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City University of New York, 1989

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Relative Effects of Extrinsic and Intrinsic Pressure on Retention in Treatment

By

Qudsia Siddiqi

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

1989

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The City University of New York

ABSTRACT

RELATIVE EFFECTS OF EXTRINSIC AND INTRINSIC PRESSURE ON RETENTION IN TREATMENT

by

Qudsia Siddiqi

Advisor: Professor Charles Winick

This research examined the relationship between extrinsic and intrinsic pressure (motivation), and retention in treatment for drug abuse. The data derive from 788 clients admitted to a New York City therapeutic community in 1986. Extrinsic pressure refers to external conditions that force people into treatment. The measures of extrinsic pressure were legal pressure, criminal activity in the six months before entering treatment, and legal problems. Intrinsic pressure (motivation) characterizes an individual who has entered drug treatment voluntarily on the basis of his or her own inner desires for change. Intrinsic pressure was measured by client's perceived length of treatment; treatment history; and previous attempts to stop drug use.

Since one third of the study sample consisted of Treatment Outreach Center referrals (a pre-residential

outpatient facility where individuals accepted for residential treatment wait for their beds), all variables were examined both for Treatment Outreach Center referrals and direct admissions. The variables found to be significant for direct admissions in univariate analysis were sex, legal pressure, and perceived length of treatment. The significant variables for Treatment Outreach Center referrals in univariate analysis were criminal history in the six months before entering treatment and clients' perceived length of treatment. The variables with significant beta coefficients in the multiple regression analysis were Blacks, clients' perceived length of treatment (medium and long term), legally referred, and legally involved clients.

As clients' perceived length of treatment contributed to about 40 per cent of the variance explained in this study, all variables were examined with respect to clients' perceived length of stay. A second regression analysis examined the clients' correlates of perceived length of stay itself. Stepwise multiple regression analysis was performed. Marijuana abuse was negatively correlated with short term retention (31-180 days) for perceived short term treatment group. Hispanics and marijuana abusers were significantly correlated with perceived medium term

treatment (over 180 days). Marijuana abusers and legal referrals were significantly associated with the perceived long term treatment (over 300 days).

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Table of Contents

LIST OF TABLES

Page

Chapter 1

Introduction

This study explores the relationship between extrinsic and intrinsic pressure (motivation), and retention in treatment. Extrinsic pressure refers to external conditions that influence people to seek treatment; these external conditions may be legal or social (De Leon, 1986). Legal conditions mean that the individual has entered treatment under the real or implied legal threat that if he or she doesn't accept treatment, legal sanctions will be imposed. Examples of persons under legal pressure are probationers, parolees, bailees, court mandated, cases pending, and persons for whom there is a warrant for arrest.

Social pressure refers to the pressure from significant others or from oneself that drive people into treatment. Examples of social pressure include pressure from significant others, financial or job problems, and health reasons. In this study, social pressures produced highly skewed distribution and failed to show any significant effect, and therefore were excluded from consideration.

Legal pressure is further refined into legal referrals and legal involvement. The operational definitions of legal referrals and legal involvement were adapted from the research by De Leon (1988).

"Legal referral relates to a variety of criminal justice procedures. Examples of these include parole, probation, court diversion, and sentencing stipulations that essentially direct abusers to a treatment alternative" (De Leon, 1988). Legal involvement includes warrants pending, cases pending, arrest, being in jail or on bail awaiting trial or sentencing (De Leon, 1988). Legal involvement indicates that the individual was under perceived legal pressure at the time of coming to treatment. Two other variables considered to reflect indirect legal pressure were criminal activity in the six months before entering treatment and the client's report of legal problems.

Preliminary analyses had indicated that the majority of volunteers (non legal referrals) reported committing crimes and had legal problems. Thus, in order to examine the effect of perceived legal pressures, statistical analyses also assessed volunteers who reported legal problems and had committed a crime in the six months before treatment.

Legal pressure in the present dissertation was defined by four groups based on the admission status at treatment. The four groups were pure volunteers (no crime and no legal problems in the six months before treatment), volunteers with self-reported criminal

activity or legal problems in the six months before treatment, legally involved, and legally referred.

Intrinsic pressure refers to the individual's own inner desire to enter drug treatment in order to achieve change. In the present study, three variables were examined as indications of intrinsic pressure: clients' perceived length of treatment, previous attempts to stop drug use, and treatment history.

Perceived length of treatment refers to the duration of TC treatment that individuals report to be best suited for them; i.e. how long the individual planned to be in residential treatment. Treatment history was defined as presence or absence of any other treatment prior to the current treatment. Previous treatment history and attempts to stop drug use are presumed to reflect the individual's "inner desire" to quit drugs.

Extrinsic pressure has been found to be significantly related to short term retention in treatment (McGlothin and Anglin, 1977; Collins and Allison, 1983; Condelli, 1986; Pompi and Resnick, 1987). However, its effects on long term retention are not clear. The role of intrinsic pressure on retention has not been investigated.

Narcotic addicts typically commit a large number of crimes every year These crimes are not limited to

sale or possession of drugs but include other nondrug offenses such as robbery, assault, theft, burglary, auto theft, fraud, forgery, sale of stolen goods, prostitution, and pimping (Johnson et al., 1985).

Estimates indicate that narcotic addicts commit over fifty million crimes per year in the United States (e.g., Ball et al. 1982). National surveys of jail and prison population reveal that more than three-quarters of the nation's inmates and almost all inmates in New York City use illicit drugs (U.S. Department of Justice, 1983). It is not known whether or to what extent criminal justice sanctions are effective in suppressing post-incarceration criminality or drug abuse. However, a number of studies have revealed a substantial reduction in criminality and illicit drug abuse for those who have received some form of treatment, particularly in drug free residential communities (Barr and Antes, 1981; De Leon et al. 1980; De Leon, Wexler, and Jainchill, 1982; De Leon, 1984; Holland, 1983; Simpson and Sells, 1982). These studies report near-zero criminality for heroin abusers while in residential drug treatment programs. Although a third of these clients were referred by the criminal justice system, over 70 per cent had criminal histories.

The studies conclude that most of the crimes in the United States are committed by drug abusers, and a substantial number of the offenders apprehended by the criminal justice system may be helped if they are referred to drug treatment programs.

Follow-up research has shown a positive relationship between time spent in treatment and favorable outcomes (Barr and Antes, 1981; De Leon, 1984; De Leon and Wexler, 1982; Holland, 1978; Simpson and Sells, 1982). All these studies conclude that improvement at follow-up is a direct function of time spent in treatment.

A consistent finding is that dropout rates are high in all drug treatment modalities. Only ten to fifteen per cent of those admitted to drug free residential therapeutic communities (TCs) graduate from the program (De Leon and Rosenthal, 1979). Psychological characteristics have not predicted long term retention, though several studies indicate that early dropouts reveal higher levels of psychological dysfunctions than people who stay (De Leon et al. 1973; Sacks and Levy, 1979; Wexler and De Leon, 1977; Zuckerman al, 1975).

With respect to motivation (intrinsic pressure), however, research is only beginning. Preliminary findings indicate that motivation may be correlated with retention in therapeutic communities.

Outcome studies indicate a significant relationship between legal pressure and length of stay in treatment (Collins and Allison, 1983; Condelli, 1986; Pompi, 1979). Legal pressure may be used as an effective means to retain drug abusing offenders in treatment.

To summarize, drug abusers commit a large number of crimes. These drug abusing offenders have shown a substantial reduction in criminality and drug use if they have received some form of drug treatment. However, the problem with all drug treatment modalities is that the majority of clients leave treatment before treatment influences start.

Legal pressure has been found to play a significant role in retaining clients longer in treatment. However, clients entering therapeutic communities under external pressure may or may not have any motivation to change their drug related life-style; this may be one of the reasons for early dropout. Therefore, both extrinsic and intrinsic pressure are important in understanding the phenomenon of retention. The primary objective of the present study, therefore, is to evaluate the relationship between extrinsic and intrinsic pressures and retention in a therapeutic community (TC).

Previous Studies

Time in program

A number of outcome studies have evaluated the effectiveness of drug abuse treatment programs. Most of these studies conclude that time spent in treatment is associated with a significant decline in drug abuse and criminal activity. For example, a follow-up of two separate cohorts of the Phoenix House TC found a substantial decrease in narcotic drug abuse and crime compared to pre-treatment levels in individuals who either completed the program or who remained in the program for an extended period of time (De Leon, 1984; De Leon et al., 1979).

Similar investigations at the Eagleville TC in Pennsylvania analyzed time in program among dropouts and found a positive relationship between favorable outcomes and length of stay in treatment (Barr and Antes, 1981). Sells and Simpson, in a large scale follow up study of 9,574 admissions to treatment in the Drug Abuse Reporting Program (DARP) during the period from June 1, 1969 to May 5, 1971, found a substantial reduction in drug use and improvement in employment status, though many of these individuals continued to have close ties with the drug-culture. Increased time in treatment was related to favorable outcomes. This relationship was found to be consistent across opioid addict and non addict client

subsamples as well as across the major treatment groups (methadone maintenance, TCs, and detoxification) (Simpson, 1984).

"Stay 'N Out" is a therapeutic community operating in a New York State prison for the last ten years. A series of evaluation studies have been carried out by the New York State Division of Substance Abuse Services Bureau of Cost Effectiveness and Research. These studies included information on client flow, client background characteristics, psychological testing, and environmental assessment and outcome. One of the study results was that psychological tests including the MMPI and the Tennessee Self Concept scale indicated improvements in psychological functioning for individuals who received treatment in a prison therapeutic community for at least six months (Wexler, 1987).

A report by Casriel and Amen on Daytop Village found that of 176 ex-addicts who graduated by February 1971, 158 used no drugs (Casriel and Amen, 1971). Another study of Daytop reported that during 1969 about 694 addicts entered the program. A follow-up by "word of mouth" indicated that only four out of 38 graduates were known to return to drug use (Collier et al., 1970). A much larger follow-up study on Daytop therapeutic

communities examined the recovery rates among 272 graduates and 280 dropouts. However, dropouts were defined as persons who had stayed in the program for at least six months. The major recovery criteria included 1. current drug use; 2. alcohol use; 3. involvement in illegal activities; and 4. psychosocial involvement, i.e. employment or education. The study found that 84 per cent of graduates and 46 per cent of dropouts were no longer using drugs or abusing alcohol, were not arrested for criminal violations, and were employed and/or involved in education (Collier and Hijazi, 1972).

Gateway House in Chicago is a TC based on Synanon and Daytop concepts. Stolkin conducted a study on 472 individuals who entered the program up to February 1, 1971. He reported that only one out of 22 graduates was using dangerous drugs since leaving Gateway (Slotkin, 1972).

Another study on members of "The Family", a therapeutic community within Mendocino State Hospital in California, concluded that 36 out of 39 graduates stayed drug free (Glasscote et al., 1972).

A study on Southmore House, a halfway house for addicts referred from the Texas Department of Corrections or the United States Public Health Service Hospital at Fort Worth, reported that graduates did better on criteria of residence, employment, arrest and drug use than did dropouts (Kaplan and Meyerowitz (1969).

Overall, therapeutic community studies reveal that graduates fared better than dropouts on all measures of outcome. Among dropouts, time spent in treatment was positively related to favorable outcome.

Retention Rates

"Although a relation between retention and outcome has been firmly established, most admissions to therapeutic communities leave and many do so before treatment influences are presumed to be effectively rendered" (De Leon and Schwartz, 1984). Research on seven traditional therapeutic communities showed that across these programs, 12 month retention rates ranged from nine per cent to 15 per cent. Moreover, the likelihood of continued retention increased significantly with longer stay in treatment (De Leon and Schwartz, 1984).

An early study examined the status of 157 residents in two New York Phoenix Houses. It was found that only 15 per cent of the admissions were graduated by the program (Nash et al., 1971).

Several retention studies have been conducted on Daytop Village. Casriel and Amen stated that 176 ex-addicts who graduated by February 1971 represented 28 per cent of all admissions (Casriel and Amen, 1971). A later study indicated that graduates constituted not more than 10 to 15 per cent of all admissions to Daytop (Glasscote et al., 1972). Collier et al. reported that

only six per cent of those who were admitted during 1969 were graduated from the program (Collier et al., 1970). A follow-up indicated that fewer than 30 per cent of the total admissions stayed in the program for six months (Collier and Hijazi, 1972).

