills	8	16.3	7	16.7	1	14.3	0.03
Heroin	7	14.3	5	11.9	2	28.6	1.36

Note: * $p < .05$. ** $p < .01$.

Significant differences between groups were found in the number of prior treatment episodes. While the median number of treatment episodes was 2, one subject in group 2 (n=7) had been in treatment 32 times prior. Similarly, Two of the 4 outliers on reported number of clean days were in the group 2 sample. Additionally, a significant difference was found in prior 12 step participation. In group 2, all 7 participants had previously attended 12 step meetings while in group 1, 67% had attended 12 step meetings previously. No significant differences were found in the number of years of 12 step participation or in the current number of 12 step meetings currently attended.

Independent variable measures: (See Table 5)

Sense of coherence (SOC) scores ranged from 79 to 178, with a mean of 124.39 (sd 23.52). The SOC meaningfulness subscale scores ranged from 20 to 55, mean 38.33 (sd 8.14). The SOC manageable subscale scores ranged from 27-66, mean 44.51 (sd 8.44). The comprehensibility subscale scores ranged from 23-66, mean 42.16 (sd 10.29).

Spiritual well-being (SWB) scores ranged from 56-118, mean 87.39 (sd 14.07). The Religious well-being subscale of the SWB ranged from 10 to 60, mean 43.84 (sd 11.43). The

Existential well-being subscale of the SWB ranged from 26 to 58, mean 43.55 (sd 7.51).

Attributional Style for negative events (ASQN) scores ranged from 52-117, mean 79.35 (sd 13.49). The ASQN internal subscale ranged in scores from 12 to 39, mean 28.73 (sd 12.73). The ASQN stable subscale ranged in scores from 12 to 39 , mean 23.98 (sd 5.74). The ASQN global subscale ranged in scores from 11 to 41, mean 26.76 (sd 7.16).

Table 5.
Total Subjects: Interval Variables.

Variable	n	Range	M	SD	Median	Mode
Dependent Variables						
Days in Treatment	49	1-90	59.18	34.66	79	90
Consecutive Clean Days	49	1-90	41.22	33.72	28	90
Slips	24	0-6	1.08	1.53	1	0
Independent Variables						
Sense of Coherence						
Total	49	79-178	124.39	23.52	121	110
Meaningful	49	20-55	38.33	8.14	38	38
Manageable	49	27-66	44.51	8.44	45	40
Comprehensible	49	23-66	42.16	10.29	42	32
Spiritual Well-Being	49	56-118	87.39	14.07	89	77
Religious	49	10-60	43.84	11.43	43	43
Existential	49	26-58	43.55	7.51	43	43
Attributional Style for Negative Events						
Total	49	52-117	79.35	13.49	79	66
Internal	49	12-39	28.73	5.73	30	30
Stable	49	12-39	23.98	5.74	24	24
Global	49	11-41	26.76	7.16	27	21

Dependent variable measures:

DV1) The number of days that participants stayed in treatment (maximum 90) post-interview ranged from 1 to 90, mean 59.18 (sd 34.66). The median number of days in treatment was 79 and the mode was 90.

DV2) The number of consecutive clean days post-interview (maximum 90) ranged from 1 to 90, mean 41.22 (sd 33.72). The median number of consecutive clean days was 28 and the modal number was 90.

DV3) For the participants who remained in treatment for the full follow-up period (90 days post-interview), the number of slips (episodes of a positive urine toxicology screening) ranged from 0 to 6, with a mean 1.08 (sd 1.53) slips. The median number of slips was 1 and the mode was 0.

There were no significant differences between samples from the two facilities (see Table 6) on any outlook measure (SOC, SWB or ASQN) nor were there any significant differences in any measure of treatment outcome (number of days in treatment, number of consecutive clean days, number of slips for follow-up completers).

Table 6.
ANOVA: Interval Variables by Facility.

Variable	Facility A (N=42) M	SD	Facility B (N=7) M	SD	F Ratio
Spritual Well-Being	86.17	14.15	94.71	12.00	2.27
Religious	43.12	11.39	48.14	11.60	1.16
Existential	43.05	7.51	46.57	7.30	1.33
Sense of Coherence					
Total	123.79	22.32	128.00	31.69	0.19
Meaningful	38.29	7.96	38.57	9.81	0.00
Manageable	44.21	7.93	46.29	11.67	0.36
Comprehensible	42.00	9.93	43.14	13.11	0.07
Attributional Style for Negative Events					
Total	79.67	11.85	77.43	22.13	0.16
Internal	28.83	5.54	28.14	7.24	0.09
Stable	23.98	5.35	24.00	8.21	0.00
Global	27.00	7.04	25.29	8.24	0.34
Dependent Variables					
Days in treatment	59.50	35.70	57.29	29.93	0.02
Consecutive clean days	40.60	34.60	45.00	29.95	0.10
Number of slips[a]	1.14	1.58	0.50	0.71	0.31

Note: [a]N= 22 for Facility A and N = 2 for Facility B.

Hypotheses testing:

Hypothesis 1 stated that a strong sense of coherence as measured by the Orientation to Life Questionnaire would predict treatment outcome. It was hypothesized that subjects with greater SOC would stay in treatment longer (DV1), obtain more consecutive clean days (DV2) and have fewer slips (reports of positive urine toxicology screenings) (DV3) than subjects with lesser SOC.

Hypothesis 2 stated that a strong sense of spirituality as measured by the Spiritual Well-Being Scale (SWBS) would predict treatment outcome. It was hypothesized that subjects with a greater sense of spirituality would stay in treatment longer (DV1), obtain more consecutive clean days (DV2), and have fewer slips (DV3) than subjects with a lesser sense of spirituality.

Hypothesis 3 stated that an optimistic attributional style as measured by the Attributional Style Questionnaire for Negative Events (ASQN) would predict treatment outcome. It was hypothesized that subjects with a more optimistic attributional style would stay in treatment longer (DV1), obtain more consecutive clean days (DV2) and have fewer slips (DV3) than subjects with a less optimistic attributional style.

The number of days in treatment post-interview (DV1),

the number of consecutive clean days post-interview (DV2) and the number of slips for subjects who completed the 90 day post-interview follow-up (DV3) were correlated with the independent variable (IV) measures (see table 7). The first of the IV measures was Sense of Coherence (SOC), including the three SOC subscales: Comprehensibility, Manageability and Meaningfulness. The second IV measure was Spiritual Well-Being (SWB) including the two SWB subscales: Religious Well-Being (RWB) and Existential Well-Being (EWB). The third IV measure was the Attributional Style Questions for Negative Events (ASQN) including three subscales: ASQN Internal, ASQN Stable and ASQN Global. The age of the subjects was also entered into the correlation matrix. Age was found to correlate significantly with the number of days in treatment (DV1) $r=.3407$, $p=.017$ as well as with Spiritual Well-Being $r=.4544$, $p=.001$, and Religious Well-Being $r=.3554$, $p=.012$. Age correlated significantly with the SOC Manageability subscale $r=.3021$, $p=.035$ and the total SOC $r=.2812$, $p=.050$. Because age seemed a potential to confound the results, the data were re-analyzed controlling for age.

Table 7.
Correlation Matrix: Dependent Variables and Independent Variable Measures

	Age	Days in Treatment	Consecutive Clean Days	Slips n=24	Spiritual Well Being	Religious Well Being	Existen-tial Well Being
Age	X	–	–	–	–	–	–
Days in Treatment	.3407*	X	–	–	–	–	–
Consecutive Clean Days	.2349#	.6478***	X	–	–	–	–
Slips	-.0791	–	-.7412***	X	–	–	–
Spiritual Well Being	.4544***	.1660	.1602	.0182	X	–	–
Religious Well Being	.3554**	.0702	.1847	-.1134	.8464***	X	–
Existential Well Being	.3105*	.2043	.0192	.2643	.5856***	.0639	X
SOC Comprehensible	.2777#	.0954	-.0681	.2666	.3907**	.1525	.4999***
SOC Manageable	.3021*	.1623	-.1469	.4610*	.4425**	.1304	.6306***
SOC Meaningful	.1731	-.0148	-.0066	.2541	.4276**	.0861	.6701***
SOC Total	.2812*	.0802	-.1141	.3920#	.4728**	.1298	.6683***
ASQN Internal	.0086	.0306	-.0490	.2257	-.0948	-.0318	-.0379
ASQN Stable	.2459#	.0311	-.0409	.1427	.0631	.1026	-.2761#
ASQN Global	.0149	-.0661	-.1191	-.0332	-.1893	-.0517	-.1291
ASQN Total	.1104	-.0171	-.1149	.1822	-.1071	.0033	-.2018

Note: # $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$. SOC= Sense of Coherence; ASQN = Attributional Style for Negative Events.

(Table continues)

Table 7. Continued.
Correlation Matrix: Dependent Variables and Independent Variable Measures

Variable	SOC Compr-hensible	SOC Manag-eable	SOC Meaningful	SOC Total	ASQN Internal	ASQN Stable	ASQN Global	ASQN Total
Age	–	–	–	–	–	–	–	–
Days in Treatment	–	–	–	–	–	–	–	–
Consecutive Clean Days	–	–	–	–	–	–	–	–
Slips	–	–	–	–	–	–	–	–
Spirital Well Being	–	–	–	–	–	–	–	–
Religious Well Being	–	–	–	–	–	–	–	–
Existential Well Being	–	–	–	–	–	–	–	–
SOC Comprehensible	X	–	–	–	–	–	–	–
SOC Manageable	.6982***	X	–	–	–	–	–	–
SOC Meaningful	.5218***	.6083***	X	–	–	–	–	–
SOC Total	.8760***	.8807***	.7970***	X	–	–	–	–
ASQN Internal	.2059	.0459	-.1656	.0836	X	–	–	–
ASQN Stable	.1487	.0170	-.0463	.0612	.2362#	X	–	–
ASQN Global	-.1850	-.2358#	-.3670**	-.2823*	.3218*	.2506#	X	–
ASQN Total	.0653	-.0792	-.2742#	-.0724	.6992***	.6603***	.7822***	X

Note: # $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$. SOC = Sense of Coherence; ASQN = Attributitional Style for Negative Events.

Hypothesis 1 stated that there would be a positive correlation between Sense of Coherence and the number of days in treatment, the number of consecutive clean days obtained and a negative correlation between Sense of Coherence and the number of slips for follow-up completers. No support for this hypothesis was found (see table 8).

Table 8.
Correlation Matrix: Treatment Outcome by Sense of Coherence Controlling for Age.

