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Relationships between locus of control, generalized self-efficacy, alcohol-specific efficacy expectations and time in treatment among residentially treated adolescent alcoholics

Tompkins, Wilma Weaver, Ph.D.

The Ohio State University, 1987
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RELATIONSHIPS BETWEEN LOCUS OF CONTROL, GENERALIZED SELF-EFFICACY, ALCOHOL-SPECIFIC EFFICACY EXPECTATIONS AND TIME IN TREATMENT AMONG RESIDENTIALLY TREATED ADOLESCENT ALCOHOLICS

DISSERTATION

Presented in Partial Fulfillment of the Requirements for the Degree Doctor of Philosophy in the Graduate School of The Ohio State University

by

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The Ohio State University

1987

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ACKNOWLEDGMENTS

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My special thanks are extended to my parents whose love, encouragement and enthusiastic support throughout all my educational ventures have been everpresent and who have taught me to value my education, and to my children, Teri and Eric, whose love make all the challenges of life worth meeting.
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Admission of alcoholic youth to central Ohio residential treatment facilities is generally classified as "voluntary". In truth, the patient rarely seeks such treatment without substantial pressure and intervention from family, school officials, and/or the court system. Denial of the diagnosis of alcoholism is a symptom of the disease; thus the "voluntary" admission status is misleading and is not usually reflective of the newly admitted patient's desire to discontinue the use of alcohol and/or drugs.

The diagnosis of alcoholism, while alcohol may or may not be identified by the patient as the drug of choice, provides the focus of treatment. Whether categorized as the disease entity of alcoholism, or categorized under the American Psychiatric Association's "substance use disorders", which, according to Hadley and Hadley (1983), includes alcoholism, the treatment model remains the same.

The residential treatment program begins with a detoxification phase. In addition to medical management
designed to identify and treat physical symptoms of withdrawal, the disease concept of alcoholism is introduced and the process of patient education begins. This is followed (or may be offered concurrently) with the treatment phase, which lasts approximately four weeks. Individual variations in the length of treatment based on progress (or lack of progress) are not generally available. The treatment phase includes group therapy, individual counseling, a continuing program of patient education, goal setting, and interaction with other recovering patients. The entire program seeks to provide the patient with a knowledge of the disease, acceptance of the diagnosis, development of alternative coping skills, and commitment to the philosophy that alcoholism is a disease that cannot be cured but can be controlled through abstinence.

While in the treatment facility and surrounded by the security and support of the treatment environment, abstinence is usually attained. However, the patient will eventually return to the pre-treatment environment which, knowingly or unknowingly, enabled and supported the use of drugs and/or alcohol. It is the goal of the treatment facilities to assist the alcoholic youth to deal with the challenges of the real world without alcohol or other mood-altering chemicals.
Post-treatment modalities are designed to assist the patient to maintain sobriety during the transition from the treatment facility to the real world environment. These modalities include completion of an aftercare program, which provides individual counseling and group support, and participation in Alcoholics Anonymous (AA). One facility also offers a "recovery center" to provide for a more gradual return to the pre-treatment environment.

BACKGROUND OF THE PROBLEM:

Three initial concerns face those who engage in alcoholism research:

What causes alcoholism?
What constitutes recovery?
Are patients appropriately diagnosed?

(1) What causes alcoholism?

In order to develop strategies for effective prevention, intervention and treatment, one must first seek to understand what causes the disease. Increased federal funding for alcoholism and drug research throughout the last decade have expanded available data and now question many of the earlier findings that suggested unitary etiological causations. Nathan and Lansky (1982) suggest the literature now supports the "more sophisticated" view
of an etiologic process that includes "a complex individual system interacting with personal history and environmental factors to yield an addiction". Pattison, Sobell, and Sobell (1977) also noted multiple causations, stating that "alcohol dependence is not a unitary phenomenon, but a variety of syndromes best regarded as a public health problem".

Much remains unknown about the reasons why, in our drinking society, one person becomes an alcoholic and another remains a harm-free drinker. The National Alcohol Research Center of Rutgers University is currently involved in a thirty (30) year study of five thousand (5000) subjects in an effort to characterize the biological, social and emotional make-up of adolescents who become problem drinkers in an attempt to identify causative factors.

(2) What constitutes recovery?

The major problem in considerations of recovery deals with the continuing controversy over the disease concept of alcoholism and, consequently, what behaviors constitute recovery. Whether one views control of the disease based solely on abstinence or one views improvement in psycho-social adaptive behaviors, reduction of alcohol consumption and/or development of harmfree drinking patterns as forms of recovery depends on the acceptance of
alcoholism as a disease entity as described by Jellinek (1960), or an "alcohol-dependence syndrome" which Edwards and Gross (1976) describe as varying in severity rather than merely present or absent.

(3) Are patients appropriately diagnosed?

Even though there has been considerable emphasis on developing diagnostic criteria, there remains no single laboratory or psychological test, with the possible exceptions of blood alcohol level and the Michigan Alcoholism Screening Test (MAST), that is diagnostic of alcoholism (Whitfield, Liepman and Williams, 1983). MAST is a simple, reliable screening test for alcoholism, consisting of twenty-four (24) "yes" or "no" answers to questions pertaining to the effects of drinking on a person’s ability to function. Alcohol Health and Research World’s Fifth Special Report to the U.S. Congress (1984) states that epidemiological research continues to be "complicated by the lack of standard and uniformly applied definitions. Terms such as alcohol abuse, alcohol misuse, problem drinking, alcoholism, and alcohol dependence are often used interchangeably." Correct diagnosis is essential for the subjects if any study attempting to evaluate treatment and/or posttreatment behaviors is to have credibility. For example, studies such as Pattison
(1976) and the Rand Study (1978) reported the potential for "alcoholics" to resume moderate, harmfree drinking. In studies reporting such data, Alcohol Health and Research World (1984) states: "Had stringent criteria for alcohol dependence been applied, it is conceivable that the drinking problems of many of these patients would be classified as alcohol abuse rather than alcoholism". Diagnosis continues to depend on a combination of factors such as hard signs of physical dependence, psychological dependence, tolerance, and problems (interpersonal, vocational, and legal) associated with alcohol consumption. Thus, any research concerning alcoholism must address these factors and provide indepth descriptive information concerning the subject's history.

While the search for consistency in diagnosing alcoholism and understanding its causative factors in order to maximize treatment effects continues, central Ohio treatment facilities base treatment on the disease concept of alcoholism, and, consistent with Jellinek's view, the desired treatment outcome is abstinence. This is also consistent with Emrick's (1974) citation of 114 studies of drinking-outcome studies with 113 using abstinence as a criterion.

The transition period between treatment and posttreatment is recognized as a crucial one in the patient's long-term recovery as this is the first
opportunity for the patient to test his/her new found knowledge and resolve. While it is recognized that relapse rates increase over time (Nathan and Lansky, 1977; Hatsukami, Pickens, and Svikis, 1981), the initial practice of non-drinking behaviors is a more accurate reflection of the result of treatment than a result of some other variable.

Central Ohio treatment facilities do not attempt to design treatment variations based on the drug of choice. The diagnosis of alcoholism is considered the common denominator. While the majority of patients will have experienced polydrug abuse, all will have experienced varying degrees of difficulty with alcohol.

Even though treatment facilities identify the precepts of Alcoholics Anonymous (AA) as their basis of treatment, two constructs of behavior modification emerge as a theoretical framework: locus of control and self-efficacy. Locus of control and self-efficacy, while initially appearing similar, are separate constructs born out of the same social learning theory.

Social learning theory, as conceived by Rotter (1954) contains four (4) classes of variables: behaviors, expectancies, reinforcements, and psychological situations. Rotter (1975) describes social learning theory in the following formula for behavior: "The potential for a
behavior to occur in any specific psychological situation is a function of the expectancy that the behavior will lead to a particular reinforcement in that situation and the perceived value of that reinforcement". His research indicated that, when an individual perceives a situation as similar, these expectancies generalize from one to another.