Glaser examined the problem of retention at the Gaudenzia TC in Philadelphia for the first five years of its existence. He found that 80 per cent of admissions to Gaudenzia left treatment during the first week and 50 per cent of the remainder had left by the end of the first month (Glaser, 1971). Among a variety of federally funded drug treatment programs reviewed in 1979, only 7-15 per cent of the clients stayed in treatment for 12 months in drug free residential treatment programs, 22 per cent remained in methadone maintenance, and nine per cent stayed in drug free ambulatory programs (De Leon, 1983).

Bayer and Koenigsberg examined the retention rates among methadone maintenance programs in New York City for the period 1964-1976. The study was based on 78,498 first admissions; data on the admissions were obtained from the Methadone Information Center of the Community Treatment Foundation, Inc. The results showed a continuous decline in retention rates from 1964 to 1976. The data didn't include dropout information for the first six months of treatment. However, a more limited study

for the period of 1974 through 1976 concluded that 68 per cent of the patients who left treatment during the first six months did so in the first three months (Ronald and Koenigsberg, 1981).

Winick conducted a large-scale evaluation of all 24 therapeutic communities in New York City. Retention rates showed an overall dropout of 26 per cent in the first month, and by three months, almost half of the patients had left treatment (Winick, 1981).

The Treatment Outcome Prospective Study (TOPS) is a long-term, large scale, longitudinal study of drug abusers who received drug treatment in publicly funded drug treatment programs from 1979-1981. The information obtained about outpatient methadone, residential, and out patient drug free programs provides some basic data necessary to describe treatment in these modalities. In TOPS methadone programs, dropout was low in the early stages of treatment. About half of the clients remained in treatment for one year or more. In TOPS drug free residential therapeutic communities, more than 25 per cent of the clients dropped out in the first month of treatment. In TOPS outpatient drug free programs, more than 20 per cent left treatment in one week or less after admission, 15 per cent after two to four weeks, and more than 60 per cent in less than 3 months. (Allison and Hubbard, 1985).

A study of Gateway Houses in Chicago revealed that only five per cent of those who had been admitted in the program left as graduates (Slotkin, 1972).

Overall, studies of drug treatment programs reveal that dropout is the rule in all treatment modalities and dropout rates are highest during first three months of treatment.

Legal Pressure

A few studies have examined the role of legal pressure on retention and treatment outcome. The California Civil Addict Program was basically designed for treatment of persons convicted of certain offenses or recommended for treatment by the district attorney's office. The program consisted of a six months residential phase, followed by a three years of outpatient treatment. The outpatient treatment included supervision by a parole officer, weekly counseling, and drug testing through urine analysis. If a parolee was found to be absent for three days, the parole officer could issue a warrant for arrest and return the client to inpatient treatment. The clients were clearly under actual legal pressure. In 1970, inpatient treatment was eliminated and outpatient treatment was reduced to a two year period. Research examined the effect of strict and relatively lenient control policies on behavior of individuals by comparing the 1964 (strict policies) and 1970 (relatively lenient policies) groups (McGlothin and Anglin, 1977).

The results revealed a significant reduction in daily narcotic use, higher rates of employment, and lower rates of nondrug arrests and self reported criminal activity for the group monitored with heavy supervision by parole agents and urine testing. It was not possible to rigorously evaluate the lenient control policies adopted in 1970 because of the differential availability of methadone maintenance. However, it was found that before the widespread use of methadone maintenance, the 1970 group did not do as well as the 1964 sample. After the use of methadone maintenance, no differences were found in the behavior of the two groups.

Another study focused on those arrestees who were referred to drug treatment programs through Treatment Alternatives to Street Crime (TASC). Regression analyses involving more than 2,200 individuals indicated that legally induced clients stayed in treatment longer and did at least as well as those who sought treatment voluntarily (Collins and Allison, 1983).

The programs at Arthur Kill and Bayview in New York are TCs modified to fit into a correctional institution (Wexler, 1986). At Arthur Kill Correctional Facility on Staten Island, there is a program for males with a capacity of 62. The program at Bayview Correctional Facility, with a capacity of 31, is for females. An evaluation study on the Arthur Kill and

Bayview programs focused on clients who were terminated prior to December 31, 1979 and had been released on parole. These clients were compared with individuals who had been on the waiting list of Arthur Kill and Bay view but were never admitted to the programs. The program and comparison groups were similar in "time at risk," age, ethnicity, religion, education, marital status, drug abuse history, prior arrests, convictions, and severity of crime leading to incarceration. It was found that parole revocation rate was lower for Arthur Kill program males than the two comparison groups (Wexler, 1987).

Therapeutic communities provide a setting for investigating legal pressure. For example, the relationship between external pressure (legal and family) and retention has been studied using 139 individuals in five residential drug treatment programs in New Jersey (Condelli, 1986). Results showed a significant positive relationship between legal pressure and length of stay in the program.

Abraxas is a therapeutic community in Pennsylvania serving adolescents referred by the courts. Client retention for Abraxas was compared with an aggregate of seven therapeutic communities in which the majority of the clients had entered treatment voluntarily (Pompi, Resnick, 1987). These studies concluded that court

pressure was the major reason for higher client retention in Abraxas especially during the first month of treatment.

As mentioned earlier, "Stay 'N Out" is a therapeutic community operating in a New York State prison for the last ten years. A series of evaluation studies has been performed by the New York State Division of Substance Abuse Services Bureau of Cost Effectiveness and Research. One of the results was that psychological tests including the MMPI and the Tennessee Self Concept scale indicated improvements in psychological functioning for individuals who received treatment in prison therapeutic community for at least six months (Wexler, 1986).

Another study examined the changes in the arrest rates for 173 inmates who attended seven prison-based treatment programs (Des Jarlais and Wexler, 1979). Four of these programs were based on the traditional Synanon model, two were counseling programs, and one was a drug free residential program. No significant differences were found in the arrest rates for those inmates who attended treatment programs and a comparison group. However, it was found in a later analysis of the data that two of the TCs did better than a comparison group .

Overall, the studies reviewed indicate that clients under legal pressure stay longer in treatment

than those who enter treatment voluntarily. However, the effects of legal pressure on long term retention remain unclear.

Intrinsic Pressure

There are virtually no studies of the effect of motivation on retention or outcome. A few investigations provide data that are indirectly related to intrinsic pressure. For example, psychological characteristics fail to predict retention in treatment. However, research on psychological scores in treatment conclude that early dropouts have higher levels of psychological dysfunction (De Leon et al, 1973; Sacks and Levy, 1979; Wexler and De Leon, 1977).

Multivariate studies of Phoenix House data suggest that clients who show less defensiveness and less denial of their problems remained in treatment longer (De Leon, 1983). Preliminary findings on the relationship of measures of circumstances, motivation, readiness, and suitability to short-term retention (30 days) indicate that motivation, readiness and suitability (the latter two in particular), in residential treatment, appear as positive correlates of short-term retention (De Leon and Jainchill, 1986).

Rationale

The two main findings from the review of literature can be summarized as follows:

1. Time spent in treatment is positively related to favorable outcomes. However, dropout rates are high for all drug treatment modalities, especially during the first month of treatment.

2. Clients under legal pressure show longer retention and their outcomes are similar to clients who come to treatment voluntarily. However, the effects of motivation or intrinsic pressure on retention in therapeutic communities have not been adequately investigated.

External pressure, particularly legal pressure, can be used as an effective technique to retain clients longer in treatment but its effects on long term retention are not known. Also, existing studies do not differentiate between actual and perceived legal pressure and it is not clear how these differences affect retention.

Several issues are involved in defining the term legal pressure. "There are important distinctions among the terms legal referral, legal status, and legal pressure. Lack of clarity in the use of these terms has been an important source of variance in assessing

treatment effectiveness for the criminal justice client" (De Leon, 1988).

Legal referral relates to a variety of criminal justice procedures, such as parole, probation, court diversion, and sentencing stipulations. Legal status refers to any form of legal involvement. Examples of legal involvement include warrants pending, cases pending, arrested, being in jail, awaiting trial or sentencing, being on bail. A large number of admissions to treatment are legally involved as compared to legally referred. These two terms imply different influences on retention in treatment but it is not known how they will affect the retention in treatment.

Another issue is how to define legal pressure. "It is commonly assumed that legal referral (an action) is equivalent to legal pressure (an effect)" (DeLeon, 1988). However, it is not necessary that legally referred clients feel pressure. Thus legal referral would not have the presumed effect of retaining clients longer in treatment.

The above issue is illustrated in a study of parolees. ACCESS PROJECT is a program undertaken jointly by the New York State Division of Substance Abuse Services and the New York State Division of Parole to refer parolees with drug abuse problems to treatment. An evaluation study on 174 cases reported that about 39 per cent of the parolees referred to treatment in the first

eight months of the program did not report to the program, irrespective of whether or not treatment was a mandated condition of the parole (Joseph, 1987). Though the reasons for which these parolees broke their appointment are not clear, it is obvious that being on parole didn't influence them to seek treatment.

On the other hand, some volunteers may enter treatment with perceived pressure because of their previous legal involvement. The classification as volunteers and non volunteers doesn't necessarily reveal the effect of perceived legal pressure. There is a distinction between a purely volunteer group without any legal pressure and volunteers who have come to treatment with perceived legal pressure. Thus, research is needed to examine the role of perceived legal pressure for both volunteers and legal referrals and its effect on retention.

How legal pressure in particular and extrinsic pressure in general can affect treatment retention has been hypothesized by De Leon (1988). He hypothesized three stages of treatment involvement which reflect shifts in the factors that influence behavior change. The three stages are:

1. Compliance, which means adherence to the rules and regulations of the TC, in order to avoid negative consequences such as disciplinary sanctions, discharge, or reincarceration.

2. Conformity, which refers to adherence to the expectations and norms of the group or community, for the purpose of avoiding disapproval or disaffiliation.

3. Commitment, which means adherence to a personal resolve to change one's life-style.

These stages are inclusive and interactive in their relation to the individual's stay in treatment in order to influence behavior. External pressure may be effective in seeking, remaining, and benefiting from treatment. For some individuals, legal pressure may provide "the initial force that sustains individuals through the compliance stage of treatment, permitting the influences of maturation, therapy and retraining that occur in the later stages of the recovery process" (De Leon, 1988).

A common perception is that clients under external pressure have no inner desire for change and will leave treatment the moment they get a chance to do so. However, the interaction of external pressure with motivation has not been investigated. The present study, therefore, examines the relationship between extrinsic and intrinsic pressure, and retention in therapeutic communities. Specifically, it focuses on the effect of perceived legal pressure on retention for both volunteers and legal referrals.

Significance

Although drug abuse is not causally related with criminality, several studies find that a change in one is related with a change in the other. These studies conclude that many of the crimes in United States are committed by drug abusers, and the offenders apprehended by the criminal justice system may be helped if they are referred to drug treatment programs.

Follow-up research has shown a positive relationship between time spent in treatment and favorable outcomes. The studies conclude that improvement at follow-up, including a reduction in criminal activity, is a direct function of time spent in treatment.

There is no profile of the clients best suited for treatment. Several studies indicate that external pressure, particularly legal pressure, helps to retain clients in treatment. However, its effects on long term retention are not known. Also, little is known of the relation between external pressure and motivation, and retention in treatment. Most of the studies on retention or dropout rates deal with fixed background characteristics, primary drug of abuse, or legal pressure.

Current research on retention in terms of circumstances, motivation, readiness, and suitability for substance abuse treatment suggests that these variables

can significantly predict long and short term retention. The present study extends this work by focusing on retention rates in relation to extrinsic as well as intrinsic pressures at the time of admission to therapeutic communities. It also examines the relationship of actual and perceived legal pressure to retention in treatment.

The study could contribute to filling in the gap in our knowledge and also suggest guidelines to the criminal justice system for identification, assessment, and referral to treatment. Recommendations can be made for therapeutic communities by identifying clients who are at risk for early dropout.

The second chapter focuses on the origin, structure, and goals of therapeutic communities. This is followed by a brief history of the program studied.

The third chapter presents the methodology. It discusses the sample, research design, instrument used, and methodological problems encountered during this study.

The fourth chapter reports the findings from univariate analysis.

In the fifth chapter, results of regression analysis between independent and dependent variables are described and discussed.

The sixth chapter reports the univariate results of selected variables in relation to clients' perceived

length of treatment. It also presents a discussion of the findings from the regression analyses.

The seventh and final chapter summarizes and concludes the study, with recommendations for the criminal justice system and treatment personnel.