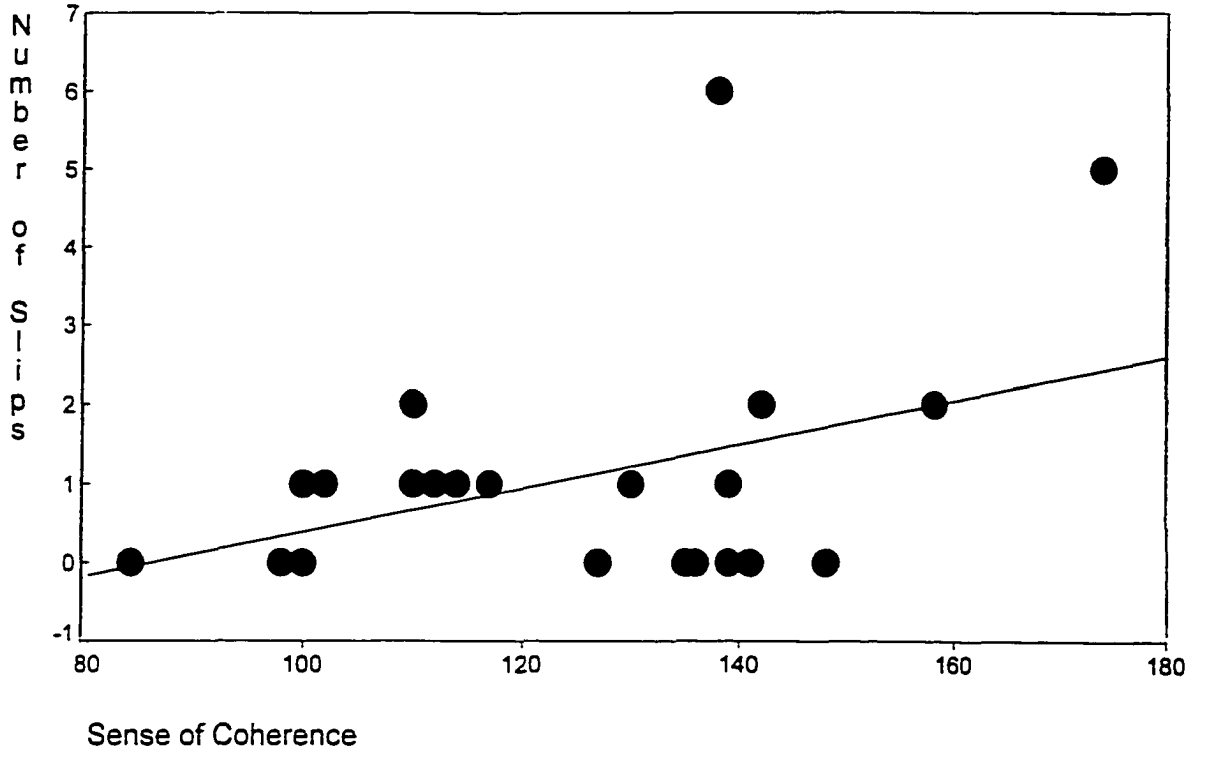
	Days in Treatment	**Consecutive Clean Days**	**Slips (N = 24)**
Sense of Coherence			
Comprehensible	.0009	-.1428	.3014
Manageable	.0662	-.2352#	.5102**
Meaningful	-.0796	-.0493	.2727
Total	-.0173	-.1931	.4330*

Note: # $p < .10$. * $p < .05$. ** $p < .01$.

In fact, the opposite was found in regards to the number of slips for follow-up completers (DV3). Overall SOC was positively correlated with the number of slips for program completers, r=.4330, p=.039, accounting for 18.49% of the variance in the number of slips by follow-up completers. The strongest correlation was with the subscale of SOC Manageability, r=.5102, p=.013. Follow-up completers with a stronger Sense of Coherence had more slips than follow-up completers with a weaker Sense of Coherence (see figure 1).

Figure 1

Scatter Plot for Number of Slips by Sense of Coherence Score for Subjects that Completed 90 Day Follow-up



A median split of Sense of Coherence scores was performed to determine if SOC group correlated with dependent variable measures (see table 9).

Table 9.
ANOVA: SOC Group by Dependent Variable Measures.

Variable	Low SOC Group (N=42) M	SD	High SOC Group (N=7) M	SD	F Ratio
Days in Treatment	54.83	36.50	63.36	33.00	0.74
Consecutive Clean Days	39.54	30.72	42.84	36.94	0.12
Slips[a]	0.82	0.60	1.31	2.02	0.60

Note: [a] N= 11 for Low SOC group and N = 13 for High SOC group.

No significant differences were found between strong or weak SOC and any of the three dependent variables.

An analysis of variance was performed using completer status to separate two groups. Group 1 dropped-out of treatment before the 90 day follow-up ended and group 2 completed the 90 day follow-up in treatment (see table 10). No significant correlations were found in Sense of Coherence by completer status.

Table 10.
AVOVA: Sense of Coherence by Completer Status.

Variable	Drop-outs (N=25) M	SD	Completer (N=24) M	SD	F Ratio
Sense of Coherence					
Total	123.68	25.61	125.13	21.66	0.05
Meaningful	39.08	9.31	37.54	6.81	0.43
Manageable	44.04	9.23	45.00	7.71	0.16
Comprehensible	40.96	10.87	43.42	9.72	0.69

Note: Drop-outs = Subjects who did not complete 90 day follow-up period; Completers = Subjects who completed 90 day follow-up period.

Hypothesis 2 stated that there would be a positive correlation between Spiritual Well-Being and the number of days in treatment (DV1), the number of consecutive clean days (DV2) and a negative correlation between SWB and the number of slips by follow-up completers (DV3). No support for this hypothesis was found (see table 11).

Table 11.
Correlation Matrix: Treatment Outcome by Spiritual Well-Being Controlling for Age.

	Days in Treatment	**Consecutive Clean Days**	**Slips (N = 24)**
Spiritual Well Being	.0133	.0618	-.0610
Religious	-.0579	.1114	-.0915
Existential	.1101	-.0582	.3048

Note: None of the correlations are significant.

A median split of Spiritual Well-Being scores was performed to see if strong or weak SWB correlated with dependent variable measures (see table 12). No significant correlations were found.

Table 12.
ANOVA: Spiritual Well-Being Group by Dependent Variable Measures.

Variable	Low SWB Group (N=25) M	SD	High SWB Group (N=24) M	SD	F Ratio
Days in treatment	57.08	34.95	61.38	34.96	0.18
Consecutive clean days	44.08	31.82	38.25	36.04	0.36
Slips	0.73	0.65	1.38	1.98	1.11

An analysis of variance was performed using completer status to separate two groups. Group 1 dropped-out of treatment before the 90 day follow-up ended and group 2 completed the 90 day follow-up in treatment (see table 13). No significant correlations were found in Spiritual Well-Being by completer status.

Table 13.
AVOVA: Spiritual Well-Being by Completer Status.

Variable	Drop-outs (N=25) M	SD	Completer (N=24) M	SD	F Ratio
Spiritual Well-Being	84.80	14.12	90.08	13.80	1.75
Religious	42.92	9.97	44.79	12.93	0.32
Existential	41.88	8.15	45.29	6.50	2.61

Note: Drop-outs = Subjects who did not complete 90 day follow-up period; Completers = Subjects who completed 90 day follow-up period.

Hypothesis 3 stated that there would be a negative correlation between Attributional Style for Negative Events (ASQN) and the number of days in treatment (DV1) and also with the number of consecutive clean days (DV2). As a low score on ASQN is more optimistic than a high score, a positive correlation was predicted between Attributional Style for Negative Events (ASQN) and the number of slips for follow-up completers (DV3). No support for this hypothesis was found (see table 14).

Table 14.
Correlation Matrix: Treatment Outcome by Attributional Style for Negative Events Ccontrolling for Age.

	Days in Treatment	**Consecutive Clean Days**	**Slips (N = 24)**
Attributional Style for Negative Events			
Internal	.0294	-.0525	.2272
Stable	-.0578	-.1047	.1678
Global	-.0757	-.1262	-.0321
Total	-.0585	-.1458	.1927

Note: None of the correlations are significant.

An analysis of variance was performed using completer status to separate two groups (see table 15).

Table 15.
AVOVA: Attributional Style for Negative Events by Completer Status.

	Drop-outs (N=25)		Completer (N=24)		F
Variable	M	SD	M	SD	Ratio
Attributional Style for Negative Events					
Internal	28.76	6.18	28.71	5.36	0.00
Stable	24.36	7.00	23.58	4.15	0.22
Global	26.64	8.39	26.88	5.78	0.01
Total	79.76	16.44	78.92	9.86	0.05

Note: Drop-outs = Subjects who did not complete 90 day follow-up period; Completers = Subjects who completed 90 day follow-up period.

Group 1 dropped-out of treatment before the 90 day follow-up ended and group 2 completed the 90 day follow-up

in treatment. No significant correlations were found in Attributional Style for Negative Events (ASQN) by completer status.

As neither Sense of Coherence, Spiritual Well-Being, nor Attributional Style for Negative Events correlated significantly with the treatment outcome measures while investigated individually, the possibility of an interaction between stress resistors was sought to determine if a combination of the factors would predict treatment outcome.

A median split was used to determine if a sub-group of participants who combined a strong Spiritual Well-Being and low levels of Attributions for Negative Events (optimistic attributional style) could be identified. A subgroup was identified and a chi square was used to determine if a greater percentage of participants who combined a strong Spiritual Well-Being and low levels of ASQN (a more optimistic attributional style) completed the 90 day follow-up than participants who combined weak SWB and high levels of ASQN.

Of the 11 participants who combined a strong Spiritual Well-Being with low levels of ASQN, 54.5% (n=6) completed the 90 day follow-up period in treatment. Of the 11 participants who combined weak Spiritual Well-Being and high levels of ASQN, only 9.1% (n=1) completed the follow-up

period. Combined strong SWB and low level of ASQN (optimistic attributional style) significantly correlated with completer status p=.022 (1df).

An analysis of variance was performed using participants who combined strong Spiritual Well-Being and low levels of ASQN in group 1 and participants who combined weak Spiritual Well-Being and optimistic attributional style (high levels of ASQN) in group 2 (see table 16).

Table 16.
ANOVAs for Dependent Variables by Combined Spiritual Well-Being and Attributional Style Groups.

Variable	↑SWB ↓ASQN (N=11) M	SD	↓SWB ↑ASQN (N=11) M	SD	F Ratio
Days in Treatment	60.27	36.75	34.09	30.31	3.22#
Consecutive Clean Days	49.00	37.60	21.09	33.31	4.54*
Number of Slips[a]	0.67	0.82	1.00	----	0.14

Note:↑SWB ↓ASQN = high spiritual well being/low Attribution style for negative events group. ↓SWB ↑ASQN = low spiritual well being/high Attribution style for negative events group. [a]↑SWB ↓ASQN group N = 6 and ↓SWB ↑ASQN group N = 1; # p < .10. * p < .05.