From this social learning theory, Rotter defined the concept of locus of control. His work with skill vs. chance studies attempted to predict behavior based on causality of reinforcement. Individuals who perceived reinforcement resulting from some action of their own were labeled "internal". Individuals who perceive reinforcement resulting from luck, chance, or fate were labeled "external". Rotter (1966) pioneered efforts to measure locus of control by developing a twenty-three (23) item Likert scale format which continues to be widely used for its general predictive ability.

The concept of locus of control in alcoholism has been studied fairly extensively with varying results. While locus of control among alcoholics has generally been found to be external (Wright and O betz, 1984; Abbot, 1984; Butts and Chotlos, 1973; Carter and Parsons, 1977), some researchers such as Gozeli and Sloan (1971) and Goss and Morosko (1970) found alcoholics more internally controlled.
However, those noting internal control among alcoholics consistently made reference to the alcoholics' unrealistic desire to be able to exert control over their drinking.

Locus of control is not a static belief but one that can be modified. Treatment goals seek to modify locus of control in moving the patient from an external locus of control to an internal locus of control. Consistent with the AA philosophy, the admission of "powerlessness" over alcohol is sought as the first of twelve steps in the AA program. This sense of powerlessness clearly demonstrates the patient's perceived lack of control over the use and subsequent consequences of alcohol/drugs. However, as one moves through the twelve steps, the emphasis changes from powerlessness to introspection, taking responsibility to make amends for previous harmful behaviors, and to eventual responsibility for sharing their message with other alcoholics. This change in locus of control is exemplified by the two following precepts of responsibility utilized by AA:

I am responsible...
When anyone, anywhere, reaches out for help, I want the hand of A.A. always to be there. And for that: I am responsible.

and

God, grant me the serenity to accept the things I cannot change, courage to change the things I can and wisdom to know the difference.
In 1977, Bandura introduced the concept of self-efficacy as a further explanation of behavior based on reinforcement. Perceived self-efficacy is a generalized expectancy that an individual has the capacity to accomplish a task. Bandura theorized that expectations of personal efficacy will determine whether coping behaviors will be initiated, how much effort will be expended, and how long it will be sustained in the face of obstacles. Bandura differentiates between self-efficacy expectancies (the belief that one can successfully perform the behavior necessary to produce a given outcome) and outcome expectancies (the belief that a given behavior will lead to a specific outcome). The influence of efficacy expectations is not merely a hope for change but, given appropriate skills and adequate incentives, Bandura views efficacy expectations as a major determinant in choice of activities.

Bandura cites four (4) principal sources of information utilized in deriving expectations of personal efficacy, all of which are components of alcohol treatment:

1. performance accomplishments - abstinence attained while in residential treatment and coping skills gained in meeting daily, interpersonal (although controlled) stresses provide generalizable skills which can be utilized in
stressful situations outside the treatment center. Controlled visits outside the facility and the entire aftercare program also provide opportunities for successful performance accomplishments.

2. vicarious experience - AA's philosophy of sharing of experiences provides single-purpose, successful modeling opportunities with sufficient variety of age and sex to provide role models with whom patients can identify.

3. verbal persuasion - educational activities, group and individual counseling throughout treatment provide extensive opportunities to utilize verbal and social persuasion.

4. emotional arousal - group therapy sessions, which frequently become highly emotionally charged, provide opportunities for examining situations and feelings and, through feedback from other group members, attempts to develop identification of defense mechanisms and alternative coping skills to handle stressful situations.

The potential for recovery is intended to serve as a primary incentive for maintaining abstinence. The emphasis on acceptance of the diagnosis of alcoholism provides assurance that patients are no more responsible for contracting the disease of alcoholism than they would be
for contracting diabetes. However, once diagnosed, the responsibility for choosing to drink/use or not, thus controlling the progress of the disease, is the decision and responsibility of the patient.

Appropriate skills for recovery are offered through the development and practice of various strategies (relaxation techniques, alternative coping skills, use of support systems such as AA) which are intended to assist in resisting the urge to drink/use. The on-going development of these skills throughout treatment provides the foundation for the utilization of appropriate behaviors following discharge. Longterm quality sobriety can only be achieved (with the possible exception of incarceration) when the patient assumes control and responsibility for change in behaviors.

While the theory of self-efficacy has not been extensively assessed in alcohol treatment, it has been studied in relation to other health issues requiring a change in behavior to effect a desired outcome, such as smoking cessation (Condiotte and Lichtenstein, 1981) weight loss (Lindsay, 1984), and treatment of phobias (Bandura and Adams, 1977). Research has consistently indicated that those with higher efficacy expectancies regarding specific situations are more likely to initiate behavioral changes and persevere for a longer period of time.
In 1984, Tipton and Worthington developed and tested a generalized self-efficacy (GSE) scale which addressed people's expectations across a broad range of activities that were challenging and which required effort and perseverance. Their findings indicated that there is a generalized self-efficacy which is measurable and which accounts for a significant portion of the variance of performance across a range of situations.

Since the patient alone has the opportunity to halt the progress of this disease, the ability for honest and accurate self-assessment is essential. Despite previous assumptions that alcoholics deny negative aspects of their lives, Cooper, Sobell, Sobell, and Maisto (1981) found that self-reports regarding alcohol-related incarcerations and hospitalizations were accurate. Further, Heather, Rollnick and Winton (1983) studying relapse in an adult treatment population found that "with regard to the comparison between objective and subjective measures of relapse, the results showed unambiguously that the subjective measure was superior as a predictor of relapse."

STATEMENT OF THE PROBLEM:

Even though the perception that one can control one's drinking/drug behavior (locus of control) and the perceived ability to attain and maintain sobriety (self-efficacy)
provide the basic tenets of residential alcohol treatment programs, research has not determined to what extent these measures differ between treatment populations and posttreatment populations.

RESEARCH QUESTIONS:

The research undertaken here will attempt to answer the following questions:

1. Is locus of control related to time in treatment? Is an internal locus of correlated with improved posttreatment drug/alcohol behaviors?

2. Are Generalized Self-Efficacy (GSE) scores related to time in treatment? Are higher GSE scores correlated with improved posttreatment drug/alcohol behaviors?

3. Are Alcohol-Specific Efficacy Expectation scores related to time in treatment? Are higher ASEE scores correlated with improved posttreatment drug/alcohol behaviors?

4. Are any of the above relationships affected by extraneous variables related to demographics, family,
and/or drug or alcohol history that are described and considered in this study?

HYPOTHESES TO BE TESTED:

The following hypotheses will be tested in an attempt to answer the above research questions. For statistical purposes they will be restated in null hypothesis form.

Hypothesis 1: There is a positive correlation between internal locus of control and longer time in treatment.

Hypothesis 2: There is a positive correlation between higher GSE scores and longer time in treatment.

Hypothesis 3: There is a positive correlation between higher ASEE scores and longer time in treatment.

Hypothesis 4: There is a positive correlation between internal locus of control and positive posttreatment drug/alcohol behaviors.
Hypothesis 5: There is a positive correlation between higher GSE scores and positive posttreatment drug/alcohol behaviors.

Hypothesis 6: There is a positive correlation between higher alcohol specific efficacy expectation scores and positive posttreatment drug/alcohol behaviors.

Hypothesis 7: There is no correlation between the major dependent variables of locus of control, GSE scores, and alcohol specific efficacy expectation scores and extraneous variables identified in this study.

NEED FOR THE STUDY:

Locus of control studies involving alcoholic patients have provided inconsistent information. Self-efficacy has been demonstrated as having predictive value with other health deviations requiring modification of behavior; however, the predictive value of self-efficacy for alcoholics has not been studied extensively. No study found has considered both locus of control and self-efficacy, general or specific, in relation to alcoholism.
Research in the development and evaluation of instruments that could be of value in determining the adolescent alcoholic's readiness for discharge and subsequent attainment of sobriety would provide a valuable tool for professionals engaged in treatment. Reliable measurements of this kind could be of potential value in altering the length of the treatment program to meet individual needs.