Chapter 2

Background Of Therapeutic Communities

Therapeutic communities were pioneered by psychiatrist Maxwell Jones in 1947 in London, in order to help psychiatric patients. According to Jones, it was an attempt to establish a democratic system in hospitals where the domination of the doctors in a traditional hierarchy system was replaced by open communication, information sharing, decision making by consensus and problem solving sharing, as far as possible, with all patients and staff (Jones, 1953).

The therapeutic community for substance abuse appeared in the 1950s with a basic philosophy of self help. The self help concept for chemical abuse was originally introduced by Alcoholic Anonymous (AA). Synanon, the first therapeutic community for drug abuse treatment, was established in 1958 by groups of alcoholics, addicts, and ex-addicts. Many therapeutic communities were developed during the 1960s following the Synanon model, but unlike Synanon, reentry to society was a major goal of these therapeutic communities (Brook and Whitehead, 1980). By 1979, over 300 therapeutic communities had been established across the United States.

Glaser suggested the name Democratic TC (D.T.C.) for the therapeutic community designed to help mental health patients and Programmatic TC (P.T.C) for the programs that emerged to help drug addicts (Glaser, 1983).

The therapeutic communities in the United States banded together in 1975 to form a new organization, the Therapeutic Communities of America (TCA), in order to improve their ability to deal with outside pressures, especially from federal and local funding agencies. The Therapeutic Community Certification manual defines therapeutic communities in the United States as a model of therapy with the primary objective of fostering personal growth (Kerr, 1986). This is accomplished by changing an individual's life style through a community of concerned people working together to help themselves and each other. The individuals in a TC are called "members" in order to communicate their affiliations within community.

Structure of Therapeutic Communities

The TC manual describes a therapeutic community as a highly structured environment with defined moral and ethical boundaries. It employs community imposed sanctions and penalties as well as earned advancement of status and privileges as part of the recovery and growth process. Being part of something greater than oneself is an especially important factor in facilitating positive growth (Kerr, 1986). The concepts used in the above definition (structured environment; ethnical and legal boundaries; earned advancement of status and privileges).

Structured Environment

TCs are stratified communities with a network of relationships. Each individual is member of a group. Several groups contribute to forming the community (De Leon, 1984, 1986). The job functions in a TC are assigned on the basis of the individual's skill, progress and seniority. The lowest position in a TC is mopping the floor and the highest position is admittance to the staff.

Ethical and Legal Boundaries

TCs have well defined ethical and legal boundaries to guide the behavior of the staff and members. These ethical and legal boundaries are described in the

Therapeutic Community Certification Manual which offers a code of ethics and bill of rights.

Earned Advancement of Status and Privileges

TCs have a system of rewards and punishments. Positive behavior in a TC means behavior which conforms to rules and regulations of the TC. Socially acceptable behavior is rewarded and inappropriate behavior is punished. The reward usually consists of improved status in the TC hierarchy and punishment consists of public denunciation and loss of status. The philosophy behind rewards and punishment is to encourage members to learn responsibility and to advance within the TC structure through earned achievements. Earned achievements are important because they "require investment of time, energy, self-modification, risk of failure and disappointment" (De Leon, 1986). Earned achievements in a TC have been found to be helpful in improving self-esteem and personal confidence. Responsibility means that a person can't blame drug addiction or other problems for his socially disapproved behavior.

Goals and Principles of a Therapeutic Community

The therapeutic community views "drug abuse as a disorder of the whole person, affecting some or all areas of functioning", (De Leon, 1986). The problem, therefore, is not the drug abuse but the person. Drug abuse is considered as a symptom of underlying problems. The TC provides an environment where individuals learn to deal with their problems in a constructive way. They are taught to express their problems, stress and conflicts with other residents and learn to help themselves with the help of others. The primary goal of the TC philosophy is " complete change in life-style: abstinence from drugs, elimination of antisocial (criminal) behavior, development of employable skills, self-reliance, and personal honesty". (De Leon and Rosenthal, 1979).

Kooyman has discussed the curative elements described by Hollidge in a therapeutic community (Kooyman, 1986). Some of the elements are described below.

1. The Installing of Hope

A TC provides a setting where individuals are taught to use their existing potential. The emphasis is on a whole new life start. This emphasis gives the individual a new hope and desire to change.

2. Feelings of Togetherness

In a TC, the individual learns to explain his or her problems to fellow residents and share their problems. The TC helps him or her feel that his or her problems are not unique and that other people may have been in the same situation. It develops confidence and eliminates the feelings of isolation and alienation.

3. Altruism

Individuals learn to share and help their fellows problems. It helps them believe that they are not worthless and reinforces their feelings of their self esteem.

4. Socialization

The TC provides an environment where the individual can no longer satisfy his or her personal needs by manipulating others. Instead, he or she learns to ask for help from others.

5. Development of Interpersonal Skills and Sharing Information

In a TC, the residents are not only encouraged to criticize the behavior of their fellow residents but also to accept criticism on their own behavior. It helps them to analyze their behavior and think about what change they need.

6. Group Cohesion

New residents may have fear of rejection in the beginning. The fear of rejection can result into isolation from the group. A TC doesn't encourage this behavior and helps overcome the feelings of rejection, thus contributing to development of feelings of group belongingness.

7. Re-Living Situations From the Family of Origin

A TC provides a new family environment.

8. Identification

TC provides a new identity for the residents. "The old identity is left behind and positive introjections occur, producing an increase of self-esteem, insight and trust" (Kooyman, 1986).

Differences Between Democratic and Programmatic Versions of Therapeutic Community

As mentioned earlier, Glaser suggested the name Democratic TC for the therapeutic community which serve mental health patients and Programmatic TC for the facility that treats alcohol and drug addiction. There are some important differences between the Democratic Therapeutic Community and the Programmatic Therapeutic Community. Some of these typological differences are discussed below.

1. Democratic TCs have professionals trained in fields like medicine, psychology, and social work whereas

primary clinical staff at Programmatic TCs consists of ex-addicts who act as role models for the residents.

2. All models of TCs have a set of explicit norms and sanctions, positive and negative behavior. Positive behavior is rewarded and negative behavior is disapproved and punished. The negative sanctions range from verbal disapproval to demotion in status or even expulsion. These norms and sanctions are strictly enforced in the PTC, on the ground that addicts need to learn self-control, and the sanctions and norms are necessary for the smooth running of the TC. The application of the negative sanctions may contribute to learning against staff advice ("splitting") at an early stage, especially following admission when an individual is not ready to face the unfamiliar environment of the TC.

The democratic models of TCs are in total disagreement with existentialism as a treatment philosophy. Behavior changes resulting from strict enforcement of norms and sanctions are considered temporary. According to Jones, "social learning in DTCs is essentially shared communication in a group setting where each Individual learns to listen to other people's points of view and compares these with his own" (Jones, 1986). This learning process is different from that of PTs where failure to comply with the norms results in the loss of support from peer group.

3. In PTCs, decisions are made by those who have positions in the authority structure (Sugarman, 1986). Residents are not allowed to participate in discussions on policy matters or clinical issues. In DTCs, there are daily community meetings of staff and residents and major issues are solved by consensus (Jones, 1986).

Despite such a typological variations, both models of TC are strikingly different from other approaches to treatment and rehabilitation. Both models address the whole person, not just specific problems or diseases.

Types of Therapeutic Communities for Substance Abuse

Sells (1974) in his discussion of drug treatment types, describes three types of therapeutic communities. These are listed and described below.

1. Standard, Traditional TC (-S)
2. Institutional, Medical Orientation (TC-M)
3. Institutional, Non-medical (TC-N)

1. Therapeutic Community (Standard, Traditional)

The standard therapeutic community is a drug-free residential program with a planned duration of 15-24 months (De Leon, 1979; Sells, 1974). The primary staff consists of ex-addicts who themselves were rehabilitated in such a program and act as role models. The therapeutic process includes the use of role models, peer pressure, and group encounters. The treatment environment is relatively authoritarian and residents are expected to strictly follow the community norms.

Residents are rewarded for their good behavior and negative sanctions are imposed for not conforming to the norms.

2. Therapeutic Community (Institutional, Medical)

These therapeutic communities are medically oriented, using detoxification as medical intervention. Alcoholics and drug addicts may be treated together. The treatment philosophy encourages all residents to appreciate the human qualities of one another. Psychiatric and psychological evaluations are made. Other therapeutic processes include encounter methods and confrontation.

In a medical therapeutic community, all residents do not live together in one residence. This type of therapeutic community typically includes smaller autonomous communities within the larger whole (Sells, 1974). The staff mostly consists of medical and social service professionals. Ex-addicts are used as counselors and group leaders.

The institutional therapeutic community usually requires two months of residence. Outpatient services are available after completion of the program.

3. Therapeutic Community (Institutional, Non-medical

These treatment programs require 8-18 months residence. Supportive chemicals are used only during detoxification. Treatment philosophy emphasizes

developing personal relations, spiritual values, and socially acceptable behavior, so that a resident may return to his or her family or family and function as a normal member of the society.

Strict discipline is practised. However, no punitive measures are implied. Daily activities consist of classes, seminars, therapy groups, and prevocational training activities.

Description Of The Program Under Study

The structure and organization of the study program follow a traditional TC model. Like all traditional therapeutic communities, its treatment plans are based on self help concept. The individual has to work as a member of the community. In a residential facility, there is a network of relationships involving individual-group-clan-community membership. Jobs are assigned in a hierarchical manner based on the individual's ability, progress and seniority. The treatment phases as discussed by De Leon (1984) are briefly described below:

1. Induction (1-30 days)

This is phase one and the primary objective is to introduce and familiarize the clients with TC concepts, rules, and regulations.

2. Primary Treatment (2-12 months)

In phase 2, the emphasis is on achieving social and psychological goals through all the activities and resources of the community (De Leon, 1984).

The daily regime includes encounter groups, marathons, tutorial sessions, and educational seminars. The objective is for individuals to look at their drug use and antisocial behavior, build self confidence, and internalize the TCs perspective and commitment to change through 24 hour a day learning experience.

Re-Entry (13-24 months)

In this stage, individuals are prepared to make autonomous decisions with self confidence. The emphasis is on identifying problems that the individual may face in the outside world. The purpose is to help the individual to avoid relapse.

Chapter 3

Methodology

This chapter describes the sample and data used. There is a discussion of variables employed and of the research design.

Sample

The sample for the present study (N=1,056) initially included all admissions to an urban residential drug treatment program from January 1986 through December 1986. The reduced study sample (N=788) excluded (a) clients whose demographic, entry status, drug, crime, and other information was not available because they left treatment within 24 hours of admission (b) clients who participated in special intervention programs as part of a clinical research project to lower dropout rates (De Leon, 1988). The exclusion of those admissions who participated in special programs permitted examination of retention without the affects of any intervention.

Data

Data used for analysis of the relationship between extrinsic pressure and intrinsic pressure (motivation) and retention in treatment were gathered as part of the above research project concerned with enhancing retention in treatment.

Clients were interviewed on the first, second, and third day of their stay. A detailed questionnaire, the client intake survey (CIS), was completed for each client. The data collected included information about demography, education, employment, drug and alcohol use, criminal activity, criminal justice system involvements, previous admissions to treatment, and reasons for coming to treatment. The CIS instrument used for collecting information on day one was used for the present study.

Procedure

Data for admissions from January 1, 1986 to April 30, 1986 were manually coded and entered on an IBM personal computer. Data for admissions from May 1, 1986 to December 31, 1986 were extracted from the database system developed by the program for research purposes. Statistical package SPSS PC+ was used to analyze the data and for regression analyses.

Variables Employed

The selection of variables was based upon a pilot study of 266 cases.

Time in Program

The dependent variable of time in program was defined as the number of days that a client remained in treatment, with the admission day counted as day one and

the day of termination (dropout / discharge) counted as the last day. Time in program (TIP) was computed against a ten month retention potential (probability of staying in treatment for ten months). The ten month criterion was based on three reasons:

1. Retention information for the entire sample was available through ten months.

2. Earlier studies indicate that four to six months is the minimum time required for client change or treatment effects (De Leon, 1973).

2. The probability of remaining in treatment is significantly higher for clients who have already spent at least six months in treatment.

Dropout rates were computed as proportions of clients leaving treatment within specific time periods. Following research conventions in this area, successive 30 days periods were examined.

Chi-squares were computed to test the 30 day and 180 day significance between the dependent and independent variables.

