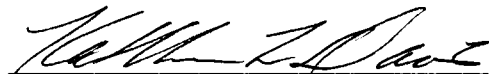


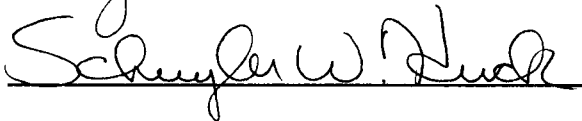
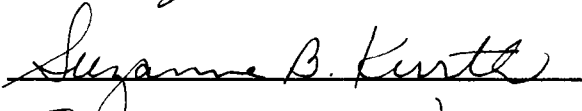
To the Graduate Council:

I am submitting herewith a dissertation written by Kay Lyn Bartosz entitled "Relationship of Patient Variables and Prognosis Ratings in an Alcoholism Treatment Program." I have examined the final copy of this dissertation for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy, with a major in Education.



Kathleen L. Davis
Major Professor

We have read this dissertation
and recommend its acceptance:



Accepted for the Council:



Vice Provost and
Dean of The Graduate School

RELATIONSHIP OF PATIENT VARIABLES AND PROGNOSIS RATINGS
IN AN ALCOHOLISM TREATMENT PROGRAM

A Dissertation
Presented for the
Doctor of Philosophy
Degree
The University of Tennessee, Knoxville

Kay Lyn Bartosz
December 1990

ACKNOWLEDGMENTS

In the course of my dissertation research a number of people have been of great help to me. I would like to thank Dr. Kathleen Davis, my committee chairperson, for her suggestions, support, and critical reading of the drafts of this document. Appreciation is also extended to the other members of my graduate committee, Dr. Schuyler Huck, Dr. Suzanne Kurth, and Dr. Cheryl Travis, for their assistance. I am also grateful to all of my friends and colleagues who have offered their encouragement throughout my graduate training. Without their support, I would never have been able to complete this milestone in my life. I wish to thank my parents for their belief in me and the value they have always placed on education. Finally, I wish to thank my beloved husband, Bob, whose love sustained me through the times I did not think I could sustain myself. I have finally begun to understand the meaning of the saying, "Let go, and let God."

ABSTRACT

This study investigated the relationship of selected psychosocial variables, based on cognitive social learning theory, and clinicians' prognoses for patients who had completed treatment for alcoholism. Within 5 days of entering treatment, 145 patients at a Veterans Administration Medical Center alcohol treatment unit were administered the Michigan Alcoholism Screening Test (MAST), the Drug Abuse Screening Test (DAST), the Buss-Durkee Anger Inventory (BDAI), and the Tennessee Self-concept Scale (TSCS). A structured interview was used to obtain sociodemographic information. The test scores and sociodemographic information were the independent variables. Six clinical staff members from the Alcohol Treatment Unit judged the patients' prognoses using a 5-point scale. These ratings served as the dependent variable.

Multiple regression and analysis of variance procedures were used to analyze the data. The one-variable regression model indicated that the DAST scores were the best predictor of clinician's ratings of patients' prognoses. There was a slight, but statistically significant, relationship between DAST scores and prognoses, indicating that clinicians tended to give lower prognosis ratings to those patients who had a history of polysubstance abuse than to those patients who

did not. The results of the four separate one-way ANOVAs suggested that marital history and employment history could be related to the patient's prognosis ratings.

The limitations and implications of the findings are discussed. Suggestions for future research are given.

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CHAPTER 1

INTRODUCTION

Statement of Purpose

The purpose of this study was to investigate the relationship of selected psychosocial variables associated with alcoholism, and clinicians' judgments of patients' prognoses at the end of their involvement in treatment for alcoholism. In the field of alcoholism research, little appears to be known about what characteristics of patients may be predictive of a clinician's prognosis rating of patients who are in or have completed a substance abuse treatment program. Staff in an alcoholism treatment unit often share implicit assumptions about what patient characteristics may influence favorable treatment outcome (Vannicelli, Gingerich, & Ryback, 1983). Research appears to be lacking on which characteristics of patients differentiate those who are perceived by clinicians as likely to benefit from treatment, and those who are not. The patient characteristics selected for study in this research are related to a cognitive social learning (CSL) perspective of alcoholism treatment.

Prognosis at the time of discharge, and the identification of factors that are perceived by clinicians to enhance or detract from posttreatment functioning of

alcoholics, have been issues of much concern in the addiction treatment literature (Billings & Moos, 1983; Cronkite & Moos, 1980; Nathan & Skinstad, 1987; Schofield, 1978; Schuckit, Schwei, & Gold, 1986). Based on a review of the literature, cognitive social learning variables such as personality characteristics (Armstrong, 1958; Freud, 1898/1962; Perkins, Simpson, & Tsuang, 1986; Rounsaville, Dolinsky, Babor, & Meyer, 1987; Sutker & Allain, 1988), sociocultural background (Donovan, 1986; Gossop & Connell, 1983; McCord & McCord, 1982; Watts & Tabow, 1983), and substance abuse history (Bass, Roach, & Griffin, 1988; Carroll, 1986; Kaufman, 1982; Royce, 1981; Tarter, 1988) have all been linked in various ways to staff judgments of prognosis, of treatment outcome, of who will be readmitted for alcoholism treatment, and of who is likely to drop out of treatment. These types of prediction all represent various applications of "clinical judgment."

From the intake interview to the termination of treatment, clinicians are collecting information on patients, formulating hypotheses, and making judgments. These activities involve a complex series of cognitive processes. The gathering, storing, and retrieval of information on the part of the clinician leads to such operations as comparing patient behaviors, correlating one event with another, and predicting patient outcome.

Judgment may be defined as the ability to perceive and distinguish relationships, or the capacity to make reasonable estimations (Webster's Ninth New Collegiate Dictionary, 1987). Prognosis, a term more often used in the health professions, is a forecast, estimation, or prediction about the probable course of an illness (Brown, 1971).

The clinician may be aware of which client variables affect his/her prognosis. However, Arkes (1981) suggested that clinicians have very little awareness of what factors actually influence their judgment and decision-making processes. For example, Bass et al. (1988) found that a person's history of substance abuse increased the likelihood that staff would favor admission into a detoxification treatment program. However, staff believed that their decisions to admit a patient for detoxification depended on the presence or absence of physical withdrawal symptoms.

Clinical judgment is an important area for study, in that clinical judgment has critical real-life implications. Decisions based on clinical judgment may determine who will benefit from and be admitted for therapy (Burlingame, 1990). Clinical judgment may also determine who is given an academic promotion (Risucci, Tortolani, & Ward, 1989), or who might be confined to a jail or mental institution (Faust & Ziskin, 1988). Every day, lawyers, physicians, nurses, judges, teachers, employers, and psychotherapists are asked

to make decisions based on predictions of an individual's behavior.

Clinical judgments likewise affect numerous aspects of an alcoholic's life. In addition to decisions about who might be admitted to detoxification (Bass et al., 1988), issues such as who would potentially do well in a half-way house (Martin, 1979) and how addicts will behave on an inpatient unit (Gossop & Connell, 1983) are all examples of the use of clinical judgment in alcoholism treatment.

Introduction to the Study

The Congressional Office of Technology Assessment (Saxe, Dougherty, Esty, & Fine, 1983) estimated that 85% of all alcoholics never receive any sort of treatment. Among alcoholics receiving treatment, Saxe et al. (1983) found that there was little definitive evidence that any one type of treatment was any better than any other. The comprehensive Rand Corporation study of 700 alcoholics found that less than 10% of the patients were able to maintain abstinence over a period of 2 years following discharge from treatment (Armor, Polich, & Stambul, 1978). This evidence suggests that treatment for alcoholism has not been very successful.

Alcohol-related disorders have a tremendous impact on the health-care delivery system. Alcoholics and alcohol-

related or alcohol-aggravated illnesses represent a potential source for increasing medical care costs. Failure to effectively address the often chronic nature of addiction has been economically costly for individuals, for employers, and for insurance carriers (Dalton & Ventura, 1990). The nationwide system of Veterans Administration (VA) hospitals is no less affected. In 1970, about 20% of the patients in VA hospitals, or 17,000 patients, were identified as having a principal diagnosis of alcoholism or alcohol abuse (Office of the Controller, VA Central Office, Washington, D.C.; 1977). Excluding the alcohol abuse diagnosis, 11% of 68,000 VA patients were identified as alcoholics in 1980. Currently, alcohol-related disorders rank second only to heart disease as a discharge diagnosis in VA hospitals.

Undoubtedly, alcoholism is a significant treatment issue. However, the very nature of alcoholism treatment remains controversial. There appears to be little agreement about the many approaches to treatment and which is the treatment model of choice, or how successful various types of treatments may be (Crawford & Chalupsky, 1977; Hill & Blane, 1967).

Prognoses often reflect clinicians' judgments of what constitutes "success" in treatment, and who is likely to be considered "successful" following discharge. Numerous criticisms have arisen over subjective definitions of

"treatment success." Typically, researchers who study alcoholism from a "medical model" perspective use abstinence as the sole criterion for defining "successful" treatment.

Proponents of a cognitive social learning perspective view total abstinence as an inappropriate criterion for successful prognosis. They hold this view because there appears to be no empirical evidence to support the idea that abstinence alone provides alcoholics with the behavior changes they need to cope with problems in daily living. Totally abstinent alcoholics may still exhibit significant personal and social problems (Gerard, Saenger, & Wile, 1962; Pattison, 1966). Clinicians may give patients the impression that only life-long abstinence constitutes "success," and that the only "cured" alcoholic is a totally abstinent one. This belief may actually increase the possibility of relapse. Marlatt and Gordon (1985) indicated that some alcoholics may feel incapable of giving a total commitment to abstinence. If total abstinence is the only definition of treatment "success," some patients may see abstinence as a threat to personal freedom. This perceived threat may provoke a relapse as a form of "mutiny" against external demands and expectations. Use of total abstinence as the criterion in forming a prognosis may therefore be an inaccurate basis for a clinical judgment.

An alternative treatment outcome proposed by some researchers (Sobell & Sobell, 1973; Taylor, 1980) is the possibility of the drinker's return to controlled or "social" drinking. This model would allow clinicians to predict "success" on the basis of a patient's predicted ability to return to nonproblematic social drinking rather than complete abstinence. However, social drinking is seen as less effective than total abstinence for those with more advanced alcohol problems, and is not acceptable as an alternative to many of those in medically oriented treatment settings or to many members of Alcoholics Anonymous (Miller & Hester, 1980). Specific criteria for judging who might be labeled a "treatment success" appear to be dependent upon the researchers' values and theoretical orientation.

Another lack of consistency noted in the alcoholism research literature occurs in the choice of tests used and the research variables selected for study. Arguing that alcoholism is a multifaceted phenomenon, Wanberg and Horn (1983) suggested the use of multidimensional concepts and measures to study such factors as etiology or outcome. Moos and Finney (1983) expanded this argument by noting that numerous factors need to be examined in any alcoholism study. They suggested addressing intrapersonal and interpersonal factors, as well as the role of life context or "extratreatment" factors. "Extratreatment" factors might

include situational variables occurring before, after, or with treatment, such as losing one's job or having one's house burn down. Emrick and Hansen (1983) suggested selecting indices which will address areas thought to be common to most alcoholism research. To simplify comparative analyses across studies, they suggested the use of "core indices." These include such factors as completion of the program, recidivism, mortality, drinking behavior, other substance abuse, and vocational, marital, family and emotional functioning. This study explored how the variables identified by Emrick and Hansen (1983), Moos and Finney (1983), and Wanberg and Horn (1983) may affect clinicians' perceptions of patients' prognoses.

Review of the Literature

The following review surveys the research in the areas of (a) the major theories of alcoholism, (b) the heuristic value of cognitive social learning (CSL) as an explanatory model for alcoholism, (c) the role of selected variables as they apply to alcoholism and the cognitive social learning model, and (d) clinicians' judgments. Specifically, the "trait" model, the "disease" model, and the CSL model of alcoholism as well as the implications each of these models might have on clinicians' judgments of prognosis are described. Finally, the variables of past history, self-

esteem, and anger management are explored under the CSL model with implications for the role of these variables in alcoholism research.

Theories of Addiction

Butcher (1988) pointed out that "at present there is no single set of causal factors that enjoys a majority following among [addiction] researchers and clinicians" (p. 171). Theories about the cause of alcoholism have run the gamut from ideas about "sin" and moral weakness, to the role of cultural and ethnic heritage, to ideas about a genetic basis, to the view of alcoholism as the outgrowth of general learning theory. No one theory seems to fully explain how alcoholism occurs or is sustained. Sutker and Allain (1988) humorously noted that "moral deficits, sinful behaviors, maladaptive functioning, irresponsible choices, psychopathology, social deviance, biological disease, inherited predisposition, and social learning . . ." (p. 173); all have been cited to account for alcoholism. In addition, most of the theories are based on research done with male alcoholics. It is only in recent years that female alcoholism has been treated as distinct from male alcoholism (Macdonald, 1987).

In this section the "trait," "disease," and cognitive social learning models will be examined. These theories

have been selected for examination since they are widely accepted by the research community and the general public (Blane & Leonard, 1987; Nathan, 1985; Searles, 1988).

"Trait" Theories

Specific personality traits may be characteristic of the alcoholic. Theorists as well as lay people have long assumed that some personality characteristics have predisposed certain people toward alcoholism (DeLiso, 1987). This idea has led to "trait" or "psychological" theories concerning the causes of alcoholism. As noted by Sutker and Allain (1988), "clinicians of various disciplines have assumed that certain personality traits . . . predate alcohol and drug use" (p. 172). Having an "addictive personality" (Armstrong, 1958) is thus assumed to be the explanation for a person's alcoholism. Psychoanalytic studies (Freud, 1898/1962; Khantzian, 1982; Rado, 1933) have suggested the constructs of regression and oral fixation to explain alcoholism. Freud (1898/1962) developed the idea of drug dependence as a form of autoerotic pleasure seeking.

More recently, a review of studies on alcoholics using the Minnesota Multiphasic Personality Inventory (MMPI) indicated that no single personality type was characteristic of all alcoholics (Graham & Strenger, 1988). The most consistent finding in the review was that alcoholics

frequently scored high on Scale 4, Psychopathic Deviant. This is consistent with the conclusions of other researchers (Hesselbrock, Hesselbrock, & Stabenau, 1985; Schuckett, Rimmer, & Reich, 1970) who found the dimension of "sociopathy" to be high in alcoholics. However, Graham and Strenger (1988) noted that the significant differences on Scale 4 between alcoholics and nonalcoholics tended to disappear with the removal of three questions from the scale, namely "I have used alcohol excessively"; "I have never been in trouble with the law"; and "I have not lived the right kind of life."

Another trait frequently found in relation to alcohol abuse is depression (Weissman & Meyers, 1980; Winakur, 1979). Childhood traits such as hyperactivity, rebelliousness, and impulsiveness have been proposed as precursors to adult alcoholism in the work of developmental theorists (Hoffman, Lopeer, & Kammeier, 1974; McCord & McCord, 1982; Vaillant, 1983). Although the personality studies remain popular, "Keller's Law" has been noted to apply to the diversity of findings. "The investigation of any trait in alcoholics will show that they have either more or less of it" (Keller, 1972).

Trait theorists imply that since an underlying personality trait may be related to or even responsible for the use of addictive substances, a change in that person-

ality trait would be necessary for good prognosis (Cooper, 1983; Cox, 1987). A clinician might base his/her judgment of prognosis on a perceived change in the underlying personality traits, such as a perceived reduction in patient's hostility or perceived increase in self-esteem.

Disease Model

The belief that alcoholism is strongly influenced by genetic factors has also had support from medical personnel, lay people, and researchers. Nathan and Harris (1980) called this belief "one of the most persistent of the biophysiological theories of alcoholism" (p. 242). Called the "disease" model (Douglas, 1986; Fingarette, 1970; Gitlow, 1973; Jellinek, 1960) or "medical" model (Brickman et al., 1982; Guze, Cloninger, Martin, & Clayton, 1986), this theory is derived from the conceptualization of alcohol and drug addiction as biologically based, with possible familial origins.

Pattison, Sobell, and Sobell (1977) credited the early concepts of the "disease model" to the writings of E. M. Jellinek in the late 1950s and early 1960s. His work served to give medical credence to alcoholism treatment and to reshape public thinking away from a "moral weakness" or "sin" conceptualization of alcoholism. In The Disease Concept of Alcoholism, Jellinek (1960) stressed alcoholism

as a physical disease beyond the control of the individual. This model rests on the assumption that genetic factors differentiate the alcoholic from the social drinker. Once drinking starts, the "true" alcoholic would be unable to have any further voluntary control over his or her drinking (Jellinek, 1960). The model assumes that one instance of drinking leads to loss of control and complete relapse; likewise, it assumes that the course of the disease of alcoholism is an inevitably downward progression (Jellinek, 1960). These assumptions imply that the only appropriate outcome of treatment is permanent and total abstinence and that treatment interventions are generally ineffective to control the course of the "disease." Viewing alcoholism as a disease also implies that the person may not be held responsible for behavior exhibited during a drinking episode.

Support for this model can still be found. For example, Goodwin and his colleagues (Goodwin, 1978; Goodwin, Schulsinger, Hermansen, Guze, & Winokur, 1973) researched genetic predisposition for alcoholism, and found that the sons of alcoholic fathers have a four to five times greater rate of alcoholism than the general population. The few twin studies that have been done suggest the possibility of a predisposition toward alcoholism. Identical twins, whether raised in the same or different environments, are

usually found to have a higher concordance rate of alcoholism than do fraternal twins (Murray & Stabenau, 1982).

In the medical model, the only possible "successful" outcome would be that of total, lifelong abstinence from addictive substances (Jellinek, 1960). Prognosis is therefore likely to be judged on the basis of the probability that a patient would be able to remain abstinent. Factors that could possibly interfere with abstinence, such as a recent loss of employment or lack of a family support system, might influence clinicians to view that patient as having a poor prognosis.

Cognitive Social Learning Theory

The role of sociocultural and cognitive variables remained largely unexplored with the conceptualization of the "personality theory" and "disease" models of alcoholism. Wilson (1987) noted that in the 1970s, "virtually all of psychology 'went cognitive'" (p. 54). The term "cognitive social learning" (CSL) was used to indicate the interaction of cognitive and social variables in studies of personality and learning theory (Beck, Rush, Shaw, & Emery, 1979; Mischel, 1973, 1981). Research in alcoholism was no less affected by the move toward CSL theory (Nathan, 1985; Wilson, 1985).

The CSL theory as applied to alcoholism is an outgrowth of the general frameworks of both cognitive theory and social learning theory (Abrams & Niaura, 1987; Bandura, 1969; Blane & Leonard, 1987; Marlatt & Gordon, 1985) and as such assumes that all drinking, from occasional social use through alcoholism, is governed by similar principles of learning, cognition, and reinforcement. While not completely discounting the role of genetic or personality factors in alcoholism, CSL differs from trait theory by shifting the focus from internal influences on drinking behavior to an examination of external influences such as sociocultural background or vicarious learning (Abrams & Niaura, 1987).