METHODOLOGY:

This is a descriptive, correlational study of perceived self-efficacy (both generalized and alcohol-specific) and locus of control of a residentially treated adolescent alcoholic population in central Ohio. The study used an intact population of volunteer subjects; thus no randomization of subjects or treatment was possible.

Subjects of this study included patients who were in residential treatment centers and aftercare programs in central Ohio treatment programs specializing in the treatment of adolescent alcoholism. Confidentiality of all individual participants was a priority.

Patient responses provided descriptive information including (1) age (2) sex (3) race (4) drug of choice (5) duration of use (6) primary reason for seeking treatment
and (7) physical, psychological and social symptoms associated with alcoholism. Additional demographic information and family data were considered extraneous variables and were considered in statistical correlations. Physical, psychological and sociological symptoms were, for the purpose of this study, used to categorize patients into two diagnostic classifications (alcoholism and alcohol abuse). Patients exhibiting symptoms of dependence in all three areas are classified as alcoholics. Patients exhibiting symptoms in some, but not all of the above, are classified as alcohol abusers.

Rotter's I-E scale was administered to determine locus of control. This scale contains twenty-three (23) forced-choice items (plus six filler items) designed to determine to what extent the individual believes he/she can control events.

Tipton and Worthington's GSE scale addresses an individual's expectations concerning one's ability to perform across a broad range of challenging activities which require effort and perseverance. Tipton and Worthington's generalized self-efficacy (GSE) scale was administered to assess the individual's expectations to perform across a broad range of activities. This instrument uses a Likert-type scale and contains ten (10) items.
The efficacy expectation scale specific to alcohol/drug use has been developed as part of this study with input from a panel of experts. This instrument has been field tested by in-patient volunteers who are not subjects of the study. On a Likert scale, subjects are asked to rate their confidence concerning their ability to abstain from alcohol/drug use in various posttreatment situations, such as abstaining when their peers are drinking/using. They are also asked to rate the difficulty of the task.

These three tests were administered via videotape. The use of videotape reduces potential error based on diversity of reading levels and further assures that each participant receives the same instructions.

In addition to the testing, those patients involved in the posttreatment phase were requested to participate in an interview. An adult family member or significant other corroborated information provided by the patient. The purpose of the interview was to obtain information regarding actual posttreatment drug/alcohol behaviors.

ASSUMPTIONS:

This author subscribes to the disease concept of alcoholism and the belief that the disease cannot be cured but can be controlled through abstinence. While a "slip"
does not constitute unsuccessful treatment but rather demonstrates the chronic nature of the disease, any regular use of drugs or alcohol, no matter how minimal or harmfree, does not constitute recovery. Perceived improvements in relationships with family, school, the legal system, and/or peers, while highly desirable, are gains that can only be considered temporary if alcohol/drug use continues.

Since abstinence can only be accomplished by the patient, it is assumed that understanding of the disease, acceptance of the diagnosis, and commitment to recovery are essential ingredients for recovery to occur. An internalization of a sense of control over the progress of the disease and development of alternative coping skills, combined with expectation of success, are assumed to provide a reasonable basis for treatment and motivation for recovery.

It is assumed that corroboration by an adult family member will be sufficient to assure accurate reporting of post-treatment behaviors.

It is further assumed that, since the patients volunteered to participate, they would respond to the questions as honestly as possible.
It is also assumed that this study, while not an experimental design, will provide preliminary data which may be of value in future studies.

DEFINITIONS:

Abstinence - voluntarily refraining from indulging in alcohol consumption.

Alcohol Abuse - over-use of alcohol that creates problems for the user and/or society, without meeting the diagnostic criteria of alcoholism (synonymous with alcohol misuse).

Alcoholics Anonymous (AA) - a fellowship of men and women who share their experience, strength, and hope with one another that they may solve their common problem and help others to recover from alcoholism.

Alcoholism - physical and psychological dependence on alcohol that recurrently interferes with the person's health, job, education, relationships and/or legal status.

Alcohol-specific efficacy expectations - the belief that one can successfully perform the behaviors needed to attain and maintain sobriety.

Generalized self efficacy - the belief in one's ability to function across a broad range of circumstances.
Polydrug abuse - misuse or overuse of a variety of chemical substances that result in a mood-altering effect.

Residential treatment facility - institutions designed to provide 24 hour/day care and services.

Self-efficacy expectation - the belief that one can successfully perform the behavior(s) needed to produce a given outcome.

Slip - prolonged period of abstinence interrupted by episode of drinking and immediate return to abstinence.

LIMITATIONS OF THE STUDY:

This study will be limited to the responses provided by volunteer participants. These responses may not be reflective of the total population. The observations of initial alcohol/drug behaviors are also provided by volunteer participants who are aware that their responses will be corroborated by a significant other. Their responses may differ from participants who decline to participate.

The only individuals involved in this study have recently been discharged from a residential treatment facility. No assumptions regarding long-term behaviors can be made or implied.

Since the population is limited to those receiving residential treatment, results cannot be expanded to those treated in out-patient settings.
Obviously many variables not considered in this study will impact on the patient’s recovery. Variables such as school related support systems and peer influences are recognized as having significant impact on the adolescent’s behavior but are not considered as part of this study.

Since this study utilizes a descriptive correlational design, no causative interpretations can be made on the basis of findings.

SUMMARY:

This descriptive, correlational study considers the constructs of locus of control and self-efficacy, both generalized and alcohol-specific, in relation to time in treatment among residentially treated adolescent alcoholics in central Ohio. Further, these variables are considered in relation to posttreatment behaviors. The study examines the effect of extraneous variables involving demographics, family considerations, and alcohol/drug history.

The testing of patients via videotape includes Rotter’s I-E Locus of Control scale, Tipton and Worthington’s GSE scale, and an ASEE scale developed for use in this study.

An interview to determine the posttreatment behaviors in regard to legal, educational, vocational, interpersonal, and drug/alcohol use, corroborated by a significant other, provided information concerning posttreatment behaviors.
CHAPTER II
REVIEW OF LITERATURE

The review of literature pertinent to this study will be presented in this chapter and will be divided into three sections:

1. Literature related to locus of control
2. Literature related to self-efficacy
3. Literature related to both self-efficacy and locus of control

A summary of the literature of review will be provided at the conclusion of this chapter.

LITERATURE RELATED TO LOCUS OF CONTROL

Locus of control is a psychological construct that developed from social learning theory (Rotter, 1954). While social learning theory is based on the four (4) variables of 1. behaviors, 2. expectancies, 3. reinforcements, and 4. psychological situations, locus of control focuses on the role of the variable of reinforcement (Rotter, 1966). Locus of control has frequently been treated as the central concept of social learning theory, but Rotter (1975)
contends that this is only one measureable variable that affects reinforcement and may be of predictive value.

Social learning theory (Rotter, 1954) presumes that the potential for a behavior to occur in a specific situation and context is dependent on the expectation that the behavior will lead to a particular reinforcement. Since individuals have the ability to discriminate between events that they believe to be causally related, it follows that the expectancy for the reinforcement to reoccur is dependent on a belief that the reinforcement is contingent on some action of their own.

Utilizing this perceived causal relationship, Rotter (1966) undertook a theoretically based, systematic study of chance vs. skill differences which he termed internal and external locus of control. Rotter defined the concept as follows:

When a reinforcement is perceived by the subject as following some action of his own but not being entirely contingent upon his action, then, in our culture, it is typically perceived as the result of luck, chance, fate, as under the control of powerful others, or as unpredictable because of the great complexity of the forces surrounding him. When the event is interpreted in this way by an individual, we have labeled this a belief in external control. If the person perceives that the event is contingent upon his own behavior or his own relatively permanent characteristics, we have termed this a belief in internal control.
Forerunners of locus of control research were identified as skill vs chance studies (Phares, 1973).