Group 1 (strong SWB and low ASQN) obtained significantly more consecutive clean days p=.0456 (1df) and neared significance with a higher number of days in treatment, p=.0833 (1df) than did group 2 (weak SWB and high ASQN). No significant correlations were found when investigating the

interaction of Sense of Coherence and Attributional Style.

Correlations between IV measures: (see table 17)
Spiritual well-being (SWB) correlated significantly with the two subscales: Religious Well-Being (RWB) r=.8225, p=.000, and Existential Well-Being (EWB) r=.5250, p=.000. Spiritual Well-Being correlated with each subscale of the Sense of Coherence (SOC): with Comprehensibility r=.3091, p=.033; with Manageability r=.3594, p=.012; with Meaningfulness r=.4036, p=.005; and with the total SOC r=.4036, p=.004. Spiritual Well-Being did not significantly correlate with Attributional Style for Negative Events (ASQN), or any subscale.

Religious Well-Being (RWB) did not correlate significantly with EWB, nor any component of SOC, nor total SOC. RWB did not correlate with ASQN, nor any subscale.

Existential Well-Being showed significant correlations with overall Sense of Coherence r=.6588, p=.000, and with each subscale: Comprehensibility r=.4530, p=.001, Manageability r=.5924, p=.000, and Meaningfulness r=.6584, p=.000. Existential Well-Being showed a significant negative correlation with the ASQN Globality measure r= -.2953, p=.042, but with neither of the other subscales. Existential Well-Being neared a significant negative

TABLE 17.
CORRELATION MATRIX BETWEEN INDEPENDENT VARIABLE MEASURES - CONTROLLING FOR AGE

	SWB	RWB	EWB	SOC Compr-hensible	SOC Manageable	SOC Meaningful	SOC Total	ASQN Internal	ASQN Stable	ASQN Global	ASQN Total
SWB	X	.8225***	.5250***	.3091*	.3594**	.3978**	.4036**	-.1108	-.0564	-.2201	-.1776
RWB	--	X	-.0523	.0600	.0259	.0268	.0333	-.0373	.0168	-.0609	-.0386
EWB	--	--	X	.4530***	.5924***	.6584***	.6588***	-.1386	-.1241	-.2953*	-.2541#
SOC Comprehensible	--	--	--	X	.6708***	.5007***	.8655***	.2119	.0863	-.1969	.0363
SOC Manageable	--	--	--	--	X	5922***	8698***	0454	-.0620	-.2521#	-.1188
SOC Meaningful	--	--	--	--	--	X	.7917***	-.1696	-.0931	-.3753**	-.2997*
SOC Total	--	--	--	--	--	--	X	.0864	-.0085	-.2986*	-.1084
ASQN Internal	--	--	--	--	--	--	--	X	.2415#	.3217*	.7025***
ASQN Stable	--	--	--	--	--	--	--	--	X	.2548#	.6572***
ASQN Global	--	--	--	--	--	--	--	--	--	X	.7822***
ASQN Total	--	--	--	--	--	--	--	--	--	--	X

Note: # p < .10. * p < .05. ** p < .01. *** p .001. SOC= Sense of Coherence; SWB = Spiritual Well Being; RWB = Religious Well-Being; EWB = Existential Well Being; ASQN = Attributional Style for Negative Events.

correlation with the overall Attributional Style for Negative Events (ASQN total) r=.-2541, p=.080.

The Sense of Coherence component of Comprehensibility significantly correlated with SOC components of Manageability r=.6708, p=.000; Meaningfulness r=.5007, p=.000; and with the SOC total r=.8655, p=.000. Comprehensibility did not correlate significantly with ASQN or any subscale.

The Sense of Coherence component of Manageability correlated significantly with SOC Meaningfulness r=.5922, p=.000. Manageability also correlated significantly with he total SOC r=.8698, p=.000. SOC Manageability neared a significant correlation with the Attributional Style Questions for Negative Events (ASQN) component of Globality r= -.2521, p =.084, but with neither of the other ASQN subscales, nor with ASQN total.

The Sense of Coherence component of Meaningfulness showed a significant correlation with the SOC total r=.7917, p=.000. Meaningfulness also showed significant correlations with the ASQN component of Globality r= -.3753, p=.009, and with the ASQN total r= -.2997, p=.039.

The total SOC showed a significant correlation with the ASQN Globality measure r= -.2986, p=.039.

The Attributional Style Questions for Negative Events (ASQN) Internal component neared a significant correlation with the ASQN Stability component r=.2415, p=.098 and achieved a significant correlations with ASQN Global and with ASQN total, r=.3217, p=.026 and r=.7025, p=.000 respectively. ASQN Stable neared a significant correlation with ASQN Global r=.2548, p=.081, and achieved a significant correlation with ASQN total r=.6572, p=.000. ASQN Global correlated significantly with ASQN total, r=.7822, p=.000.

Additional Findings:

Analyses were performed to determine whether variables other than those hypothesized played a role in treatment outcome.

Of interest is a finding of a strong correlation between two dependent variable measures (see table 18).

Table 18.
Correlation Matrix: Dependent Variables Controlling for Age.

	Days in Treatment	**Consecutive Clean Days**	**Slips (N = 24)**
Consecutive Clean Days	.6216***	----	----
Slips	----	-.7458***	----

Note: *** $p < .001$.

DV1 measured the number of days a client remained in treatment, with a maximum of 90 days, the period of follow-up. DV2 measured the number of consecutive clean days post-interview. The number of consecutive clean days correlated positively with the number of days the client was retained in treatment, r=.6213, p=.000. This means that the number of consecutive clean days obtained accounted for 38% of the variance in the number of days retained in treatment.

An analysis of variance was performed measuring the effect of previous treatment experiences on the outcome of the current episode (see table 19). For ten participants, the current treatment episode had been their first treatment experience, while the other 39 had been in treatment at least once before. While no significant differences were found by prior treatment group, two trends were apparent. On DV3, the number of slips for 90 day follow-up completers, the number of slips was higher for subjects with no previous treatment episodes than it was for the group who had been in treatment before p=.0576. Additionally, This no previous treatment group tested at a higher level of existential well-being than the group with previous treatment episodes, p=.0943.

Table 19.
ANOVA: By Prior Treatment Group.

Variable	No Prior Treatment (N=10) M	SD	Prior Treatment (N=39) M	SD	F Ratio
Days in Treatment	65.10	40.14	57.67	33.53	0.36
Consecutive Clean Days	33.20	39.50	43.28	32.34	0.71
Slips[a]	2.00	2.52	0.71	0.69	4.01#
Spiritual Well Being	88.60	13.53	87.08	14.37	0.09
Religious	41.50	10.56	44.44	11.70	0.51
Existential	47.10	6.42	42.64	7.51	2.92#
Sense of Cohernece					
Comprehensible	45.90	11.84	41.20	9.80	1.68
Manageable	46.60	10.30	43.97	7.97	0.77
Meaningful	39.10	6.01	38.13	8.65	0.11
Total	131.60	25.79	122.54	22.89	1.19
Attributional Style for Negative Events					
Internal	28.00	3.33	28.92	6.22	0.20
Stable.	23.20	5.27	24.18	5.90	0.23
Global	24.80	6.60	27.26	7.29	0.94
Total	75.40	10.44	80.36	14.10	1.08

Note: [a] N = 7 for no prior treatment group and N = 17 for prior treatment group. # $p < .10$.

The variable of racial group membership was analyzed by grouping subjects into two groups, racial minority group members (Black not Hispanic, Black Hispanic and White Hispanic participants) and White not Hispanic participants (see table 20). No significant differences were found between the race categories in the number of days in treatment (DV1), the number of consecutive clean days (DV2) or in the number of slips for 90 day follow-up completers by race category. A chi square was used to determine if race category was correlated with completer category and no significant difference was found p=.8793 (1df).

Race category was not significantly correlated with any measure of the independent variables, (Sense of Coherence, Spiritual Well-Being or Attributional Style for Negative Events) but three trends developed. On measures of Spiritual Well-Being and Religious Well-Being, group 1 (racial minority group members) scored higher, p=.0734 and p=.0829 respectively. Group 1 also scored lower on the ASQN component of Stability, meaning that the participants in group 1 saw the causes for negative events as less long lasting than the participants in group 2 p=.0682.

Table 20.
ANOVA: Race Category by Dependent Variables and Amounts of Cocaine Hydrochloride and Crack Cocaine Used

Variable	Racial Minority (N=26) M	SD	White not Hispanic (N=23) M	SD	F Ratio
Days in Treatment	58.04	35.85	60.48	34.02	0.06
Consecutive Clean Days	40.15	32.62	42.43	35.63	0.06
Slips[a]	1.23	1.59	0.91	1.51	0.25
Spiritual Well-Being	90.77	13.73	83.57	13.75	3.35#
Religious	46.50	11.45	40.83	10.88	3.14#
Existential	44.27	7.95	42.74	7.07	0.40
Sense of Coherence					
Comprehensible	41.23	9.77	43.22	10.97	0.45
Manageable	43.85	7.52	45.26	9.49	0.34
Meaningful	38.69	7.20	37.91	9.23	0.11
Total	123.38	20.06	125.52	27.33	0.10
Attributional Style for Negative Events					
Internal	28.00	5.41	29.57	6.09	0.91
Stable	22.58	6.21	25.57	4.79	3.48#
Global	27.50	5.89	25.91	8.43	0.59
Total	78.08	12.74	80.78	14.43	0.49
Age	36.38	9.02	36.43	1.91	0.00
Coke Average	148.41	186.45	145.71	221.06	0.02
Crack Average	154.80	202.32	207.75	490.60	0.24

[a]N= 13 for Racial Minority Group and N = 11 for White not Hispanic Group. # $p < .10$.

Race category was also analyzed to determine if differences in age, or average amounts of crack cocaine or cocaine hydrochloride use existed between the groups. No significant differences were found.

Further analyses were computed to determine what influence the subjects' education level, yearly income, current attendance at 12 step meetings, average weekly cost of cocaine and the number of years of cocaine use had on dependent and independent variable measures while controlling for age (see table 21).

Table 21.
Correlation Matrix: Education Level, Income Level, Frequency at 12-Step Meetings, Average Cost of Cocaine and Number of Years of Cocaine Use by Dependent Variables and Independent Variable Measures. Controlling for Age.