Cognitive social learning differs from theories of addiction that focus on the medical/disease model, which emphasizes uncontrollable biochemical processes in an essentially passive "victim" (Collins & Marlatt, 1983). The principles of CSL theory assume an adaptive, purposive role in the explanation of how behavior patterns are established, maintained, and modified (Bandura, 1982).

In this conceptualization, addictive behaviors represent learned habits that can be analyzed and modified in a manner similar to the process of changing any learned behavior (Marlatt, 1985b). Addictive behaviors are also viewed as lying along a continuum of frequency of

occurrence. Rather than being in dichotomous categories such as "binge drinking" as opposed to "abstinence," the possibility of returning to controlled, nonproblematic drinking is seen as an option, albeit a controversial one (Armour, Johnson, Polich, & Stambul, 1977; Crawford & Pell, 1977; Daview, 1962; Lloyd & Salzberg, 1975; Sobell & Sobell, 1973; Taylor, 1980).

It is a central assumption to the theory that the addictive behaviors are a group of overlearned, overused, maladaptive habits (Marlatt, 1985a, 1985c). These habits are reinforced by some form of immediate gratification (e.g., the "high" of drugs or the "rush" of gambling) and are generally performed in some situation perceived as stressful or threatening. For example, Marlatt (1985a) noted that the role of alcohol may be to increase the person's sensation of power, personal well-being, or social control in stressful situations. Scoufis and Walker (1982) also indicated that heavy drinking may be related to the need for the sensation of power. The act of drinking alcohol may acquire the learned outcome expectation that alcohol can decrease personal discomfort in these stressful situations. By using addictive substances prior to stressful or unpleasant situations, this behavior (e.g., drinking to "calm the nerves" and reduce social anxiety) comes to represent maladaptive coping mechanisms.

The perspective offered by CSL theory is empirically productive for researchers. Marlatt (1978) proposed that the determinants of drinking, the consequences, and the social and interpersonal reactions of the alcoholic are of particular interest to the researcher. These areas of interest could include factors such as environmental antecedents, the person's repertoire of social skills, and/or level of emotional functioning. Marlatt and Gordon (1985) indicated that researchers using the CSL model might be interested in studying such factors as "the determinants of addictive habits, including situational and environmental antecedents, beliefs and expectations, and the individual's family history and prior learning experiences" (p. 9) with addictive substances or activities. It may be noted that these factors are similar to some of the "core indices" (e.g., drinking behavior, other substance abuse, emotional functioning, and general interpersonal functioning) noted earlier by Emrick and Hansen (1983) as important areas of research. Wilson (1987) credited CSL theory as being able to "successfully accommodate much evidence that appeared to be conflicting" and to have "generated controversy, fresh ideas, and new research" (p. 325).

If, as Marlatt (1985a) noted, the addictive behaviors are overlearned and overused habits, and if one can assume

that drinking behavior is governed by principles of learning, it seems logical to assume that cognitive social learning principles can be applied to the modification, as well as the acquisition, of drinking behavior. Variables related to recovery from alcohol can be studied to determine the role those variables play in the subject's response to treatment and perhaps in the clinicians' determinations of prognosis.

In the CSL model, views of prognosis might be related to clinicians' perceptions of changes in the patients' thoughts about alcohol, and in patients' environments following treatment. For example, Dalton and Ventura (1990) noted that some of the factors associated with previous drinking are also indicative of future relapse. These factors include the lack of a network of nonaddictive family and friends, stressful life changes, fantasies of returning to controlled drinking or drug use, "euphoric recall" of the "good times" when they were using drugs, or return to high-risk situations such as being with former "drinking buddies" or returning to the former neighborhood bar. As these events and thoughts previously served to reinforce drinking patterns, these same stimuli could evoke the desire to drink in the future (Myers, 1990). Clinicians might use their perceptions of change or lack of change in these previously

drinking-related events or thoughts as indicative of a positive or negative prognosis, respectively.

Variables Related to Alcoholism

Sociocultural History

Demographic and sociocultural factors have often been looked at as both possible predictors of alcohol abuse (Miller & Mastria, 1973) and as influential factors in posttreatment functioning (Ornstein & Cherepon, 1985). There is some evidence to suggest that factors indicative of social instability, such as high divorce rate or frequent unemployment, are associated with poor response to treatment (Gibbs & Flanagan, 1977; Pokarny, Miller, & Cleveland, 1968), and therefore, possibly poor prognosis for recovery. Stressful life events and the cultural background of a patient (Cronkite & Moos, 1980) have been noted within general social learning theory as explanations for the development of problem drinking behavior. Modeling of drinking by family or friends, or seeing drinking used as a general coping mechanism by one's culture may predispose the individual to inappropriate alcohol use (Marlatt, 1978, 1979, 1985a, 1985b). Social learning theorists have even advanced economic deprivation and socioeconomic status of the family as being bases for substance abuse, although these situational factors are not supported by research

findings (Fawzy, Coombs, Simon, & Bowman-Terrell, 1987). These factors are often thought to indicate high risk for the development and maintenance of alcoholism, and therefore possible poor response to treatment of and poor recovery from alcoholism (McAuliffe et al., 1987).

Jaffe (1979) noted that "the characteristics of the individual and the environment to which he returns have significant effects on . . . the treatment process" (p. 9). Among the characteristics Jaffe hypothesized as having an effect on a patient's response to treatment were the patient's age, duration and severity of substance use history, and the history of alcohol use in the individual's family of origin. Bromet and Moos (1977), Costello (1975), and Gibbs (1980) identified potential predictors of a patient's ability to successfully readjust to the community following treatment. These predictors of posttreatment adjustment included the patient's number of prior alcohol-related hospitalizations, age, and marital status.

Several researchers have examined the effect of a patient's family history of alcoholism as a factor in the development of alcohol abuse patterns and in treatment outcome. Tarter (1988) reported that family history of alcohol and drug use is one of the most salient sociodemographic risk factors for the development of alcoholism. Familial substance abuse "appears to most strongly portend

an adverse outcome" (Tarter, 1988, p. 189). While Tarter (1988) agreed that there may be some heritable basis for a vulnerability toward alcoholism, these "dispositions" are shaped by such cognitive social learning factors as the influence of the physical and social environment, the effect of learning, and the socialization experiences of the alcoholic. In studies of the early family environments of alcoholics (McCord & McCord, 1982; Robins, Bates, & O'Neal, 1982), a history of family dysfunction was a common factor. The alcoholics in both the aforementioned studies came from homes where the father was often alcoholic; the research participants also described themselves as aggressive and self-sufficient. Several other researchers (Kaufman & Pattison, 1982; McCrady, 1982; Steinglass & Robertson, 1982) examined the family systems of alcoholics, and the effect the family might have on the alcoholic. These family system studies indicate that by isolating and protecting the alcoholic family member, the family can serve to perpetuate the alcoholic member's drinking problem. Donovan (1986) stated that alcoholism can be viewed as both the cause and the effect of family dysfunction. People who are exposed to heavy drinking and long histories of substance abuse by their peers or family members may tend to mirror those habits, causing further problems within the family. From these studies, it appears that a family history of substance

abuse implies high risk for developing an alcoholism problem and poor prognosis for recovery.

The comprehensive and longitudinal Rand studies (Armor et al., 1978; Polich, Armor, & Braiker, 1980) investigated 14,000 patients treated for alcoholism over a 4-year period. Social stability, in terms of steady employment, stable housing, and family and marital support, were noted as positive factors for abstinence following treatment. Abstinence was the criterion for judging the success of the treatment. The younger patients, who had shorter histories of alcoholism and were less severely dependent on alcohol, appeared to have better outcomes at the 4-year follow-up. These patients were also likely to have fewer numbers of alcohol-related hospitalizations.

There is, however, contradictory evidence on the point of age as a factor in treatment. The medical model holds that alcoholics must "hit bottom," that is, reach their lowest social, medical, and emotional level of functioning, before they can benefit from treatment. This "hitting bottom" argument is consistent with results showing greater improvement with advanced age. Ornstein and Cherepon (1985) found that recovering alcoholics who were characterized as abstinent or "improved" 2 years after treatment, tended to be married, employed, and older, approximately age 45 years and older. The findings of Ornstein and Cherepon (1985)

appear to conflict with the findings of the Rand group on the factor of age, but support the Rand findings on the factors of social stability as being positive treatment factors. The patients in the Rand studies, who were in their thirties, may have been less socially deteriorated, been less severely medically impaired, had shorter substance use histories, or had fewer number of hospitalizations for alcoholism. The older patients in the Ornstein and Cherepon study (1985) appeared to have more of a social and financial support system in terms of marital and familial support for sobriety, family involvement in aftercare, and the ability to return to steady employment.

Schuckit et al. (1986) used multiple correlational analysis to determine the "best" predictors of successful alcohol treatment. Treatment outcome success was defined as the number of days of abstention. Three variables were most strongly related to abstention: (a) number of days worked in the previous 6 months, (b) number of prior hospitalizations, and (c) the presence of siblings or a father who had a history of substance abuse. The number of days worked in the previous 6 months was positively correlated with the outcome measure of total number of days of abstinence in 6 months. The hospitalization and family history variables had negative correlations with abstention from alcohol following treatment.

In their review of the 1975 national statistics of clients in alcohol and drug treatment programs, Wolkstein and Hastings-Black (1979) found that employment represented an important factor in the drug and alcohol treatment process. The 1975 data indicated that 74% of clients leaving treatment were unemployed. The 1976 data were similar, with 73% of clients unemployed upon leaving treatment. Brainstein, Powell, McGowan, and Thoreson (1983) found that employment status had a significant effect in and of itself, as well as having an effect when combined with the factor of age, on treatment outcome of alcoholics. Employed alcoholics also had lower scores on measures of anxiety and depression than did unemployed alcoholics. Elal-Lawrence, Slade, and Dewey (1986) compared "relapsed" drinkers with "abstainers" on several sociodemographic characteristics. "Relapsed" drinkers were defined as those who regularly drank more than 64 grams of alcohol per day in the year following their inpatient treatment. The members of the relapsed group were less likely to be married than the abstainers, although this factor did not reach the level of statistical significance. Only 43% of the members from the "relapsed" group were married, as compared to 58% of the abstinent group members. They were also less likely to be employed. Thirty-four percent of the relapsed drinkers were employed, while 44% of the abstinent group members had jobs

in the year following treatment. This represented a significant difference between the groups.

Thus the factors of age, family history of alcoholism, marital status, and employment status have been identified as important factors in the research on the development of and responsiveness to treatment for alcoholism. A patient having poor responsiveness to treatment might also be seen by clinicians as having poor prognosis for recovery. The factors of age and family history are variables which cannot be changed. The remaining factors appear to reflect the subject's stability in work history and/or relationships.

Substance Use History

In the CSL approach to alcoholism, alcohol abuse is viewed as a socially acquired behavior pattern. Alcoholics may conceptualize alcohol as a coping mechanism with the expected ability to enhance pleasure, increase power and aggression, make the subject more assertive socially, and reduce tension (Brown, Goldman, Inn, & Anderson, 1980).

As the use of any substance may result in occasional positive consequences, the use of alcohol or drugs is reinforced and the habit strengthened. This represents a basic principle of learning theory which assumes that behavior which is followed by a reinforcing event will increase in occurrence (Bandura, 1969). The model also

assumes that the attraction toward the old "crutch" increases in a high-risk situation; in a stressful situation, the previously dominant response is likely to recur (Marlatt, 1985b). Ornstein and Cherepon (1985) found, for example, that alcoholics characterized as "improved" in a 2-year follow-up were less likely to have had prior alcohol-related hospitalizations. The "improved" category consisted of patients who reported that they had been totally abstinent during the 2-year period, and those who reported that their posttreatment drinking totaled 5% or less of their prehospitalization intake. The "improved" group also "enjoyed more days of sobriety before entering [the initial] treatment" (p. 427). These ex-patients appear to have had less of an attraction for the previous dominant response, or "old crutch," noted by Marlatt (1985b).

Research on the role of prior treatment is equivocal at best. "Prior treatment" may be defined in a particular study as duration/intensity of treatment, or number of previous admissions. Some investigators (McLellan, Luborsky, O'Brien, Woody, & Druley, 1982; Armor et al., 1978) reported that patients benefit from long-term treatment. Patients in long-term treatment (15-60 days or more) showed better 6-month outcomes than those in short-term treatment (5-14 days) on 12 of 18 outcome criteria, such as legal problems, unemployment, and psychological

functioning (McLellan et al., 1982). Other researchers (Gunderson & Schuckit, 1978) found positive prognosis to be associated with short (1-5 days) rather than long-term hospitalization or no hospitalization. Still others (Miller & Hester, 1980; Ritson, 1968) found no significant difference in effectiveness of treatment regardless of duration or intensity of treatment. Controlled research to date has found no consistent advantage for type or intensity of treatment (Miller & Hester, 1980). Long-term, short-term, inpatient, and/or outpatient treatments appear to be equally effective.

Frequent readmission for alcohol treatment is a common pattern for many substance abusers. The more severe and overlearned the addiction, the less likely a full recovery on the first try. For example, Armor et al. (1978) found that 63% to 81% of alcoholics in treatment will have at least one readmission. From a cognitive social learning perspective, one might infer that the number of previous admissions is more important than the type, as each might be labeled as a "failure" experience for the drinker and a reminder of his or her relapses. Number of prior hospitalizations may be interpreted by clinicians as a sign of poor prognosis for treatment. Repeated admissions for the same or similar problems may indicate past "failures" on the part of the patient to benefit from treatment. Patients with a

history of numerous hospitalizations are sometimes given unflattering labels by staff members, such as being called "hospital hoboes" (Eisendrath, 1988) or as having the "revolving door syndrome" (Pope, Jonas, & Jones, 1982). Commenting on the prognosis for such patients, Eisendrath (1988) indicated that these people "may be so fixed in the 'patient' role that they are essentially untreatable" (p. 472).

Few researchers have assessed the concomitant use of alcohol and other drugs by substance abusers in stressful situations (Sutker & Allain, 1988). Royce (1981) also noted that "we must correct the idea that alcoholics misuse only alcohol . . . we hear of studies where 100 percent of young addicts are involved with at least two other drugs and many with a third" (p. 6).

"Polydrug abuse" is commonly defined as the simultaneous or sequential use of more than one psychoactive drug for nonmedical purposes (Tinklenberg & Berger, 1977). Synonymous terms are multiple drug abuse, cross-addiction, or mixed addiction. Polydrug abuse patients may prove more difficult to treat due to such complications as drug-induced reactions or difficulty in detoxifying (Ashley et al., 1978), and may therefore be seen as having a poor prognosis for recovery. Kaufman (1982) stated that "pure" alcoholics can be detoxified in 3 to 5 days; when tranquilizers or

other drugs are added, a more complicated withdrawal picture is presented which may take several weeks. He emphasized that a detailed history of specific drug usage needs to be taken. The hazards of combined abuse include overdose, coma, or possible death.

Polysubstance abusers tend to be younger (Rosenberger, 1969) and may represent up to 60% of the clients requesting admission to alcohol treatment programs (Tuchfield, 1975). The combination of alcohol and marijuana was noted to be the fifth most common drug use pattern found among emergency room admissions in a National Institute of Drug Abuse (NIDA) study in 1982 (Norton & Colliver, 1988). Up to 71% of the clients seen at mental health agencies were polysubstance abuse cases (Wesson, Carlin, Adams, & Beschner, 1978).

Given the number of possible cases of cross-addiction and the difficulty in treating these patients, polydrug abuse thus appears to be another factor that can complicate the response to treatment, and perhaps imply poor prognosis. One complication, as previously noted, is that multiple drugs make detoxification more difficult. Polysubstance users also tend to drop out of treatment early (Winick, 1980). Another complication appears to be a belief that a combination of substances may bring faster relief from perceived distress, making a cross-addiction a stronger source of reinforcement than addiction to a single

substance, and perhaps a more difficult pattern to change. In noting that drinking has been shown to increase the likelihood of smoking, Miller (1980) stated that "perhaps this higher level of arousal when cigarettes and alcohol are combined constitutes a more potent reinforcer than lower levels of arousal achieved by alcohol alone. The same phenomenon is apparent when alcohol and certain psychoactive drugs are used in combination" (p. 267). As cognitive social learning theorists would predict, the more complicated the habit, as represented by use of multiple drugs, the more difficult it is to learn new behaviors and change patterns of cognitions. The strong reinforcement value, the tendency to drop out of treatment, and the more difficult habit pattern to change make these patients likely to be seen in a more negative light by treatment staff. These "difficult" patients may therefore be perceived by staff as having a poor prognosis.

Anger Management

The ability to manage anger has been shown to be a deficient social skill in adolescent drinkers (Braucht, Brakarsh, Follingstad, & Berry, 1973). Braucht et al. (1973) found that adolescent problem drinkers were perceived by others as overly aggressive and lacking in personal control. Nurco (1979) offered the explanation that drugs

and alcohol may dampen or sedate the adolescent's angry feelings, thus allowing the drinker to believe that he/she has avoided the problems associated with the inability to cope with anger. Others may see a drinker's behavior as overly aggressive while he/she is under the influence of alcohol. However, the drinker is likely to perceive his/her anger management skills in a positive manner. For example, adolescents saw themselves as more assertive and better able to manage anger as they consumed more alcohol (Miller & Eisler, 1977).

Like the adolescent drinkers, adult alcoholics are frequently seen as being deficient in social skills, particularly anger management (Miller, 1976; Miller & Eisler, 1977). Miller (1976) noted that by failing to manage anger successfully, it is likely that an alcoholic will experience a decrease in self-esteem and subsequently feel powerless and helpless. This may increase the probability of drinking under similar circumstances, because the alcoholic may believe that he/she cannot behave assertively or aggressively without the aid of alcohol. The reduction of inhibitions to expressing anger, which often occurs when one is drinking, may be reinforcing. As Marlatt, Demming, and Reid (1973) and Wilson (1978) noted, it is a common belief in our society that alcohol facilitates the expression of anger, perhaps by having a "disinhibiting" effect on

behaviors which would ordinarily be under social control. Although anger might be expressed under the influence of alcohol, the release of aggressive emotions may, in itself, be experienced as rewarding or reinforcing.

The "angry" alcoholic adult, high in characterological MMPI codes with a high 4 scale, has been identified as a distinct subtype of drinker by Snowden, Nelson, and Campbell (1986). The ability to manage anger thus appears to be an important factor in the development and maintenance of alcohol abuse patterns (Gustafsen, 1986; Jaffe, Babor, & Fishbein, 1988; Lang, Goeckner, Adesso, & Marlatt, 1975; Marlatt, Kosturn, & Lang, 1975).