Three early studies were representative of efforts to determine if there were differences in expectations (confidence levels) based on reinforcements, both positive and negative, when subjects perceived their own skill contributed to results vs when subjects perceived luck caused the results.

In the first study Phares (1957) asked subjects to perform two perceptual judgement tasks (color matching and length of lines). After being instructed that their performance would be based solely on skill and ability or being told that the task was so difficult that success could only be achieved by chance, subjects were asked to state their expectancy prior to testing based on the number of chips the individual would bet on the next test. This study demonstrated that changes in expectancy were greater for those who perceived their success or failure was based on skill and ability.

Phares (1962) next study tested the same hypothesis using electric shock and nonsense syllables. He confirmed that subject's learning was greater when "escape" from a painful stimulus was perceived to result from their own efforts.
In a third study in 1961 Rotter, Liverant and Crowne manipulated skill-chance categorizations by the nature of the task rather than by instructions. Using ESP as a chance situation and hand steadiness as a skill situation, they demonstrated that positive and negative reinforcements lead to greater changes in expectancies in skill situations.

Attempts to measure and generalize individual's beliefs as a predictive variable were undertaken by Phares in 1957. He developed a thirteen (13) item internal, thirteen (13) item external Likert-type scale and concluded that individuals scoring high on the external items tended to demonstrate the same behaviors as those who were tested in chance situations.

The scale developed by Phares was revised in James' 1957 dissertation to a twenty-six (26) item Likert scale, using Phares' most successful items plus filler items to disguise the purpose of the test. James found low but significant correlations between his test and skill-chance task performance.

Rotter's work, published in 1966, reflects the development of the I-E Scale most commonly used by subsequent researchers. This forced-choice test, consisting of twenty-three (23) items plus six (6) filler items, has been found to provide a reasonably high internal
consistency, discriminant validity, and test-retest reliability.

Rotter's and Phares' research repeatedly supported the following conclusions:

(a) Subjects who perceived that luck, chance, or experimenter control determined the reinforcements were less likely to raise expectations following success than those who perceived the reinforcement was due to their own skill, were less likely to generalize success or failure from one task to another, and were less likely to lower expectancies following failure.

(b) There was strong support for the hypotheses that the individual who holds a strong belief that one controls one's own destiny was more likely to take steps to improve the environmental conditions, place greater value on skill reinforcements, and be more resistive to attempts to influence.

Liverant, Rotter and Seeman (Rotter, 1966) attempted to broaden the test and develop subscales for different areas such as achievement, affection, and general social and political attitudes. They developed a new forced-choice scale of sixty (60) items but found that the subscales were not generating separate predictions, thus their attempt to measure subareas was abandoned.
By 1975, Rotter estimated that over six hundred (600) published studies, not including unpublished studies, theses, and dissertations, have dealt with the concept of internal versus external control of reinforcement. Locus of control literature reviews were developed to deal with the volume of research (Phares, 1973; Joe, 1971; Lefcourt, 1972).

In 1975, Rotter noted several problems and misconceptions regarding locus of control. Rotter claimed researchers have failed to control for or measure reinforcement value, have persisted in efforts to obtain highly accurate and specific predictions from a generalized expectancy, and have placed values on the "goodness" of being internal and the "badness" of being external.

Despite the inability of Liverant, Rotter and Seeman to develop discriminant subareas of the I-E scale, Rotter's (1975) suggestion that more specific predictions could be made from instruments capable of measuring locus of control in specific areas has resulted in the development of a variety of locus of control scales. The Wallston, Wallston, Kaplan and Maides (1975) health locus of control attempted to provide an instrument that was capable of predicting health behaviors. While this instrument provided significantly improved predictive ability,
Wallston and Wallston (1978) identified a need for an even more topic-specific measurement of health behaviors. Salzer (1978) developed a weight control scale that provided greater predictive power for weight loss intent than either Rotter or Wallston.

Hinrichsen (1976), in reviewing locus of control literature related to alcoholism, noted similar concerns about the general nature of Rotter’s scale and its limited ability to predict behaviors in the alcoholic. Caster and Parsons (1977) believed the Levenson LOC scale offered advantages in their study of correlations between locus of control and treatment outcomes. The Levenson LOC scale is tridimensional and measures the following aspects of LOC: locus of control—internal (LOC-I), locus of control—chance (LOC-C), and locus of control—powerful others (LOC-PO). While Levenson (1973) found different types of control in psychiatric patients and in Black and White college students using this tridimensional scale, Caster and Parsons were only able to identify “trends” rather than significant correlations in their study of adult male alcoholics.

Abbott (1984) conducted his research on in-patient alcoholics in New Zealand utilizing two locus of control scales—one generalized and one drinking related—to attempt to predict therapy involvement and treatment.
outcomes. Both the generalized scale and the drinking related scale showed significant shifts in the internal direction, but relationships between locus of control and therapy participation and ability to predict outcomes were weak.

Despite criticism of the generalized nature of Rotter's scale and despite varying and inconclusive results, Rotter's I-E Scale continues to be the most widely used. Typical of the studies using Rotter's I-E scale are those of Butts and Chotlos (1973) and Nowicki and Hopper (1974) suggesting that alcoholics were more externally controlled than non-alcoholics, while the research of Gozali and Sloan (1971) and Goas and Morosko (1970) indicated alcoholics were more internally controlled. The emphasis on obtaining more pertinent results has focused on examination of additional variables as opposed to developing more specific locus of control subscales.

The following studies indicate the diversity of locus of control research findings in studying alcoholism. They are identified here because they are indicative of the wide interest in relating locus of control to addictive illnesses, they reflect various age groups and various drugs of choice, they utilize varied methodology, and their findings show varied results.
Mookherj (1986) studied one thousand, four hundred and seventy-seven (1477) adult white males in rural Tennessee who participated in an alcohol education rehabilitation program due to driving-while-intoxicated (DWI) offenses. His research included selected personality variables, including locus of control. While the locus of control scores provided on Rotter's I-E Scale did not differ significantly between those identified as alcoholicics vs non-alcoholicics, the alcoholic attributed slightly less control to external environmental forces. He noted, in relationship to other personality factors studied, that the tendency for the alcoholic to appear less influenced by external forces may reflect an unrealistic sense of being able to quit drinking anytime they want.

Carmen (1977) hypothesized that junior high school students in rural Wyoming who admitted drug use would exhibit a greater belief in external locus of control. While his research showed all correlations in the expected direction and some were statistically significant, results were of modest magnitude and he concluded that "it is clear that important factors other than locus of control are at work in determining the nature and origins of drug use among adolescents".

In his original study, Carmen identified that drinking for "personal effects" reasons, such as feeling mad or
feeling under pressure, tended to be associated with external control orientation and suggested that drinking motivations (personal vs social effects) and I-E score might presage problematic drinking which was not yet overt. This study was replicated in 1978 by Schilling and Carmen who identified one hundred and ninety-six (196) urban high school student drinkers averaging sixteen (16) years old who were asked to report reasons for drinking, quantity and frequency of drinking, and drinking related social complications. Using Rotter's I-E Scale, the "externals" reported significantly more personal effects motivations and a greater number of social consequences. They suggest the possibility of a developmental sequence of external control associated with problem-oriented motivation for drinking among very young drinkers pre-warning of increased intake and increased social consequences and eventual dependence on alcohol for a solution to personal problems. They also suggest that, at some advanced point in this developmental sequence, the individual may develop unrealistic beliefs in personal power which would explain the unexpected findings of internally oriented adult alcoholics.

Henik and Domino (1974) investigated changes in control expectancies among heroin addicts as they progressed through treatment. Their study involved sixty-four (64)
white males aged twenty-two (22) to thirty-six (36) with at least four (4) years of mainline heroin use who were participating in a methadone maintenance treatment program at the Narcotic Addiction Unit at Bronx State Hospital. Their methodology was unique in that they were able to identify a matched control group from their waiting list. They tested their subjects within twenty-four (24) hours of admission and following nine (9) weeks of treatment. While no significant differences were found between the initial means, the retest scores of the control group remained the same while the experimental group showed statistically significant decreases in external orientation.