	Education Level	**Income**	**Freq12/wk**	**c/c AVG COST**	**c/c Yrs Used**
Days in treatment	.2241	.1174	.0666	-.0085	.0438
Number consecutive clean days	-.1101	.1890	-.1662	-.2406	.2330
Number of slips (n=24)	.3934#	.2498	.0535	.2352	-.1854
SWB	-.0775	-.0656	-.0375	.0367	.0755
RWB	-.2553#	-.0709	.0742	.1732	.2257
EWB	.2460#	-.0104	-.1520	.-1705	-.2052
SOC-Comprehenisble	.3374*	.0755	-.2374	.1739	-.0611
SOC-Managable	.3115*	-.1064	-.1802	.0682	-.3502**
SOC-Meaningful	.1780	-.0244	-.1303	-.0517	-.2896*
SOC-Total	.3239*	-.0131	-.1701	.0760	-.2540#

Note: SWB= Spiritual well-being; RWB = Religious well-being; EWB= existential well-being; SOC = Sense of coherence; Freq. 12/wk = number of 12-step meetings attended per week; c/c AvgCost = weekly cost of cocaine; c/c#yrs used = number of years of cocaine use. # $p < .10$. * $p < .05$. ** $p < .01$.

(Table continues)

Table 21. Continued.
Correlation Matrix: Education Level, Income Level, Frequency at 12-Step Meetings, Average Cost of Cocaine and Number of Years of Cocaine Use by Dependent Variables and Indeper lent Variable Measures. Controlling for Age.

	Education Level	**Income**	**Freq12/wk**	**c/c AVG COST**	**c/c Yrs Used**
Education level	X	.3539**	-.1772	.0456	-.1234
Income	--	X	.3835*	-.0558	.2412
ASQN-Internal	.4053**	.3030*	.0940	.2556#	.2162
ASQN-Stable	.2142	.1630	.0800	.1846	-.1018
ASQN-Global	.0300	-.1076	-.1396	.2665#	-.0184
ASQN-Total	.2815#	.1330	-.0143	.3289#	.0387
Freq. 12/wk	--	--	X	.0427	.2128
c/c AvgCost	--	--	--	X	.3890**
c/c #Yrs Used	--	--	--	--	X

Note: ASQN= Attributional Style for Negative Events; Freq. 12/wk = number of 12-step meetings attended per week; c/c AvgCost = weekly cost of cocaine; c/c#yrs used = number of years of cocaine use. # $p < .10$. * $p < .05$. ** $p < .01$.

Education level was significantly correlated with the total SOC score r=.3239, p=.025, and with two SOC subscales; Comprehensibility r=.3374, p=.019 and Manageability r=.3115, p=.031. Education level was also significantly correlated with The ASQN subscale of Internality r=.4053, p=.004. Four trends existed with the variable of education level: the number of slips for follow-up completers neared a significant positive correlation, r=.3934, p=.063, Religious Well-Being was negatively correlated with education level to an extent nearing significance, r= -.2553, p=.080, EWB neared a significant correlation with education level r=.2460, p=.092, and the ASQN total score neared a significant correlation with education level r=.2815, p=.053.

Income level was significantly correlated with education level r=.3539, p=.017 and with the ASQN subscale of Internality r=.3030, p=.043. Income level was also significantly correlated with the frequency of 12 step meeting attendance r=.3835, p=.040.

The average weekly expenditure on cocaine (either form) was significantly correlated with the ASQN total score r=.3289, p=.033 and neared a significant correlation with the ASQN Globality subscale r=.2665, p=.088. The more money

participants spent weekly on cocaine, the less optimistic were their attributional styles.

The number of years of cocaine use was significantly negatively correlated with two SOC subscales, Manageability r= -.3502, p=.015, and Meaningfulness r= -.2896, p=.046. The number of years of cocaine use neared a significant negative correlation with SOC total r= -.2540, p=.081, meaning that those who had used cocaine longer also had a lower SOC. The number of years of cocaine use correlated significantly with the average weekly expenditure on cocaine r=.3890, p=.011 meaning that those who had used cocaine longer had also reported spending more money on the drug weekly.

Three open ended questions were asked of participants during the interview. The responses were coded and correlations were investigated (see table 22). Question #1 "What prompted your involvement with drugs?" elicited responses that could be grouped into 3 categories: internal forces (such as to cope with uncomfortable emotions), social forces (because of peer pressure), or adventure seeking (as a way of gaining new experiences). Analyses of variance were conducted including the number of years of prior exposure to 12 step meetings, and the longest period of clean time (drug and alcohol free). Participants claiming adventure seeking

as prompting drug use were significantly higher in ASQN Internal attributions p=.0296. Participants, claiming internal forces as prompting drug use were significantly higher on ASQN Stable attributions p=.0439. Participants claiming social forces as prompting drug use showed a trend toward being lower on overall ASQN attributions p=.0989.

Table 22
ANOVA: Question #1 "What Prompted Your Involvement with Drugs?"

Variable	Internal Forces (N=24) M	SD	Social Forces (N=16) M	SD	Adventure (N=8) M	SD	F Ratio
Days in treatment	55.33	34.91	65.75	35.85	61.50	34.38	0.43
Consecutive clean days	43.42	34.58	31.63	27.27	31.63	27.27	0.45
Slips[a]	1.10	1.85	0.80	0.79	1.75	2.22	0.53
Spiritual Well-Being	87.17	12.56	90.31	15.81	83.75	15.72	0.59
Religious	43.92	10.59	46.44	13.76	39.13	8.70	1.08
Existential	43.25	7.46	43.88	6.59	44.63	10.16	0.10
Sense of Coherence							
Comprehensible	42.25	11.78	40.94	7.97	43.75	11.16	0.20
Manageable	43.96	9.74	44.38	7.13	45.50	7.62	0.10
Meaningful	39.71	7.99	36.50	8.96	37.50	7.50	0.77
Total	125.50	25.88	120.56	20.67	126.75	24.46	0.77
Attributional Style for Negative Events							
Internal	29.42	5.17	25.94	6.59	32.13	3.40	3.81*
Stable	26.08	5.89	21.63	5.24	23.13	4.36	3.35*
Global	26.75	7.70	25.75	7.11	27.63	5.73	0.20
Total	82.00	15.07	73.31	12.98	82.88	3.83	2.44#
Years prior in 12-Step[b]	1.97	1.95	2.21	3.17	0.51	0.57	0.80
Longest Sobriety	1.93	1.92	2.31	2.26	1.40	1.89	0.49

Note: [a]N = 10 for Internal forces group, N = 10 for Social forces group, and N = 4 for adventure group; [b]N = 15 for Internal forces group, N = 9 for Social forces group, and N = 2 for adventure group; # $p < .10$. * $p < .05$.

Question #2 "What prompted your seeking treatment at this time?" elicited responses naming internal influences and external forces (see table 23). Participants who named external forces as prompting their seeking treatment stayed in treatment significantly longer than participants claiming internal prompts p=.0034. Additionally, participants who named external forces accumulated significantly more consecutive clean days than participants claiming internal prompts p=.0090. There were no significant differences by group in the number of slips for completers or for any measure of independent variables.

Table 23.
ANOVA: Question #2 "What Prompted Your Seeking Treatment at this Time?"

Variable	Internal Influences (N=34) M	SD	External Forces (N=14) M	SD	F Ratio
Days in Treatment	50.71	36.64	82.00	14.23	9.52**
Consecutive Clean Days	34.00	31.05	61.36	32.83	7.45**
Slips[a]	1.07	1.33	1.10	1.85	0.00
Spritual Well-being	86.47	14.23	90.50	13.90	0.81
Religious	43.65	11.12	44.71	12.84	0.08
Existential	42.82	7.71	45.79	6.86	1.55
Sense of Coherence					
Comprehensible	41.38	9.89	43.71	11.68	0.50
Manageable	43.15	8.05	47.29	9.01	2.45
Meaningful	37.74	8.60	39.57	7.31	0.49
Total	121.38	23.44	130.57	23.76	1.51
Attributional Style for Negative Events					
Internal	28.00	5.99	30.43	5.05	1.77
Stable	24.03	5.73	24.29	5.94	0.02
Global	26.15	7.07	27.57	7.35	0.39
Total	78.18	12.76	81.86	15.69	0.40
Years Prior 12-Step[b]	1.97	2.56	1.57	1.74	0.18
Longest Sobriety[c]	2.20	2.11	1.46	1.72	1.33

[a]N = 14 for Internal influences group and N = 10 external forces group; [b]N = 19 for Internal influences group and N = 14 external forces group; [c]N = 32 for Internal influences group and N = 14 external forces group; ** $p < .01$.

Question #3 "What will help sustain you as you seek to remain abstinent?" elicited responses naming spiritual forces and outside forces including social support, job or program, or learning strategies (see table 24). There was no significant difference by group on any dependent variable. Group 1 ranked significantly higher on Spiritual Well-Being and Religious Well-Being, p=.0020 and p=.0044 respectively.

Table 24
ANOVA: Question #3 "What Will Help Sustain You as You Seek to Remain Abstinent?"

Variable	Spiritual (N=8) M	SD	Outside[a] (N=40) M	SD	F Ratio
Days in treatment	61.00	40.25	59.60	34.08	0.01
Consecutive clean days	48.62	34.59	40.65	33.76	0.37
Slips[b]	0.60	0.55	1.21	1.69	0.62
Spritual Well Being	101.25	12.87	84.93	12.83	10.79**
Religious	54.25	6.16	41.90	11.27	8.96**
Existential	47.00	8.38	43.03	7.28	0.53
Sense of Coherence					
Comprehensible	46.75	8.24	41.13	10.59	2.00
Managable	44.63	6.41	44.30	8.88	0.01
Meaningful	41.13	11.68	37.70	7.40	1.16
Total	132.50	21.69	122.38	23.93	1.23
Attributional Style for Negative Events					
Internal	29.75	6.09	28.50	5.79	0.31
Stable	25.88	7.18	23.75	5.43	0.92
Global	26.25	7.57	26.63	7.11	0.02
Total	81.88	14.38	78.73	13.58	0.35
Years Prior 12-step[c]	1.00	0.79	2.02	2.49	0.80
Longest Sobriety[d]	1.69	1.60	2.03	2.10	0.19

[a]Outside = Social Forces, Job/Program, Learning;[b] N = 5 for spiritual group and N = 19 for Outside group;[c]N = 5 for spiritual group and N = 23 for Outside group;[d]N = 8 for spiritual group and N = 38 for Outside group; ** $p < .01$.

Chapter 5

Discussion of the Results

The discussion of the results will be arranged in four sections. The first section consists of a discussion of the hypothesis testing. The second section consists of a discussion of correlations between measures and the third section consists of a discussion of the results obtained from additional analyses. The fourth section will emphasize what are thought to be the most important results.