Extrinsic Pressure

Variables examined to reflect extrinsic pressure were: legal pressure, criminal activity in the six months before entering treatment, and self reported legal problems just before treatment.

Legal Pressure

Since about 30 percent of admissions to the program are either legal referrals or legally involved (e.g., probationers, parolees, bailees, court mandated, pending cases), legal pressure was used as an objective indicator of extrinsic pressure. The legal pressure category referred to the following groups of clients: volunteers, legal referrals, and legally involved. These classifications were based on the response distribution to the intake question, "What was your legal status when you contacted this program?" The three categories are shown in schematic A.

Schematic A

Classification of Legal Pressure Groups

1. Volunteers

   No legal status

2. Legal Involvement

   On bail awaiting trial

   On bail awaiting sentencing

   In jail awaiting trial

   In jail awaiting sentencing

   In prison or jail serving a sentence

   Warrants pending

3. Legal Referrals

   Parole

   Probation

Additional Perceived Legal Pressure variables

Criminal Activity In The Six Months Before Coming To Treatment

The pilot study of 266 clients revealed a significant association between criminal activity in the six months prior to treatment and increased retention. These findings suggest that recent criminal activity exerted a certain degree of indirect legal pressure. Thus, criminal activity in the six months before treatment was examined as an additional legal pressure variable.

Because information on the crime variable was coded in alpha numeric manner, crime rates were not computed in the present study. The information provided by clients about their criminal activity was recoded as follows.

Clients who committed no crimes in six months before coming to treatment were placed in the "no crime" category and clients who committed any crime were placed in the "crime" category, regardless of the number of crimes they committed.

Legal Problems

The pilot study on 266 admissions revealed that a large number of clients (about 70 per cent) were volunteers (i.e., no legal referral or legal involvement). However, a large majority of these volunteers when asked about legal problems as part of the

intake interview, admitted having such problems just before treatment. These clients, though not legally referred or legally involved, might have opted to enter treatment because of legal pressure they were perceiving at that time. Thus, legal problems were included as an indicator for perceived pressure. Client were asked whether they had any legal problem before entering treatment.

The legal problem and criminal activity variables were used to redefine the volunteer group in several analyses. Volunteers were subdivided into two groups: those who reported no legal problems and committed no crimes in the six months prior to treatment; and those who reported legal problems and/or committed crimes in the six months prior to treatment. This yielded two volunteer groups, those with and those without perceived legal pressure.

Intrinsic Pressure

Intrinsic pressure consisted of both subjective and objective indicators. The subjective indicator was perceived length of treatment. The objective indicators were treatment history and previous attempts to stop drug use.

1. Perceived Length of Treatment

In an earlier study, clients' perceived length of treatment was found to significantly predict retention in

treatment (Condelli, 1986). This finding was also obtained in recent research by De Leon (1988).

In the present study, perceived length of treatment was included to measure the individual's "inner" need for the treatment and its effect on retention. Clients were asked to select from ten categories the kind of treatment they needed most at this time.

short term residential (one-six months)
medium term residential (6-12 months)
long term residential (12 months to 2 years)
non-residential daycare (9-5)
night care (work out, sleep in)
outpatient clinic - counseling
religious counseling
individual psychotherapy (private)
methadone maintenance
hospital detoxification

Categories from 4 to 10 were combined as 'other' because they contained few cases.

The objective indicators for clients' motivation for treatment were treatment history and previous attempts to stop drug use.

Treatment History

Multiple admissions have been found to be significantly associated with retention in treatment.

Multiple admissions may reflect the individual's inner desire to stop using drugs. In the present study, it referred to whether or not a client had any previous treatment. It was computed on the bases of information given in the Client Intake Survey instrument. Clients were asked about the kind of treatment they had undergone for drug/alcohol abuse. The clients who had no previous treatment were categorized as "no previous treatment" and those who had previous alcohol/drug abuse treatment were placed in a "previous treatment" group. Because some of the clients had been in more than one treatment modality, it was not possible to isolate and examine the effect of each treatment modality on retention.

Previous Attempts To Stop Drug Use

This variable presumably reflects an individual's motivation to quit drug use. It was recoded as "no attempt" or "any previous" attempt to stop drug use.

Other Variables

These were demography, perceived pressure, and primary drug of abuse. Primary drug of abuse contained the following drugs:

1. Marijuana and Hashish
2. Inhalants
3. Hallucinogens
4. Cocaine

5. Heroin
6. Other Opiates
7. Illegal Methadone
8. Valium
9. Librium
10. Quaaludes
11. Tranquillizers (thorazine, other pharaceutical drugs)
12. Barbiturates (goofballs, tuinal, seconal) drugs)
13. Sedatives/Hypnotics (elavil, brownies)
14. Amphetamines
15. Methedrine
16. PCP - "Dust"
17. Cough Medicine
18. Over the Counter
19. Alcohol
20. Crack

Self-Reported Source Of Pressure

Clients were asked about which pressure to seek treatment influenced them most to seek treatment. The different response categories were:

1. none
2. perceived outside pressure

3. perceived inside pressure

4. both pressures equally influenced

Analytic Plan

Dropout rates, computed as percentages based on time in program, were examined for both extrinsic and intrinsic pressures. Since 27 per cent of the study sample consisted of referrals from Treatment Outreach Center, a pre-residential outpatient facility, dropout rates were examined both for Treatment Outreach Center referrals and direct admissions.

Hierarchical multiple regression analysis was performed to examine the predictors of retention.

Variables found significantly predicting retention in regression analysis were further examined. Both univariate and multivariate analyses were used to study the relationship between significant predictors and the other variables with respect to retention.

This chapter described the research methodology used in the present dissertation. Research sample, data, research procedure, variables employed in the study, research design, and methods were discussed. The next chapter reports results from univariate analysis, followed by a discussion of results.

Chapter 4

In this chapter the sample characteristics are described, and the significant findings from univariate analysis are reported and discussed. The variables which were not significantly associated with retention are reported in appendix.

Sample Characteristics

The sample for the present study (N=788) consisted of 69 per cent Blacks, 19 per cent Hispanics, and 12 per cent Whites, as shown in Table 1, Sample Characteristics by Demography and Primary Drug of Abuse. Two thirds of the clients were male, and the mean age was 23 years. Twenty two per cent considered marijuana as their primary drug of abuse, 36 per cent chose cocaine, eight per cent heroin, and 26 per cent crack.

Table 2, Sample Characteristics by Legal Pressure, Admission Status, Self-Reported Legal Problems, and Criminal Activity in the Six Months before Treatment, shows that the majority of clients (79 per cent) were volunteers, seven per cent were legally involved, and 14 per cent were legally referred.

Eighty two per cent of the clients had committed some crime in the six months before entering treatment, and one third of the clients admitted having legal problems just before entering treatment. Twenty seven per cent of the sample had been in the Treatment

Table 1

Sample Characteristics by Demography and Primary Drug of Abuse (N=788)

Characteristic	Proportion (In Percent)[a]
Sex	
Male	66.2
Female	33.8
Ethnicity	
Black	69.0
White	18.7
Hispanic	12.3
Age	
Mean age	23.1
Primary Drug of Abuse	
Marijuana	22.0
Cocaine	36.3
Heroin	8.1
Crack	25.8
Other	7.9

[a]Total percentages may be more or less than 100 in this and other tables due to rounding off to the nearest digit.

Table 2

Sample Characteristics by Legal Pressure, Admission Status, Self-Reported Legal Problems, and Criminal Activity in the Six Months before Treatment (In Percent)

(N=788)

Characteristic	Proportion (In Percent)
Legal Pressure	
Volunteers	69.4
Legal Referrals	12.4
Legally Involved	6.2
Admission Status[a]	
TOC Referrals	26.5
Direct Admissions	73.5
Reported Legal Problem	
No Legal Problem	65.7
Legal Problems	34.3
Criminal Activity in Last 6 Months	
No crime	18.4
Crime	81.6

[a] A pre-residential outpatient facility where individuals already accepted for residential treatment wait for beds.

Outreach Center (TOC). The Treatment Outreach Center is a pre-residential outpatient facility (9 am to 3 pm) where individuals who have been accepted for the residential treatment program wait for beds. Clients in the Treatment Outreach Center are mostly males. The basic idea behind the Treatment Outreach Center is to keep the clients involved in various treatment activities prior to entering their residential status. Clients who enter the residential facility through the Treatment Outreach Center are a select group of people, since they did not drop out during their outpatient treatment. Thus, in order to examine the selection effect, dropout rates were examined both for TOC referrals and direct admissions.

Table 3, Sample Characteristics by Perceived Treatment, Treatment History, and Self-Reported Source of Pressure shows that 16 per cent of the clients indicated the need for short term residential treatment, 29 per cent for medium term, and 47 per cent for long term residential treatment. Less than ten per cent indicated a preference for non-residential treatment.

About half of the clients came to treatment under perceived inner self pressure, less than 20 per cent under perceived outside pressure, and 30 per cent under both inner and outer pressures. Sixty seven per cent had not received any form of treatment for their drug problems before entering the therapeutic community.

Table 3

Sample Characteristics by Perceived Treatment, Treatment History, and Self-Reported Source of Pressure (N=788)

Characteristic	Proportion (In Percent)
Perceived Treatment	
Short Term Residential	17.1
Medium Term Residential	29.1
Long Term Residential	45.3
Non Residential	8.5
Treatment History	
No Previous Treatment	67.3
Previous Treatment	32.7
Self-Reported Source of Pressure	
None	0
Outside Pressure	19.1
Inside Self-Pressure	48.7
Both Pressures	32.2

Table 4

Monthly Dropout Rates (In Per Cent)

N=788

1-30 Days	25.5
31-60 Days	11.4
61-90 Days	7.4
91-120 Days	2.9
121-150 Days	2.8
151-180 Days	7.7
Remained Over 180 Days	36.7
Total	100.1

Results

This section reports the results from univariate analysis of retention. Chi-squares were computed to measure the association between the dependent and independent variables on 30 day and 180 day dropout.

Dropout Rates

Table 4, Monthly Dropout Rates, shows that 25 per cent of the clients left treatment within the first 30 days, and 37 per cent had accumulated more than 180 days in treatment. Dropout was proportionately highest in the first 30 days, fell sharply to 11 per cent in 31-60 day period, and thereafter slowly declined. This dropout pattern closely resembles that described in other studies (De Leon and Schwartz, 1984).

Dropout Rates for the Treatment Outreach Center Referrals and Direct Admissions

Table 5, Dropout Rates for Treatment Outreach Center Referrals and Direct Admissions, shows that 22 per cent of TOC clients left treatment in the first 30 days as compared with 27 per cent of direct admissions. Fifty six per cent of TOC referrals accumulated more than 180 days in treatment as compared with 41 per cent of direct admissions. Both groups differed significantly over 180 day dropout ($p < .001$).

Treatment Outreach Center referrals had a higher long term retention rate than direct admissions.

Since Treatment Outreach Center and non-Treatment Outreach Center referrals differed on the proportion of dropout, both groups were examined separately for the relationship between the independent and dependent variables.

Direct Admissions

Dropout Rates by Demography

Age and ethnicity were not related to retention. However, for direct admissions, sex was significantly associated with 180 day dropout. Table 6, Dropout Rates by Sex for Direct Admissions, shows that females had higher dropout rates than males ($p < .05$). Twenty four per cent of the males left treatment in the first 30 days as compared with 30 per cent of the females, and forty nine per cent of the males accumulated more than 180 days in treatment, as compared with about 35 per cent of the females.

Dropout Rates by External Pressure

Clients' self-reported legal problems and recent criminal engagement were not significantly associated with retention. However, legal pressure was found to be significantly associated with retention. The results of univariate analysis are described below.

Dropout Out Rates by Legal Pressure

The majority of volunteers reported criminal activity or legal problems in the six months before

Table 5

Dropout Rates for Treatment Outreach Center Referrals and Direct Admissions (In Per cent) (N=784)

Days	Admission Status[a]	
	Treatment Outreach Center Referrals N=190	Direct Admission N=594
1-30	21.6	26.8
31-60	12.1	11.1
61-90	5.3	8.1
91-120	1.6	6.9
121-150	2.1	3.2
151-180	1.6	3.2
Remained Over 180	55.8	40.7
Total	100.1	100.0

[a]$P < .05$ between Treatment Outreach Center referrals and direct admissions with respect to 180 day dropout.