Research (Docter, Naitch, & Smith, 1966; Garfield & McBrearty, 1970; Solomon, 1977, 1980; Solomon & Corbit, 1974) based on CSL theory suggests that alcohol may have a "biphasic" effect; the arousing initial effects of alcohol may serve to enhance the drinker's perceived sense of power and personal well-being, while the later, more sedating effects of the drug serve to decrease the aroused stress and soothe the personal distress involved in a conflictual situation. An initial state of arousal, through such mechanisms as an increased heart rate or vasodilation, may be subjectively experienced by the user as an increase in personal powerfulness or personal energy. This aroused state may help the person feel he/she is more assertive or

aggressive in dealing with his/her anger, while the sedating phase may soothe the perception of the anger. These biphasic responses strongly reinforce the person's use of an addictive substance as a means of dealing with anger (McClelland, Davis, Kalin, & Wanner, 1972).

Negative emotional states, defined by Marlatt (1973) as the experiencing of an unpleasant feeling such as anger, appeared to predict about 29% of the relapses in a study of 65 clients with addictive behaviors. The results of follow-up studies (Cummings, Gordon, & Marlatt, 1980; Marlatt & Gordon, 1980) with 311 subjects who had a variety of addictions, including drug addiction and compulsive overeating, indicated that about 35% of all relapses could be attributed to "negative emotional states." Almost all (82%) of the relapse-triggering situations in interpersonal categories, defined as conflict associated with an interpersonal situation rather than an intrapsychic or situational conflict, were due to anger and frustration (Marlatt, 1973). Schonfeld, Rohrer, Dupree, and Thomas (1989) studied 30 substance abusers who were reentering inpatient treatment, to determine what had caused the patients to relapse. The researchers found that relapse was determined by interpersonal and intrapersonal events, which were "almost exclusively" negative emotional states, such as anger, depression, or loneliness. Thus, high levels of

anger and poor anger management skills appear to complicate the response to treatment for alcoholism. Anger, with its frequent association with relapse, may be perceived by clinicians as indicative of a poor prognosis.

Self-Esteem

The issues of anger management and self-esteem may be closely related. For example, people rated as being high in self-esteem were less likely to respond with aggression to provocation than were people rated as being low in self-esteem (Rosenbaum & decharms, 1960; Veldman & Worchel, 1961). In Bandura's (1973) discussion of anger as a response to perceived environmental demands or aversive psychosocial events, he noted that aversive events may be interpreted as threats to the self-esteem. Self-esteem was defined as a "global self-image," or one's beliefs about oneself across a wide variety of situations. The term pertains to one's evaluation of one's overall self-worth (Bandura, 1981, 1984).

When a disparity develops between the individual's beliefs about the self and a behavior that is incongruent with this self-image, cognitive dissonance occurs (Festinger, 1964). This cognitive dissonance is subjectively experienced as guilt over what is idealized in the self versus what one sees as real, but disparate from the

ideal (Marlatt, 1985a). Other researchers (Duval & Wicklund, 1972; Wicklund, 1975) have shown that a negative discrepancy, based on a comparison between the actual and ideal self-image, results in self-criticism and lowered self-esteem. Similarly, Weiner, Russell, and Lerman (1978) indicated that cognitive attributions for perceived failures, such as relapse, result in greater emotional impact when the perceived cause is ascribed to internal factors, such as lack of effort or lack of willpower. They (Weiner et al., 1978) also indicated that the attribution of failure to lack of effort generated affective reactions of guilt and shame. Wortman and Brehm (1975) emphasized the relationship between internal attributions of failure and loss of self-esteem. They believed that individuals try to avoid self-perceptions that reflect negatively on their self-esteem. Failure due to perceived lack of "willpower" will do more damage to the self-esteem than will failures attributed to external causes.

For example, if a person views him/herself as an abstainer from alcohol, engaging in the act of drinking is incongruent with that belief about the ideal self. Drinking behavior may result in self-statements such as "I shouldn't have done that" or "I'm worthless." To the extent that alcohol has been used in the past to deal with feelings of guilt or loss of self-esteem, the individual may continue to

use alcohol in an attempt to reduce the unpleasant affective state. This may have implications for prognosis, as patients viewed by clinicians as having low self-esteem may also be viewed as likely to relapse if that affective state is not improved. The relationship between self-esteem and prognosis has been implied in the works of other researchers. Krampen and Nispel (1981) found that alcoholics' levels of self-esteem could differentiate between those alcoholics who were successful and unsuccessful in completing treatment. Cooper's (1983) investigation supported a conclusion that alcohol treatment "extensively" improved the patient's self-esteem, but did not support the hypothesis that higher self-esteem is related to greater treatment success.

Another option is that the person may attempt to bring the self-concept into line with the actual behavior to resolve the dissonance (Festinger, 1964). A relapse into drinking may be viewed as a "failure," causing the alcoholic to view him- or herself as a "failure" also, so that the beliefs and the behavior would be consistent and not dissonant (Festinger, 1964; Marlatt, 1985a).

Other researchers have also examined the relationship of self-esteem and alcohol use. For example, Caster and Parsons (1977) indicated that at the time of seeking treatment, alcoholics rated their sense of self-esteem as

being very low. Yakichuk (1978) found the male alcoholic's view of himself to be significantly lower than the nonalcoholics on 12 of the 13 scales of the Tennessee Self-Concept Scale. The self-criticism subscale, a measure of general defensiveness, showed no difference between the responses of alcoholics and nonalcoholics. O'Leary, Cheney, and Hudgins (1978) also found alcoholics to have lower levels of self-esteem as measured by the Tennessee Self-Concept Scale than did nonalcoholic control subjects. Thus, alcoholics generally appear to have lower self-esteem than nonalcoholics. Without an improvement in self-esteem, clinicians may see little likelihood for recovery from alcoholism and therefore poor prognosis.

As noted in the reviews of the literature on alcoholism and anger management and on polysubstance abuse, there is a perception and expectation that alcohol will enhance the user's pleasure, increase social assertiveness, enhance the sense of well-being, and/or allow the alcoholic to better cope with conflict (Brown et al., 1980). Higgins and Marlatt (1975) indicated that subjects tended to increase their ingestion of alcohol after experiencing fear of a poor interpersonal evaluation, particularly by a member of the opposite sex. This suggests that social anxiety may play a role in alcohol abuse for those persons who have problems with self-confidence and social competence. A patient with

greater self-confidence may be seen by clinicians as having a positive prognosis, because he or she may be perceived as being better able to cope with situations provoking conflict or anxiety. Abrams and Niaura (1987) stated that "individuals with high self-esteem, adequate efficacy and outcome expectations, [and] a good repertoire of interpersonal competence . . . model appropriate alcohol use and discourage the use of alcohol as a coping method . . . and for the most part they become 'normal social drinkers'" (p. 162).

In summarizing the key factors that may precipitate a return to inappropriate or excessive drinking, it appears that self-esteem may play a role in treatment outcome. Marlatt (1979) included the person's view of the self as important in relation to the environmental demands that are perceived as beyond the persons' control, such as powerlessness, fatalism, and helplessness. An individual's self-esteem can complicate the outcome of treatment in several ways. Patients with low self-esteem may tend to drop out of treatment early (Beckman & Bardsley, 1986) and be less able to reap the benefits of the treatment program. Patients with low self-esteem may also perceive themselves as incapable of being able to change their drinking patterns (Connor, 1962), and therefore, may be unable or unwilling to benefit from treatment. Patients with good self-esteem may have adequate social skills, or may have a repertoire of

learned coping skills to aid them in learning new responses to old drinking habits. These patients might be viewed by clinicians as having good prognoses, as these patients have demonstrated their ability to cope with difficult situations.

The factors of anger management skills, substance use history, self-esteem, and sociodemographic background may reflect implicit or explicit criteria for prognosis on the part of clinicians and researchers. The choice of variables for study and the determination of what constitutes "successful response to treatment" both reflect a researcher's beliefs of what factors imply good or bad prognosis. A judgment about the likelihood of recovery, in this case from substance abuse, is synonymous with "prognosis" (Webster's Ninth New Collegiate Dictionary, 1987).

Clinical Judgment

Making an accurate prognosis can be a difficult task for therapists. Lettieri (1985) defined "prediction" as "the estimation on one phenomena [sic] from a knowledge of others to which it is related" (p. 3). A clinical judgment may be made on the basis of a transitory state of the client being judged. Lettieri also noted that the time at which an estimation is made reflects a particular, and perhaps momentary, psychosocial state of the person being assessed.

The goal of prediction is to provide guidance for future actions or decisions. Prediction is thus an intimate factor in the decision-making of clinicians (Einhorn, 1986).

"Prognosis" is a medical term referring to the likelihood of recovery from an illness, or the likely course of an illness (Brown, 1971). "Prediction" is defined as prophesy or as the forecasting of events, while "judgment" is defined as the capacity to make reasonable decisions; to discern relationships; or an estimation, opinion, idea, or thought (Webster's Ninth New Collegiate Dictionary, 1987). "Clinical judgment" is generally thought to be an intuitive process based on training and experience (Faust & Ziskin, 1988). A prognosis is therefore one aspect of clinical judgment, which might also include such activities as making diagnoses or deciding on treatment interventions.

Attempts to research "clinical judgment" began as introspective accounts of the mental processes of a clinician as he/she made decisions (Goldberg, 1968). As reported by Goldberg (1968), these early accounts described the clinicians' mental processes as complex, with interactive, sequential, and/or curvilinear use of cues. However, other researchers (Goldberg, 1968; Hammong, Hursch, & Todd, 1964; Hoffman, 1960) found that a simple linear, additive regression model was able to provide a good representation of clinicians' judgments. The use of more

complex equations rarely increased the accuracy of representing the clinicians' judgment. In spite of what clinicians said about using cues in an interactive manner, the linear model was adequate in representing the judgmental process.

"Clinical decision analysis" (Sisson, Schoomaker, & Ross, 1976) focused on statistical properties such as base rates of behavior in a population, or computer-simulated "decision trees." The Strohmer research group (Haase, Strohmer, Biggs, & Keller, 1983; Strohmer, Biggs, Haase, & Keller, 1983; Strohmer, Haase, Biggs, & Keller, 1982) studied the cognitive processes that may occur between the time that clinicians observe clients' behavioral cues and the time that clinicians make prognoses or outcome predictions. For these researchers, clinical judgment is seen as a process of making observations about the client, forming inferences about the current functioning of the client, forming inferences about possible factors that might underlie the present behavior, and developing a prognosis for treatment outcome.

Although the process of how clinical decisions are determined appears to be an interesting area of inquiry, the relative merits of clinical judgment versus actuarial, or statistical, prediction have been discussed for nearly 50 years. The early works of Sarbin (1941, 1943) and Meehl

(1954) raised questions about the relative merits of case study and actuarial methods of prediction. Meehl's work led him to strongly urge that actuarial methods of prediction, such as regression equations or test results, were superior to traditional clinical inferences as predictors of human behavior. Meehl (1986) noted that he has found no need to change his position on the issue of the actuarial versus clinical method. In fact, Meehl (1986) estimated that no more than 5% of his 1954 book would need to be retracted, and that what might be retracted would be his statements on what little validity there was to the clinical method. These retractions would result in his 1954 book being even more strongly proactuarial.

Predictions based on clinical judgments have often been criticized in the literature. Lack of reliability and validity have been cited as reasons not to use clinical judgment (Arkes, 1981; Goldberg, 1968; Meehl, 1954; Webster et al., 1984). Clinical judgments are said to add little to information available through self-report (Lewis & Williams, 1989), and to be uncorrelated with examination scores in medical students (Petrusa, Blackwell, & Ainsworth, 1990). Experience does not seem to improve clinical accuracy in the use of diagnostic tests (Mior, McGregor, & Schut, 1990) and clinical experts sometimes appear to do no better than students or lay persons in making prognoses (Garb, 1989).

In general, research comparing clinical and actuarial methods often shows actuarial methods to be superior (Dawes, Faust, & Meehl, 1989; Wedding & Faust, 1989).

However, other research offers support for the role of clinical judgment being as good as or better than objective data as predictors of behavior. For example, Myers (1988) compared depressed patients who received medication based on a clinical judgment versus those who took antidepressants based on the dexamethasone suppression test (DST), a biochemical marker for depression. The predictive value of the DST for a favorable response to medication was no better, and was more costly, than the use of clinical judgment. There was also little difference between the sensitivity or specificity of the two predictors, the DST, or clinical judgment.

Brannen, Godfrey, and Goetter (1989) compared physicians' abilities to predict the outcome for a group of patients in an intensive care unit, with predictions based on scores from an objective measure, the Acute Physiology and Chronic Health Evaluation (APACHE). Physicians were significantly better in predicting outcome in the critically ill, particularly in predicting mortality. Gilpin et al. (1990) studied 400 cardiac patients to determine whether prognoses derived statistically from patient data could produce better decisions about prognoses than expert

clinicians. No difference was found between physicians' judgments and actuarial tables in predicting cardiac death 1 year after treatment.

Clinical judgment and objective developmental scales were used to assess the physical capabilities of 58 handicapped children. Results indicated that clinical judgment and developmental performance scores were equally accurate in assessing the capabilities of both infant and preschool children (Bagnato & Neisworth, 1985). In a similar study of 351 preschool children, Bax and Whitmore (1987) found that objective scores of neurodevelopmental abnormality were not as accurate in predicting learning disabilities 2 years later as was the clinical judgment of the school doctor.

Assessment of student performance through the use of subjective rating scales has been found to be comparable to the use of objective measures, such as grade point averages, exam scores, or results of the American Board of Surgery In-Training Examination (Keynan, Frienman, & Benbassat, 1987; Risucci et al., 1989). Medical faculty members preferred the use of subjective rating scales to objective examinations, or grades on technical skills such as use of medical instrumentation (Meetz et al., 1988). Faculty believed that subjective measures, such as performance ratings, added information about students that was not

reflected in measures such as GPA or grades on technical skills (Meetz et al., 1988). The American Board of Internal Medicine (ABIM) requires directors of medical residency programs to use subjective ratings, as well as objective examination scores, to assess a medical resident's "clinical competence." This assessment of competence occurs before a resident can be licensed. The ratings are used to underscore the belief that subjective data is equally as useful as objective data for decision-making (Norcini, Webster, Grosso, Blank, & Benson, 1987). Keynan et al. (1987) also noted that subjective and objective methods represented different types of assessment and addressed different domains of competence. They suggested that the clinical performance of medical students should be assessed by a combination of subjective and objective methods. Thus, clinical judgment generally appears to be as good as actuarial methods for making many types of predictions, despite the negative comments of researchers such as Meehl (1954, 1986).

Although there appears to be little research on the role of clinicians' prognoses with substance abuse, there is some data related to clinicians' predictions of responses to treatment in other maladaptive behaviors. For example, studies of the prediction of violent behavior (Hall, 1988; Hall, Catlin, Boissevain, & Westgate, 1984; Jackson, 1989;

Janofsky, Spears, & Neubauer, 1988; Segal, Watson, Goldfinger, & Averbuck, 1988), and the likelihood of future criminal acts (Holland, Holt, Levi, & Becket, 1983), all found that actuarial data were better predictors than clinical judgment. In a study of the prediction of reoccurrence of suicidal behavior (Hengeveld, Kerkhof, & Van derWal, 1988), consultants' judgments had a predictive value of 54%, only slightly better than chance. In a study of staff judgment with eating disorder patients, staff rated patients who had eating disorders as having a poorer prognosis for discharge than did the patients themselves. Patients saw themselves as having few problems and a good prognosis for cure of their disorder, although they were rated by staff as having a poorer prognosis for release from a hospital setting (Vanderlinden & Vandereycken, 1988).

Characteristics of the persons being evaluated have been shown to influence clinical judgment. For example, technical ability, knowledge of basic science, perceived effort, personal appearance, and interpersonal skills of students influenced faculty in their ratings of medical students (Herbers et al., 1989; Meetz et al., 1988). Other factors are also important in influencing clinical judgment. The number of questions asked of a client (Rimoldi, 1988; Witkin, 1982), and the sequence of presentation of case material (Curley, Young, Kingry, & Yates, 1988) have been

found to influence clinical judgment. Clinicians' perceptions of the severity of a mental health condition has been found to influence judgments of prognosis (Murdock & Fremont, 1989). The perceived chronicity of the mental health condition and the urgency of need for treatment also influences prognosis for therapy (Murdock & Fremont, 1989). The verbal expressiveness and physical attractiveness of the client (Cousins, Fischer, Glisson, & Kameoka, 1985), eye contact with the therapist, and hand movements (Bouhuys et al., 1987) have all been cited as variables that influence prognosis.

In the literature on substance abuse research, relatively few studies have directly addressed the issue of prognosis. Stoffelmayer, Benishek, Humphreys, Lee, and Mavis (1989) were one of the few groups of researchers to look at the issue of prognosis and substance abuse. They found that the prognosis for abstinence was poorer if there was a psychological diagnosis present in addition to a diagnosis of alcoholism. Rounsaville et al. (1987) found that for male alcoholics, an additional diagnosis of major depression, antisocial personality, or polysubstance abuse was associated with a poorer prognosis. For women, Rounsaville et al. (1987) found that a diagnosis of major depression was associated with a better prognosis, while antisocial personality and drug abuse were associated with a

poorer prognosis. Craig and Olson (1988) studied substance abusers who had only one admission, and those who had repeated admissions. The researchers found that patients with lower scores on the need for exhibition and aggression on the Adjective Checklist received a poor prognosis, and were more likely to return to treatment. In three studies of prognosis and alcoholic physicians (Bissell & Jones, 1976; Kliner, Spicer, & Barnett, 1980; Murray, 1976), researchers found that the prognosis for alcoholic physicians was improved if the drinking problem had been identified early in the medical career, and if the physicians had received intensive inpatient treatment.

In summary, accurately predicting a person's future behavior is a difficult activity. A wide variety of factors appears to influence clinicians' predictions. Although dual diagnoses and scores on measures of exhibition and aggression have been shown to relate to poor prognoses for alcoholics, very few studies have explored factors that may influence prognosis in alcoholism.

Rationale for the Study

A review of the literature has shown that cognitive social learning factors such as family and cultural history, anger management, perceived self-esteem, and learned patterns of alcohol and drug abuse are important in the

acquisition and maintenance of substance abuse patterns. Sociocultural history, self-esteem, previous alcohol and drug use patterns, and anger are all factors which may affect patients' progress in an alcohol treatment program, and in turn affect how they might be perceived and rated by clinicians. The purpose of this study was to investigate the relationship of these variables to clinician's judgments of the prognosis of patients who were in an alcohol treatment unit. It was hypothesized that the variables, alone or in combination, might be predictive of clinicians' ratings of patients' prognoses. Some variables might have a positive relationship to prognosis, while other variables might have a negative relationship.

Patients in the alcohol treatment program used in this study who had a poor prognosis for posttreatment success might be expected to display the following characteristics: (a) demographic characteristics consistent with a family history of alcoholism, poor marital and vocational stability, and a history of prior substance abuse treatment; (b) high levels of anger and poor coping skills for dealing with anger; (c) low self-esteem; and/or (d) severe levels of alcohol or drug abuse. Patients with a good prognosis for posttreatment functioning might be expected to come from a family with no history of alcoholism, have good marital and vocational stability, and no previous need for treatment.

They also might display good self-esteem, low levels of perceived anger, and less severe alcohol and/or drug abuse.