Spoth (1983) studied the effect of locus of control in terms of treatment orientation. He applied different modes of treatment to fifty-five (55) adult male alcoholics in a V.A. Medical Center. "Internals" were provided cue-oriented, situationally-applied relaxation training, while "Externals" were provided regular, structured, daily-practiced relaxation training. His findings supported his hypothesis that matching treatment control with patient control enhances outcomes. Results also showed significant difference in outcome between types of locus of control, with internal subjects performing better.
Despite the burgeoning quantity of research and interest in the subject of locus of control, precise and definitive information remains incomplete. Phares (1978) suggests that research may have been impeded by failing to consider other social learning theory variables along with I-E when attempting to predict behavior.

LITERATURE RELATED TO SELF-EFFICACY

Self-efficacy is a second psychological construct based on social learning theory. Since 1977, when Albert Bandura presented the concept of self-efficacy as an "integrative theoretical framework" to explain and predict behavior change, subsequent research such as that of Butler (1980), Smedsland (1978), Bandura, Adams, and Beyer (1977) have supported his original findings.

Bandura (1980) defined self-efficacy as one's judgement of the likelihood that one can perform those actions required to deal with prospective situations. He hypothesized that expectations of personal efficacy determine whether coping behavior will be initiated, how much effort will be expended, and how long it will be sustained in the face of obstacles and aversive experiences. Lindsay (1984) notes the importance of this concept as it relates to acquiring health behaviors.
This construct differs primarily from locus of control in that locus of control attempts to determine if the individual believes that a given behavior will produce a given result, while self-efficacy attempts to determine if the individual perceives that he/she possesses the capability to effect the behavior. Kendall and Korgaski (1980) predicted self-efficacy will become an important research variable in behavioral research noting that attempts to change behavior are effective only to the degree that they influence expectations.

Bandura's original research sought to reconcile the divergence between two major trends in the field of behavioral change. While theorists preferred to explain behavioral changes in terms of cognitive processes, performance-based procedures were proving to be the most powerful in effecting changes. He proposed an explanatory mechanism that could account for behavior resulting from diverse modes of treatment. His theory was based on the assumption that various psychological procedures, both participatory and symbolic, serve as a means of developing and enhancing expectations of personal efficacy.

In his 1977 publication, Bandura differentiated between response-outcome expectations and self-efficacy by describing outcome expectancy as "a person's estimate that
a given behavior will lead to certain outcomes" while an efficacy expectation is "the conviction that one can successfully execute the behavior required to produce the outcome". Efficacy expectations represent more than a hope for favorable outcomes. It implies a belief that one possesses appropriate skills and adequate incentives to bring about the desired change. This belief is developed and enhanced, according to Bandura, through a variety of treatment modalities, each achieving differing levels of self-efficacy.

The cognitive processing of positive experiences gained in participatory, or enactive, experiences has repeatedly been demonstrated to achieve the highest levels of mastery over avoidance behaviors and the highest gains is self-efficacy (Bandura, 1977; Bandura, 1980). However, vicarious modeling experiences have demonstrated significant gains as well, especially when the models are diversified, the outcomes are clear, the model has similar characteristics with which the observer can identify, and effortful coping behavior can be demonstrated (Kazdin, 1973; Meichenbaum, 1971; Bandura, 1977). Verbal or social persuasion has been identified by Bandura as having a contributory effect on self-efficacy; however, when offered alone, this treatment provided weak, inconsistent results.
Bandura also identified emotional arousal as a treatment modality that, when cognitively processed, might have informational value in self-efficacy.

Bandura first tested his theory with an experiment involving snake phobics. Three treatment groups were identified - one subjected to participant modeling, one using vicarious modeling, and one with no treatment. Level, strength and generality of self-efficacy were measured before treatment, after treatment but before posttesting, and after the posttest. Subjects were asked to rank, in order of increasing threat, the tasks they considered themselves capable of executing. They also rated the strength of their expectation for each task on a one hundred (100) point scale with ten (10) point intervals ranging from great uncertainty to complete certainty. Generalizability was measured by using a different type of snake in the behavior posttest, but one that carried an equivalent threat value. The experiment demonstrated that higher self-efficacy was achieved through participatory modeling and that there was congruence between self-efficacy and performance regardless of whether the changes in self-efficacy were achieved through participant modeling (89% congruence) or by vicarious modeling (86% congruence).
Bandura, Adams, Hardy and Howell (1980) studied agoraphobics with similar results, indicating significantly higher (p<.05) self-efficacy and actual performance of subjects following vicarious experiences than the control group.

The power of self-efficacy has been studied on a variety of behaviors. Bandura and Schunk (1981) demonstrated the positive effects of cultivating self-efficacy with slow-learners through setting and achieving small subgoals in math as compared with subjects assigned to a group that set only a long-term end goal. Ryckman, Michael, Thorton and Cantil (1982) developed a physical self-efficacy scale that demonstrated statistically significant predictions of subjects' ability to perform athletic skills. Bradley, Poser and Johnson (1980) demonstrated high correlation between self-efficacy and weight loss. They noted that of thirteen (13) variables considered in their study, weight loss expectancy was the only one that significantly correlated (p<.01) with weight loss.

Tipton and Worthington (1984) noted that while Bandura identified three dimensions of self-efficacy - magnitude, strength, generality - most research has focused on the magnitude and strength dimensions and the dimension of
generality has been studied only in closely related situations. In order to test generality of self efficacy on a broader level, that is, the transferability of self-efficacy gained from one situation to unrelated situations, they developed and tested a generalized self-efficacy (GSE) scale. The scale addresses expectations about competency for performance across a broad range of activities which are challenging and that require effort and perseverance. Their experiments included both a self-determination task and a self-modification project. Subjects were administered a twenty-seven (27) item scale which included such items as "I am a very determined person" and "I can succeed at most any endeavor to which I set my mind".

In their first experiment involving a self-determination task, subjects were tested, divided into high GSE vs low GSE groups, and were asked to hold a book in their non-dominant hand parallel to the floor for as long as possible. Participants in the high GSE group held their arms outstretched longer (mean=189.8 seconds) than the low GSE group (mean=140.7 seconds).

In their second experiment, subjects were administered the GSE scale, selected a self-modification project, and following four (4) weeks of intervention, evaluated the outcomes on a goal attainment scale (GAS). Again the high GSE group had significantly higher GAS ratings (p<.05).
In both cases, substantial time elapsed between GSE measurement and the experiment, indicating that the beliefs assessed by the GSE scale are relatively enduring. Tipton and Worthington suggest, based on these findings, that in addition to specific expectations regarding performance in specific situations, "people also have generalized self-efficacy which is measurable and which accounts for a significant portion of the variance in their performance across a range of situations".

Tipton and Worthington have, since their original study, developed an alternative version of the GSE test which includes ten (10) items rated on a Likert scale. These ten (10) items reflect the items on their original test with the highest discriminatory value.

There has been minimal evidence relating self-efficacy to the addictive disorders. Perhaps one explanation is the failure of researchers to utilize self-efficacy language in their studies. For example, Jones and Lanyon (1981) studied subjects who were one year post-discharge from a treatment center in Phoenix. Using an "Adaptive Skills Battery" developed for their study, they found significant correlation between posttreatment improvement and the measured ability to cope with stimuli which could trigger drinking. One could assume that this measure of adaptive skills as perceived by the patient would be indicative of self-efficacy.
Condiotte (1981) studied self-efficacy and relapse in smoking cessation programs and concluded the higher the level of perceived self-efficacy at the completion of treatment, the greater the probability that subjects would remain abstinent throughout the experiment and the longer they would remain abstinent following treatment. Conversely, those who relapsed had the lowest posttreatment scores.