Table 6

Dropout Rates by Sex for Direct Admissions (In Percent)

(N=594)

	Sex[a]	
	Male	Female
Days	N=335	N=259
1-30	23.9	30.5
31-60	11.6	10.4
61-90	6.9	9.7
91-120	6.0	8.1
121-150	4.2	1.9
151-180	2.7	3.9
Remained Over 180	44.8	35.5
Total	100.1	100.0

[a]$P < .05$ between male and female with respect to 180 day dropout.

treatment. These voluntary clients may have opted to come to treatment because of legal pressure they were perceiving due to their criminal or legal involvement. This raised the issue of distinguishing a client who entered the treatment program purely with inner motivation to change his or her life-style from a client who entered the treatment experiencing a potential legal threat because of criminal activity or legal problems. Thus, voluntary clients were reclassified in order to capture important differences with respect to perceived legal pressures and to examine the relationship between motivation and retention. The revised legal pressure category now included pure volunteers (no crime and legal problems in the six months before treatment), volunteers with recent criminal activity and legal problems, legal referrals, and legally involved. Out of 544 volunteers, only 96 reported having no legal problems.

Table 7, Legal Pressure by Dropout Rates for Direct Admissions, shows that pure volunteers had the highest proportion of dropouts in the first 30 days, and the lowest proportion staying in treatment over 180 days. The differences were significant between pure volunteers and legally involved clients over 30 day dropout ($p = .05$). For 180 day dropout, pure volunteers ($p = .05$) and volunteers with crime or legal problems ($p = .01$) differed significantly from legally referred clients.

Table 7

Dropout Rates by Legal Pressure for Direct Admissions

(In Percent)

N=526

	Legal Status			
Days	Pure Volunteers[a]	Volunteers with Crime or Legal Problems[b]	Legally Involved	Legally Referred
	N=73	N=345	N=36	N=72
1-30	34.2	28.1	16.7	20.8
31-60	9.6	11.9	5.6	8.3
61-90	8.2	7.5	8.3	6.9
91-120	0	8.1	16.7	5.6
121-150	5.5	3.2	0	2.8
151-180	5.5	3.8	0	2.8
Remained Over 180	37.0	37.4	52.8	52.8
Total	100.0	100.0	100.1	100.0

[a] $p = .05$ Pure volunteers vs. legally involved with respect to 30 day dropout.
[b] $p = .05$ Volunteers with crime or legal problems vs. legal referrals with respect to 180 day dropout, and $p < .05$ volunteers with crime or legal problems vs. legal referrals with respect to 180 day dropout.

Because of the smaller sample size, it was not possible to test the significance of dropout rates by legal pressure for Treatment Outreach Center referrals. However, the dropout rates reflected the same trend as shown in Table 25 in Appendix A (pure volunteers with highest proportion of dropout in the first 30 days and legally involved with highest proportion staying in treatment over 180 days).

Intrinsic Pressure

Clients' previous treatment history and previous attempts to stop drug use were not associated with retention in the program. However, clients' perceived length of treatment was found to be significantly associated with retention.

Dropout Rates by Perceived Length of Treatment

Perceived length of treatment was significantly associated with retention in treatment for those who were directly admitted to the residential facility.

Thirty seven per cent of clients indicating the need for short term treatment left treatment in the first 30 days, as compared with 26 per cent of those indicating the need for medium term treatment, and 17 per cent of those indicating the need for long term treatment (Table 8, Dropout Rates by Perceived Length of Treatment for Direct Admissions). Twenty six per cent of the perceived short term treatment group stayed in treatment for more

Table 8

Dropout Rates by Clients' Perceived Length of Treatment for Direct Admissions (In Percent) (N=594)

	Perceived Length of Treatment			
Days	Short Term[a] N=112	Medium Term[b] N=182	Long Term[c] N=244	Non-Residential N=56
1-30	36.6	26.4	17.2	50.0
31-60	11.6	10.4	13.1	3.6
61-90	10.7	8.2	7.4	5.4
91-120	9.8	4.9	7.8	3.6
121-150	1.8	3.8	3.7	1.8
151-180	3.6	2.2	3.3	5.4
Remained Over 180	25.9	43.9	47.5	30.4
Total	100.0	99.8	100.0	100.2

[a] $p < .001$ Perceived short term vs. perceived long term treatment for 30 and 180 day dropout, $p > .0$ perceived short term vs. perceived medium term treatment for 30 day, and $p < .001$ for 180 day dropout.
[b] $p < .05$ Perceived medium term vs. perceived long term treatment for 30 day, $p > .05$ for 180 day dropout, and $p < .001$ perceived medium term vs. non-residential for 30 day dropout.
[c] $p < .001$ Perceived long term vs. non-residential for 30 day dropout, and $p < .05$ perceived long term vs. non-residential for 180 day dropout.

than 180 days, as compared with 43 per cent of the perceived medium and 48 per cent of the perceived long term treatment groups (Table 8, Dropout Rates by Perceived Length of Treatment for Direct Admissions).

Fifty per cent of the clients indicating the need for non-residential treatment left treatment in the first 30 days, while 30 per cent accumulated more than 180 days in treatment.

The perceived short term treatment group differed significantly ($p < .001$) from the perceived long term group with respect to 30 day dropout rates. The perceived medium term group had a significantly higher dropout rate ($p < .5$) than that of the perceived long term treatment group. However, no significant differences were found on 30 day dropout rates between the perceived short and medium term groups. The perceived short term treatment group differed significantly ($p < .001$) from the perceived long term and perceived medium term groups with respect to 180 day dropout rates. However, no significant differences were found between perceived medium and long term groups on 180 day dropout.

The perceived non-residential treatment group differed significantly from perceived medium term and perceived long term treatment groups ($p <. 001$) with respect to 30 day dropout. The perceived non-residential treatment group also differed significantly ($p < .05$) from the perceived long term treatment group on 180 day dropout.

Clients' perceived length of treatment was significantly associated with their actual stay in treatment. Clients with perceived long term treatment had a longer stay in treatment than the other three groups.

Clients' perceived length of treatment was also examined by survivor rates. Survivor rates are dropout rates computed upon a base which excludes clients who have already left treatment (De Leon, 1988).

Table 9, Survivor Rates for Perceived Length of Treatment for Direct Admissions, shows that the maximum loss for the four groups of perceived length of treatment occurred in the first 30 days. After the initial loss, the four groups differed on the peak period of dropout. For the perceived short term treatment group, the highest dropout occurred in the 91-120 day period (24 per cent). For the perceived medium and long term treatment groups, the highest proportion of dropout occurred in 31-60 day period. For the perceived non-residential treatment group, the highest proportion of dropout occurred in 151-180 day period.

Dropout rates based on survivor rates also showed that among three groups of perceived residential treatment, the proportion of dropout was the highest for the perceived short term treatment group, and the lowest for the perceived long term treatment group.

Table 9

Survivor Rates by Clients' Perceived Length of Treatment for Direct Admissions (In Percent)

(N=594)

		Days in Treatment					
Perceived Treatment	N	1-30	31-60	61-90	91-120	121-150	151-180
Short Term	112	36.6	18.3	20.6	23.9	5.7	12.1
Medium Term	182	26.4	14.1	13.0	9.0	7.7	4.8
Long Term	244	17.2	15.8	10.6	12.5	6.8	6.4
Non-Residential	56	50.0	7.1	11.5	8.7	4.8	15.0

Treatment Outreach Center referrals

Demography, primary drug of abuse, self-reported source of pressure, legal pressure, self-reported legal problems, treatment history, and previous attempts to stop drug use were not significantly associated with retention for Treatment Outreach Center referrals. The variables significantly associated with retention were recent criminal activity and clients' perceived length of treatment.

Dropout Rates by Criminal Activity for Treatment Outreach Center referrals

Criminal activity in the six months before entering treatment was significantly related to 30 day and 180 day dropout ($p < .05$). Thirty three per cent of the clients reporting no crime left treatment in the first 30 days, as compared with 19 per cent of those who reported some crime (Table 10, Dropout Rates by Criminal Activity in the Six Months Before Entering Treatment for Treatment Outreach Center referrals). Thirty eight per cent of the "no crime" group accumulated more than 180 days in treatment, as compared with 60 per cent of the "some crime" group. Thus, criminal activity in the six months before entering treatment was significantly related to short and long term retention for Treatment Outreach Center referrals.

Table 10

Dropout Rates by Criminal Activity in the Six Months Before Entering Treatment for Treatment Outreach Center Referrals

(N=190)

	Criminal History[a]	
Days	No Crime	Crime
	N=34	N=156
1-30	35.3	18.6
31-60	14.7	11.5
61-90	2.9	5.8
91-120	0	1.9
121-150	5.9	1.3
151-180	2.9	1.3
Remained Over 180	38.2	59.6
Total	99.9	100.0

[a] $p > .05$ between crime and no crime groups with respect to 30 day and 180 day dropout.

Dropout Rates by Perceived Length of Treatment for Treatment Outreach Center Referrals

Perceived length of treatment was also found to be significantly associated with retention for individuals who had come from the Treatment Outreach Center. Forty four per cent of the individuals who indicated the need for short term treatment dropped out of residential treatment in the first 30 days, and 43.5 per cent accumulated more than 180 days in treatment (Table 11, Dropout Rates by Perceived Length of Treatment for Treatment Outreach Center Referrals). Among those who indicated the need for medium term treatment, 18 per cent left in the first 30 days, and 58 per cent accumulated more than 180 days in treatment. The dropout rate was 16 per cent for those who indicated the need for long term treatment, and about 59 per cent of them stayed in treatment for more than 180 days (Table 11, Dropout Rates by Perceived Length of Treatment for Treatment Outreach Center referrals).

Among those who indicated a need for non-residential treatment, 45 per cent left treatment in the first 30 days, and 45 per cent accumulated more than 180 days in treatment (Table 11, Dropout Rates by Perceived Length of Treatment for Treatment Outreach Center Referrals).

Table 11

Dropout Rates by Clients' Perceived Length of Treatment for Treatment Outreach Center Referrals (In Percent) (N=179)

	Perceived Length of Treatment			
Days	Short Term[a] N=23	Medium Term[b] N=45	Long Term[c] N=111	Non-Residential N=11
1-30	43.5	17.8	16.2	45.5
31-60	8.7	15.6	11.7	9.1
61-90	0	6.7	6.3	0
91-120	0	0	2.7	0
121-150	0	2.2	2.7	0
151-180	4.3	0	1.8	0
Remained Over 180	43.5	57.8	58.6	45.5
Total	100.0	100.1	100.0	100.1

[a] $P < .01$ Perceived short vs. perceived medium term treatment for 30 day dropout, $P < .01$ Perceived short vs. perceived long term treatment for 30 day dropout.
[b] $P = .0\ 5$ Perceived medium term vs. perceived non-residential treatment for 30 day dropout.
[c] $P < .05$ Perceived long term vs. perceived non-residential treatment for 30 day dropout.

Thirty day dropout rate for perceived short term treatment differed significantly ($P < .01$) from those of medium and long term treatment. However, no significant differences were found between perceived medium term and perceived long term treatment groups.

The perceived non-residential treatment group had a significantly higher dropout rate than the perceived medium term ($p = .05$) and perceived long term treatment ($p < .05$) groups in the first 30 days.

No significant differences were found among clients' perceived length of treatment over 180 day dropout.

Among those who indicated a need for residential treatment, clients with perceived short term treatment had the highest proportion of dropout in the first 30 days, and the lowest proportion staying for more than 180 days in treatment.

Overall, for both the TOC and direct admissions, clients' perceived length of treatment was significantly associated with actual retention. In general, TOC long term retention rates were higher than non-TOC admissions, though statistically not significant.

Summary of Significant Univariate Findings

1. Sex was found to be significantly associated with 180 day dropout for direct admissions. Males had a lower proportion of dropout than females.

2. Recent criminal engagement was not significantly associated with retention for direct admissions. However, it was significantly associated with both short and long term retention for Treatment Outreach Center referrals.

3. Pure volunteers had a higher proportion of dropout in under 30 days than those who were legally involved. The differences were significant between pure volunteers and legally involved clients with respect to 30 day dropout. Both pure volunteers and volunteers with crime or legal problems differed significantly from legal referrals on 180 day dropout.

4. Another major finding of univariate analysis was the significant association between clients' perceived length of treatment and actual retention. Among clients who indicated a need for residential treatment, clients with perceived short term treatment had a higher proportion of early dropout than clients who indicated the need for medium term or long term treatment. This finding also remained significant for clients who had been in Treatment Outreach Center.