CHAPTER 2

METHOD

Subjects

Volunteers from the inpatient alcohol treatment unit (ATU) at a local Veterans Administration Medical Center (VAMC) comprised the sample for this study. The 145 male patients ranged in age from 26 to 69. The average age was 41 years. They entered the unit through self-referral or through referral by professional personnel in other clinical facilities. Each patient received a diagnosis of either alcohol abuse or alcohol dependency. These diagnoses were based on the criteria set forth in the third edition of the Diagnostic and Statistical Manual for Mental Disorders (DSM-III; American Psychiatric Association, 1980). Some subjects also had other chemical dependency diagnoses. Twenty-two percent were married, and 66% were divorced. Nearly 12% of the sample had never married.

Treatment Program

The inpatient component of the alcohol treatment program utilized a variety of therapeutic offerings on a daily basis for the patients. A typical day would begin with a "community meeting" of all patients and staff. This time was used to share information, voice complaints, and

remind patients of various events scheduled for the day. This was also a time for reading from the literature of Alcoholics Anonymous. Patients would then be involved in an hour of group therapy, using a small group format. Staff members served as leaders for these groups. Psychoeducational groups were offered for those veterans who wished to learn skills such as assertiveness or problem solving. Alternatives to alcohol abuse, such as involvement in recreational and sports activities, were offered through the hospital's recreation therapy service as part of the daily schedule. Patients were also encouraged to consider completion of their high school equivalency degree if they did not complete high school.

After the first week of stay, patients were encouraged to spend some time away from the inpatient ward. A "pass" might be authorized to visit with the family, go shopping, or attend Alcoholics Anonymous (AA) or Narcotics Anonymous (NA) meetings in the local community. Transportation was provided to these meetings. No formal programs existed for individual or family therapy, although these services were available upon request. Meetings of AA and NA were also held on the inpatient unit in the evenings.

Use of the drug disulfuran, also known as Antabuse, was strongly encouraged unless medical conditions precluded its use. If the patients had other medical needs they would be

scheduled for various clinics at the VA. These might include a hypertension and diabetic clinic.

In addition to a psychologist who served as the program coordinator, the staff on the ATU was composed of one physician, a physician's assistant, a social worker, two psychology technicians who were certified as substance abuse counselors, one vocational rehabilitation counselor, and several psychiatric nurses. Six staff members served as raters for this study. These six professionals led the daily group therapy sessions and were the primary therapists for the patient population.

As might be expected from employees of a hospital-based alcohol treatment program, the staff gave credence to a "medical model" of addiction, in that all who served as raters espoused a belief that a predisposition toward alcoholism was inherited. However, they also espoused a belief that the process of changing a patient's pattern of alcohol use consisted of patients learning new cognitive beliefs about alcohol and new social skills in dealing with drinking temptations. This combination of medical and social learning viewpoints appeared to be relatively common among substance abuse counselors, particularly those trained in or familiar with the Alcoholics Anonymous belief system. According to Alcoholics Anonymous writings, the patient may not be responsible for the development of his/her addiction,

but is responsible for the recovery from it (Shire & Smith, 1976). This viewpoint was consistent with AA and NA philosophy as espoused in the Alcoholics Anonymous 'Big Book' (1939) and Twelve Steps (1952) book, which serve as the theoretical background for AA.

As many hospitals incorporate AA terminology and beliefs into their treatment programs or into their outpatient follow-up efforts, it appears that these beliefs may be incorporated by staff as well. For staff members with a belief in the medical model of etiology and a cognitive social learning model of recovery, good prognosis would be seen in terms of the likelihood of a patient maintaining total abstention from addictive substances, without any relapses. This was also consistent with the AA and NA beliefs about recovery.

The unit also enlisted the services of former patients of the program as counselor trainees. Two or three trainees co-lead the morning ward meetings and evening AA meetings. As this VAMC is also a teaching facility connected with a medical school, there were a variable number of psychology clerks, medical and nursing students, and social work trainees on the staff at any given time.

The ATU program was housed in a separate building at the VA and was a 30-bed ward. The usual length of stay was 28 days, which was followed by optional involvement in

outpatient therapy. The options included referral to a halfway house, which is a living situation designed to provide some structure yet allow the veteran to work toward independent living; self-help groups such as NA or AA; and/or group or family therapy offered in the evenings. The domiciliary, or long-term stay unit, of the VAMC also offered a sobriety maintenance program for those deemed to be in need of further supervised living.

Those patients seen as having a poor prognosis were often transferred to the domiciliary, where they would continue to be involved in an inpatient alcoholism treatment setting. There they would also be provided food, shelter, and continued medical care. Placement in the domiciliary allows for up to six more months of hospitalization and an opportunity to be involved in AA, group therapy, searching for employment, and searching for other living arrangements. Those patients seen as having the best prognosis might be referred to group or family outpatient therapy only. This type of referral would be for patients who had maintained employment, had a place to live, and had family members interested in participation in treatment. Patients who had no permanent home or employment, but did not need continued medical care in an inpatient setting, might be referred to a halfway house setting which offered less structure than the

domiciliary but still provided for food and shelter while the patient sought employment or further education.

Procedures

Within 5 days of admission to the ATU, new patients were asked to attend a group information session wherein the study was explained. Patients were told the purpose of the research. They were also informed of the voluntary nature of their participation. Risks and benefits were discussed, as well as the provisions taken to maintain confidentiality. After this briefing, the men indicated their willingness to participate by signing the standard VA form entitled "Agreement to Participate in Research" (see Appendix A). Another form was required by the Medical College, entitled the "Patient Information Sheet"; therefore, volunteers also signed this form (Appendix B). After all patient questions were answered, the volunteers selected a time during that day for the interview and administration of selected psychological instruments.

Patients were seen for individual interviews by the experimenter. Using a standardized outline (Appendix C) for this interview, questions were asked about the patient's sociodemographic background. These questions covered such areas as the patient's marital status, family history of alcoholism, and employment history. Patients next completed

paper and pencil questionnaires about their history of alcohol use and other drug use. Finally, subjects were instructed in the use of the computerized testing terminals. The remaining two assessment devices, the Tennessee Self-Concept Scale and the Buss-Durkee Anger Inventory, were completed through this computerized system. Most patients had prior experience with the computer, as all new admissions to the ATU were routinely referred for personality assessment. Only three men requested assistance in reading the questions. Assistance was given by the experimenter in reading the computer screen, the permission forms, and other test instruments.

Completion of the interview portion of the participant's assessment took an average of about 10-15 minutes. Each paper and pencil questionnaire took about 10 minutes, while the computerized tests took about 30-45 minutes each. Subjects were informed that a summary of the research findings could be made available to them if they so desired. The summary would be mailed to the address given to the VA upon the man's discharge. Computer printouts of the test results were stored in a locked file cabinet. The paper and pencil tests and the permission forms were also stored there.

At the time of discharge each subject's type of discharge was noted in the medical records by the ward

clerks. Discharges were in two general forms: (a) regular or (b) irregular. A regular discharge was given for completion of the program with referral to some type of outpatient follow-up, such as referral to a halfway house or to the evening outpatient group. Nearly every irregular discharge was the result of the patient's violation of the unit's treatment criteria, such as failure to return from a "pass," leaving against medical advice, unsatisfactory progress in the program, or failing the breathalyzer tests which were given randomly. These irregular discharges are not determined by treatment staff, but by hospital administrative staff.

At the time of each man's discharge, one of six staff members who had served as primary therapists used a rating scale to indicate a probable prognosis for the patient. Raters were staff members with direct clinical contact with the patients. One of these six staff members was assigned to each patient when that person was first admitted, to serve as overall advisor and primary therapist to that patient. This staff member would serve a mentoring role to answer questions, assist with discharge plans, provide any individual therapy requested by the patient, and to assist that patient throughout his stay on the ATU. The staff member would also serve as a leader for the daily group therapy sessions. Each rater thus had from 3-4 hours daily

contact with the patient. Raters included two Master's level psychologists, a social worker, a nurse, a vocational rehabilitation therapist, and a doctoral level psychologist. All raters were male except for the nurse.

The rater did not determine the patient's discharge status, although the rater was aware of the discharge status. The Likert-type scale used by the rater ranged from a possible rating of 1 to 5, with a rating of 1 indicating that the subject's prognosis was extremely poor. This rating would indicate that the patient was perceived by the staff member as likely to return to previous patterns of substance abuse, with participation in treatment being only a "time out" from a pattern of chronic abuse. A rating of 5 indicated that the staff member perceived that veteran as being very unlikely to return to his former patterns of substance abuse. The rating forms were returned to the experimenter and were then stored with the subject's other data.

Within 6 months from the time of the patient's discharge, a computer search was performed in an attempt to cross-validate the clinician's judgment of patient's prognosis after judgment. Using the hospital's computerized admission data base, patient computer records were searched to determine the status of each patient relative to readmission for further treatment. Each subject's file was

reviewed to determine if that patient had been readmitted to the hospital, and if so, to what service of the hospital. Possible categories were (a) not readmitted to this hospital, (b) readmitted for detoxification, (c) readmitted for alcohol treatment, or (d) readmitted to some other ward of the hospital, such as the psychiatry ward or the general medical wards.

Independent Variables

Five instruments were used to obtain the information or scores which comprised the eleven independent variables. A questionnaire developed by the researcher and named the Index of Stability provided demographic information. Five of the independent variables were based on responses to this questionnaire. The Michigan Alcoholism Screening Test (MAST) and the Drug Abuse Screening Test (DAST) measured behaviors related to alcohol and drug use, respectively. Two scales of the Tennessee Self-Concept Scale (TSCS) were used to assess two components of the concept of self-esteem. Patients' perceptions of two dimensions of anger were measured by the Buss-Durkee Anger Inventory (BD AI) Hostility and Aggression scales.

Demographic Data

Five of the independent variables reflected demographic data. As noted above in Procedures, information for the five variables was obtained during individual interviews with each patient.

The first variable was the patient's age. Second, his family history of alcoholism was assessed. This response could be in one of three possible categories: (a) no family members with a previous history of alcoholism, (b) a parent or parents with alcoholism, or (c) a family member other than a parent with a history of alcoholism. The third variable was the patient's previous treatment history for substance abuse. Categories for this variable were: (a) no prior hospitalizations or outpatient treatment, (b) outpatient treatment only, (c) one previous hospitalization, or (d) multiple inpatient treatment. The fourth variable was the patient's marital status. Possible responses were: (a) single marriage, still intact, (b) second marriage, still intact, (c) never married, (d) single marriage, currently divorced or separated, (e) multiple marriages, none currently intact. The fifth variable reflected the patient's employment history, and included the categories of (a) never employed, (b) temporary jobs only with periods of unemployment, (c) 1-2 years of steady employment at a time with periods of unemployment, (d) 2 years steady employment

at a time with periods of unemployment, (e) 3 years of steady employment with less than 6 months unemployment, and (f) 5 or more years of steady employment. If the patient was a career military person, this would also count as steady employment. This basic data on the subject pool is shown in Appendix C.

Michigan Alcoholism Screening Test

Drinking behaviors and attitudes about drinking were measured by the Michigan Alcoholism Screening Test (MAST; Selzer, 1971). The questions were found to be highly discriminative in field trials with 116 alcoholics and 103 nonalcoholic controls. The resulting instrument, according to Selzer (1971), is highly sensitive for accurately labeling alcoholism in an individual. Items are in a yes/no format, with a "yes" response scored as "1" and a "no" response scored as "0." A "yes" score is in the direction of problem drinking behavior. The total MAST score is the sum of all the "yes" responses, and can range from zero to 24 (see Appendix D).

Positive answers to questions regarding attendance at Alcoholics Anonymous meetings, a spouse going to someone for help about the patient's drinking, and hospitalization for drinking are prognostic of severe substance dependence. Cutoff scores for a diagnosis of alcoholism were based on

the responses of the previously mentioned sample of 116 known alcoholics and 103 nonalcoholics. A cutoff score of three items or less is considered nonalcoholic. A cutoff score of 4 is "suggestive" of alcoholism, and 5 points is considered the cut-off score for "indicative of" alcoholism (Selzer, 1971, p. 1655. All patients in this study had raw scores above 5.

The MAST is a commonly used instrument in alcohol research and treatment, and has been shown to have acceptable reliability and validity for various populations (Skinner, 1979; Zung, 1978). Six studies reviewed by Hedlund and Vieweg (1984) reported reliability coefficients as measured by the alpha coefficient for internal consistency (Cronbach's alpha). These coefficients ranged from .83 to .95 with subjects from such diverse groups as "drinking while intoxicated" (DWI) offenders, psychiatric patients, nonalcoholics, and polysubstance abusers. The alpha coefficient suggests that subjects responded consistently to the items within the test. Test-retest reliability was .97 for a 1-day time interval and .85 for a 3-day interval (Zung, 1982). Skinner and Sheu (1982) found a test-retest coefficient of .84 for a 5-month interval, again indicating good reliability of scores over time.

The MAST also has good concurrent validity with other instruments which assess alcohol abuse and its sequelae.

Concurrent validity between the MAST and the Alcohol Use Index (Skinner, 1979) was found to be .83 using Pearson's correlation coefficient. The relationship between the MAST and the McAndrews scale of the MMPI was found to be $r = .46$ (Friedrich & Loftsgard, 1978). Using the MMPI clinical scales and the record of convictions for drinking while intoxicated, Snowden and Campbell (1984) attempted to determine the relationship these external criteria might have with the MAST. The MAST was found to have significant and positive relationships with factors labeled by the researchers as "isolation" and "concern about drinking" which were also associated with psychopathology as measured by the MMPI and with the record of convictions. Using a modified version of the MAST, Magruder-Habib, Harris, and Fraker (1982) attempted to correlate patient scores with patients' ratings by informants. They found a strong relationship, $r = .89$, between patient scores and informant's ratings on the MAST when the rating period addressed alcohol problems during the past year. There was a correlation coefficient of .84 when both groups were asked to rate problems over the last 1-5 years, and a correlation coefficient of .73 between patient and informant scores on the MAST reflecting patient alcohol problems over 5 years ago.

Drug Abuse Screening Test

Cross-addiction use was measured by the Drug Abuse Screening Test (DAST; Skinner, 1982; see Appendix E). Skinner designed the DAST to parallel questions on the MAST. It is actually a variation of the MAST designed for the purpose of addressing the nonmedical or nonprescription use of drugs. The 10 items are in a yes/no format, with a "yes" response scored as "1" and a "no" response scored "0." A "yes" score is in the direction of problem substance abuse behavior, except for item 3 which is reverse-scored. The total DAST score is the sum of all the "yes" answers, and can range from 0 to 9. Questions address the use of drugs, other than alcohol, over the last 12 months. This may mean prescription drugs used in a manner other than as prescribed, or any nonmedical use of drugs such as cannabis, solvents, stimulants, tranquilizers, cocaine, hallucinogens, or other "street" drugs. The items assess physical symptoms of withdrawal, participation in illegal activities to obtain drugs, and the reactions of family members to the person's drug use. A score of 1 or above is indicative of problematic drug abuse.

The sample of people on which the test was normed consisted of 223 drug-abusing clients who voluntarily sought help after referral to a drug abuse clinic. Seventy-two percent of the sample were male and 28% were female. Of the

223 people, 58.6% had been referred for alcohol abuse, 25.4% for other drug abuse, and 16% for cross-addiction. Skinner (1982) found significant differences in DAST scores between the alcohol only, drug only, and mixed substance abuse groups. The DAST thus seemed to differentiate among each group.

To establish external validity, the test developer also compared the DAST with demographic variables and known levels of the normative sample's drug use. Skinner (1982) found that younger males tended to score higher on the DAST than older males. These results suggest age group differences in the clinical population, as older subjects tended to abuse alcohol more than they abused other drugs. There was a slight inverse relationship, $r = -.21$, between DAST scores and scores on the MAST. Higher scores on the DAST also correlated with higher levels of marijuana, barbiturate and opiate use among the subjects in the norm group. The test developer noted that these findings supported the concurrent validity of the DAST.

Skinner (1982) used factor-analysis with a principal components solution to determine the dimensions underlying the correlation matrix of DAST items. A first principal component was found that accounted for 45.4% of the total variance. A second factor accounted for only 5.4% of the total variance. These results from the principal components

solution suggest a unidimensional scale measuring a single dominant domain of drug abuse problems.

The item-scale correlation provides an index of the discriminative power of each item in a test. "Good" items are ones with a high correlation, above .40, with the total score (Nunnally, 1978). Except for one item, which was subsequently dropped, all questions had item-scale correlations ranging from .55 to .78.

As a measure of reliability, the internal consistency, or Cronbach's alpha, was found to be .92 (Skinner, 1982). This alpha level indicates that subjects were consistent in responding to the DAST items. No test-retest reliability data was cited by Skinner (1982), nor were any reliability studies found in the literature.

Buss-Durkee Anger Inventory

In this study, self-perceptions of various components of anger were measured by the Buss-Durkee Anger Inventory (BDAI; Buss, 1961; see Appendix F). For the purpose of this study, scores on the two major dimensions of "Hostility" and "Aggression" were used.

In constructing the original BDAI, Buss made the assumption that it was necessary to measure dimensions of anger, rather than to measure anger globally as others had done. The dimensions identified by the test developer were

labeled Assault, Direct Aggression, Irritability, Verbal Aggression, Negativity, Resentment, Suspicion, and Guilt. On the basis of factor-analytic studies (Buss, 1961) the scales were reduced to two dimensions; "Hostility" and "Aggression." The "hostility" dimension of the BDAI consists of the Resentment, Suspicion, and Guilt subscales. Questions for this dimension reflect the projection of hostile impulses onto others, one's feelings of resentment or unfairness about the good fortune of others, items about the recognition of wrongdoing, pangs of conscience, and "feeling bad" about oneself and one's behavior. The remaining subscales underlie the "aggression" dimension. Questions on these subscales reflect the subject's willingness to use physical violence, use of passive-aggressive behaviors such as door-slamming, ease of provocation to anger, use of oppositional behavior, and use of negative verbal statements (Buss, 1961; Buss & Durkee, 1957).

The original inventory (Buss & Durkee, 1957) consisted of 105 items, which were item-analyzed and reduced to the present 75 items. These items were then administered to 85 male and 85 female college students. Pearson product-moment correlation coefficients were computed separately for each sex. Only two of the subscales, Negativism and Resentment, had correlations above .50. This suggested that each of the

subscales was tapping primarily independent dimensions of behavior.

For this study, the computerized version of the BDAI was used. Seventy-five questions are presented in a true-false format. Scores were reported in the form of T-scores, with a mean of 50 and a standard deviation of 10. The mean and standard deviation were based on the original norm group of 170 college students (Buss & Durkee, 1947).

Test-retest correlations on the 75-item version were completed after a 5-week interval. The Pearson product-moment correlations ranged from .61 to .78 for the eight subscales for the original college student norm group (Buss & Durkee, 1957). In 1961, Buss found a test-retest correlation of .82 for the 66-item version over a 5-week interval, using additional college student and psychiatric norm groups. The 66-item version excluded the nine items of the "Guilt" subscale.