Condiotte’s study addressed but did not support Marlatt’s (1978) relapse theory that higher self-efficacy lends itself to abstinence violations. Marlatt theorized that an enhanced self-efficacy predisposes one to place oneself in high-risk situations, thus producing abstinence violations, which in turn produces a dissonance state and results in an expectancy for continued failure. Condiotte and Lichtenstein (1981) contend that direct support of Marlatt’s theory is non-existent.

Schimmel (1985), in his study of factors leading to premature termination from alcohol treatment, used self-reports assessing various factors including self-efficacy expectations for resisting the urge to drink in general as well as specific situations. His results indicated that both general and situational self-efficacy expectations increased as a function of time in treatment. While none of the variables studied were found to be
reliable predictors of premature termination from treatment, the assessment of self-efficacy expectations appeared to provide the most clinically useful data.

Despite the increasing number of studies concerning self-efficacy, Bandura’s theory is not without critics. Eastman and Marzillier (1984) reported, after review of Bandura’s original and subsequent research, "discordance between the striking and bold claims made for self-efficacy by Bandura and the limited and specific relationships demonstrated in his studies". Their criticism is centered on what they perceive as Bandura’s failure to distinguish between efficacy and outcome expectations, which they believe forms a doubtful theoretical status. Further they question global inferences and generalizations made on the basis of very specific and discreet tasks. It is interesting to note that this criticism is in direct conflict with the criticism of Rotter’s locus of control, in which the generalized use of the research instrument has necessitated the constant search for more specificity.

LITERATURE RELATED TO LOCUS OF CONTROL AND SELF-EFFICACY

While locus of control and self-efficacy are constructs born of the same social learning theory, literature which
includes both constructs is practically non-existent. Lindsay's dissertation (1984) identified the similarities in the two by pointing out that locus of control measurement scales are often contaminated with self-efficacy items. As an example, he utilized the statement from Wallston et al (1978) health locus of control scale "I can control my health". While disagreement with the statement scores as "external", one could disagree with the statement because of a perceived lack of motivation or skills to control a situation that one believes is potentially controllable. Lindsay offers this potential miscalculation of locus of control orientation as a possible explanation for its lack of significance as a variable in previous studies.

Lindsay studied locus of control and self-efficacy in an effort to determine if they are independent constructs and to determine their relative contributions to successful weight management. In his study, weight locus of control and self-efficacy were demonstrated to be largely independent constructs. While selected measures of perceived self-efficacy demonstrated a significant ability to predict successful outcomes, locus of control had no significant effect on any outcomes.
Bandura (1977) noted the significant but separate role of each construct. While efficacy focuses on the social learning variable of expectancies, locus of control focuses on the variable of reinforcement. He cautions that poorly conceived treatment strategies can have an unintended negative impact. Lindsay (1984) supports this contention in noting that programs which remind people that weight can be controlled but fail to provide the necessary skills are more likely to create a sense of hopelessness than to create a change in behaviors.

Summary

Since Rotter first introduced social learning theory in 1954, there have been attempts to utilize the variable of reinforcement for its predictive ability. Rotter's locus of control scale was developed for its generalized predictive ability and has been the basis of numerous studies, often with varying and inconclusive results. Researchers have sought to develop more specific subscales to provide more accurate predictions but have frequently contaminated their subscales with self-efficacy items, leading to the potential for mislabeling the control orientation of the subjects.
Self-efficacy is a more recent construct that developed from the same social learning theory but focuses on the variable of expectancies. Originally identified by Bandura, its early studies were limited to the study and treatment of phobias and only in this decade has its utility in other areas of behavioral change been explored with encouraging results.

In the study of alcoholism, locus of control has been studied extensively but has often provided contradictory results. While one would expect the alcoholic to be more externally controlled, the opposite has been true in several studies. Self-efficacy has received less attention in alcoholism study and, according to Marlatt's theory, high self-efficacy may be seen as a factor contributing to relapse. Marlatt, however, is alone in this interpretation and other research in using self-efficacy scores as predictors of success in the addictive illnesses has been positive.

Despite the obvious similarities between these two constructs, almost no research has been identified which studies both. Only Lindsay has used both in his study of predictions of weight loss and his study focused on determining that they are independent constructs, with self-efficacy being the one with predictive ability.
While treatment modalities continue to seek to develop self-efficacy and internal control, and while each of these has been studied separately in relation to addictive illnesses, no effort to study these constructs together in relation to alcoholism could be identified.
Chapter III

METHODS AND PROCEDURES

This chapter will describe the methods and procedures used in this study. The chapter is divided into the following sections: research design, hypotheses, subject selection, measurement and instrumentation, testing conditions, data analysis, and summary of methods and procedures.

RESEARCH DESIGN

This is a descriptive-correlational study which examines test scores on three dependent variables - locus of control, generalized self-efficacy and efficacy expectations specific to alcohol/drug use - among residentially treated adolescent alcoholics in central Ohio. For all subjects, both in-patient and posttreatment, these scores will be treated as dependent variables with the independent variable being time in treatment. Each of the three test scores will be analyzed separately and in relation to the other test scores.
For out-patient subjects only, these scores will also be treated as independent variables with the dependent variable being post-treatment drug/alcohol behaviors. Post-treatment drug/alcohol behaviors will be determined by interview and will include self-reported employment status, legal status, educational status, alcohol status, and family and peer relationships. Patient's interview responses will be corroborated by interviews with a significant other.

The major research questions being addressed in this study are whether or not there is a correlation between internal locus of control and higher self efficacy, both general and specific, and time in treatment and whether or not higher internal locus of control and higher self efficacy (both general and specific), relate to positive treatment outcomes. This study involves patients who are currently participating in various stages of treatment and will examine populations as they exist.

Campbell and Stanley (1963) caution about interpretations made on the basis of the correlational design. They note that numerous rival hypothesis could explain observed differences and causal relationships should not be inferred. They further note that data
obtained from such studies are relevant primarily in that they expose the hypotheses to disconfirmation. That is, if a high correlation exists, the credibility of the hypotheses is strengthened and the hypotheses has survived a chance of disconfirmation. However, no causal relationships can be made on the basis of findings using this design.

While the lack of control, notably control over random selection and control over variables being studied, presents a major concern to utilizing this design, Kerlinger (1973) defends the use of the design by noting that while some of the most important social and educational research problems do not lend themselves to experimental designs, they do provide for controlled inquiry. He notes that the quality of research of this type is improved when the study tests multiple hypotheses and when care is exercised in interpreting results.

Because the population to be studied occurs as an intact group, attention must be provided to the numerous variables which could account for observed differences. The identification and statistical analysis of these extraneous variables provides a means to consider the relationship of the variable as it affects the major variables being studied. Some of these variables relate to
the individual (age, sex, etc.), some relate to aspects of treatment, and some relate to the family.

HYPOTHESIS

The major research questions to be addressed in this study are (a) whether or not locus of control, generalized self-efficacy scores, and alcohol-specific efficacy expectation scores are greater for patients with increased time in treatment in a residential adolescent alcohol treatment center, and (b) are higher scores on any of these variables consistent with improved post-treatment drug/alcohol behaviors.

Hypothesis will be tested to determine if, for this particular population, correlational relationships exist. This study will test the hypothesis noted on page 15 and 16. They have been restated in the null form:

1. There is no correlation between internal locus of control scores and longer time in treatment.

2. There is no correlation between high generalized self-efficacy scores and longer time in treatment.
3. There is no correlation between high alcohol-specific efficacy expectation scores and longer time in treatment.

4. There is no correlation between internal locus of control scores and positive posttreatment drug/alcohol behaviors.

5. There is no correlation between high generalized self-efficacy scores and positive posttreatment drug/alcohol behaviors.

6. There is no correlation between high alcohol-specific efficacy expectation scores and positive posttreatment drug/alcohol behaviors.