Discussion

The majority of volunteers reported criminal activity or legal problems in the six months before treatment. These voluntary clients may have opted to come to treatment because of legal pressure they were perceiving due to their criminal or legal involvement. Thus, the term "volunteer" may be misleading. The voluntary clients were reclassified in order to capture important differences with respect to perceived legal pressures and to examine the relationship between pure volunteers (motivation) and retention. The fact that pure volunteers had the highest 30 day dropout rate suggests that motivation to join treatment was not sufficient to keep the clients longer in treatment. The significant differences between volunteers (pure volunteers, volunteers with crime or legal problems) and legal referrals for 180 day dropout suggest that volunteers, whether they were under legal pressure or not, had higher dropout rates than non-volunteers. Recent criminal or legal involvement in the case of volunteers did not exert pressure on volunteers to remain longer in treatment.

Research showed a significant association between recent criminal activity and retention for Treatment Outreach Center referrals only. TOC clients represent a select group of people who did not dropout during their involvement with a pre-residential

outpatient facility. The admissions to residential treatment reflects, on their part, the willingness to stay in treatment. It is plausible that TOC effect (motivation) with recent criminal engagement (perceived legal pressure) is primarily responsible for retention differences between those who committed crime and those who didn't commit any crime.

The significant and consistent association between clients' perceived length of treatment and retention emphasized the role of clients' perception of their treatment needs and their motivation to stay in treatment. This conclusion is similar to earlier research in which length of stay in treatment was found to be positively related to the number of months that clients perceived they needed to be in residence in the program (Condelli, 1986; De Leon, 1988).

This chapter has described the findings from univariate analysis. In order to examine the extent, direction, and strength of the relationship between the independent and dependent variables, multiple regression analyses were carried out.

Chapter 5

Multiple Regression Analysis

This chapter describes the results of multiple regression analysis. A detailed description of regression procedures used and variables involved in the analysis is given. The significant findings from regression analysis are reported and discussed.

Multiple Regression analysis examined the relative contribution of the independent variables in predicting retention in treatment. The question addressed by the regression analysis was, "what are the clients' characteristics associated with retention?"

A hierarchical multiple regression model was employed in which independent variables enter the regression in a specified order. Each independent variable is then assessed in terms of what it contributes to the regression equation after the contribution of predictor variables is removed.

The order of entry of variables was based upon a theoretical conception of their hierarchical positions as discussed in previous research (De Leon, 1983, 1984).

The independent variables used in this study were those assessed in the previous univariate analysis. These variables included sex; age; ethnicity; primary drug of abuse; self-reported source of pressure;

admission status; legal pressure; perceived length of treatment; treatment history; and previous attempts to stop drug use. The dependent variable was time in program (TIP), operationally defined as the number of days the client remained in treatment. It was constructed using the dates of admission to, and the last day in, the treatment program. Time in program was computed against a ten month retention potential. Sex, treatment history, and admission status were defined in a dichotomous way. Dummy variables were used for variables which were neither dichotomous nor on interval scale. These variables included: ethnicity (White, Black, or Hispanic), legal pressure (pure volunteers, volunteers with crime or legal problem, legal referrals, or legal involvement), primary drug of abuse (marijuana, cocaine, heroin, crack, or other), clients' self-reported source of pressure (outside pressure, inside-self pressure, or both) and perceived length of treatment (short, medium, long or non-residential). Age and previous attempts to stop drug use were entered as continuous variables.

Since recent criminal activity and self-reported legal problems were missing for pure volunteers, they were not entered in the regression equation.

In the present regression analysis, blocks of variables were entered as follows.

1. Admission Status (Treatment Outreach Center referrals vs. non-Treatment Outreach Center referrals).
2. Demography (sex and age).
3. Ethnicity (Black, Hispanic, or White).
4. Primary drug (marijuana, cocaine, Crack, heroin, or other).
5. Self-Reported Source of Pressure (internal, external, or both).
6. External Pressure (pure volunteers, volunteers with crime or legal problems, legal involvement, or legal referrals).
7. Internal Pressure (perceived length of treatment, previous attempts to stop drug use, or treatment history).

Each block of variables was forced into the equation based upon a theoretical conception of their hierarchical positions as discussed in previous research (De Leon, 1983). In this study, background characteristics and primary drug of abuse were found to be weak correlates of retention. The theoretical conception was that static or descriptive variables appear to be less important than dynamic variables.

In the present study, clients' admission status was entered first. Demographic variables were entered

Table 12

Multiple Regression Analysis

(N=690)

Predictors	Simple Correlation	R Square Change	Beta
Admission Status[a]	.12[d]	.014[c]	.055
Demography		.011[c]	
Age[g]	.09[c]		.065
Sex[h]	-.12d		-.066
Ethnicity		.003	
Hispanic[i]	-.01		.067
Black[j]	.04		.106[b]
Primary Drug of Abuse		.007	
Cocaine[k]	-.04		-.062
Heroin[l]	.04		-.016
Marijuana[m]	.04		.033
Crack[n]	-.04		-.090
Self-Reported Source of Pressure		.000	
Outside Pressure[o]	-.01		.043
Inside-Self Pressure[p]	.04		.033
External Pressure		.009	
Pure Volunteers[q]	.05		-.014
Legally Involved[r]	.07[b]		.076[c]

Table Continues

Table 12 Continued

Predictors	Simple Correlation	R Square Change	Beta
Legal Referrals[s]	.07[b]		.067[c]
Internal Pressure		.030[c]	
Treatment History[t]	.04		.011
Previous Attempts to Stop Drug Use[u]	.04		.046
Perceived Short Term Treatment[v]	-.13[d]		.000
Perceived Medium Term Treatment[w]	.01		.141[b]
Perceived Long Term Treatment[x]	.14[d]		.222[c]
Multiple R			.275
% of Variance Accounted for (R Square)			7.6%
Adjusted R Square			.053

[a]0=Non-Treatment Outreach Center referrals, 1=Treatment Outreach Center referrals
[b]P < .05
[c]P < .01
[d]P < .001
[e]P = .06
[f]P = .07
[g]Entered as a continuous variable (number of years)
[h]0=male, 1=female
[i]0=Non-Hispanic, 1=Hispanic
[j]0=Non-Black, 1=Black
[k]0=Non-cocaine abusers, 1=cocaine abusers
[l]10=Non-heroin abusers, 1=heroin abusers
[m]0=Non-marijuana abusers, 1=marijuana abusers
[n]0=Non-crack abusers, 1=crack abusers
[o]0=Not under outside pressure, 1=under outside pressure
[p]0=Not under inside pressure, 1=under inside pressure
[q]0=Non-pure volunteers, 1=pure volunteers
[r]0=No legal involvement, 1=legal involvement
[s]0=Not legally referred, 1=legally referred

Table Continues

Table 12 Continued

[t]0=No previous treatment, 1=some previous treatment
[u]Entered as a continuous variable (number of attempts)
[v]0=Didn't perceive short term treatment, 1=perceived short term treatment
[w]0=Didn't perceive medium term treatment, 1=perceived medium term treatment
[x]0=Didn't perceive long term treatment, 1=perceived long term treatment

next. The external and internal pressure blocks were entered on later steps. Since perceived length of treatment was found to be consistently predicting retention in univariate analysis, the internal pressure block was entered on the last step in the regression equation in order to isolate its effect over and above the other blocks.

Results

Table 12, Multiple Regression Analysis, shows that the regression equation is significant, although only five per cent of the variance (adjusted for sample size) is explained by the model. The significant predictor sets were demography and internal pressure when clients' admission status was controlled. After the small contribution of demography, internal pressure set was the greatest predictor of actual length of stay. The internal pressure contributed to 40 per cent of the variance explained. The Beta coefficients for perceived medium term and perceived long term treatments were significant, indicating the primary contribution of these variables in the predictor set. Perceived length of treatment was associated with actual length of stay. The Beta coefficients for Blacks, legal referrals and legally involved clients were significant (although the sets were not significant), indicating that retention was associated with non-volunteers and Blacks.

This chapter has described the results of multiple regression analysis. The next chapter examines the clients' characteristics with respect to their actual stay for perceived short, medium, and long term treatment groups.

Chapter 6

Clients' Perceived Length of Stay in Treatment

This chapter examines the client characteristics associated with perceived length of stay. Since the intent of this dissertation was to examine the relationship between perceived residential treatment and actual retention, clients with perceived outpatient treatment were excluded from this analysis.

Clients' perceived length of treatment was significantly associated with retention in both univariate and multivariate analyses. Individuals who indicated the need for short term treatment had a higher proportion of early dropout than individuals who indicated the need for medium or long term treatment. In the multiple regression analysis, clients' perceived length of treatment was the greatest predictor of retention. Thus, an attempt was made to further clarify perceived length of stay, specifically to identify the characteristics associated with clients in the small, medium, and long term treatment groups. Univariate and multiple regression analyses addressed several related questions concerning the relationship between clients' perceived and actual stays. To clarify, each question is addressed separately.

Do Clients' Characteristics Differ By Perceived Length Of Treatment?

Table 13, Clients' Characteristics by Perceived Length of Treatment, shows that there were no significant differences among perceived short, medium and long term treatment groups with respect to clients' characteristics. Thus, perception of length of treatment was not related to demography, primary drug of abuse, legal pressure, previous attempts to stop drug use, or previous treatment history.

Each group was dichotomized into the proportion of clients who left treatment before attaining their perceived length of stay and individuals who achieved their perceived length of stay. For the perceived short term treatment group, time in program differentiated clients who stayed 30 days or less from those who stayed 31-180 days. Since retention information for the entire sample in the present study was only available through ten months, it was not possible to compute the proportion of clients who stayed in treatment through 12 months. Thus, for the perceived medium term treatment group, time in program was dichotomized as 180 days or less and over 180 days, and for the perceived long term treatment group, time in program was computed as 300 days or less and over 300 days.

Table 14

[a]Clients' Perceived and Actual Stays In Treatment

Actual Stay	N	Proportion (In Per Cent)
Perceived Short Term	112	
1-30 Days	41	36.6
31-180 Days	42	37.5
Over 180 Days	29	25.9
Perceived Medium Term	182	
1-180 Days	102	55.0
Over 180 Days	80	45.0
Perceived Long Term	244	
1-300 Days	150	60.8
Over 300 Days	94	39.2

[a]To examine the relationship between clients' perceived and actual stay without being affected by the selection factor, clients who came to treatment through Treatment Outreach Center were excluded from the analyses.

As indicated in Table 14, Clients' Perceived and Actual Stays in Treatment, 37 per cent of the clients who indicated a need for short term treatment did not achieve their perceived length of treatment (i.e., one to six months). Thirty seven per cent of the perceived short term group stayed in treatment for one to six months, and 26 per cent stayed over 180 days.

Among clients who indicated a need for medium term treatment, 55 per cent did not achieve their perceived length of stay. However, forty five per cent stayed in treatment for over 180 days (Table 14, Clients' Perceived and Actual Stays in Treatment).

Sixty one per cent of the clients who perceived long term treatment as best suited to their needs did not stay in treatment in accordance with their perception, and 39 per cent were in the program for over 300 days.

Table 15

Primary Drug of Abuse by Actual Stay in Treatment for Perceived Short Term Treatment Group(Percentage)

	N	1-30 Days (Dropout)	31-180 Days (Retention)
Drug[a]			
Marijuana	27	66.7	33.3
Heroin	5	60.0	40.0
Cocaine	35	37.1	62.9
Crack	11	36.4	63.6
Other	5	60.0	40.0

[a]$P < .05$ Marijuana vs. Cocaine with respect to actual stay in treatment.

What Were The Characteristics Associated With Individuals Who Achieved And Those Who Did Not Achieve Their Perceived Length Of Stay? Univariate analysis showed that for the perceived short term treatment group, there were significant differences between those who did and those who did not achieve their desired length with respect to primary drug of abuse. Marijuana abusers had the lowest, and cocaine abusers had the highest retention rates in 31-180 days ($p < .05$, Table 15).

Table 16 shows the client characteristics which were significantly associated with the actual stay for the perceived medium term treatment group. Within this, clients who achieved and those who did not achieve their desired length of stay differed significantly on both ethnicity and primary drug of abuse. Hispanics had the highest, and Whites the lowest proportion of clients achieving their perceived length of stay ($p < .05$). Marijuana abusers had the lowest (39.5 per cent) and heroin abusers the highest proportion of dropout (79 per cent) in 1-180 day period ($p < .05$).