As the analysis of the hypotheses began, Age was found to be a confounding variable in treatment retention (see table 7). Subject's age correlated positively with the number of days in treatment, r=.3407, p=.017, which accounted for nearly 12% of the variance in treatment retention. Older men stayed in treatment longer than the younger men did.

A number of different reasons for this finding can be offered. As the participant's age, being older, also correlated positively with Spiritual Well-Being, r=.4544, p=.001, and the subscale Religious Well-Being, r=.3554, p=.012, the possibility exists that these stress resistors fortified the participant to be able to stay in treatment. The older age of the participants also correlated significantly with their Sense of Coherence, r=.2812, p=.050, another form of stress resistor. A further related

explanation may lie in the maturity that often comes with age. The theory of drug abusers "maturing out" of the drug abusing lifestyle was first offered by Winick (1962).

While controlling for the age of the participants, the hypotheses were re-examined, starting with the participants' Sense of Coherence (SOC). Hypothesis 1 stated that clients with a strong SOC would stay in treatment longer, obtain more consecutive clean days and experience fewer slips than participants with a weak Sense of Coherence. While no support was found for a relationship between SOC and treatment retention or consecutive clean days obtained, a surprising relationship was found between the number of slips for follow-up completers and the participants' Sense of Coherence (see figure 1). Follow-up completers with a strong Sense of Coherence had significantly more slips than did subjects with a weak sense of Coherence, $r=.4330$, $p=.039$, accounting for 18.49% of the variance in number of slips for follow-up completers.

This finding becomes less of a surprise when the concept of a slip is reframed slightly. The men with a strong Sense of Coherence have a number of resources. They find their lives to be, for the most part, manageable, meaningful and comprehensible. That these men could relapse and come back

to treatment may speak to the availability of coping resources to enable their return.

This is the group of men who completed the 90 day follow-up period. In this group of follow-up completers, men who had a stronger Sense of Coherence not only were more likely to have more slips, they were able to stay in treatment and cope with the experience of relapse. It is posited that clients often do not return to treatment after a relapse experience because of feelings of failure or shame. This finding highlights two points. Follow-up completers with a strong SOC have more slips than do follow-up completers with a weak Sense of Coherence but also that this same Sense of Coherence may facilitate their coping with the stress of returning to treatment after a slip.

Analyzed separately, Sense of Coherence, Spiritual Well-Being and Attributional Style for Negative Events did not correlate significantly with treatment outcome (except that follow-up completers with a strong SOC had more slips than follow-up completers with a weak SOC). Neither of the three constructs was sufficient to near a statistically significant relationship with treatment outcome. The possibility of an interaction between stress resistors was sought to determine if a combination of the factors would predict treatment outcome.

It was found through a median split of Attributional Style for Negative Events and Spiritual Well-Being that participants who combined a low level of ASQN (which is an optimistic attributional style) and a high level of Spiritual Well-Being were significantly more likely to complete the treatment follow-up than were participants with high levels of ASQN (which is a pessimistic attributional style) and low levels of Spiritual Well-Being, p=.022 (1df). This finding becomes even more impressive as the small sample size is taken into account.

Using an analysis of variance, participants who combined high levels of Spiritual Well-Being and optimistic attributional style (low levels of ASQN) were used as group 1. Participants who combined low levels of Spiritual Well-Being and pessimistic attributional style (high levels of ASQN) were used as group 2 (see table 16). Group 1 members obtained significantly more consecutive clean days, p=.0456 (1df). That means that after the date of interview, participants with high Spiritual Well-Being and Optimistic Attributional Styles stayed drug and alcohol free for significantly more days in a row than did participants with low Spiritual Well-Being and less Optimistic Attributional Styles. The High Spiritual Well-Being, Optimistic Attributional Style participants also stayed in treatment

more days than participants with low Spiritual Well-Being and less Optimistic Attributional Styles at a rate that neared statistical significance, p=.0833 (1df).

The combination of Spiritual Well-Being and optimistic attributional style (as evidenced by low levels of ASQN) seems to have fortified these men to be able to obtain more consecutive clean days and to stay in treatment longer than the men who did not possess this combination.

Discussion of Correlations Between Independent and Dependent Variable Measures:

Spiritual Well-Being showed strong positive correlations with each of its two subscales. While correlations with each subscale were significant at the .000 level, the percentage of variance attributable to each subscale varied widely. Religious Well-Being correlated with Spiritual Well-Being r=.8225, accounting for nearly 68 % of the variance in SWB. Existential Well-Being correlated at a lower rate, r=.5250, accounting for only 28% of the variance in Spiritual Well-Being. In fact, the correlation between Religious Well-Being and Existential Well-Being showed a negative, although not significant correlation, r=.-0523, p=.724.

While the Spiritual Well-Being Scale emphasizes the differences between Existential and Religious Well-Being, it appears to be a more robust measure Religious Well-Being.

The Sense of Coherence measure showed a strong significant correlation with each of its subscales. The Comprehensibility subscale correlated r=.8655 with overall SOC. The Manageability subscale correlated with overall SOC r=.8698. The Meaningfulness subscale correlated with overall SOC r=.7917. These correlations were all significant at the .000 level. SOC subscales were also

strongly correlated with each other, suggesting a great deal of overlap between the constructs and reinforcing the author's warning that the scale is most useful as an overall measure. Results concerning only one subscale need to be viewed with this in mind.

The Attributional Style Questions for Negative Events (ASQN) consists of three subscales. Each subscale correlated significantly with overall ASQN. The Internal subscale correlated r=.7025. The Stable subscale correlated r=.6572. The Global subscale correlated r=.7822. All subscale correlations were significant at the .000 level. While each ASQN subscale correlated strongly with overall ASQN, the subscales do not correlate as strongly with each other. Both ASQN Stable and Global subscales, and ASQN Stable and Internal only correlate as trends, r=.2448, p=.081 and r=.2415, p=.098 respectively. Only the ASQN Global and Internal subscales correlate significantly, r=.3217, p=.026. This suggests that the subscales are distinct useful constructs, with little overlap.

A significant correlation existed between Sense of Coherence and Spiritual Well-Being r=.4036, p=.004, accounting for over 16% of the variance in Sense of Coherence. The differences between the two SWB subscales became striking as the correlation with Religious Well-Being

was only r=.0333 and the correlation with Existential Well-Being was r=.6584, p=.000. Existential Well-Being accounted for 43.35% of the variance in Sense of Coherence.

One more noteworthy correlation between IV measures was found in the correlation matrix. Sense of Coherence negatively correlated with the Global subscale of the Attributional Scale for Negative Events, r= -2986, p=.039. Almost 9% in the variance in SOC was accounted for by attributions for bad events not being seen as global.

Discussion of Additional Results:

As analyses were being performed to determine whether variables other than those hypothesized played a role in treatment outcome, interesting results became apparent. A strong correlation was found between the number of consecutive clean days obtained and the number of days the client was retained in treatment, r=.6213, p=.000. Nearly 39% of the variance in the length of treatment retention was accounted for by the number of consecutive clean days obtained post- interview.

The number of consecutive clean days were counted starting the day of the interview. If a client had a slip two days after the interview, his number of consecutive clean days was recorded as 2. If the client did not have a slip until 60 days post-interview, his recorded number of consecutive clean days was 60. The largest number of consecutive clean days obtainable was 90, as 90 days was the length of follow-up.

For clients who dropped-out of treatment before the 90 day follow-up period was completed, the last day of treatment participation was counted as their final consecutive clean day (as long as the urine screenings had been negative up until that point). It was common for participants to have a slip after a number of days and

continue in treatment. Sometimes they completed the 90 day follow-up after having slipped early on in the follow-up and sometimes they continued in treatment for a period less than the 90 day follow-up.

The correlation between number of consecutive clean days and the number of days of treatment retention suggests that participants who have their first slip later-on, after being in the program longer, have a much better chance of completing the follow-up. This is likely due to the feeling of belonging that occurs for clients in drug treatment. As a greater and more consistent support network is established over time, the client may feel more able to tolerate the set-back of a slip and still be able to continue in the treatment program.

An analysis of variance was performed measuring the effect of previous treatment experiences on the outcome of the current treatment episode (see table 19). For ten of the 49 participants, the current treatment experience was their first treatment episode. The other 39 men had been in treatment at least once before. While no significant differences were found between the two groups, two trends were apparent. Among 90 day follow-up completers, the group with no prior treatment had more slips than the group that had been in treatment before.

This finding could suggest that the effects of treatment episodes may be cumulative, in that people who had been in treatment before, may have learned how to avoid slips. This finding could also suggest that people who were new to treatment were more able to accept a slip and return to treatment than those participants with more treatment experience. An additional trend adds credence to the latter suggestion. Participants who had no previous treatment experience exhibited greater Existential Well-Being than did participants who had been in treatment before, p=.0943.

As Existential Well-Being is a measure of the individual's satisfaction with life and sense of purpose in life, it appears that repeated unsuccessful treatment attempts may serve to discourage hope for future success in maintaining abstinence as suggested by Miller (1992).

The variable of racial group membership was analyzed by grouping subjects into two categories. Participants who were members of racial minority groups (Black not Hispanic, Black Hispanic, White Hispanic) became group 1 and participants who were White not Hispanic became group 2 (see table 20). One of the interesting results looking at race categories was the lack of a significant difference in treatment retention. Whereas others had found less treatment retention among Black and Hispanic clients

(Agosti, Nunes, Stewart, & Quitkin, 1991), prompting more inclusive treatment programs. Treatment retention was equivalent among men of different races. This finding may be due to progress in the areas of inclusion. It may also have to do with the racially and ethnically diverse urban setting of the treatment programs.

While race category was not correlated significantly with any measure of the independent variables (Sense of Coherence, Spiritual Well-Being or Attributional Style for Negative Events), three trends developed. Group 1 (racial minority group members) exhibited more Spiritual Well-Being and Religious Well Being, p=.0734 and p=.0829 respectively. This same group also scored lower on the Stable subscale of the Attributional Style Questions for Negative Events (ASQN), p=.0682, meaning that they perceived the causes for bad events to be less long lasting than the White not Hispanic group did. The group of racial minority group members was more fortified in the areas of Spiritual Well-Being, and in one area of Attributional Style.

Further analyses were computed to determine what influence the subject's education level, yearly income, current attendance at 12 step meetings, average weekly expenditure on cocaine, and the number of years of cocaine

use all had on treatment outcome and the independent variables, while controlling for age (see table 21).