In a study by Renson, Adams and Tinklenberg (1978), 26 chronic alcohol abusers with a history of violence while intoxicated were compared to 26 alcohol abusers with no history of violence. Violent alcohol abusers scored significantly higher on the "hostility" score of the BDAI than did the nonviolent group. The researchers noted that their findings indicated a positive correlation between violence while intoxicated and the elevated "hostility"

dimension on the BDAI. Five of the subscales (Assault, Irritability, Verbal Hostility, Indirect Hostility, and Resentment) were also elevated in the more violent group. This was believed to confirm the validity of the BDAI as a measure of hostile feelings and aggressive behavior, prompting Renson et al. (1978) to suggest that the BDAI might prove useful in assessing potential for violence in known alcohol abusers.

Tennessee Self-Concept Scale

The Tennessee Self-Concept Scale (TSCS; Fitts, 1965) has been used to examine a variety of areas dealing with self-esteem (see Appendix G). In the most recent edition of the Mental Measurements Yearbook (Mitchell, 1985), the TSCS was noted to rank 12th in frequency of citations among personality tests and first among self-concept measures. The TSCS used in this study was the computerized, self-administered version consisting of 100 self-descriptive statements. Subjects are asked to answer the statements so as to describe how they see themselves. A sentence stem is given, with response options on a 5-point Likert scale ranging from "completely false" to "completely true." For the purposes of this study, two specific scales, the Self-Criticism scale and the Total Positive scale, were used.

The Self-Criticism scale is purported to be a measure of general defensiveness. The items are all mildly derogatory statements that most people endorse as being true of themselves. Denial of statements in this scale is suggestive of test-taking defensiveness and a deliberate attempt to present oneself in a good light, in the sense of giving socially desirable responses (Walsh, 1985). The items were designed to be similar to the MMPI Lie scale (Bolton, 1979). Scores above the 99th percentile indicate a person may be lacking in the ordinary amount of defenses and may be pathologically "defenseless." According to the researcher, the scale has a test-retest reliability of $r = .75$ after a 4-week interval with 60 college students (Fitts, 1965). Numerous researchers (Marsh & Richards, 1988; McGuire & Tinsley, 1981; Tzeng et al., 1985; Walsh, 1985) have commented on the lack of both reliability and validity information available in the original and subsequent research on the Self-Criticism scale.

The second scale of interest is the "total self-concept" score. This is considered by Fitts to be the "most important single score" (1965, p. 2) of all the 13 scale scores. The "total self-concept" scale reflects the person's overall sense of self-pleasure. According to Fitts (1965), high scores are thought to indicate that subjects see themselves as persons of value and worth. Low scores

usually reflect self-doubt, generalized unhappiness, and perceived lack of personal worth. Fitts (1965) reported a test-retest reliability coefficient of $r = .92$ for a 1-month period. While doing a cross-cultural validity study on the TSCS, Ezeilo (1982) found a test-retest reliability coefficient of .74 between the Total Self-Concept scores for Nigerian students and American students over a 2-week period.

Walsh (1985) noted that the reliability estimates in the test manual for all TSCS scales were retest coefficients based on a subsample of college students. He questioned the small sample size ($N = 60$) and the adequacy of the sample as being sufficiently representative. While noting that the normative data provided for the TSCS are satisfactory, the reliability measures were in need of further study. Tzeng et al. (1985) studied three sample groups in an attempt to provide reliability estimates for the TSCS. The groups consisted of first offenders in a pretrial diversion program ($N = 132$) and two groups of college students ($N = 132$ and $N = 138$). Tzeng et al. (1985) found the values of the alpha coefficients to be above .80 for the total 100-item pool and for the individual subscales of the TSCS. However, they also found that the averages of interitem correlations within the total item pool and the individual subscales to be low, ranging from .15 to .27. This was noted by Tzeng

et al. (1985) as suggestive of very low internal homogeneity within each of the subscales.

The TSCS appears to fare better psychometrically in studies of validity. A negative intercorrelation ($-.10$) between the Self-Criticism and Total Self-Concept score is reported by Fitts (1965). Bolton (1979) compared TSCS scores and 16PF scores from 126 clients applying for rehabilitation hospital services. The researcher reported that the TSCS did reflect a unidimensional factor of positive self-evaluation, which was similar to the second-order dimension of anxiety versus adjustment as measured by the 16PF. Using the scores from 343 participants in an Outward Bound course in Australia, Marsh and Richards (1985) compared the TSCS with their Self Description Questionnaire (SDQ). A correlation coefficient of $.71$ was found between the total SDQ score and the TSCS Total Self-Concept score. Marsh and Richards believed this relatively high correlation provided support for the convergent and discriminative validity of responses to the TSCS and the SDQ.

Factor analysis has been used to investigate arguments about the global or multidimensional nature of self-concept as measured by the TSCS. Bolton (1976) compared the factorial structure of 312 client's responses to the TSCS with the normative subscale structure. He also summarized seven other published factor analysis studies on the TSCS.

These studies reported (a) three factor analyses of the subscales in conjunction with other inventories, (b) two factor analyses regarding the content of the subscales alone, and (c) two factor analyses of the 100 items comprising the whole scale. Bolton (1976) reported that each method of study produced a "major self-concept dimension" (p. 950). The validity of a global self-concept score was thought to be supported. Other studies of the TSCS have argued for as many as a 9-factor (Bertinetti & Fabry, 1977) or even a 12-factor (Rahaim, 1976) conceptualization of the dimensions of self-concept.

The literature suggests that alcoholics may have poor overall self-esteem (Caster & Parsons, 1977; Yakichuk, 1978). The alcoholic will have less general perceived happiness, less sense of personal self-worth, and less overall self-pleasure. Scores on the "total self-concept" scale would therefore be low. Defensiveness and denial of personal problems would most likely be reflected in low scores on the Self-Criticism scale of the TSCS. Yakichuk (1978) found no significant difference between alcoholics and nonalcoholics on this scale, although Gross (1971) and Tomsovic (1976) found a decrease on the Self-Criticism scores of alcoholics following treatment.

Dependent Variable

The dependent variable consists of a 5-point, Likert-type rating scale. This scale represents ordinal rather than categorical data, in that ordinal scaling indicates a relationship between characteristics in terms of their being greater or less than one another on the basis of a particular factor (Huck, Cormier, & Bounds, 1974). In this study, the ranked criterion is perceived prognosis, or a clinician's judgment about the likelihood of a particular type of outcome. A ranking of "5" therefore represents a perceived better outcome than a ranking of "1."

Rating scales are often used to assess technical skills, to evaluate students on performance of a task, or to rank members of a group on a particular outcome dimension. The use of rating scales is considered a standard tool for evaluating many types of performance (Meetz et al., 1988), and is generally thought to provide an efficient, reliable, and valid method to assess aspects of performance (Hays, 1990; Raz, Cohen, & Benbassat, 1987). However, the development of valid and reliable scales may be difficult. Items on the rating scales often reflect the bias of those doing the rating, rather than factors which can be shown to distinguish competent performance (Lynch, 1977). Patterns of behavior which may affect clinical judgments of prognosis may be more complex than the behaviors which can be measured

by objective tests (Risucci et al., 1989). The use of ratings is thought to add information not reflected in objective scores, in that ratings may assess or reflect different domains of behavior (Keynan et al., 1987) than do objective scores. In this study, prognosis ratings are hypothesized to have a relationship to some pattern of test scores and/or sociodemographic factors, which represent behaviors assessed by objective scores. If ratings do indeed reflect different domains than do objective scores, this assumption of a relationship existing between prognosis ratings and some pattern of scores may not be true.

The prognosis classifications and their corresponding scores reflect the therapist's judgment of the patient's prognosis. The descriptions associated with each classification and number are:

1. Extremely Poor: Highly probable that the patient will return to previous patterns of substance use; being in program was only a "time out" in pattern of chronic abuse of chemical substance(s),
2. Poor: Likely to relapse after discharge; seemed to gain slight benefit from the program,
3. Guarded: Unable to make a determination; could go either way,
4. Good: Some possibility of relapse, but generally good progress; program was helpful; and

5. Excellent: Very unlikely to "backslide"; program was helpful to this patient.

Each patient was evaluated and assigned a rating by his primary therapist from the ATU at the time of the patient's discharge. The six staff who served as raters had extensive experience not only in alcoholism counseling, but had all been employed on the ATU ward at the hospital used in this study. Two of the six raters were Master's level psychologists who were also certified substance abuse counselors (CSACs) with 5 and 7 years of employment on the ATU. A psychiatric nurse with a BS degree in nursing and CSAC certification was another of the raters, as was an MSW social worker with CSAC certification. They had 10 and 7 years, respectively, of employment on the ATU. A fifth rater had a Master's degree in vocational rehabilitation and had worked on the ATU for 10 years. The other rater was a doctoral-level counseling psychologist who had also served as the Program Coordinator for the ATU. He had been in the field of alcoholism treatment approximately 27 years, and in his position on the ATU for 20 years.

The types of patients being judged were not unlike other patients the raters had known and had perhaps made less formal judgments about in the past. The raters had experience with patients who relapsed and with patients who had been able to maintain sobriety after treatment. In

their years of making clinical judgments, the raters had undoubtedly come to formulate some beliefs about what factors might be indicative of relapse. It was also likely that the raters had more experience and interaction with patients who relapsed, as relapse is a more frequent outcome than abstinence. Longitudinal studies indicate that 20% of alcoholics may relapse within 1 year after treatment (Armor et al., 1978), while up to 90% of alcoholics will return to some amount of drinking within 3 to 4 years after treatment (Polich et al., 1980). Perhaps this expected difficulty of recovery was indicated by the rater's truncation of the possible ratings. Although five rating categories were possible, no patient was rated in category 5, "excellent," by his therapist.

Garb (1986) reviewed 18 studies on clinical judgment. The studies considered the accuracy of clinical judgments based on data from: (a) neuropsychological tests (Heaton, Smith, Lehman, & Vogt, 1978; Wedding, 1983), (b) biographical data (Clavelle & Turner, 1980), (c) interviews and information obtained from therapy sessions (Brenner & Howard, 1976), and (d) from personality tests (Albert, Fox, & Kahn, 1980; Young, 1972). For all four broad areas, Garb found that clinicians were more accurate and confident in their judgments when (a) judges were mental health professionals, (b) the tasks being judged were

relevant to their professional experience, and (c) they were experienced clinicians. Jackson et al. (1986) found that judgments about psychopathology, such as neuroticism or depression, were highly accurate ($r = .99$) if the raters shared a theoretical construct of the etiology of the psychopathology and the behavior being predicted was relevant to that construct. A later study by Garb (1989) upheld the finding that judges with training in a mental health field made significantly more valid clinical judgments. In 30 studies covering a variety of mental health issues, including judgments about depression, anxiety, and risk of suicide, Garb (1989) noted that academic and on-the-job training does appear to increase clinicians' skills in making more valid and accurate judgments.

Other studies of the clinical judgment process indicate that experienced clinicians are more sensitive to subtle interpersonal cues. Experienced clinicians are more likely to use cues such as eye contact or hand movements in their judgments of prognosis than are novices (Bouhuys, Beersma, & Van den Hoofdakker, 1987; Itano, 1989). Experienced clinicians also tended to make more accurate predictions, and have appropriate confidence in their decisions (Garb, 1986). Further, experienced clinicians are better at knowing which of their judgments is likely to be correct

(Garb, 1989). For example, in a review of nine studies, Garb (1989) examined not only the accuracy of the judgments made but also the confidence that the clinicians had that the judgments were correct. Using data from such varied sources as Kinetic Family Drawing protocols, MMPI profiles, and neuropsychological test data, judges estimated the probability of their judgments being correct and then compared their estimates to their actual rate of success. Expert judges, such as researchers and doctoral-level psychologists, who were certain of their judgments were also accurate 80% of the time. Lay people who were certain of the accuracy of their judgments were accurate about 50-60% of the time.

Garb and Shefsky (1986) reviewed their unpublished 1984 study of clinicians who were predicting patient dropout from a drug detoxification program. When the clinicians had access to patient history data, as well as demographic data, accuracy of prognosis rose from 47% to 58%. Confidence in the accuracy of the prediction also increased with the addition of information ($p < .01$). Schuckit et al. (1986) speculated about the reasons for the low level of accuracy in making predictions often found in alcohol studies. Noting that their own study (Schuckit et al., 1986) assessed only the use of objective data such as demographic variables and social history in predicting outcome, they suggested

that the inclusion of other measures might improve predictions concerning alcoholics' recovery.

The primary therapists who acted as raters for this study appeared to fit the criteria identified by Garb (1986; 1989) and Jackson et al. (1986) in their studies about the accuracy of clinical judgments. They were experienced mental health professionals, who were making predictions in their area of expertise. The raters generally shared similar beliefs about the theoretical basis of the etiology of alcoholism, and were predicting behavior likely to be relevant to that theoretical construct. This information available to them on any given patient came from generally reliable sources, such as previous hospital records or medical test results. This information included demographic data and test data, particularly the results from the MMPI and/or the FIRO-B, which are routinely collected on the ATU. Data also came from interaction with the patients, information gained during therapy sessions, the patient's social history, and observations of patients' behaviors on the unit.

Data Analysis

To obtain a general description of the subjects, summary statistics were computed for each of the independent variables. This information is in Table I-1 of Appendix I.

Multiple regression and analysis of variance (ANOVA) were used to analyze the relationship of the 11 independent variables and prognosis ratings.

Multiple regression is a statistical method that allows for the study of the "separate and collective contributions of one or more independent variables . . . to the variation of a dependent variable" (Wampold & Freund, 1987, p. 372). Multiple regression is also sufficiently flexible that any level of measurement, from nominal through interval data, can be analyzed (Cohen & Cohen, 1983). Multiple regression is thought to be a general system of data analysis, able to use almost any form of information and to be able to mix forms of data (Cohen & Cohen, 1983).

The analytic strategy of stepwise regression with the "maximum R^2 improvement" (MAXR) technique was used. This method does not choose a single regression model. Rather, the technique produces the best one-variable model, the best two-variable model, and so on until all variables are entered. The "best" one-variable model is that which produces the highest R^2 , while the "best" two-variable model adds that variable which produces the greatest additional increase in R^2 (SAS, 1985). Seven continuous variables were used as predictor variables in this exploratory regression analysis.

Four one-way Analysis of Variance (ANOVA) procedures were used to examine the possible significance of the categorical variables in relation to patient's prognosis rating. The categorical variables were family history of alcoholism, history of previous alcoholism treatment, marital history, and employment history.

CHAPTER 3

RESULTS

The main analyses of data involved 11 independent variables and 1 dependent variable. Clinician's rating of patient's prognosis was the dependent variable. The 11 independent variables pertaining to the patients were:

(a) age, (2) DAST score, (3) MAST score, (4) Self-Criticism score on the Tennessee Self-concept Scale, (5) Total Positive score on the Tennessee Self-Concept Scale, (6) Aggression score on the Buss-Durkee Anger Inventory, (7) Hostility score on the Buss-Durkee Anger Inventory, (8) marital status, (9) employment status, (10) history of previous hospitalization, and (11) family history of alcoholism. The first seven variables were treated as continuous variables and the last four were treated as categorical variables.

A multiple regression analysis with the maximum R^2 improvement option (SAS, 1985) was performed on the continuous data. The one-variable model indicated that the DAST scores were the best single predictors of clinician's ratings of patients' prognoses. The DAST beta weight was -0.105 and the F value was 15.25 ($p < .0001$). The R^2 associated with this one-variable model was 0.096 (see Table 1). The next variable to be entered into the

Table 1

Regression Analysis Identifying Best One-, Two-, Three-, Four-, Five-, Six-, and Seven-Variable Models for Predicting Prognosis Rating

Model	Total R^2	Increase in R^2	F for increase in R^2	dfs	p	Parameter estimate	Standard error
<u>One-variable</u>							
Intercept	.096	.096	508.12	1, 143	.0001	3.234	0.143
Drug Abuse Screening Test (DAST) ¹			15.25		.0001	-0.105	0.027
<u>Two-variable</u>							
Intercept	.106	.010	40.31	2, 142	.0001	4.011	0.632
DAST			13.30		.0004	-0.099	0.027
Self-criticism score (SC) ²			1.59		.2087	-0.015	0.012
of the Tennessee Self-Concept Scale							
<u>Three-variable</u>							
Intercept	.116	.010	33.76	3, 141	.0001	3.801	0.654
DAST			14.19		.0002	-0.103	0.027
SC			2.28		.1334	-0.019	0.012
MAST ³			1.48		.2259	0.028	0.023
<u>Four-variable</u>							
Intercept	.117	.001	18.50	4, 140	.0001	3.560	0.828
DAST			8.96		.0033	-0.095	0.032
SC			2.15		.1446	-0.018	0.012
MAST			1.27		.2623	0.026	0.023
AGE			0.23		.6335	0.005	0.010
<u>Five-variable</u>							
Intercept	.118	.001	16.01	5, 139	.0001	3.658	0.914
DAST			8.01		.0053	-0.093	0.033
SC			1.66		.1993	-0.017	0.013
MAST			1.32		.2519	0.027	0.024
AGE ⁴			0.22		.6363	0.004	0.010
HOS			0.07		.7973	-0.003	0.012

Table 1 (continued)

Model	Total R^2	Increase in R^2	F for increase in R^2	dfs	p	Parameter estimate	Standard error
Six-variable							
Intercept	.118	.000	15.91	6,138	.0001	3.658	0.917
DAST			7.86		.0058	-0.094	0.034
SC			1.50		.2226	-0.019	0.015
MAST			1.18		.2785	0.027	0.024
AGE			0.22		.6431	0.005	0.010
HOS ₅			0.10		.7502	-0.004	0.014
AGG ₅			0.04		.8432	0.003	0.016
Seven-variable							
Intercept	.118	.000	9.20	7,137	.0029	3.600	1.185
DAST			7.22		.0081	-0.093	0.035
SC			1.42		.2360	-0.018	0.015
MAST			1.17		.2803	0.027	0.025
AGE			0.22		.6430	0.005	0.010
HOS			0.07		.7868	-0.004	0.014
AGG ₆			0.04		.8434	0.003	0.016
TOTP ₆			0.01		.9932	0.001	0.010

- 1 = Drug Abuse Screening Test
 2 = Self-criticism score of the Tennessee Self-concept Scale
 3 = Michigan Alcoholism Screening Test
 4 = Hostility score of the Buss-Durkee Anger Inventory
 5 = Aggression score of the Buss-Durkee Anger Inventory
 6 = Total positive score of the Tennessee Self-concept Scale

regression analysis was the Self-Criticism score on the Tennessee Self-Concept Scale; however, the addition of the Self-criticism scores to the DAST scores did not make a significant contribution to the regression model.

When all seven variables were included in the model, the R^2 was only 0.118. Only the F value associated with the DAST scores was significant at the .05 level.