7. There is no correlation between locus of control scores, generalized self-efficacy scores and alcohol-specific efficacy expectation scores and the extraneous variables identified in this study.
SUBJECT SELECTION

Subjects were self-selected and included all patients in any stage of treatment, recovery, or aftercare at central Ohio residential adolescent treatment centers who agreed to participate and from whom patient and parental consent could be obtained. Since one of these centers bases placement in the adolescent treatment program on a developmental, rather than a chronological, age, they refer to their program subjects are young adults rather than adolescents but are involved in the same adolescent treatment program and are included in this study.

Four residential treatment centers in the central Ohio area were identified. Following initial contact one center declined to participate. One center initially agreed to participate but later declined due to changed philosophy of their new leadership personnel. The two treatment centers who did agree to cooperate and are included in this study were Maryhaven, Inc. in Columbus, Ohio, and Shepherd Hill Hospital in Newark, Ohio. Copies of the proposed research, including all supportive documents, were submitted, reviewed and approved by each of the participating agencies and by The Ohio State University Human Subjects Review Committee (see appendix C).
One of these centers maintains a recovery residence. The recovery residence provides for a protected environment with increasing opportunities for independence and increasing emphasis on self-reliance. While the center does not use the term "half-way house", the reader may identify with this term. These patients were identified as posttreatment patients, since they may work and/or attend classes, and were included in the interview process.

Each center provides an aftercare program. Aftercare is designed for continuing support in the form of group therapy and family involvement after discharge. While all patients are encouraged to participate in aftercare, cost and the location of the patient's residence sometimes prohibits this activity.

The residential program offered at these two institutions is basically the same. The treatment phase does not generally exceed thirty-five (35) days.

Each hospital protected their patient's right to confidentiality by initiating the consent to participate process. Prior to any contact by the researcher, they made direct contact with patients and families and obtained the necessary releases. All subjects were informed that the
testing process was voluntary and, while participation was encouraged, each subject was informed of the voluntary nature of the procedure and their right to discontinue participation at any time.

Campbell and Stanley (1963) express concern over selection as it affects both the internal and external validity of many research designs, and it is of special concern with this type of study. From the standpoint of internal validity, there is the possibility that lack of control over selection, as is available when random selection or manipulation of subjects to treatment groups can be applied, could account for observed differences with or without the effect of the hypothesized variable. As stated by Kerlinger (1973), the "truth" of the hypothesized relation between x and y cannot be asserted with the confidence of the experimental situation. While there is no adequate substitute for randomization, the identification of as many extraneous variables as can reasonably be considered and ruled out as plausible rival hypotheses to explain observed correlations on other grounds will strengthen assumptions about the hypothesized relationships. Conversely, significant correlations between any of the extraneous variables and the major variables of time in treatment, I-E scores, GSE scores, and/or ASEE scores limits interpretations based on
correlations between the major variables being studied.

The question of generalizability - external validity - also relies on identifying and analyzing as many descriptors of the subject population as can be reasonably expected to potentially interfere with the variable(s) being studied. As noted in the discussion of design, no causal relationships can or will be inferred from this study and no effort to interpret the results to populations who differ from the subjects identified in this study will be made.

MEASUREMENT AND INSTRUMENTATION

Of the variables to be measured, reliable instruments which have been developed and tested in prior research were identified and selected to measure locus of control and generalized self-efficacy.

Rotter's (1966) I-E Locus of Control Scale has been used repeatedly in studies affecting both general populations and alcoholic populations. In his original validation of the instrument, the scale demonstrated internal consistency ranging from 0.65 to 0.79 and test-retest reliability ranging from 0.49 to 0.83 depending on the time period and the populations tested.
Rotter's I-E scale contains twenty-nine (29) forced-choice questions. Six (6) of these are filler questions used to disguise the purpose of the test. Thus, as administered in this project, filler items are identified as Question 1, 7, 14, 19, 24, 27 and are not included in the scoring.

For the purpose of this study two scores will be utilized on Rotter's test. The test is scored in the internal direction and anyone scoring thirteen (13) or more is labeled "internal". Statistical analysis will include both locus of control raw scores and categories identified as internal or external.

Like Rotter's I-E scale, Tipton and Worthington's (1984) GSE scale was developed as a general instrument to measure self-efficacy over a broad range of circumstances. This Likert scale was developed from an instrument originally designed by Tipton, Harrison, and Mahoney (1980) to measure the concept of faith. One of the factors - faith in self - provided the basis of content. Additional items were added to the initial item pool and administered to one hundred and seventy five (175) volunteer undergraduate students. Those items yielding a discrimination index of 50 or greater were retained and resulted in a generalized self efficacy (GSE) scale used in their research.
Tipton and Worthington's GSE scale is scored numerically. As administered in this project, items identified as Question 33 and Question 34 are reverse-scored.

The alcohol-specific self efficacy (ASEE) scale was developed for use in this study. The items included in this Likert scale were selected to represent common situations in which the adolescent alcoholic may have used drugs/alcohol in the past and may encounter drugs/alcohol following discharge from treatment. Additional items concern their belief in their diagnosis of alcoholism, which is intended to serve as the motivation for abstinence, and their commitment to their daily AA program, which is considered basic to their sobriety. The content validity of the twelve item scale was established with input from treatment personnel at Shepherd Hill and Talbot Hall.

The test was administered to thirteen (13) in-patient adolescent alcoholics at a central Ohio residential treatment center where the population was expected to be similar to the subjects of this study. These thirteen residents consisted of three (3) females and ten (10) males with an age range from fourteen (14) years to seventeen (17) years. The average age was fifteen (15). The length of treatment ranged from one (1) day to thirty (30) days,
with an average of thirteen (13) days in treatment. The reliability coefficient of their responses was analyzed using the SPSS (Statistical Package for the Social Sciences, 1986) and demonstrated a high degree (alpha=.8482) of internal consistency for the instrument.

The alcohol-specific efficacy expectation scale is also numerically scored. The item labeled Question 41 is reverse-scored.

The test items totaled fifty-one (51) and were divided into two sections. Section 1 consists of the twenty-nine (29) forced-choice locus of control questions. Section 2 consists of both the GSE and the alcohol-specific Likert scales. A script was developed to provide background information to the subjects and was read verbatim in order to assure testing conditions are as similar as possible. A videotape was developed with separate instructions for each section of the test. The test items are read as they appear on the screen. Providing both the oral and visual representation of the test items was done to maximize the subject's understanding of the questions, despite potential variations of the reading level of the subjects. The test items appear in written form in Appendix D.

Each subject was provided with an answer sheet which asked for descriptive information. These descriptors are identified as extraneous variables and were selected for
their relevance to this study. Table 1 on page 61 identifies the extraneous variables and potential responses for each.

The demographic variables noted were selected in order to identify the subjects of this study in establishing the external validity to similar populations. These initially included age, sex, race, locale, position in family, and the patient's employment history.

Certain of the extraneous variables relate to aspects of their disease and/or treatment, and might present potential rival hypotheses in this study. These include drug of choice, duration of use, age when use was initiated, primary reason for seeking treatment, physical/emotional/social drug history for classification as "alcoholic" or "alcohol abuser", prior participation in treatment, and prior attendance at AA.