Education level was significantly correlated with Sense of Coherence r=.3239, p=.025. Participants who had more years of formal education also reported a greater Sense of Coherence. This group had less optimistic attributions for negative events. They also were much more likely to attribute the causes for bad events to internal causes r=.4053, p=.004. This finding was significant in terms of internal-external causes and there was a strong trend with overall Attributional Style for Negative Events, r=.2815, p=.053.

Three additional trends were found with the variable of education level. Among follow-up completers, participants with higher education levels, also experienced more slips than did follow-up completers with fewer years of education, r=.3934, p=.063. The two other trends had to do with the subscales of the Spiritual Well-Being scale. Religious Well-Being was negatively correlated with education level r=-.2553, p=.080 and Existential Well-Being was positively correlated with education level, r=.2460, p=.092.

Predictably, income level was significantly correlated with education level, r=.3539, p=.017, accounting for nearly 13% of the variance in income level. Income level was also

significantly correlated with reported frequency of participation in 12 step meetings, r=.3835, p=.040. This finding could lend some support for the criticism of 12 step meetings being frequented by individuals who are more middle class (Galif & Sussman, 1995).

The average weekly expenditure on cocaine was significantly positively correlated with Attributional Style for Negative Events, r=.3289, p=.033. Participants who spent more money on cocaine per week also had less optimistic attributional styles. They were more likely to credit the causes for bad events to be because of something inside them (Internal), to be long-lasting (Stable) and to influence other parts of their lives (Global).

While Attributional Style for Negative Events was positively correlated with the weekly expenditure on cocaine, the number of years of cocaine use was negatively correlated with Sense of Coherence. Two subscales reached a significant correlation, Manageability, r= -.3502, p=.015 and Meaningfulness, r= -.2896, p=.046. Overall Sense of Coherence neared a significant negative correlation with the number of years of cocaine use, r= -.2540, p=.081. Participants who had been using cocaine longer had a lower Sense of Coherence than participants who had been using cocaine fewer years. Long-time users experienced their

lives as being less manageable and less meaningful than cocaine users with a shorter cocaine use history. The number of years of cocaine use also correlated significantly with the weekly expenditure on cocaine, r=.3890, p=.011. Participants who reported more years of cocaine use also reported spending more money per week on the drug. This finding is consistent with the concept of drug tolerance, in which as the length of drug abuse increases, tolerance develops in which greater amounts of the drug are needed to achieve the same effects that smaller amounts had produced in the past.

Three open ended questions were asked of participants during their interview (see table 18). The first question "To the best of your understanding now, what prompted your involvement with drugs?" elicited responses that could be coded into three categories: Internal forces (such as to cope with uncomfortable emotions), social forces (because of peer pressure), and adventure seeking (as a way of gaining new experiences).

Participants claiming adventure seeking as prompting their involvement with drugs were also significantly more likely to give internal attributions for the cause of negative events, p=.0296 . As an individual's desire for adventure is part of their internal make-up, the correlation

between internal attributions for bad events and the internal state of adventure seeking are consistent with each other.

Participants claiming internal forces as prompting their drug use gave significantly more stable attributions for the causes of negative events, p=.0296. This can be understood in terms of both internal forces (such as wanting to soothe uncomfortable emotions) and stable attributions being long-lasting, not short-term events.

Participants claiming social forces as prompting their involvement with drugs were also more optimistic in their attributions for negative events to a degree that neared significance, p=.0989. Optimistic Attributional Style means that the individual does not blame him or herself for negative events, just as participants who claimed social forces (such as peer pressure) for prompting their drug use placed the motivating factors outside of themselves.

Question 2 asked "What prompted your seeking treatment at this time?" elicited responses naming internal influences and external influences. Some examples of internal influences taken from participant narratives include: "I wanted to rejoin society. I wanted to get my life back on track, using drugs was messing me up" "I had a relapse. I was starting to feel the same symptoms that I did before:

depression, anxiety, stuff like that." "I just thought there had to be a better way than being addicted to drugs and alcohol, so much of the day I'd be hung over." "The pain.. emotional pain that I had gone through, spiritually I felt separated from God. I felt hungry. I didn't have no money. I had a job but I didn't have no money because I was using drugs." "I attempted suicide. I have a vision of it eventually killing me if I don't stop." "I couldn't look in the mirror anymore. I couldn't deal with how I looked and I couldn't deal with what I was becoming."

External influences for seeking treatment, taken from participant narratives include: "So I can continue my job." "It was suggested that I come here by my counselor, because I live in HRA housing" "A chain of events. I was arrested and had to tell my wife about the extent of my problem." "Things got progressively worse. My job was on the line, mortgage payments on the line."

Participants who named external influences as prompting their seeking treatment (see table 19) stayed in treatment longer than participants claiming internal influences, p=.0034. Additionally, participants who named external influences accumulated significantly more consecutive clean days than participants claiming internal prompts, p=.0090. It appears that men who were coerced into treatment by the

threat of losing their job, home, or marriage were more likely to stay in treatment and be more likely to abstain longer than men who entered treatment because of dissatisfaction with their drug-using lifestyle, even when that included the fear of suicide. An interesting question is raised in regards to the chances for continued abstinence for these participants once the external prohibitions to drug use have lifted, although that question is beyond the scope of this investigation.

Question 3 "What factors do you think will help sustain you as you seek to remain abstinent?" elicited responses naming spiritual forces (help from God, prayer) or outside forces (including social support, job or treatment program, or learning cognitive strategies for avoiding relapse). Examples of spiritual forces taken from participant narratives included: "My strong belief in God. I tried meetings and they did so much good, but going to church, I believe I've gotten more from that." "Keeping a conscious contact with God." "My relationship with God, knowing there's more to life than just using drugs."

Examples from participant narratives naming outside forces included: "Well, first I have to do my part of the job. I have to go to the meetings. I have to get around with people that'll give me good advice, and I have to look

at things positive and try to get something I can do with my life. I have a lot of things that I wish to do, but I have to try one thing at a time." "I guess working the 12 steps and 12 traditions of AA, and group therapy." "I want to get my schooling together for my GED. I'm trying to stay on welfare and then get a job, you know? Trying to look for a future for myself. I ain't trying to depend on nobody, but I do need support from people in the community as well as myself." "Staying away from friends who are using. That's important to me because I like to be with the "in crowd"." "Going to meetings, really getting involved, getting a sponsor, someone I can talk to about things." "I'm hoping that this time I got it. I'm trying to get my program in place so it can stop me. I'm stopped, but I don't have that same enthusiastic feeling that I had the first time. To be honest, I don't have that much faith that I'm going to stay stopped. I doubt myself." "Aftercare programs, I was already in rehab. I need to just go to my meetings and keep it one day at a time."

No significant differences were found in treatment outcome by participant responses to what may help sustain them. Of interest is the fact that participants who named spiritual forces as support also exhibited greater Spiritual Well-Being and Religious Well-Being, p=.0020 and .0044

respectively. Their responses on the Spiritual Well-Being Scale were consistent with their verbal responses to the open ended question.

To conclude the discussion of the results of this investigation, a re-emphasis of the most striking results will be helpful. In response to the hypothesized relationship between the stress resistors of Sense of Coherence, Spiritual Well-Being and Optimistic Attributional Style, and treatment outcome, support has been found for two of the three factors when combined. Participants who possessed a combination of strong Spiritual Well-Being and Optimistic Attributional Style were significantly more likely to complete the 90 day follow-up period in treatment, $p=.022$. Further support for the hypotheses were found as the group with strong Spiritual Well-Being and Optimistic Attributional Style also obtained more consecutive clean days than participants who combined weak Spiritual Well-Being and Pessimistic Attributional Style, $p=.0456$.

Contrary to the hypothesized relationship between number of slips for follow-up completers and the stress resistor of Sense of Coherence, program completers who had a greater Sense of Coherence actually experienced more slips than program completers with a lesser Sense of Coherence. It is thought that this greater sense of Coherence may have helped

the relapser to be able to stay in treatment and face the repercussions of the slip.

The relationship found between two dependent variable measures, although not part of the hypothesis is also an important finding, worthy of further mention. A strong relationship was found between the number of consecutive clean days obtained by participants immediately following the interview and the number of days that they were retained in treatment, r=.6213, p=.000. Participants who had their first slip later in the follow-up period (or not at all) were significantly more likely to stay in treatment longer. It is believed that this emphasizes the importance of engaging the client in the treatment program early, to fortify the client to avoid dangerous situations, especially in very early sobriety.

Finally, in regards to what prompted the participant's entering treatment, it was found that external influences, such as the threat of job, housing or marriage loss was significantly associated with both the length of days in treatment and also with the number of consecutive clean days obtained, p=.0034 and p=.0090 respectively. One interesting area of further study would be to follow the outcome of these participants to determine if the external prompting

for their entering treatment and staying abstinent has long-lasting effects.

Limitations of the Current Study

The most pressing limitation of this study is the small sample size. Of the 49 men who participated in the study, only 24 completed the 90 day follow-up period. Whereas this amount of attrition is not uncommon in the drug treatment field, some statistical analyses were prohibited because of the sample size, especially as it pertained to the number of slips for program completers (DV3).

The current study was further limited by the inability to contact study participants who dropped-out of treatment before the completion of the 90 day follow-up period. It may have been useful to determine why participants dropped-out. While it was expected that some discontinued treatment because of a relapse, the possibility exists that participants could have left treatment and not resumed drug use.

The brief follow-up period also limited the study results. It would have been useful to follow participants' progress for a time period longer than 90 days. A longer follow-up period, combined with a larger sample size may

have illuminated coping resources that are associated with short-term abstinence and long term abstinence.

Suggestions for Future Research

It appears that the internal coping resources of Sense of Coherence, Spiritual Well-Being, and Optimistic Attributional Style play an important role in drug rehabilitation treatment. Further research is indicated in this area. It is suggested that participants from facilities using different treatment models be utilized to determine if the coping resources hypothesized in the current study, using the Minnesota Model, also produce significant results. Furthermore, a within subjects design may be fruitful to determine any possible changes in Sense of Coherence, Spiritual Well-Being, and Attributional Style as a participant undergoes and completes drug rehabilitation treatment.

Conclusions

Based on the findings of this study and with consideration of its limitations, the following conclusions are tenable: Cocaine abusers who combine a strong spiritual orientation

and an optimistic attributional style were more successful in drug rehabilitation treatment offered by the Minnesota Model. They were significantly more likely to complete the 90 day treatment follow-up and obtained significantly more consecutive clean days than participants who combined a lesser sense of spirituality and a less optimistic attributional style.

Cocaine abusing men who enter drug treatment programs with a strong coping capacity, who completed the 90 day follow-up period experienced greater numbers of slips and still remained in treatment than did those with a weaker capacity for coping. It appears that a spiritual orientation and optimistic attributional style combine to fortify participants to stay in treatment and avoid relapse, while a strong coping capacity enables participants to cope with the experience of a relapse without quitting treatment.