The Pearson correlation coefficients for the seven continuous variables and prognosis ratings are presented in Table 2. The high number of correlations, 28, will inflate the alpha level; therefore, only those correlation coefficients that have a probability level of 0.01 or less are considered significantly different from a correlation = .00 for the population. Of major interest are the correlations between the independent variables and prognosis. Only the DAST scores had a significant correlation ($r = -.31$) with the dependent variable. The correlation between age and prognosis ($r = .20$) approached significance.

The unequal number of participants in each classification of the categorical variables required testing for the assumption of homogeneity of variance associated with the ANOVA procedure. Due to the large differences in the sizes of the samples in the categorical variables, the $F_{\max}$ test was not used to estimate the possibility of heterogeneity of variance in the population. Myers (1979) stated, "Usually

Table 2

Pearson Correlation Coefficients for Age, Test Scores, and Prognosis Ratings

	Age	MAST	DAST	TTOP	HOS	AGG	SC	PROGNO
Age	--							
MAST	.045	--						
DAST	-.504*	.150	--					
TOTP	.191	-.195	-.402*	--				
HOS	-.166	.302*	.340*	-.533*	--			
AGG	-.154	.373*	.361*	-.437*	.640*	--		
SC	-.116	.248*	.167	-.366*	.408*	.602*	--	
PROGNO	.204	.024	-.310*	.160	-.142	-.143	-.151	--

* $p < .01$

when there is a negative correlation of variance and sample size, . . . , the true probability of a Type I error is above that assumed; if the correlation is positive, heterogeneity of variance may deflate the Type I error rate" (p. 69).

Spearman rank correlation coefficients between the variances and sample sizes were .40 for previous hospitalizations, .47 for marital status, and 1.00 for family history of alcoholism; whereas, employment history was -.90.

In the instances of the positive correlations, a conservative test of significance is produced. Thus, there may be less likelihood of incorrectly rejecting a true null hypothesis. A liberal alpha level may occur in the instance of the negative correlation. It is possible that the null hypothesis, with respect to employment history, may be falsely rejected. If ANOVAs are computed on these data, the F tests may not be precise and the probabilities associated with the F values need to be interpreted cautiously. With this caveat in mind, the ANOVAs were calculated and the results are presented.

The relationship of the four categorical variables with the dependent variable was analyzed with four separate one-way Analyses of Variance (ANOVAs). The results suggested that marital history (F = 2.45, df = 5,139, p < .05) and employment history (F = 8.02, df = 4,140, p < .0001) are related to patient's prognosis ratings (see Table 3).

Table 3

One-way Analyses of Variance on Prognosis Ratings for Patients'
Histories of Marriage, Employment, Previous Hospitalization,
and Alcoholism in the Family

Source	<u>df</u>	Mean Square	<u>F</u>	<u>P</u>
Marriage	5	2.915	2.45	.0365
Error	139	1.189		
Employment	4	8.383	8.02	.0001
Error	140	1.045		
Previous hospitalization	3	.668	.53	.6623
Error	141	1.261		
Family history of alcoholism	2	1.015	.81	.4466
Error	142	1.252		

The Duncan multiple-range test was used to determine the significant differences between the mean prognoses ratings for marital status and employment history. Confidence in the results of the post-hoc tests is limited because of the large variability in the sample sizes among the categories of these variables. A significant difference ($p < .05$) was found between prognosis ratings for patients with a single marriage, still intact, and for those with no current marital support, due to divorce, separation, or having never married. No significant differences were evident between prognosis ratings for patients in a first, second, or subsequent marriage if the marriage were still intact. However, prognosis ratings for patients who had two or more marriages and who were presently living with their spouse were not significantly different from patients who were never married or were currently divorced or separated. Those patients who had been steadily employed for 5 or more years received significantly higher prognosis ratings ($p < .05$) than those who had been employed for 3 years but also had been unemployed for less than 6 months and those who had only held temporary jobs with periods of unemployment. The patients with 1 or 2 years employment, interspersed with periods of unemployment, were also rated significantly higher by clinicians than the patients who had held only temporary jobs and those who had held a job for 3 years with

less than 6 months of unemployment. Table 4 contains the means and standard deviations of the prognosis ratings for the categories within each of these variables.

Comparison of Raters' Performances

The six raters appeared to assign prognoses in a similar fashion. All the raters used scores of "1" through "4"; none of the raters used the best prognosis rating; a "5." The overall mean for prognosis ratings was 2.79, with a standard deviation of 1.12. The mean ratings for the six raters were 2.64, 2.96, 2.60, 2.60, 3.08, and 2.90. The differences in means were not significant ($F = .87$, $df = 5, 139$; $p > .51$). Each clinician rated approximately the same number of patients. The range was 20 to 26 patients.

Follow-Up Data

As previously noted, 46 of the original 145 subjects returned to the research site hospital within 6 months of the time of their discharge. This represents 32% of the subject pool. The reason for readmission appeared to be overwhelmingly related to seeking further treatment for alcohol abuse. Thirty-four of the 46 (74%) returned for some form of alcohol treatment.

Seventeen were readmitted to the detoxification unit. To be admitted to detoxification, a patient would have acute

Table 4

Means and Standard Deviations of Prognosis Ratings for Patients'
Historical Backgrounds

Background Characteristic	N	Prognostic Rating	
		Mean	Std. Dev.
Family history of alcoholism			
Parent(s) alcoholic	62	2.903	1.197
Other family member	41	2.805	1.054
No family member	42	2.619	1.058
Previous hospitalizations			
Multiple inpatient admissions	68	2.853	1.069
One prior inpatient admission	36	2.889	1.166
Outpatient treatment only	4	2.500	.577
No prior treatment	37	2.622	1.210
Marital history			
Multiple marriages, none intact	54	2.815	1.183
Multiple marriages, latest currently intact	8	3.000	.756
Single marriage, not intact	42	2.571	1.107
Never married	17	2.412	1.064
Second marriage currently intact	12	3.000	1.206
First marriage intact	12	3.667	.492
Employment history			
Temporary jobs, less than 1 year	18	2.111	1.132
1-2 years with periods of unemployment	25	3.000	.957
2-3 years with unemployment	12	3.000	1.206
3 years steady employment with less than 6 months of unemployment	24	2.000	1.180
5 or more years steady employment	66	3.152	.916

need for medical detoxification, often associated with drinking within the last 24 hours. Seven were admitted for another 28-day stay in the hospital-based alcohol treatment unit. This decision was based on admission staffs' perceptions that the patient might benefit from another trial of intense, short-term treatment. Ten were admitted to the domiciliary-based alcohol treatment program, which offers up to 6 months of treatment in an atmosphere similar to a "halfway house" for alcoholics. This decision was often based on the admitting staff members' perceptions that either longer-term treatment was needed, or that the patient would not benefit further from intensive treatment and would be better served by trying to make a slow transition back into the community.

Of the 34 returnees for some sort of alcoholism treatment, only 6 (18%) were rated in the two lowest prognosis categories, which indicated a belief by the rater that recidivism was likely. The remaining 28 received higher ratings indicating a 50/50 likelihood of relapse, or a generally good prognosis. No data were available on patients who did not seek services within 6 months, or those who might have sought services at another VA hospital or private agency. This particular ATU averages about a 20% relapse rate in its patients. Overall, 30 patients received a rating of "1" (21%) while 18 patients received a prognosis

score of "2" (12%). As a check on the validity of the prognosis ratings, 6 of these 48, or about 13%, were correctly identified as recidivists.

CHAPTER 4

DISCUSSION

The results of the study suggest some support for a cognitive social learning theoretical orientation as it relates to clinicians making prognoses about patients who received treatment on an alcohol treatment unit. A record of polysubstance use was significantly related to clinicians' prognoses; marital status and employment history also seemed related to clinical prognosis. Because of the limitations noted in Chapter 3, more caution should be observed in interpreting the results with respect to employment history and marital status than with polysubstance abuse.

The polydrug abuser may be more difficult to treat due to complicating factors such as difficulty in detoxifying (Kaufman, 1982) or drug-induced medical reactions (Ashley et al., 1978). As might be predicted by CSL theory, this more complicated pattern of substance abuse might be seen as more difficult to "unlearn" and therefore imply a poorer prognosis to the treatment staff. However, although the negative relationship between scores on the DAST and clinicians' prognosis ratings were statistically significant, polysubstance abuse remained a rather poor

predictor of prognosis ratings. The regression equation could only account for 10% of the variance in the study, a limitation which will be discussed further.

Patients' marital statuses and employment records have been cited in the CSL literature as being related to a favorable outcome to treatment for alcoholism (Brainstein, Powell, McGowan, & Thoreson, 1983; Gibbs & Flanagan, 1977; Pokorny, Miller, & Cleveland, 1968; Schuckit et al., 1986; Wolkstein & Hastings-Black, 1979). As expected, patients received higher prognosis ratings if a spouse was available to offer support or personal contact. However, patients in their second or third marriage were not rated significantly higher than patients with no spousal support. It appears that a consistent relationship with one other person, not multiple relationships, was an important criterion for more positive prognosis ratings.

A patient's employment history was also related to prognosis ratings. As would be expected by CSL theory, patients who had steady employment or military service for 5 or more years or had 1 or 2 years of employment with periods of unemployment received significantly higher prognosis ratings than those who had temporary jobs with periods of unemployment. A somewhat surprising result, however, which would not be predicted by CSL theory is that the prognosis ratings for patients who had 3 or more years of employment

with less than 6 months of unemployment received significantly lower prognosis ratings than those patients who had 1 or 2 years of employment with periods of unemployment.

Other variables which would be considered consistent with CSL theory were nonsignificant contributors to clinicians' prognosis ratings. The variables of self-esteem, anger management, family history of alcoholism, and previous hospitalizations for alcohol treatment did not relate to prognosis ratings in this study.

There are limitations to this study which mandate caution in interpreting its results. Implications for identifying patients who have a "good" or "poor" prognosis, threats to internal and external validity, and the relationship of the findings to cognitive social learning theory will also be discussed.

Limitations

Medicine and psychology rely upon clinical judgments in (a) making decisions about appropriate treatments for patients, (b) deciding if patients have benefited from specific treatments, and (c) predicting how "disease or problem free" patients will be in the future. However, as previously noted, there are criticisms of the use of clinical judgment in making predictions about a person's

future behaviors (Faust, 1986; Hall, Catlin, Boissevain, & Westgate, 1984; Meehl, 1986). The basis for the majority of the criticisms resides in the difficulty associated with making accurate predictions. Early research on clinical judgment focused on the issue of accuracy. The results of the accuracy studies were labeled "disappointing" by Goldberg (1968) and continue to be seen as disappointing by modern researchers. For example, studies on the topic of predicting violence find that clinicians are wrong at least twice as often as they are correct (Monahan, 1984; Werner, Rose, & Yesavage, 1983). In reviews of studies of the accuracy of clinical judgment in psychology, both Goldberg (1968) and Garb (1989) found that training and experience were not necessarily related to accuracy. Contradictory results have also been reported by these same researchers. Giving clinicians additional information (i.e., personality test results and biographical data) about patients increased (Garb, 1984) and did not affect (Goldberg, 1968) the accuracy of psychologists' predictions.

Rock, Bransford, Maisto, and Morey (1987) contended that the tasks in experimental judgment studies are artificial and vary greatly from common, "everyday" judgment tasks done in the practice of psychology. This variation from real life experience may imply that the results from experimental studies are not representative of clinical practice.

Garb (1987) noted that researchers may be overly negative about clinical judgment. He commented that many studies "consistently underestimate the success that clinicians have when making judgments" (Garb, 1987, p. 549). In addition, Christensen-Szalanski and Beach (1984) stated, "the widely-held belief in the hopelessness of human judgment and decision performance results in part from the fact that only evidence to that effect gets much attention. That is, evidence for poor performance is cited more frequently than is evidence for good performance" (p. 75).

One way to explore clinicians' judgments is to ask clinicians to use a global scale and rate the future behaviors of their patients discharged from a treatment program. Using a global scale may cause more difficulties for clinicians than asking them to use their own specific descriptors to identify the future actions of ex-patients. In this study, accurate prognoses did appear to be a difficult task for the raters. Of the 46 patients in the study who returned to the veteran's hospital, 34 needed additional treatment for alcohol-related problems. Only 6 of these 34 were clearly identified by the clinicians as likely to relapse. Information about the majority of patients is missing; however, the results from the patients for whom there are data raises questions about the clinicians' abilities to make accurate predictions. It may be

particularly difficult to make such clinical prognoses when constrained by an instrument such as a 5-point global scale rather than using a more personalized or individualized decision-making scheme, which a clinician may have developed through experience with a number of patients.

The global rating scale used by the clinicians in this study has the limitation of being only a 5-point scale. The nonuse of a "5" rating leads to a truncation of the already small range of possible prognosis scores and needs to be considered in interpreting the results. A decrease in the size of the range may lead to invalid or unrepresentative statistical results (Ferguson, 1971; Kiess, & Bloomquist, 1985). The smaller the possible range of choices, the less reliable the generalizations or conclusions (Myers, 1990). A restricted range can result in low correlation coefficients (Meetz et al., 1988). Perhaps if there had been more variability in the prognosis ratings, the regression equation might have been able to account for more than 12% of the variance. Although the treatment staff did not determine the type of discharge a patient received, they were often aware of a patient's discharge status. All patients who left the program with an irregular discharge (not completing the program, $N = 21$) received ratings of "1," "extremely poor" prognosis, from the clinicians. Staff members may have held a belief that program dropouts were

not interested in or not committed to changing their previous behaviors. It appears that staff were reluctant to indicate that patients were entirely unable or unwilling to recover from alcoholism, as the lowest prognosis rating was reserved almost entirely for those who were "kicked out" of the program. Only nine patients who did not receive an irregular discharge received a "1" score. Most of the patients received a higher score than "1" simply by completing the program. The range of prognosis ratings suggests that clinicians tended to use the middle ratings and avoided the two extreme scores.

Alcohol and substance abuse patients are known for their tendency to relapse, and to have numerous admissions for treatment. This may have colored the clinician's judgment, and thus made them unwilling to give any patient the most positive prognosis. In this study, no clinician marked the most favorable prognosis ("5"--Very unlikely to "backslide," program was helpful to this patient). National statistics (Armor et al., 1977) indicate that about 20% of alcoholics relapse, and that within 4 years of treatment about 90% of substance abusers will return to some degree of use (Polich et al., 1980). Clinicians may have simply taken the side of statistical probability, and been cautious about saying any patient was "very unlikely" to relapse. If a patient's prognosis was questionable, the rater might appear

foolish or overly optimistic about a particular patient's chances if the rating of "5" were assigned. Brooke, Care, and Curry (1977), in discussing physicians' fears about inaccurate prognoses, noted that most hospital staff have very little idea whether a particular disease will recur in a patient supposedly "cured."

The staff's familiarity with certain patients may also influence the prognosis ratings. As some patients have had multiple admissions to the detoxification and treatment units, it was likely that the staff could have had previous experience with at least some of the men. The staff may have formed opinions about these men, as to whether these particular patients were likely to relapse again or were able to receive further benefit from the program.

Adding additional variables to the study might have resulted in being able to explain more of the variance in clinical prognosis. For example, clinicians' familiarity with the history of a patient's response to treatment as well as knowledge of a patient's discharge status (i.e., against medical advice) may be important variables.

A confounding factor that might have affected the results of the study is that data on the predictor variables were collected during the first few days of entering the ATU. Patients responded to the personality assessment instruments prior to experiencing the treatment program.

Any personal characteristics that may have changed during the 28 days of treatment were not measured. The clinicians' prognosis ratings were very likely based on interactions and behaviors observed during and at the end of the treatment program.

The poor reliability and validity of some of the test instruments used in the study may also contribute to the low coefficient of multiple correlation. Although the DAST was developed specifically for use with a clinical drug abuse population, it appears to be a relatively infrequently used and untested instrument. There is little information about the psychometric properties of the DAST. The TSCS, although widely used in research, also appears to have poor reliability. Several researchers have expressed concern with the overall psychometric properties of the scale (Hoffman & Gellen, 1984; Rahaim, 1976; Suinn, 1972; Tzeng et al., 1985; Walsh, 1985).

The reliability and validity of the prognosis rating scale, used as the criterion variable, were not determined. Each patient received only one prognosis rating. Therefore, no interrater reliability measures are available. In addition, clinicians were not asked to do a second rating on the same patient; therefore, no data are available on intrarater reliability. However, all raters appeared to be similar in the frequency of their use of any given ratings,

and did not appear to differ from the other raters in their choice or assignment of scores. There are limited validity data on prognosis ratings and outcome for 46 of the 145 patients.

A threat to external validity is the limited population from which both raters and patients were drawn. As all patients were male and all were veterans, they did not necessarily represent a cross-section of the general population. This makes it difficult to generalize the results to other groups of substance abusers, who might differ on such factors as socioeconomic status, employment history, type of previous treatment, age, sex, or type of addiction. For example, there has been increasing awareness that the patterns of female alcoholics are distinct from those of male alcoholics, and need to be researched separately (Hoar, 1983; Macdonald, 1987).

The use of only six clinicians as raters also limits the generalizability of the results. Although the average ratings from these six professionals were not significantly different, other professionals might rate patients' prognoses quite differently. Schwartz and Taylor (1989) found differences in attitudes toward alcoholism among different mental health professionals. For example, believing in a disease concept of alcoholism might mean a professional would give a high prognosis rating only when a patient is

abstinent for a certain length of time. Generally, alcoholics receiving treatment in an outpatient setting have symptoms that are less severe than those receiving inpatient services. Therefore, clinicians who work only with alcoholics in an outpatient setting could give higher prognosis ratings than clinicians, such as those in this study, who work on an inpatient ward.

This study, like others in the literature (Schuckit et al., 1986; Svanum & McAdoo, 1989), only accounts for a small proportion of the variance. It is difficult to select factors that are related to clinicians' prognoses and which enhance the ability to predict prognosis scores. Although there are justified criticisms about clinical prognoses, prognoses are constantly used in making decisions about patients. Therefore, it does seem appropriate to continue to study variables that could affect prognostic decisions.

Implications

Despite the limitations noted, there are implications that can be drawn from this study. Perhaps foremost is the implication that additional research variables should be investigated in studying the relationship between client characteristics and clinicians' prognoses.

The very modest relationship between the variables selected and prognosis is similar to the results found by

Svanum & McAdoo (1989) in their review of studies on alcoholism and prediction of outcome. One conclusion may be that the variables that are consistent with CSL theory and found to enhance the development and maintenance of alcoholism may not be the major variables clinicians use when making prognoses.

The finding that higher DAST scores, indicative of high levels of polydrug abuse, were slightly correlated with clinicians' prognoses may have implications for substance abuse treatment centers. Advocates of the CSL viewpoint would agree with this finding that more complex substance abuse habit patterns are more difficult to change (McClelland et al., 1972; Miller, 1980). Kaufman (1982) noted that regardless of whether the client is a "drug-abusing alcoholic" or a "problem-drinking drug abuser" (p. 14) the prognosis is much worse than if the patient is abusing only alcohol or only drugs.