Table 16

Ethnicity and Primary Drug of Abuse by Actual Stay in Treatment for Perceived Medium Term Treatment Group (Percentage)

	N	1-180 Days (Dropout)	Over 180 Days (Retention)
Ethnicity[a]			
Black	128	57.0	43.0
Hispanic	29	37.9	62.1
White	24	70.8	29.2
Drug[b]			
Marijuana	43	39.5	60.5
Heroin	9	77.8	22.2
Cocaine	74	64.9	35.1
Crack	44	54.5	45.5
Other	12	50.0	50.0

[a]P <. 05 Hispanic vs. White with respect to actual stay in treatment.
[b]P<.05 Marijuana vs. Heroin with respect to actual stay in treatment.

Table 17

Legal Pressure by Actual Stay in Treatment for Perceived Long Term Treatment Group (Percentage)

	N	1-300 Days Dropout	Over 300 Days Retention
Legal Pressure			
Pure Volunteers[a]	27	66.7	33.3
Volunteers with Crime or Legal Problems[b]	149	67.8	32.2
Legally Involved	13	46.2	53.8
Legal Referrals	28	39.3	60.7

[a]P<.05 Pure Volunteers vs. Legal Referrals with respect to actual stay in treatment.
[b]P<.001 Volunteers with Crime or Legal Problems vs. Legal Referrals with respect to actual stay in treatment.

Table 17 shows the actual length of stay by legal pressure for the perceived long term treatment group. For pure volunteers, volunteers with crime or legal problems, legally involved, and legal referrals, the dropout rate for 1-300 days was 67 per cent, 68 per cent, 46 per cent, and 39 per cent respectively. Pure volunteers had the highest proportion of dropout, and legal referrals had the lowest proportion of dropout in 1-300 days. The differences were significant between volunteers with crime or legal problems vs. legal referrals ($p < .01$) and pure volunteers vs. legal referrals ($p < .05$).

No other variable was found to be significantly associated with actual stay for perceived long term treatment group.

Multiple Regression Analysis

A further attempt to clarify differences between clients who attained and those who did not attain their perceived length of stay was addressed through multiple regression analysis. For these analysis, time in program was dichotomized as 1-30 days and 31-180 days for the short term treatment group, 1-180 days and over 180 days for the medium term treatment, and 1-300 days and over 300 days for the long term treatment.

Although the dependent variable was dichotomous, log linear analysis was discarded since it yielded an infinite number of cells. The dichotomous nature of the dependent variable raised the issue of possible violation of the linearity of variance assumption. To deal with this, residuals were plotted against the predicted values. No systematic patterns were found between the predicted values and the residuals, suggesting that the assumption of the linearity of variance was not violated.

The predictor variables used in the regression analyses were: sex; age; ethnicity; legal pressure; self-reported source of pressure; treatment history; previous attempts to stop drug use; and primary drug of abuse. Sex and treatment history were defined in a dichotomous way. Dummy variables were used for variables which were neither dichotomous nor on interval scale. These variables included: Blacks, Hispanics, Whites, legal pressure (pure volunteers, with crime or legal problems, legal referrals and legal involvement), primary drug of abuse (marijuana, cocaine, crack, heroin, and other), and clients' self-reported source of pressure (outside pressure, inside-self pressure, or both).

Table 18

Perceived Length of Treatment

Simple Correlations between the Independent and Dependent Variables used in the Model for Multiple Regression Analyses

Dependent Variable = Time in Program

Independent Variable	N	Correlation
Perceived Short Term Treatment	74	
Marijuana		-.20[a]
Cocaine		.18[a]
Perceived Medium Term Treatment	161	
Marijuana		.18[b]
Cocaine		-.15[a]
Hispanic		.16[a]
Perceived Long Term Treatment	217	
Marijuana		.13[a]
Legal Referrals		.19[b]

[a] $p < .05$
[b] $p < .01$

Because the relationship between clients' perceived length of treatment and other predictor variables had not been examined in previous studies, there was no hypothesis as to the order of entry of variables. A hierarchical multiple regression model was replaced by stepwise multiple regression analysis to identify the best predictor variables. In a stepwise regression analysis, the order of entry of a variable is based on statistical rather than theoretical criteria. At each step, the variable which adds most to the prediction equation is entered. The process stops when no more useful information can be obtained from further addition of variables (Tabachnick and Northridge, 1983).

Table 18, Simple Correlations Between the Independent and Dependent Variables used in the Model for Multiple Regression Analysis, shows that for clients who indicated the need for short term treatment, the use of marijuana as the primary drug was negatively correlated with actual time in the program. Marijuana abusers dropped out earlier than non-marijuana abusers. Cocaine abuse was significantly related with time in program, with more cocaine abusers staying in treatment in 31-180 days than non-cocaine abusers.

For the individuals who indicated the need for medium term treatment, more marijuana abusers and

Table 19

Summary of Significant Stepwise Regressions for Clients' Perceived Length of Stay in Treatment

Dependent Variable = Actual Time in Program

Variable	N	Regression Co-Efficient (B)	Standard Error of B (SEB)	Two-Tailed Probability (P)
Short Term Treatment	74			
Marijuana Use[a]		-.19	.08	.03
Constant		1.57	.05	<.001
Medium Term Treatment	161			
Marijuana Use		.22	.08	.009
Hispanic vs. non-Hispanic[b]		.22	.10	.03
Constant		1.35	.04	<.001
Long Term Treatment	217			
Legal Referrals[c]		.25	.10	.01
Marijuana Use[d]		.13	.08	.09
Constant		1.33	.04	<.001

[a]0=Non-marijuana users, 1=marijuana users
[b]0=Non-Hispanic, 1=Hispanic
[c]0=Non-legal referrals, 1=legal referrals
[d]0=Non-marijuana abusers, 1=marijuana abusers

Hispanics stayed in treatment for more than 180 days than did non-marijuana abusers and non-Hispanics. More cocaine abusers left treatment in over 180 day period than non- cocaine abusers.

For the perceived long term treatment group, legal referrals and marijuana abusers had a lower proportion of dropout in the over 300 days period than did non-legal referrals and non-marijuana abusers.

Table 19, Summary of Significant Stepwise regressions for Clients' Perceived Length of Stay in Treatment, shows that marijuana as the primary drug of abuse contributed significantly to R Square. The negative Beta coefficient indicates that marijuana abusers didn't achieve their perceived length (one-six months) of treatment. None of the other independent variables made any significant contribution to the dependent variable.

For the Perceived Medium Term Treatment group, the significant predictor variables were marijuana abuse and Hispanics, indicating that marijuana abusers and Hispanics achieved their perceived length of treatment.

For the clients who indicated a need for long term treatment, the variables significantly predicting long term retention were legal referrals and marijuana abusers, indicating that more legal referrals and marijuana abusers achieved their desired length of stay than did non-legal referrals and non-marijuana abusers

(Table 19, Summary of Significant Stepwise Regressions for Clients' Perceived Length of Stay in Treatment).

Summary and Discussion

Did Clients In The Perceived Short, Medium, And Long Term Treatment Differ Significantly With Respect To Client Characteristics? Present findings suggest that no significant differences were found among the perceived short, medium, and long term treatment groups with respect to clients' characteristics.

What Proportion Of Clients Achieve Their Perceived Length Of Stay? The perceived short term had the lowest (37 per cent) and perceived medium term group had the highest proportion (45 per cent) of clients who achieved their perceived length of stay. However, less than half of all groups achieved their desired length of treatment.

What Were Clients' Correlates Of Retention?

Univariate analysis show that among those who indicated the need for short term treatment, marijuana abusers had the highest proportion of dropout in the 1-30 day period. In perceived medium term treatment, Hispanics and marijuana abusers were significantly correlated with over 180 day retention. Among clients who indicated the need for long term treatment, volunteers with crime or legal problems had the highest proportion of dropout in 1-180 days, and legal referrals had the highest proportion staying in treatment for over 180 days.

Multiple regression analysis show that for the perceived short treatment group, marijuana abusers had a higher proportion of dropout in the one - six month period than did non-marijuana abusers. For the perceived medium treatment group, Hispanics and marijuana abusers had a higher proportion of clients staying over 180 days than did non-Hispanics and non-marijuana abusers. When examined as a main effect, marijuana abuse was not significantly associated with time in program. The same was true for Hispanics. These findings suggest that Hispanics and marijuana abusers who indicated the need for medium term treatment stayed in treatment for more than 180 days.

For individuals who indicated the need for long term treatment, non-legal referrals and non-marijuana abusers were at most risk for early dropout. In other words, non-legal referrals and non-marijuana abusers who indicated the need for long term treatment did not achieve their perceived length of stay. Thus, the entries into treatment without external pressure were less likely to meet their own estimates of treatment.

This chapter has described the clients' characteristics associated with perceived short, medium, and long term treatment. The proportion of clients who achieved and those who did not achieve their perceived length of stay were reported, as well as the client

correlates of those who achieved and did not achieve their estimated length of stay.

Chapter 7

This chapter summarizes the main elements of the study. Implications for the criminal justice system and drug treatment programs are briefly discussed.

Summary Of Significant Findings

This study analyzed data collected on 788 successive admissions to a northeastern therapeutic community from January 1, 1986 to December 31, 1986. The research focused on the relationship between extrinsic and intrinsic pressures, and retention in treatment.

Extrinsic pressure referred to external conditions that influenced people to seek treatment; these were mostly different varieties of legal or social pressure. Social pressure referred to pressure from significant others, financial or job problems, or health reasons. Analyses indicated that social pressure variables were vague and produced highly skewed distributions, and were excluded from the study.

Legal pressure refers to real or implied legal threat, concerning the individual's acceptance of a treatment option to avoid imposition of legal sanctions. Thus, clients falling under the legal pressure category consisted of three groups.

1. Legal referrals: Legal referrals included individuals who were either on probation or parole.

2. Legal involvement: Legal involvement included bailees, warrant for arrest, court mandated, and pending cases.

3. Volunteers: Volunteers were defined as individuals who were neither legally referred to treatment nor had any legal involvement.

The volunteers were further classified into two categories reflecting levels of indirect legal pressure: those volunteers with no crime in the six months before entering treatment and nor any legal problems just before treatment (no legal pressure), and those with both crime and legal problems (some indirect legal pressure).

Intrinsic pressure (motivation) referred to the individual's own inner desire to undergo treatment. Variables used to examine intrinsic pressure were clients' perceived length of treatment, previous treatment history, and previous attempts to stop drug use. Other variables examined were the clients' self reported source of pressure to enter treatment, primary drug of abuse, and demography.

Univariate and multiple regression analyses evaluated the relationship between the measures of external and internal pressure and actual days in treatment.

Summary of Significant Findings

The major findings of the study are described below.

1. In multiple regression analyses, the variance accounted for after entering all predictors in the equation was small (five per cent when adjusted for sample size).

2. Demography and internal pressure sets contributed significantly to the explained variance when clients's admission status (Treatment Outreach Center referrals vs. direct admissions) was controlled.

3. Clients' demographic characteristics as a set were significant but small predictors of retention. Ethnicity as a set did not contribute significantly to the variance explained. However, the beta coefficient for Black was significant, suggesting that Blacks were more likely to remain in treatment than non-Blacks.

4. The internal pressure variables entered as a set contributed about 40 per cent to the variance explained. The Beta coefficient of the clients' perceived length of treatment (medium and long term) was significant, indicating the primary contribution of this variable in the predictor set.

5. Other variables with significant beta coefficients were legal referrals and legally involved clients. The positive beta coefficients of these variables suggested

that legal referrals and legally involved clients had a longer stay in treatment than both pure volunteers or volunteers with crime or legal problems.

Perceived Length of Treatment

Since clients' perceived length of treatment was the largest predictor of retention in treatment, all independent variables were examined in relation to the clients' perceived and actual length of stay in treatment. The objective was to identify the client characteristics that differentiated those who achieved from those who did not achieve their perceived length of stay.

For the perceived short term treatment, 37 per cent of clients did not achieve their perceived length of stay. Thirty seven per cent of the perceived short term treatment group achieved their desired length (31-180 days) and 26 per cent stayed in the program for more than 180 days. For perceived medium term treatment, 45 per cent achieved, and 55 per cent did not achieve their desired length of stay in treatment. For the perceived long term treatment group, 61 per cent of the clients did not achieve their desired length of stay in treatment.

Stepwise multiple regression analysis showed that for the perceived short term treatment group (31-180 days), marijuana abuse was negatively correlated with

31-180 day retention, suggesting that more non-marijuana abusers significantly contributed to the 31-180 day retention.