Finally, the unexpected strong relationship between the number of consecutive clean days obtained and the number of days of treatment retention emphasizes the importance of the first weeks of treatment. Participants who were able to postpone their first relapse until after they had been in treatment for a time were much more likely to complete the

treatment follow-up, maximizing their chances for continued abstinence.

APPENDIX A

Consent Form

Thank you for your willingness to participate in this study of individuals in outpatient treatment programs. You will be asked to do or agree to the following:

1. You will be asked to sign this consent form.

2. You will be asked to agree to the treatment facility releasing demographic information about you to me.

3. You will be asked to allow me to obtain information about your clean time.

4. You will be given three questionnaires to fill-out when you are new in the program and you will be asked 3 short questions about treatment.

5. Upon successful completion of the protocol you will be given five dollars. This is my way of thanking you for your participation in the study.

6. There are no known risks in this study.

7. Anything you say or write will be strictly confidential. You will not use your name on any questionnaire, instead you will be asked to choose a 4 digit code so we can keep your responses together.

8. Your participation will have no impact on your treatment at this or any other facility.

This research is a doctoral dissertation conducted under the auspices of the Program in Clinical Psychology, CUNY Graduate Center, City College.

Date_____
Participant_____
code #_____
(2 letters & 2 numbers)

_____
Lauri E. Lee, M.Phil.

_____
Professor Vera S. Paster, Ph.D.

APPENDIX B

Demographic Questionnaire

Date of Birth_____/_____/_____ code #_____

Do you have a permanent address? ___YES ___NO

Who do you live with? (check all that apply)

___alone ___with spouse or partner ___with parents

___with children ___with others (who?)_____

How long have you lived at your current address? _____

Highest grade level completed_____

What is your occupation?_____

Are you currently employed? ___ YES ___ NO

Yearly Income (check one)

___under 15,000 ___15,000-25,000 ___25,000-40,000

___40,000-55,000 ___over 55,000

Sex (check one) ___Male ___Female

Racial Group Membership (Check most accurate category)

___Black not Hispanic ___Black Hispanic

___White not Hispanic ___White Hispanic ___Asian

___Other (please specify)_____

What substances did (do) you use? (check all that apply)

	Age at 1st use	# years used	How much per week
___alcohol			
___cocaine(snorting)			
___crack			
___marijuana			
___pills			
___heroin			
___other(specify)			

Are you within your first two weeks of treatment here?

___YES ___NO

How many clean days do you have today?

_____

Are you currently taking methadone? ___Yes ___No

How many times have you been in each type of treatment? (List number for each treatment modality 0-?)

____detox ____inpatient rehab ____outpatient rehab

____therapeutic community ____methadone treatment

What has been your longest period of sobriety? _____

When?_____

Any prior exposure to Alcoholics Anonymous (AA)?

___Yes ___No

(if yes, how much?) _____

Any prior exposure to Narcotics Anonymous (NA)?

___Yes ___No

(If yes, how much?) _____

Do you currently participate in AA? ___Yes ___No

(if yes, how often?)_____

Do you currently participate in NA? ___Yes ___No

(if yes, how often?)_____

APPENDIX C

SWB Scale code #_____

For each of the following statements circle the choice that best indicates the extent of your agreement or disagreement as it describes your personal experience:

1. I don't find much satisfaction in private prayer with God.

1	2	3	4	5	6
strongly agree	moderately agree	agree	disagree	moderately disagree	strongly disagree

2. I don't know who I am, where I came from, or where I am going.

1	2	3	4	5	6
strongly agree	moderately agree	agree	disagree	moderately disagree	strongly disagree

3. I believe that God loves me and cares about me.

1	2	3	4	5	6
strongly agree	moderately agree	agree	disagree	moderately disagree	strongly disagree

4. I feel that life is a positive experience.

1	2	3	4	5	6
strongly agree	moderately agree	agree	disagree	moderately disagree	strongly disagree

5. I believe that God is impersonal and not interested in my daily situations.

1	2	3	4	5	6
strongly agree	moderately agree	agree	disagree	moderately disagree	strongly disagree

6. I feel unsettled about my future

1	2	3	4	5	6
strongly agree	moderately agree	agree	disagree	moderately disagree	strongly disagree

7. I have a personally meaningful relationship with God.

1	2	3	4	5	6
strongly agree	moderately agree	agree	disagree	moderately disagree	strongly disagree

8. I feel very fulfilled and satisfied with life.

1	2	3	4	5	6
strongly agree	moderately agree	agree	disagree	moderately disagree	strongly disagree

9. I don't get much personal support and strength from my God.

1	2	3	4	5	6
strongly agree	moderately agree	agree	disagree	moderately disagree	strongly disagree

10. I feel a sense of well-being about the direction my life is headed in.

1	2	3	4	5	6
strongly agree	moderately agree	agree	disagree	moderately disagree	strongly disagree

11. I believe that God is concerned about my problems.

1	2	3	4	5	6
strongly agree	moderately agree	agree	disagree	moderately disagree	strongly disagree

12. I don't enjoy much about life.

1	2	3	4	5	6
strongly agree	moderately agree	agree	disagree	moderately disagree	strongly disagree

13. I don't have a personally satisfying relationship with God.

1	2	3	4	5	6
strongly agree	moderately agree	agree	disagree	moderately disagree	strongly disagree

14. I feel good about my future.

1	2	3	4	5	6
strongly agree	moderately agree	agree	disagree	moderately disagree	strongly disagree

15. My relationship with God helps me not to feel lonely.

1	2	3	4	5	6
strongly agree	moderately agree	agree	disagree	moderately disagree	strongly disagree

16. I feel that life is full of conflict and unhappiness.

1	2	3	4	5	6
strongly agree	moderately agree	agree	disagree	moderately disagree	strongly disagree

17. I feel most fulfilled when I am in close communion with God.

1	2	3	4	5	6
strongly agree	moderately agree	agree	disagree	moderately disagree	strongly disagree

18. Life doesn't have much meaning.

1	2	3	4	5	6
strongly agree	moderately agree	agree	disagree	moderately disagree	strongly disagree

19. My relationship with God contributes to my sense of well-being.

1	2	3	4	5	6
strongly agree	moderately agree	agree	disagree	moderately disagree	strongly disagree

20. I believe there is some real purpose for my life.

1	2	3	4	5	6
strongly agree	moderately agree	agree	disagree	moderately disagree	strongly disagree

APPENDIX D

ORIENTATION TO LIFE QUESTIONNAIRE **code #_____**

Here is a series of questions relating to various aspects of our lives. Each question has seven possible answers. Please mark the number which expresses your answer, with numbers 1 and 7 being the extreme answers. If the words under 1 are right for you, circle 1; if the words under 7 are right for you, circle 7. If you feel differently, circle the number which best expresses your feeling. Please give only one answer to each question.

1. **When you talk to people, do you have the feeling that they don't understand you?**

1	2	3	4	5	6	7
never have this feeling						always have this feeling

2. **In the past, when you had something which depended upon cooperation with others, did you have the feeling that it:**

1	2	3	4	5	6	7
surely wouldn't get done						surely would get done

3. **Think of the people with whom you come into contact daily, aside from the ones to whom you feel closest. How well do you know most of them?**

1	2	3	4	5	6	7
you feel that they're strangers						you know them very well

4. **Do you have the feeling that you don't really care about what goes on around you?**

1	2	3	4	5	6	7
very seldom or never						very often

5. **Has it happened in the past that you were surprised by the behavior of people whom you thought you knew well?**

1	2	3	4	5	6	7
never happened						always happened

6. **Has it happened that people whom you counted on disappointed you?**

1	2	3	4	5	6	7
never happened						always happened

7. **Life is:**

1	2	3	4	5	6	7
full of interest						completely routine

8. **Until now your life has had:**

1	2	3	4	5	6	7
no clear goals or purpose at all						very clear goals and purpose

9. **Do you have the feeling that you've been treated unfairly?**

1	2	3	4	5	6	7
very often						very seldom or never

10. **In the past ten years your life has been:**

1	2	3	4	5	6	7
full of changes without your knowing what will happen next						completely consistent and clear

11. **Most things you do in the future will probably be:**

1	2	3	4	5	6	7
completely fascinating						deadly boring

12. **Do you have the feeling that you are in an unfamiliar situation and don't know what to do?**

1	2	3	4	5	6	7
very often						very seldom or never

13. **What best describes how you see life:**

1	2	3	4	5	6	7
one can always find a solution to painful things in life						there is no solution to painful things in life

14. **When you think about your life, you very often:**

1	2	3	4	5	6	7
feel how good it is to be alive						ask yourself why you exist at all

15. **When you face a difficult problem, the choice of a solution is:**

1	2	3	4	5	6	7
always confusing and hard to find						always completely clear

16. **Doing the things you do every day is:**

1	2	3	4	5	6	7
a source of deep pleasure and satisfaction						a source of pain and boredom

17. **Your life in the future will probably be:**

1	2	3	4	5	6	7
full of changes without your knowing what will happen next						completely consistent and clear

18. **When something unpleasant happened in the past your tendency was:**

1	2	3	4	5	6	7
"to eat yourself up" about it						to say "ok, that's that, I have to live with it," and go on

19. **Do you have very mixed-up feelings and ideas?**

1	2	3	4	5	6	7
very often						very seldom or never

20. **When you do something that gives you a good feeling:**

1	2	3	4	5	6	7
it's certain that you'll go on feeling good						it's certain that something will happen to spoil the feeling

21. **Does it happen that you have feelings inside that you would rather not feel?**

1	2	3	4	5	6	7
very often						very seldom or never

22. **You anticipate that your personal life in the future will be:**

1	2	3	4	5	6	7
totally without meaning or purpose						full of meaning and purpose

23. **Do you think that there will <u>always</u> be people whom you'll be able to count on in the future?**

1	2	3	4	5	6	7
you're certain there will be						you doubt there will be

24. **Does it happen that you have the feeling that you don't know exactly what's about to happen?**

1	2	3	4	5	6	7
very often						very seldom or never

25. **Many people-even those with a strong character-sometimes feel like sad sacks (losers) in certain situations. How often have you felt this way in the past?**

1	2	3	4	5	6	7
never						very often

26. **When something happened, have you generally found that:**

1	2	3	4	5	6	7
you over-estimated or underestimated its importance						you saw things in the right proportions

27. **When you think of difficulties you are likely to face in important aspects of your life, do you have the feeling that:**

1	2	3	4	5	6	7
you will always succeed in overcoming the difficulties						you won't succeed in overcoming the difficulties

28. **How often do you have the feeling that there's little meaning in the things you do in your daily life?**

1	2	3	4	5	6	7
very often						very seldom or never

29. **How often do you have feelings that you're not sure you can keep under control?**

1	2	3	4	5	6	7
very often						very seldom or never

APPENDIX E

ATTRIBUTIONAL STYLE QUESTIONNAIRE

Directions Code #_____

1. Read each situation and vividly imagine it happening to you.
2. Decide what you believe would be the one major cause of the situation if it happened to you.
3. Write the cause in the blank provided.
4. Answer three questions about the cause by circling one number per question. Do not circle the words.
5. Go on to the next situation.