In Egan's (1989) research in which she used multiple predictor variables, only one variable, the absence of polydrug use, correlated significantly with the outcome measure, alcoholics' abstinence for at least 3 months. The findings of this study were consistent with outcome research (Egan, 1989; Kaufman, 1982; Svanum & McAdoo, 1989) in that polydrug use has a negative relationship with the favorable prediction of treatment outcome. It seems reasonable to

assume that the variables that are salient in outcome research are also relevant in making clinical prognoses.

The finding that polydrug abuse is negatively related to a positive posttreatment prognosis may have implications for treatment decisions. Administration of the DAST, in conjunction with other information, could prove to be a quick and easy way to help clinicians make prognoses about patient's likelihood of recovery. If a potential patient were found to have a high DAST score, the clinician might be alerted to the fact that this patient is not yet ready to benefit from a standard treatment program. The patient might then be offered special services to help offset this negative prediction. He or she might be given additional counseling, referred to another program, or be offered more extensive outpatient therapy. Craig and Olson (1988) noted that polydrug abusers, particularly those who are being admitted to treatment for the first time, appear to have special needs for autonomy and the expression of aggression.

As treatments become more complicated, they also become more costly. In these days of increasing cost containment by insurance companies and health care systems, poor prognosis might imply that a patient would not be admitted for treatment at all. Poor prognosis might mean that the person was not "cost effective" to treat. This raises the ethical question of the possibility of withholding treatment to

those with more severe addictions, or offering "second class" treatment, such as detoxification only with no follow-up treatment.

The expectation that patients would receive favorable prognoses if clinicians thought the patient had the skill and interest in developing and maintaining a relationship with another person (Bromet & Moos, 1977; Elal-Lawrence et al., 1986; Macdonald, 1987) appears to have been verified. Patients who had never been in a marital relationship or were not presently in one received lower prognosis ratings than patients who were in a marital relationship. Higher levels of marital cohesion and support, and lower levels of marital conflict, have been associated with more favorable treatment outcome (Finney, Moos, & Mewborn, 1980). Marital cohesion may thus serve as a "buffer" to stressful life events that might precipitate a relapse. The person who is able to successfully maintain a marital relationship may also have more effective coping mechanisms for dealing with everyday stress and conflict. Conversely, more effective coping mechanisms may serve to promote positive interactions among family members (Cronkite & Moos, 1980).

The prognosis ratings with respect to marriage call attention to the importance of relationships for recovering alcoholics. Professionals who work with alcoholics might

want to ensure that patients have some relationship, friendship, or other persons for support before the patients are discharged from an alcoholic treatment program. Such a supposition, however, needs to be tested by further research.

The relationship between employment patterns and clinical prognosis also offers some support for CSL theorizing. It is reasonable to assume that people engaged in steady employment have their personal lives well enough organized to fulfill day-to-day responsibilities. Such persons might be better able to follow the requirements of a treatment program than those who are less able to organize their lives and assume responsibilities.

As noted above, one curious result is that, on the average, the lowest prognosis ratings were given to those patients with a history of some employment (i.e., 3 years employment with less than 6 months of unemployment). The reasons for this finding needs further investigation. The timing of the 6 months of unemployment could be important. If the patient was unemployed during the 6 months immediately prior to admission and was still unemployed, that could explain the low prognosis ratings. The clinicians may view current unemployment to be as detrimental to a favorable prognosis as an unstable work history. Also those with a fairly steady employment history

might be more alarmed by a 6-month layoff than those who experienced frequent periods of unemployment. The clinicians could have been aware of such patient concerns about unemployment.

It is reasonable to assume that a stable marriage or steady employment, or any similar commitment that reduces a person's focus on self, would increase a patient's motivation for positive change. Increased motivation and potential to benefit from treatment might elicit differential treatment from staff (Cronkite & Moos, 1980). Positive responses from staff may reinforce the patient's positive behavior changes and lead clinicians to expect more positive changes from the patient. Clinicians' expectations, personal beliefs, and attributions for others are of special importance to CSL theory (Nathan, 1985) and have an important impact upon the prognoses they make for their patients.

Future Research

Among the issues not addressed in this study, five seem of particular significance for future research. These are: (a) whether prognosis is best explained by a linear model, (b) the expectations and beliefs that clinicians bring to bear on their predictions, (c) the question of the optimal time to collect data, (d) the characteristics of the popula-

tion, with particular attention to gender, and (e) the difficulty in defining "successful" recovery.

There was no test of nonlinear models in this study. Clinical judgment may not be simply a linear combination of cues (Haase et al., 1983; Strohmer et al., 1983; Strohmer et al., 1982) as was earlier suggested (Goldberg, 1968; Hammond et al., 1964; Hoffman, 1960). There appears to be a "mediated, stagewise decision model" (Strohmer et al., 1982, p. 597; Strohmer et al., 1983) which accounts for the cognitive activity of the clinician. An investigation of the accuracy of this view seems an important area for future research.

Another area for future work is the relationship between the cues and the criteria clinicians use in making prognoses. This relationship can be influenced by the clinician's prior beliefs and expectations about the behavior of alcoholics. Based on the results of their studies of clinical judgment, Chapman and Chapman (1967) proposed that faulty inferences occur when inaccurate relationships between cues and criteria are learned. In this situation clinicians may make systematic errors in their observations. These errors are compounded when they make prognostic inferences based on the erroneous observations.

In this study the data for the independent variables were collected in the initial stages of treatment. Clinicians may start to formulate their prognoses later in the treatment when patients' scores may be different on the variables. Therefore, future work might look at the relationship between variables and clinical prognosis at several points throughout the treatment process.

Research on female alcoholics is also a growing area of clinical interest. Preliminary studies indicate that women alcoholics are different from men in such areas as their response to treatment and what triggers relapse (Duckert, 1987; Macdonald, 1987). For example, family of origin issues, such as mental illness or violence in the family, were predictive of relapse after treatment for women alcoholics, but not for men (Haver, 1986). There may also be differences between men alcoholics and other populations, such as adolescents and minorities. Research with women and other groups is needed before a complete picture of alcoholism is possible.

Additional research appears needed on the issue of how to best identify and/or rate what is perceived as "success" of treatment. Abstinence as the sole criterion of treatment success does not necessarily mean alcoholics will have improved functioning in other parts of their lives (Gerard et al., 1962; Pattison, 1966). Behavioral measures could be

one means of measuring "success" in such areas as family relations or job performance.

This research, like much of what has preceded it, has not significantly increased the understanding of the process of clinical judgment. Systematic investigation of the areas suggested above for further research, however, may lead to greater understanding of how clinicians make their prognoses for alcoholic patients.

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APPENDICES

APPENDIX A

VETERANS ADMINISTRATION'S AGREEMENT TO PARTICIPATE
IN RESEARCH

PART I-AGREEMENT TO PARTICIPATE IN RESEARCH BY OR UNDER THE DIRECTION OF THE VETERANS ADMINISTRATION		DATE
1. I, _____, voluntarily consent to participate as a subject (Type or print subject's name) in the investigation entitled _____ (Title of study)		
2. I have signed one or more information sheets with this title to show that I have read the description including the purpose and nature of the investigation, the procedures to be used, the risks, inconveniences, side effects and benefits to be expected, as well as other courses of action open to me and my right to withdraw from the investigation at any time. Each of these items has been explained to me by the investigator in the presence of a witness. The investigator has answered my questions concerning the investigation and I believe I understand what is intended. 3. I understand that no guarantees or assurances have been given me since the results and risks of an investigation are not always known beforehand. I have been told that this investigation has been carefully planned, that the plan has been reviewed by knowledgeable people, and that every reasonable precaution will be taken to protect my well-being. 4. In the event I sustain physical injury as a result of participation in this investigation, if I am eligible for medical care as a veteran, all necessary and appropriate care will be provided. If I am not eligible for medical care as a veteran, humanitarian emergency care will nevertheless be provided. 5. I realize I have not released this institution from liability for negligence. Compensation may or may not be payable, in the event of physical injury arising from such research, under applicable federal laws. 6. I understand that all information obtained about me during the course of this study will be made available only to doctors who are taking care of me and to qualified investigators and their assistants where their access to this information is appropriate and authorized. They will be bound by the same requirements to maintain my privacy and anonymity as apply to all medical personnel within the Veterans Administration. 7. I further understand that, where required by law, the appropriate federal officer or agency will have free access to information obtained in this study should it become necessary. Generally, I may expect the same respect for my privacy and anonymity from these agencies as is afforded by the Veterans Administration and its employees. The provisions of the Privacy Act apply to all agencies. 8. In the event that research in which I participate involves certain new drugs, information concerning my response to the drug(s) will be supplied to the sponsoring pharmaceutical house(s) that made the drug(s) available. This information will be given to them in such a way that I cannot be identified. I _____ NAME OF VOLUNTEER HAVE READ THIS CONSENT FORM. ALL MY QUESTIONS HAVE BEEN ANSWERED, AND I FREELY AND VOLUNTARILY CHOOSE TO PARTICIPATE. I UNDERSTAND THAT MY RIGHTS AND PRIVACY WILL BE MAINTAINED. I AGREE TO PARTICIPATE AS A VOLUNTEER IN THIS PROGRAM. 9. Nevertheless, I wish to limit my participation in the investigation as follows:		
VA FACILITY	SUBJECT'S SIGNATURE	
WITNESS'S NAME AND ADDRESS (Print or type)	WITNESS'S SIGNATURE	
INVESTIGATOR'S NAME (Print or type)	INVESTIGATOR'S SIGNATURE	
☐ Signed information sheets attached. ☐ Signed information sheets available at:		
SUBJECT'S IDENTIFICATION (I.D. plate or give name - last, first, middle)		SUBJECT'S I.D. NO.
		WARD
AGREEMENT TO PARTICIPATE IN RESEARCH BY OR UNDER THE DIRECTION OF THE VETERANS ADMINISTRATION VA FORM 10-1086 SEP 1979 SUPERSEDES VA FORM 10-1086 JUN 1975, WHICH WILL NOT BE USED.		

APPENDIX B

PATIENT INFORMATION SHEET

PATIENT INFORMATION SHEET

Information about a Research Study entitled: Sociodemographic and Personality Characteristics of Patients Entering an Alcoholism Treatment Program conducted under the direction of Kay Bartosz, M.S., and John Flake, Ph.D.

Introduction: You are being asked to volunteer to participate in an experiment. It is important that you understand the purpose, risks and potential benefits in order to make a wise choice about participation. Please read the following information carefully and discuss any questions you might have with the investigator and others you may choose to consult.

Information: I, _____, understand that the purpose of this study is to learn what characteristics and demographic information are common among both people who complete this program and those who receive an irregular discharge. I understand that, if I agree to participate in this study, I am agreeing to undergo the following procedures, in addition to or in place of, the necessary customary care for my condition:

- a. completion of a brief (10-15 minute) interview
- b. completion of two paper and pencil surveys
- c. completion of two computerized tests

I have been told that the above described procedures may result in the following kinds of discomfort(s), inconvenience(s), or side effects(s):

All interviews, surveys and tests are physically noninvasive nor harmful. However, some statements may be disquieting to some subjects, as they require revealing aspects of oneself not commonly disclosed.

I have also been told that participation in this study may involve the following risk(s):

No physical or emotional risks are foreseen.

It has been explained to me that participation in this study will not benefit me directly but might generate knowledge of benefit in the future to others with the same or similar condition.

Consent: I understand that as a veteran I may qualify for medical care and possibly for compensation for any unexpected injuries to me as a result of this study. I understand I may call Dr. Robert Flake (x7714) for answers to questions that may occur to me at any time about the research study in which I am participating. I understand that if I decide not to participate in this study, either by refusing to sign this document or by withdrawing my consent at any time after I have signed it, the VA will continue to provide the best possible care for my condition. Additional information concerning my recourse in case of injury may be obtained from the chairman of the ETSU Institutional Review Board or the Veterans Benefit Counselor at Mountain Home VAMC, as appropriate.

I also understand that while my right to privacy will be maintained, the Secretary of the Department of Health and Human Services does have free access to any information obtained in this study should it become necessary. I have read or had read to me all of the foregoing and I freely and voluntarily choose to participate.

(Volunteer's signature/date)

(Witness' signature/date)

(Legal representative/next of kin/date) (Where applicable)

As the principal investigator I believe the above information is an accurate description of the subject's participation in the study and

that the subject (or legal representative) fully understands the implications of participation in the study.

(Signature, Principal Investigator/date)

ALTON MASE

APPENDIX C

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EMERGENCY HISTORY

APPENDIX D

MICHIGAN ALCOHOLISM SCREENING TEST

Michigan Alcoholism Screening Test

Please answer the following Yes (Y) or No (N).

- | | | |
|--|---|---|
| 1. Do you feel you are a normal drinker? | Y | N |
| 2. Have you ever awakened the morning after some drinking the night before and found that you could not remember a part of the evening before? | Y | N |
| 3. Does your spouse (or parents) ever worry or complain about your drinking? | Y | N |
| 4. Can you stop drinking without a struggle after one or two drinks? | Y | N |
| 5. Do you ever feel bad about your drinking? | Y | N |
| 6. Do friends or relatives think you are a normal drinker? | Y | N |
| 7. Are you always able to stop drinking when you want to? | Y | N |
| 8. Have you ever attended a meeting of Alcoholics Anonymous (AA)? | Y | N |
| 9. Have you gotten into fights when drinking? | Y | N |
| 10. Has drinking ever created problems between you and your spouse? | Y | N |
| 11. Has your spouse (or other family member) ever gone to anyone for help about your drinking? | Y | N |
| 12. Have you ever lost friends or girlfriends/boyfriends because of drinking? | Y | N |
| 13. Have you ever gotten into trouble at work because of drinking? | Y | N |
| 14. Have you ever lost a job because of drinking? | Y | N |
| 15. Have you ever neglected your obligations, your family, or your work for two or more days in a row because you were drinking? | Y | N |
| 16. Do you ever drink before noon? | Y | N |
| 17. Have you ever been told you have liver trouble? Cirrhosis? | Y | N |
| 18. Have you ever had delirium tremens (DTs), severe shaking, heard voices or seen things that weren't there after heavy drinking? | Y | N |
| 19. Have you ever gone to anyone for help about your drinking? | Y | N |
| 20. Have you ever been in a hospital because of drinking? | Y | N |
| 21. Have you ever been a patient in a psychiatric hospital or on a psychiatric ward of a general hospital where drinking was a part of the problem? | Y | N |
| 22. Have you ever been seen at a psychiatric or mental health clinic, or gone to a doctor, social worker, or clergyman for help with an emotional problem in which drinking has played a part? | Y | N |
| 23. Have you ever been arrested, even for a few hours, because of drunk behavior? | Y | N |
| 24. Have you ever been arrested for drunk driving after drinking? | Y | N |

APPENDIX E

DRUG ABUSE SCREENING TEST

The following questions concern information about your possible involvement with drugs not including alcoholic beverages during the past 12 months. Carefully read each statement and decide if your answer is "Yes" or "No". Then, circle the appropriate response beside the question.

In the statements "drug abuse" refers to (1) the use or prescribed or over the counter drugs in excess of the directions and (2) any nonmedical use of drugs. The various classes of drugs may include: cannabis (marijuana, hashish), solvents, tranquilizers (e.g., Valium), barbiturates, cocaine, stimulants (e.g., speed), hallucinogens (e.g., LSD) or narcotics (e.g., heroin). Remember that the questions do not include alcoholic beverages.

Please answer every question. If you have difficulty with a statement, then choose the response that is mostly right.

These questions refer to the past 12 months.

	<u>Circle Your Response</u>	
1. Have you used drugs other than those required for medical reasons?	Yes	No
2. Do you abuse more than one drug at a time?	Yes	No
3. Are you always able to stop using drugs when you want to?	Yes	No
4. Have you had "blackouts" or "flashbacks" as a result of drug use?	Yes	No
5. Do you ever feel bad or guilty about your drug use?	Yes	No
6. Does your spouse (or parents) ever complain about your involvement with drugs?	Yes	No
7. Have you neglected your family because of your use of drugs?	Yes	No
8. Have you engaged in illegal activities in order to obtain drugs?	Yes	No
9. Have you ever experienced withdrawal symptoms (felt sick) when you stopped taking drugs?	Yes	No
10. Have you had medical problems as a result of your drug use (e.g., memory loss, hepatitis, convulsions, bleeding, etc.)?	Yes	No

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APPENDIX F

BUSS-DURKEE ANGER INVENTORY

BUSS-DURKEE ANGER INVENTORY

1. I seldom strike back, even if someone hits me first.
2. I sometimes spread gossip about people I don't like.
3. Unless somebody asks me in a nice way, I won't do what they want.
4. I lose my temper easily but get over it quickly.
5. I don't seem to get what's coming to me.
6. I know that people tend to talk about me behind my back.
7. When I disapprove of my friends' behavior, I let them know it.
8. The few times I have cheated, I have suffered unbearable feelings of remorse.
9. Once in a while I cannot control my urge to harm others.
10. I never get mad enough to throw things.
11. Sometimes people bother me just by being around.
12. When someone makes a rule I don't like, I am tempted to break it.
13. Other people always seem to get the breaks.
14. I tend to be on my guard with people who are somewhat more friendly than I expected.
15. I often find myself disagreeing with people.
16. I sometimes have bad thoughts which make me feel ashamed of myself.
17. I can think of no good reason for ever hitting anyone.
18. When I am angry, I sometimes sulk.
19. When someone is bossy, I do the opposite of what he asks.
20. I am irritated a great deal more than people are aware of.
21. I don't know any people that I downright hate.
22. There are a number of people who seem to dislike me very much.
23. I can't help getting into arguments when people disagree with me.
24. People who shirk on the job must feel very guilty.

25. If somebody hits me first: I let him have it.
26. When I am mad, I sometimes slam doors.
27. I am always patient with others.
28. Occasionally when I am mad at someone I will give him the "silent treatment."
29. When I look back on what's happened to me, I can't help feeling mildly resentful.
30. There are a number of people who seem to be jealous of me.
31. I demand that people respect my rights.
32. It depresses me that I did not do more for my parents.
33. Whoever insults me or my family is asking for a fight.
34. I never play practical jokes.
35. It makes my blood boil to have somebody make fun of me.
36. When people are bossy, I take my time just to show them.
37. Almost every week I see someone I dislike.
38. I sometimes have the feeling that others are laughing at me.
39. Even when my anger is aroused, I don't use "strong language."
40. I am concerned about being forgiven for my sins.
41. People who continually pester you are asking for a punch in the nose.
42. I sometimes pout when I don't get my own way.
43. If somebody annoys me, I am apt to tell him what I think of him.
44. I often feel like a powder keg ready to explode.
45. Although I don't show it, I am sometimes eaten up with jealousy.
46. My motto is "never trust strangers."
47. When people yell at me, I yell back.
48. I do many things that make me feel remorseful afterward.
49. When I really lose my temper, I am capable of slapping someone.