Hispanics and marijuana abusers were correlated with perceived medium term treatment (over 180 days). In other words, individuals who were Hispanics and marijuana abusers and indicated the need for medium term treatment (6-12 months), had a better chance of staying in treatment for more than 180 days.

Primary marijuana abusers and legal referrals were positive correlates of over 300 days retention, indicating that among those who perceived long term treatment for their needs, marijuana abusers and non-volunteers were more likely to actually remain in residence.

The following are the conclusions drawn from the present dissertation:

1. Clients' demographic characteristics are significant but weak predictors of retention when client admission status is controlled. Blacks are more likely to stay in treatment than non-Blacks.
2. Clients' perceived length of treatment significantly predicts their actual stay in treatment.
3. Legally referred and legally involved clients stay longer in treatment than pure volunteers and volunteers with crime or legal problems.

4. For clients who indicate a need for short term treatment, marijuana abuse is negatively correlated with 30-180 day retention.

4. For clients who indicate a need for medium term treatment, Hispanics and marijuana abusers are positively correlated with over 180 day retention.

5. For the perceived long term treatment group, legal referrals and primary marijuana abusers are positively correlated with over 300 day retention.

Discussion

The results of the present dissertation indicate that clients' demographic characteristics were significant but weak correlates of retention when clients' admission status was controlled. Blacks contributed more significantly to retention than non-Blacks. This finding is consistent with existing research (Wexler and De Leon, 1977). However, for clients who indicated a need for medium term treatment (6 to 12 months), Hispanics were more likely to achieve over 180 day retention than non-Hispanics. This finding suggests that among Hispanics, motivation for medium term treatment seemed to increase the likelihood of a retention rate of over six months. The ethnic composition of the clinical staff of the program being studied is approximately 60 per cent Black, 25 per cent Hispanic, and 15 per cent White. This rules out the possibility of

there being any relationship between the higher retention rates among Hispanics and the ethnic composition of the staff. Research indicates that Hispanics are at greater risk for earlier dropout (Wexler and De Leon, 1977, De Leon, 1988). However, no study has examined the relationship between clients' perception of treatment and retention in regard to clients' characteristics. In order to clarify this finding, further research is required.

Present findings indicate that among clients who indicated a need for short term treatment (one-six months) marijuana abusers were more likely to drop out than non-marijuana abusers. However, among clients who indicated a need for medium term (6-12 months) or long term (one-two years) treatment, marijuana abusers were more likely to achieve their desired length of stay than non-marijuana abusers. Marijuana is a non-addictive drug, and with the exception of a few chronic cases, no withdrawal symptoms have been noted among marijuana abusers. This may be related to long term retention among marijuana abusers who perceived a medium or long term stay to be best suited to their needs. However, a two year follow-up of 248 dropouts and graduates from a traditional therapeutic community revealed that although marijuana abusers stayed longer in treatment, abstinence in the last year of follow-up was highest among the

primary opioid abusers and lowest among the primary alcohol and marijuana abusers (De Leon, 1987). The social use of these two substances makes it relatively difficult to remain drug free for a longer period of time once the client leaves treatment.

In the present dissertation, clients' perceived length of stay in treatment significantly predicted actual retention. Individuals who indicated a need for medium or long term treatment actually stayed longer in treatment. This was true both for direct admissions and Treatment Outreach Center's referrals. This finding confirms the results of previous research (Condelli, 1985; De Leon, 1988). These results indicate that clients' perception of treatment significantly predicted retention in treatment, suggesting that client's perception of treatment at the time of admission should be considered as an important factor before and after assigning them to treatment programs.

In the present dissertation, legally involved and legally referred clients were more likely to stay longer in treatment than the clients who had joined the treatment voluntarily. Previous research indicates that legal pressure increases the treatment retention and no differences are found in treatment outcomes between voluntary and non-voluntary clients (McGlothin and Anglin, 1977; Collins and Allison, 1986; Pompi, 1987).

These findings suggest that legal pressure can be used as an effective technique in diverting drug abusing offenders to treatment programs particularly intravenous drug abusers who are at risk for contracting and transmitting the acquired immune deficiency (AIDS) virus. This will not only result in a reduction in both crime and drug abuse, but also reduce the chances of contracting and transmitting the acquired immune deficiency (AIDS) virus.

Another important finding of this dissertation is that legal pressure, when accompanied by some degree of internal pressure (evident in perceived length of treatment), appears to increase the likelihood of long-term retention (over 300 days), suggesting that a combination of perceived internal and actual external pressure is required for a long-term stay in treatment. Although legal pressure may force individuals to seek and enter treatment, intrinsic pressure motivates these individuals to stay longer in treatment. Thus, clients who are under legal pressure and express a need for long-term treatment appear to be better candidates for long term retention. No study has investigated the relationship between legal pressure and intrinsic pressure (motivation). In order to examine this complex issue, further research is required.

Some Implications for Treatment and Referral

The main findings and conclusions contain the following tentative recommendations for the criminal justice system and treatment personnel:

1. Most admissions to treatment programs enter voluntarily. Those who do not indicate the need for long term treatment are a threat for early dropout. More counseling should be provided by treatment staff to these individuals. During the early stages of treatment, such individuals should be informed of the effectiveness of a longer stay in treatment.

2. The assessment methods in the criminal justice system should be refined to identify offenders suitable for treatment. In particular, the drug abusing offender with a perceived need for treatment could be diverted to treatment at the earliest possible stages in the adjudication process. Thus, cases which are dismissed with drug problems will accept voluntary treatment because of assessed perceived legal pressure. In addition, for those who are held for further proceedings, diversion to treatment at arraignment permits them to await trial in a treatment, rather than a prison, environment.

Limitations

Because drug treatment programs differ in terms of structure and organization, it should be noted that investigation is needed in a variety of other treatment programs, i.e., firm generalizations can be made to those programs similar to that of a traditional northeastern therapeutic community.

Secondly, because the data was drawn from an existing intake instrument, not designed specifically for the purposes of this research, further refinement is needed to clarify the specific effects of several of the variables employed in the present study. For example, due to the alpha numeric nature of the crime variable, it was difficult to compute crime rates. Since crime rates could exert different degrees of pressure, a careful definition of crime rate based on the actual number of crimes committed is suggested for future research.

Similarly, type of treatment prior to the present admission needs to be more explicit. Clients were asked about the kind of treatment they had experienced for drug/alcohol abuse. Because the treatment modalities were not mutually exclusive, it was difficult to examine the specific effect of each treatment modality on retention. Future research must isolate and examine the effect of each treatment type as well as extent of previous treatment on retention.

Appendix

Table 13

Clients' Characteristics by their Perceived Length of Stay (Per Cent)

Characteristic	Perceived Length of Stay		
	Short Term (1-6 Months) N=112	Medium Term (6-12 Months) N=182	Long Term (1-2 Years) N=243
Sex			
Male	52.7	54.9	58.6
Female	47.3	45.1	41.4
Ethnicity			
Black	71.4	70.7	71.2
Hispanic	20.5	16.0	16.5
White	8.0	13.3	12.3
Age			
Under 21 Years	60.7	49.5	56.1
21 or Over	39.3	50.5	43.9
Primary Drug			
Marijuana	32.1	23.6	19.3
Cocaine	38.4	40.7	36.5
Heroin	6.3	4.9	7.8
Crack	15.2	24.2	30.3
Other	8.0	6.6	6.1

Table Continues

Table 13 Continued

Perceived Length of Stay

Characteristic	Short Term (1-6 Months) N=112	Medium Term (6-12 Months) N=182	Long Term (1-2 Years) N=243
Legal Pressure			
Pure Volunteers	15.0	14.2	12.4
Volunteers with Crime or Legal Problem	68.0	63.6	68.8
Legally Involved	8.0	7.4	6.0
Legal Referrals	9.0	14.8	12.9
Perceived Pressure			
Outside Pressure	22.5	21.4	15.6
Inside Pressure	43.5	44.5	49.0
Both Pressures	34.2	34.1	35.4
Crime			
No Crime	17.9	17.0	18.4
Crime	82.1	83.0	81.6
Legal Problems			
No Legal Problem	70.3	68.7	64.2
Legal Problem	18.6	31.3	35.8
Treatment History			
No Previous Treatment	68.8	67.6	68.7
Previous Treatment	31.3	32.4	31.3

Table 20

Dropout Rates by Age for Direct Admissions (Per cent)

N = 592

	Age (Years)	
	Under 21	21 and Over
Days	N=326	N=268
1-30	26.4	27.2
31-60	11.3	10.8
61-90	7.1	9.3
91-120	7.1	6.7
121-150	2.8	3.7
151-180	2.8	3.7
Remained Over 180	42.6	38.5
Total	100.1	99.9

Table 21

Dropout Rates by Ethnicity for Direct Admissions (Per cent)

N = 592

	Ethnicity		
Days	Black	Hispanic	White
	N=415	N=109	N=68
1-30	26.3	31.2	23.5
31-60	11.8	8.3	11.8
61-90	7.5	6.4	13.2
91-120	7.7	3.7	7.4
121-150	3.1	1.8	5.9
151-180	3.4	3.7	1.5
Remained Over 180	40.2	45.0	36.8
Total	100.0	100.1	100.1

Table 22

Dropout Rates by Primary Drug of Abuse for Direct Admissions (Per Cent)

N = 594

	Primary Drug				
Days	Marijuana	Cocaine	Heroin	Crack	Other
	N=142	N=227	N=43	N=142	N=40
1-30	33.8	23.3	30.2	24.6	25.0
31-60	7.0	16.3	4.7	10.6	5.0
61-90	3.5	10.1	7.0	9.2	10.0
91-120	4.2	10.1	2.3	6.3	5.0
121-150	2.1	2.6	9.3	4.2	0
151-180	1.4	3.1	4.7	3.5	7.5
Remained Over 180	47.9	34.4	41.9	47.5	47.5
Total	99.9	99.9	100.1	99.9	100.0

Table 23

Dropout Rates by Clients' Self-Reported Source of Pressure (Per Cent)

N = 592

Days	Source of Pressure		
	Outside	Inside	Both
	N=124	N=270	N=198
1-30	30.6	25.6	25.8
31-60	8.1	12.6	11.1
61-90	6.5	10.0	6.6
91-120	4.8	5.9	9.6
121-150	4.8	3.0	2.5
151-180	4.8	1.9	4.0
Remained Over 180	40.3	41.1	40.4
Total	99.9	100.1	100.0

Table 24

Dropout Rates by Treatment History for Direct Admissions (Per cent)

N=593

Days	Treatment History	
	No Treatment	Previous Treatment
	N=409	N=184
1-30	28.9	22.3
31-60	10.8	12.0
61-90	7.3	9.8
91-120	7.1	6.5
121-150	3.2	3.3
151-180	2.4	4.9
Remained Over 180	40.3	41.3
Total	100.0	100.1

Table 25

Dropout Rates by Criminal Activity in the Six Months before Treatment for Direct Admissions (Per cent)

N=594

Days	Criminal Activity	
	No Crime	Crime
	N=110	N=484
1-30	32.7	25.4
31-60	9.1	11.6
61-90	8.2	8.1
91-120	2.7	7.9
121-150	3.6	3.1
151-180	3.6	3.1
Remained Over 180	40.0	40.9
Total	99.9	100.1

Table 26

Dropout Rates by Self-Reported Legal Problems before Treatment for Direct Admissions (Per cent)

N=591

Days	Self-Reported Legal Problems	
	No Legal Problem	Legal Problems
	N = 391	N = 200
1-30	29.2	22.0
31-60	11.5	10.0
61-90	7.7	9.0
91-120	6.9	7.0
121-150	2.8	4.0
151-180	4.1	1.5
Remained Over 180	37.9	46.5
Total	100.1	100.0

Table 27

Dropout Rates by Legal Pressure for Treatment Outreach Center Referrals (Per cent)

N=161

	Legal Pressure			
Days	Pure Volunteers	Volunteers with Crime or Legal Problems	Legally Involved	Legal Referrals
	N=22	N=101	N=13	N=25
1-30	27.3	14.9	23.1	24.0
31-60	18.2	12.9	0	16.0
61-90	4.5	5.9	7.7	4.0
91-120	0	2.0	7.7	0
121-150	4.5	3.0	0	0
151-180	4.5	1.0	0	4.0
Remained Over 180	40.9	60.4	61.5	52.0
Total	99.9	100.1	100.0	100.0

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