SITUATIONS

YOU MEET A FRIEND WHO COMPLIMENTS YOU ON YOUR APPEARANCE.

1) Write down the one major cause:_____

_____

2) Is the cause of your friend's compliment due to something about you or something about other people or circumstances?

Totally due to other people or circumstances 1 2 3 4 5 6 7 Totally due to me

3) In the future when you are with your friend, will this cause again be present?

Will never again be present 1 2 3 4 5 6 7 Will always be present

4) Is the cause something that just affects interacting with friends, or does it also influence other areas of your life?

Influences just this particular situation 1 2 3 4 5 6 7 Influences all situations in my life

YOU HAVE BEEN LOOKING FOR A JOB UNSUCCESSFULLY FOR SOME TIME.

5) Write down the one major cause:_____

_____

6) Is this cause of your unsuccessful job search due to something about you or about other people or circumstances?

Totally due to other people or circumstances 1 2 3 4 5 6 7 Totally due to me

7) In the future when you look for a job, will this cause again be present?

Will never again be present 1 2 3 4 5 6 7 Will always be present

8) Is the cause something that just influences looking for a job, or does it also influence other areas of your life?

Influences just this particular situation 1 2 3 4 5 6 7 Influences all situations in my life

YOU BECOME VERY RICH.

9) Write down the one major cause:_____

_____

10) Is the cause of your becoming rich due to something about you or something about other people or circumstances?

Totally due to other people or circumstances 1 2 3 4 5 6 7 Totally due to me

11) In your financial future, will this cause again be present?

Will never again be present 1 2 3 4 5 6 7 Will always be present

12) Is this cause something that just affects obtaining money, or does it also influence other areas of your life?

Influences just this particular situation 1 2 3 4 5 6 7 Influences all situations in my life

A FRIEND COMES TO YOU WITH A PROBLEM AND YOU DON'T TRY TO HELP HIM/HER.

13) Write down the one major cause:_____

_____

14) Is the cause of your not helping your friend due to something about you or something about other people or circumstances?

Totally due to other people or circumstances 1 2 3 4 5 6 7 Totally due to me

15) In the future when a friend comes to you with a problem, will this cause again be present?

Will never again be present 1 2 3 4 5 6 7 Will always be present

16) Is the cause something that just affects what happens when a friend comes to you with a problem, or does it also influence other areas your life?

Influences just this particular situation 1 2 3 4 5 6 7 Influences all situations in my life

YOU GIVE AN IMPORTANT TALK IN FRONT OF A GROUP AND THE AUDIENCE REACTS NEGATIVELY.

17) Write down the one major cause:_____

_____

18) Is the cause of the audience's negative reaction due to something about you or something about other people or circumstances?

Totally due to other people or circumstances 1 2 3 4 5 6 7 Totally due to me

19) In the future when you give talks, will this cause again be present?

Will never again be present 1 2 3 4 5 6 7 Will always be present

20) Is the cause something that just influences giving talks, or does it also influence other areas of your life?

Influences just this particular situation 1 2 3 4 5 6 7 Influences all situations in my life

YOU DO A PROJECT WHICH IS HIGHLY PRAISED.

21) Write down the one major cause:_____

_____

22) Is the cause of your being praised due to something about you or about other people or circumstances?

Totally due to other people or circumstances 1 2 3 4 5 6 7 Totally due to me

23) In the future when you do a project, will this cause again be present?

Will never again be present 1 2 3 4 5 6 7 Will always be present

24) Is the cause something that just affects doing projects, or does it also influence other areas of your life?

Influences just this particular situation 1 2 3 4 5 6 7 influences all situations in my life

YOU MEET A FRIEND WHO ACTS HOSTILELY TOWARDS YOU.

25) Write down the one major cause:_____

_____

26) Is the cause of your friend acting hostile due to something about you or something about other people or circumstances?

Totally due to other people or circumstances 1 2 3 4 5 6 7 Totally due to me

27) In the future when interacting with friends, will this cause again be present?

Will never again be present 1 2 3 4 5 6 7 Will always be present

28) Is the cause something that just influences interacting with friends, or does it also influence other areas of your life?

Influences just this particular situation 1 2 3 4 5 6 7 Influences all situations in my life

YOU CAN'T GET ALL THE WORK DONE THAT OTHERS EXPECT OF YOU.

29) Write down the one major cause:_____

_____

30) Is the cause of your not getting the work done due to something about you or something about other people or circumstances?

Totally due to other people or circumstances 1 2 3 4 5 6 7 Totally due to me

31) In the future when doing work that others expect, will this cause again be present?

Will never again be present 1 2 3 4 5 6 7 Will always be present

32) Is the cause something that just affects doing work that others expect of you, or does it also influence other areas of your life?

Influences just this particular situation 1 2 3 4 5 6 7 Influences all situations in my life

YOUR SPOUSE (BOYFRIEND/GIRLFRIEND) HAS BEEN TREATING YOU MORE LOVINGLY.

33) Write down the one major cause:_____

_____

34) Is the cause of your spouse (boyfriend/girlfriend) treating you more lovingly due to something about you or something about other people or circumstances?

Totally due to other people or circumstances 1 2 3 4 5 6 7 Totally due to me

35) In future interactions with your spouse (boyfriend/girlfriend), will this cause again be present?

Will never again be present 1 2 3 4 5 6 7 Will always be present

36) Is the cause something that just affects how your spouse (boyfriend/girlfriend) treats you, or does it also influence other areas of your life?
Influences just this particular situation 1 2 3 4 5 6 7 Influences all situations in my life

YOU APPLY FOR A POSITION THAT YOU WANT VERY BADLY (e.g., IMPORTANT JOB, GRADUATE SCHOOL ADMISSION, etc.) AND YOU GET IT.

37) Write down the one major cause:_____

_____

38) Is the cause of your getting the position due to something about you or something about other people or circumstances?

Totally due to other people or circumstances 1 2 3 4 5 6 7 Totally due to me

39) In the future when you apply for a position, will this cause again be present?

Will never again be present 1 2 3 4 5 6 7 Will always be present

40) Is this cause something that just influences applying for a position or does it also influence other areas of your life?

Influences just this particular situation 1 2 3 4 5 6 7 Influences all situations in my life

YOU GO OUT ON A DATE AND IT GOES BADLY.

41) Write down the one major cause:_____

_____

42) Is the cause of the date going badly due to something about you or something about other people or circumstances?

Totally due to other people or circumstances 1 2 3 4 5 6 7 Totally due to me

43) In the future when you are dating, will this cause again be present?

Will never again be present 1 2 3 4 5 6 7 Will always be present

44) Is this cause something that just influences dating, or does it also influence other areas of your life?

Influences just this particular situation 1 2 3 4 5 6 7 Influences all situations in my life

YOU GET A RAISE.

45) Write down the one major cause:_____

_____

46) Is the cause of your getting a raise due to something about you or something about other people or circumstances?

Totally due to other people or circumstances 1 2 3 4 5 6 7 Totally due to me

47) In the future on your job, will this cause again be present?

Will never again be present 1 2 3 4 5 6 7 Will always be present

48) Is this cause something that just affects getting a raise, or does it also influence other areas of your life?

Influences just this particular situation 1 2 3 4 5 6 7 Influences all situations in my life

APPENDIX F

The twelve steps of Alcoholics Anonymous

1. We admitted that we were powerless over alcohol- that our lives had become unmanageable.

2. Came to believe that a power greater than ourselves could restore us to sanity.

3. Made a decision to turn our will and our lives over to the care of God as we understood Him.

4. Made a searching and fearless moral inventory of ourselves.

5. Admitted to God, to ourselves and to another human being the exact nature of our wrongs.

6. Were entirely ready to have God remove all these defects of character.

7. Humbly asked Him to remove our shortcomings.

8. Made a list of all persons we had harmed, and became willing to make amends to them all.

9. Made direct amends to such people wherever possible, except when to do so would injure them or others.

10. Continued to take personal inventory and when we were wrong promptly admitted it.

11. Sought through prayer and meditation to improve our conscious contact with God as we understood Him, praying only for knowledge of his will for us and the power to carry that out.

12. Having had a spiritual awakening as the result of these steps, we tried to carry this message to alcoholics, and to practice these principals in all our affairs.

The twelve traditions of Alcoholics Anonymous

1. Our common welfare should come first; personal recovery depends on A.A. unity.

2. For our group purpose there is but one ultimate authority- a loving God as He may express Himself in our group conscience. Our leaders are but trusted servants; they do not govern.

3. The only requirement for A.A. membership is a desire to stop drinking.

4. Each group should be autonomous except in matters affecting other groups or A.A. as a whole.

5. Each group has but one primary purpose- to carry its message to the alcoholic who still suffers.

6. An A.A. group ought never endorse, finance, or lend the A.A. name to any related facility or outside enterprise, lest problems of money, property, and prestige divert us from our primary purpose.

7. Every A.A. group ought to be fully self-supporting, declining outside contributions.

8. Alcoholics Anonymous should remain forever non-professional, but our service centers may employ special workers.

9. A.A., as such, ought never be organized; but we may create service boards or committees directly responsible to those they serve.

10. Alcoholics Anonymous has no opinion on outside issues; hence the A.A. name ought never be drawn into public controversy.

11. Our public relations policy is based on attraction rather than promotion; we need always maintain personal anonymity at the level of press, radio, and films.

12. Anonymity is the spiritual foundation of all our traditions, ever reminding us to place principles before personalities. (Alcoholics Anonymous 1939).

The Twelve Steps and Twelve Traditions are reprinted with permission of Alcoholics Anonymous World Services, Inc. Permission to reprint the Twelve Steps and the Twelve Traditions does not mean that A.A. has reviewed or approved the contents of this dissertation, nor that A.A. agrees with the views expressed herein. A.A. is a program for alcoholism only- use of the Twelve Steps and Twelve Traditions in connection with programs and activities which are patterned after A.A., but which address other problems, or in any other non-A.A. context, does not imply otherwise.

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IMAGE EVALUATION TEST TARGET (QA-3)

150mm

6"

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