50. Since the age of ten, I have never had a temper tantrum.
51. When I get mad, I say nasty things.
52. I sometimes carry a chip on my shoulder.
53. If I let people see the way I feel, I'd be considered a hard person to get along with.
54. I commonly wonder what hidden reason another person may have for doing something nice for me.
55. I could not put someone in his place, even if he needed it.
56. Failure gives me a feeling of remorse.
57. I get into fights about as often as the next person.
58. I can remember being so angry that I picked up the nearest thing and broke it.
59. I often make threats I don't really mean to carry out.
60. I can't help being a little rude to people I don't like.
61. At times I feel I get a raw deal out of life.
62. I used to think that most people told the truth but now I know otherwise.
63. I generally cover up my poor opinion of others.
64. When I do wrong, my conscience punishes me severely.
65. If I have to resort to physical violence to defend my rights, I will.
66. If someone doesn't treat me right, I don't let it annoy me.
67. I have no enemies who really wish to harm me.
68. When arguing, I tend to raise my voice.
69. I often feel that I have not lived the right kind of life.
70. I have known people who pushed me so far that we came to blows.
71. I don't let a lot of unimportant things irritate me.
72. I seldom feel that people are trying to anger or insult me.
73. Lately, I have been kind of grouchy.

74. I would rather concede a point than get into an argument about it.

75. I sometimes show my anger by banging on the table.

APPENDIX G

TENNESSEE SELF-CONCEPT SCALE

TENNESSEE SELF-CONCEPT SCALE

1. I have a healthy body.
2. I am an attractive person.
3. I consider myself a sloppy person.
4. I am a decent sort of person.
5. I am an honest person.
6. I am a bad person.
7. I am a cheerful person.
8. I am a calm and easy going person.
9. I am a nobody.
10. I have a family that would always help me in any kind of trouble.
11. I am a member of a happy family.
12. My friends have no confidence in me.
13. I am a friendly person.
14. I am popular with me.
15. I am not interested in what other people do.
16. I do not always tell the truth.
17. I get angry sometimes.
18. I like to look nice and neat all the time.
19. I am full of aches and pains.
20. I am a sick person.
21. I am a religious person.
22. I am a moral failure.
23. I am a morally weak person.
24. I have a lot of self-control.
25. I am a hateful person.
26. I am losing my mind.
27. I am an important person to my friends and family.
28. I am not loved by my family.
29. I feel that my family doesn't trust me.
30. I am popular with women.
31. I am mad at the whole world.
32. I am hard to be friendly with.
33. Once in a while I think of things too bad to talk about.
34. Sometimes, when I am not feeling well, I am cross.
35. I am neither too fat nor too thin.
36. I like my looks just the way they are.
37. I would like to change some parts of my body.
38. I am satisfied with my moral behavior.
39. I am satisfied with my relationship to God.
40. I ought to go to church more.
41. I am satisfied to be just what I am.
42. I am just as nice as I should be.
43. I despise myself.
44. I am satisfied with my family relationships.
45. I understand my family as well as I should.
46. I should trust my family more.

47. I am as sociable as I want to be.
48. I try to please others, but I don't overdo it.
49. I am no good at all from a social standpoint.
50. I do not like everyone I know.
51. Once in a while, I laugh at a dirty joke.
52. I am neither too tall nor too short.
53. I don't feel as well as I should.
54. I should have more sex appeal.
55. I am as religious as I want to be.
56. I wish I could be more trustworthy.
57. I shouldn't tell so many lies.
58. I am as smart as I want to be.
59. I am not the person I would like to be.
60. I wish I didn't give up as easily as I do.
61. I treat my parents as well as I should (Use past tense if parents are not living).
62. I am too sensitive to things my family say.
63. I should love my family more.
64. I am satisfied with the way I treat other people.
65. I should be more polite to others.
66. I ought to get along better with other people.
67. I gossip a little at times.
68. At times I feel like swearing.
69. I take good care of myself physically.
70. I try to be careful about my appearance.
71. I often act like I am "all thumbs".
72. I m true to my religion in my everyday life.
73. I try to change when I know I'm doing things that are wrong.
74. I sometimes do very bad things.
75. I can always take care of myself in any situation.
76. I take the blame for things without getting mad.
77. I do things without thinking about them first.
78. I try to play fair with my friends and family.
79. I take a real interest in my family.
80. I give in to my parents. (Use past tense if parents are not living)
81. I try to understand the other fellow's point of view.
82. I get along well with other people.
83. I do not forgive others easily.
84. I would rather win than lose in a game.
85. I feel good most of the time.
86. I do poorly in sports and games.
87. I am a poor sleeper.
88. I do what is right most of the time.
89. I sometimes use unfair means to get ahead.
90. I have trouble doing the things that are right.
91. I solve my problems quite easily.
92. I change my mind a lot.
93. I try to run away from my problems.

94. I do my share of work at home.
95. I quarrel with my family.
96. I do not act like my family thinks I should.
97. I see good points in all the people I meet.
98. I do not feel at ease with other people.
99. I find it hard to talk with strangers.
100. Once in a while I put off until tomorrow what I ought to do today.

APPENDIX H

STAFF RATING FORM FOR PATIENT PROGNOSIS

STAFF RATING: PATIENT PROGNOSIS

PATIENT: _____

EXCELLENT

GOOD

GUARDED

POOR

EXTREMELY
POOR

5

4

3

2

1

5 = Very unlikely to "backslide"; program was helpful to this patient.

4 = Some possibility of relapse, but generally good progress. Program was helpful.

3 = Unable to determine; could go either way.

2 = Likely to relapse soon after discharge; seemed to gain some slight benefit from program.

1 = Highly probable that patient will return to previous patterns of substance use; being in program was only a delay or "time out" in pattern of chronic abuse of chemical substance(s)

Other comments?

APPENDIX I

TABLE

Table I-1

Participants' Raw Scores On Independent Variables, Prognosis Rating and Discharge Type

Observation Number	Michigan Alcoholism Screening Test Score	Drug Abuse Screening Test Score	Self-criticism Score	Total Positive Score	Hostility Score	Aggression Score	Age	Family History of Alcoholism	History of Hospitalization	Marital Status	Employment Status	Prognosis Rating	Discharge Type*
1	11	1	52	34	67	53	40	1	1	2	3	3	1
2	17	1	52	15	60	59	46	2	1	4	3	3	1
3	6	1	36	38	54	45	53	3	4	6	6	4	1
4	11	3	40	42	52	37	57	2	1	1	6	3	1
5	10	1	58	43	53	51	53	1	4	1	6	3	1
6	10	8	57	18	67	51	26	1	4	3	2	1	2
7	17	7	58	21	59	49	31	1	4	3	6	1	2
8	19	9	54	25	69	58	36	1	2	1	2	1	2
9	17	7	57	21	75	66	33	1	4	1	5	1	2
10	13	4	64	33	52	53	39	1	4	6	3	4	1
11	13	5	54	34	62	57	56	1	3	3	6	3	1
12	14	8	52	17	62	52	43	1	4	3	4	4	1
13	5	7	52	43	45	49	30	1	1	3	2	1	2
14	12	0	63	35	59	45	57	1	1	1	6	3	1
15	15	1	48	34	42	51	47	3	2	1	3	4	1
16	16	1	48	57	59	56	40	2	2	6	6	4	1
17	14	6	49	28	50	52	38	1	2	4	2	1	2
18	17	9	57	18	69	64	31	1	1	1	2	4	1
19	17	8	58	36	68	61	40	2	1	5	5	1	2
20	18	8	60	27	62	64	50	1	2	1	6	4	1
21	12	1	45	42	40	36	57	3	4	4	6	2	1
22	19	1	54	12	72	60	69	1	1	1	3	3	1
23	5	4	48	23	66	61	52	3	4	1	6	1	1
24	14	1	52	30	64	50	56	3	2	1	6	4	1
25	16	9	64	13	63	57	27	1	1	6	6	3	1
26	16	1	45	57	52	41	41	1	1	1	6	4	1
27	17	9	66	-3	72	64	35	1	1	5	3	4	1
28	12	0	39	41	44	49	60	1	1	1	6	4	1
29	15	0	42	41	58	46	57	3	4	3	5	2	1
30	6	6	42	18	60	44	29	2	4	3	6	3	1
31	6	1	36	38	54	45	53	3	4	6	6	4	1
32	14	1	55	23	57	60	40	3	2	3	4	1	1
33	17	1	51	28	55	58	47	1	1	1	6	3	1
34	19	7	48	14	66	62	33	1	1	1	4	4	1

Table I-1 (continued)

Observation Number	Michigan Screening Test Score	Drug Abuse Screening Test Score	Self-criticism Score	Total Positive Score	Hostility Score	Aggression Score	Age	Family History of Alcoholism	History of Hospitalization	Marital Status	Employment Status	Prognosis Rating	Discharge Type*
35	15	2	61	9	69	58	46	3	4	1	5	1	2
36	20	1	52	16	71	56	67	2	1	1	5	4	1
37	11	0	54	29	62	50	41	1	4	1	6	4	1
38	14	7	58	19	67	64	40	3	1	2	2	2	1
39	18	9	42	32	54	60	31	1	1	4	3	4	1
40	8	2	46	32	40	40	42	2	4	3	6	4	1
41	11	4	54	43	59	49	29	2	4	3	4	2	1
42	17	9	64	26	69	62	40	2	1	3	5	2	1
43	17	6	52	15	66	64	47	3	2	5	2	3	1
44	18	3	40	32	66	35	51	2	2	1	6	4	1
45	19	3	51	11	69	61	44	1	1	1	3	1	2
46	20	9	43	20	69	56	34	1	1	1	3	2	1
47	17	7	66	20	69	68	49	2	2	1	6	2	1
48	13	1	49	48	37	38	61	3	2	1	2	3	1
49	18	0	55	41	65	69	43	2	1	3	4	4	1
50	18	9	51	25	65	57	28	1	1	3	6	3	1
51	16	9	63	14	69	67	40	2	2	1	6	3	1
52	8	1	43	34	55	34	33	3	4	6	6	4	1
53	19	0	64	43	57	64	58	3	1	1	5	3	1
54	18	1	58	27	65	52	44	3	3	5	6	2	1
55	19	6	46	28	51	47	48	1	1	5	6	4	1
56	15	1	63	33	71	61	35	3	1	3	6	4	1
57	6	7	52	19	68	58	31	1	4	4	2	3	1
58	19	9	51	31	67	61	36	2	1	1	5	1	1
59	12	9	48	15	66	53	29	3	2	3	4	3	1
60	16	2	49	36	57	60	41	2	2	5	6	4	1
61	17	8	45	39	52	44	54	3	1	3	6	2	1
62	13	3	51	45	52	49	37	1	2	3	5	4	1
63	16	0	61	14	65	67	46	1	1	2	6	4	1
64	16	7	42	47	59	54	39	2	1	3	3	3	1
65	15	8	45	34	59	60	34	2	2	1	5	1	2
66	15	4	66	40	64	57	48	2	2	2	6	3	1
67	14	5	48	22	60	52	58	2	1	4	6	3	1
68	17	3	54	31	55	48	33	2	1	4	3	1	2
69	8	1	49	39	46	48	47	3	4	6	6	3	1
70	14	1	42	25	50	35	35	3	4	4	5	3	1

Table I-1 (continued)

Observation Number	Michigan Alcoholism Screening Test Score	Drug Abuse Screening Test Score	Self-criticism Score	Total Positive Score	Hostility Score	Aggression Score	Age	Family History of Alcoholism	History of Hospitalization	Marital Status	Employment Status	Prognosis Rating	Discharge Type*
71	18	9	57	31	62	66	44	1	1	4	6	1	2
72	15	5	63	26	56	60	40	3	2	3	6	3	1
73	14	4	58	21	45	49	31	1	4	3	6	1	2
74	17	7	57	21	49	59	33	1	4	1	5	1	2
75	10	9	45	34	55	48	36	1	2	1	2	1	2
76	15	8	52	43	59	60	30	1	1	3	2	1	2
77	5	8	58	36	75	66	34	3	1	3	5	1	2
78	15	8	57	18	50	52	26	1	4	3	2	1	2
79	17	7	61	9	69	58	42	2	2	1	5	1	2
80	15	6	51	11	69	61	46	3	4	1	5	1	2
81	19	2	57	18	69	61	40	2	1	5	5	1	2
82	17	3	49	28	67	51	28	1	2	4	2	1	2
83	19	7	54	25	69	58	44	1	1	4	3	1	2
84	13	4	64	33	52	53	39	1	4	6	3	4	1
85	13	5	54	34	62	57	56	1	3	3	6	3	1
86	14	8	52	17	62	52	43	1	4	3	4	4	1
87	12	0	63	35	59	45	57	1	1	1	6	3	1
88	15	1	48	34	42	51	47	3	2	1	3	4	1
89	16	1	48	57	59	56	40	2	2	6	6	4	1
90	17	9	57	18	69	64	31	1	1	1	2	4	1
91	18	8	60	27	62	64	50	1	2	1	6	4	1
92	12	1	45	42	40	36	57	3	4	4	6	2	1
93	19	1	54	12	72	60	69	1	1	1	3	3	1
94	6	4	48	23	66	61	52	3	4	1	6	1	1
95	14	1	52	30	64	50	56	3	2	1	6	4	1
96	16	9	64	13	63	57	27	1	1	6	6	3	1
97	16	1	45	57	52	41	41	1	1	1	6	4	1
98	17	9	66	-3	72	64	35	1	1	5	3	4	1
99	12	0	39	41	44	49	60	1	1	1	6	4	1
100	15	0	42	41	58	46	57	3	4	3	5	2	1
101	6	6	42	18	60	44	29	2	4	3	6	3	1
102	14	1	55	23	57	60	40	3	2	3	4	1	1
103	17	1	51	28	55	58	47	1	1	1	6	3	1
104	19	1	48	14	66	62	33	1	1	1	4	4	1
105	20	1	52	16	71	56	67	2	1	1	5	4	1
106	11	0	54	29	62	50	41	1	4	1	6	4	1

Table I-1 (continued)

Observation Number	Michigan Screening Test Score	Drug Abuse Screening Test Score	Self-criticism Score	Total Positive Score	Hostility Score	Aggression Score	Age	Family History of Alcoholism	History of Hospitalization	Marital Status	Employment Status	Prognosis Rating	Discharge Type*
107	14	7	58	19	67	64	40	3	1	2	2	2	1
108	18	9	42	32	54	60	31	1	1	4	3	4	1
109	8	2	46	32	40	40	42	2	4	3	6	4	1
110	11	4	54	43	59	49	29	2	4	3	4	2	1
111	17	9	64	26	69	62	40	2	1	3	5	2	1
112	17	6	52	15	66	64	47	3	2	5	2	3	1
113	18	3	40	32	66	35	51	2	2	1	6	4	1
114	20	9	43	20	69	56	34	1	1	1	3	2	1
115	17	7	66	10	69	68	49	2	2	1	6	2	1
116	13	1	49	48	37	38	61	3	2	1	2	3	1
117	18	0	55	41	65	69	43	2	1	3	4	4	1
118	18	9	51	25	65	57	28	1	1	3	6	3	1
119	16	9	63	14	69	67	40	2	2	1	6	3	1
120	8	1	43	34	55	34	33	3	4	6	6	4	1
121	19	0	64	43	57	64	58	3	1	1	5	3	1
122	18	1	58	27	65	52	44	3	3	5	6	2	1
123	19	6	46	28	51	47	48	1	1	5	6	4	1
124	15	1	63	33	71	61	35	3	1	4	2	4	1
125	8	7	52	19	68	58	31	1	4	4	5	3	1
126	19	9	51	31	67	61	36	2	1	1	5	1	1
127	12	9	48	15	66	53	29	3	2	3	4	3	1
128	16	2	49	36	57	60	41	2	2	5	6	4	1
129	17	8	45	39	52	44	54	3	1	3	6	2	1
130	13	3	51	45	52	49	37	1	2	3	5	4	1
131	16	0	61	14	65	67	46	1	1	2	6	4	1
132	16	7	42	47	59	54	39	2	1	3	3	3	1
133	15	4	66	40	64	57	48	2	2	2	6	3	1
134	14	5	48	22	60	52	58	2	1	4	6	3	1
135	8	1	49	39	46	58	47	3	7	6	6	3	1
136	19	1	52	33	71	58	40	1	1	3	3	3	1
137	19	1	52	33	71	58	40	1	1	3	3	3	1
138	16	0	52	30	52	49	43	2	1	1	3	3	1
139	16	0	52	30	52	49	43	2	1	1	3	3	1
140	14	1	42	25	50	35	35	3	4	4	5	3	1
141	15	4	57	18	55	48	34	3	1	3	5	1	2
142	15	5	63	26	56	60	40	3	2	3	6	3	1

Table I-1 (continued)

Observation Number	Michigan Alcoholism Screening Test Score	Drug Abuse Screening Test Score	Self-criticism Score	Total Positive Score	Hostility Score	Aggression Score	Age	Family History of Alcoholism	History of Hospitalization	Marital Status	Employment Status	Prognosis Rating	Discharge Type*
143	11	1	52	34	67	53	40	1	1	2	3	3	1
144	17	1	52	15	60	59	46	2	1	4	3	3	1
145	11	3	40	42	52	37	57	2	1	1	6	3	1

*1 = Regular discharge; 2 = Irregular discharge.

"Family History of Alcoholism": 1 = Parent(s) alcoholic.
2 = Alcoholic family member other than parent
3 = No family history.

"History of Hospitalization": 1 = Multiple inpatient hospitalizations.
2 = Single inpatient hospitalization.
3 = Outpatient treatment only.
4 = No prior hospitalizations or outpatient treatment.

"Marital Status": 1 = Multiple marriages, none intact.
2 = Multiple marriages, current marriage intact.
3 = Single marriage, currently divorced or separated.
4 = Never married.
5 = Second marriage intact.
6 = Single marriage still intact.

"Employment Status": 1 = Never employed.
2 = Temporary jobs with periods of unemployment.
3 = 1-2 years with periods of unemployment.
4 = 2 years with periods of unemployment.
5 = 3 years employment with less than 6 months unemployment.
6 = Steady employment or military career, 5+ years

VITA

Kay Lyn Bartosz was born in Stevens Point, Wisconsin, on October 7, 1953. She graduated from P. J. Jacobs High School in May 1971. The following September she entered Carroll College in Waukesha, Wisconsin, and graduated magna cum laude with a Bachelor of Science degree in psychology and communications in June 1975. After 2 years of work in a children's residential treatment center, she entered the University of Wisconsin at Oshkosh to pursue a Master of Science degree in clinical psychology. In 1979 she entered the University of Tennessee at Knoxville to pursue a doctorate in counseling psychology and completed all course work for this degree. Her doctoral internship was done at the Veterans Administration Medical Center in Lexington, Kentucky, in October 1983. She has subsequently worked in community mental health services and at the VA Medical Center, Johnson City, Tennessee. She received the Doctor of Philosophy degree in Education, with a major in counseling psychology in December 1990.

The author is currently working as a psychotherapist at Metropolitan Clinic Counseling, a private therapy clinic in Kingsport, Tennessee. She is a member of the Intermountain Psychological Association, the Tennessee Psychological Association, and an associate member of the American Psychological Association.