Since alcoholism is considered a family disease, additional extraneous variables were identified to describe the family setting. The custodial setting is included because many theorists subscribe to the concept that the disease of alcoholism is an inherited disease. If this is the case, it may be expected that the adolescent alcoholic would come from a home setting that has been disrupted due to the disease and may not reflect an intact family group. The parents work history may be of significance since,
### TABLE 1
EXTRANEOUS VARIABLES AND POTENTIAL RESPONSES

<table>
<thead>
<tr>
<th>Extraneous Variable</th>
<th>Potential Response(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex</td>
<td>Male, Female</td>
</tr>
<tr>
<td>Age</td>
<td>Years</td>
</tr>
<tr>
<td>Locale</td>
<td>Urban, Suburban, Rural</td>
</tr>
<tr>
<td>Position in Family</td>
<td>Only child, oldest, middle, Youngest</td>
</tr>
<tr>
<td>Parents</td>
<td>Both, Mother only, Father only, Neither</td>
</tr>
<tr>
<td>Employed</td>
<td>Never, Parttime, Fulltime</td>
</tr>
<tr>
<td>Patient Employed</td>
<td>Both Parents, Mother, Father, Mother + Stepfather, Father + Stepmother, Adoptive, Other</td>
</tr>
<tr>
<td>Home Setting</td>
<td>Alcohol, Marijuana, Cocaine, Amphetamines, Hallucinogens, Polydrugs</td>
</tr>
<tr>
<td>Drug of Choice</td>
<td></td>
</tr>
<tr>
<td>Age Started</td>
<td>Years</td>
</tr>
<tr>
<td>Using/Drinking</td>
<td></td>
</tr>
<tr>
<td>Duration of Use</td>
<td>Years</td>
</tr>
<tr>
<td>Prior Treatment</td>
<td>None, Out-Patient, Residentia</td>
</tr>
<tr>
<td>Prior AA</td>
<td>None, Occasional, Regular</td>
</tr>
<tr>
<td>Diagnostic Class</td>
<td>Alcoholic, Alcohol Abuser</td>
</tr>
<tr>
<td>Primary Reason</td>
<td>Pressure from family, school, law, peers, self-choice</td>
</tr>
<tr>
<td>for Seeking Treatment</td>
<td></td>
</tr>
</tbody>
</table>


again, the family may present evidence of dysfunction in their work setting due to alcoholism.

For those subjects who are involved in aftercare or recovery and from whom additional information was collected on interview, the posttreatment behaviors in areas of vocational, educational, legal, adaptive, and drinking/drug use were also scored and considered. In each of these areas the patient obtained a score of three (3) if the responses were positive and there were no drug-related incidents, a score of two (2) if the responses were mixed or neutral and there were no drug-related incidents, a score of one (1) if the response was negative but there were no drug related incidents, and a score of zero (0) if there were drug-related incidents. Thus the maximum potential score on the interview is fifteen (15).

TESTING CONDITIONS

For residential patients, the total participation consisted of providing the descriptive information, viewing the videotape and responding to the questions. In each administration of the test, a script was read verbatim. The videotaped questions assure that instructions will be the same. The entire process is limited to one (1) hour.
The tests were scheduled by each facility at times which would not interfere with treatment activities.

For recovery patients and for aftercare patients, the test was administered in the same manner, but in addition, individual interviews were scheduled with each subject. The answer sheets were numbered in order to match the test results with the interview responses and to assure anonymity for each subject. The interview seeks to determine the subject's posttreatment behaviors related to educational, occupational, legal, and social progress and the use of drugs and/or alcohol since discharge from the treatment facility. The interview responses are scored in each of the categories as noted above.

An identical interview was held with a family member or significant other for corroboration of the subject's responses. The person corroborating each subject's responses was asked to respond to each of the same interview questions but was not informed of the subject's responses. Each interview was limited to twenty (20) minutes. The interview record appears in Appendix F. In order to maximize continuity of responses and interpretations, the interviews were all conducted by the same interviewer and time constraints were observed.
DATA ANALYSIS

The analysis of data involves statistical testing of each of the null hypothesis as stated on pages 50 and 51. Each research question is addressed by establishing whether or not relationships exist. Each correlation will be assessed for its statistical significance based on established critical values for accepting or rejecting the hypothesis.

Correlations between the major independent variable of time in treatment and each of the major dependent variables - I-E score, GSE score, ASEE score - will be identified using the Pearson product-moment (Pearson r) correlation coefficient to quantify the degree of the relationship if linear relationships exist. In each case scatterplots will first be examined to establish that a generally linear relationship is present. According to Hopkins and Glass (1978), the meaning of r is unequivocal in a roughly linear relationship but with a curvilinear relationship, the value of r will underestimate the true relationship.

The scores on each of the dependent variables are also studied in regard to "in-patient" vs "posttreatment" status of each subject. The premise that patients score higher on these measures after having completed the treatment phase will be analyzed using the t test.
The locus of control score, in addition to the above examination of the raw score, will be studied using the classifications of "internal" or "external". For the purpose of examining the overall control orientation as originally identified by Rotter (1966), scores of thirteen (13) or more are identified as internal and those of twelve (12) or less are labeled external. Differences between groups identified as internal vs external and time in treatment will be examined using the t test.

For those patients who have completed the treatment phase of their program and are in recovery or aftercare, the interview will provide information concerning the posttreatment behaviors that have been identified to indicate progress since discharge in the areas of legal, educational, vocational, social adaptions, drinking and drug use. The interview responses will be scored (maximum score=15) and this score will be considered a dependent variable with the independent variable being the I-E Score, the GSE Score and the ASEE Score. Correlations will be determined using the Pearson r.

The impact, if any, of each extraneous variable on the major dependent variables (I-E, GSE, ASEE) will be statistically evaluated to determine if correlations exist.
If correlations between the subjects of this study and the major dependent variables are present, the internal validity of the study is threatened. That is, the presence of the extraneous variable, rather than the variable being considered, could account for the correlation. This threat is enhanced if correlations between the extraneous variable and the major independent variable is also present.

Tests of correlation considering the impact of the extraneous variables on each major variable used in this study are Pearson r for continuous (interval) data, such as the variable "age" in years and the variable "I-E score". When one variable is continuous and one is dichotomous, or dichotomized for the purpose of this study, the data may be examined by a point biserial correlation (calculated and interpreted as Pearson r) or a t test in order to report additional information (mean scores and standard deviations).

Differences between groups will be subjected to a t test when the variables are identified as two mutually exclusive categories such as "male/female" and F test when there are three or more categories, such as "drug of choice". Ordinal data, such as AA attendance identified as none/occasional/regular, will be treated as other multiple categorical data since they will be analyzed only as independent variables.
SUMMARY OF METHODS AND PROCEDURES

This study will examine correlations between locus of control, generalized self-efficacy, and alcohol-specific efficacy expectations and time in treatment among a residentially-treated adolescent alcoholic population from two central Ohio treatment facilities. Data will also be obtained from patients in the aftercare and/or recovery program to determine the posttreatment behaviors of these patients.

A number of extraneous variables have been identified as potentially impacting on this study and will be analyzed to determine if they have any significant bearing on findings. Those that are significantly related to the dependent variables threaten the internal validity of interpretations between the major dependent and independent variables being studied. In these cases, the relationship between the major independent variable must also be investigated. These extraneous variables include demographic variables, variables related to alcoholism and variables related to the family.

Each subject is asked to provide descriptive data and is tested via a videotaped questionnaire which includes Rotter's Internal-External locus of control items,
Worthington and Tipton's generalized self efficacy (GSE) scale, and an alcohol-specific efficacy expectation (ASEE) scale designed for use in this study. Patients who have been discharged from the treatment phase will be asked to participate in an interview, and responses will be corroborated by a significant other. Posttreatment behaviors will be scored in areas related to legal, educational, vocational, adaptive relationships and drug/alcohol use since discharge.

Stringent criteria have been applied to assure that confidentiality and patient's rights have been observed. The anonymity of each subject is assured and appropriate consent has been obtained.
CHAPTER IV

RESULTS

The purpose of this chapter is to report the results of the statistical testing of the hypotheses of this study. This chapter is organized into four (4) sections. The first section provides descriptive information concerning the subjects of this study. The next section examines the major dependent variables of I-E, GSE and ASEE scores and their relationship to the independent variable of time in treatment. The third section examines the relationship of the dependent variable of posttreatment behaviors as it relates to the independent variables of I-E, GSE and ASEE scores. The last section examines the relationships of the extraneous variables and the major variables considered in this study. A summary of the findings concludes the chapter.

DESCRIPTION OF SUBJECTS

This section is provided to acquaint the reader with the population involved in this study. Subjects originally

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included forty-six patients who are in various stages of treatment, recovery or aftercare at two central Ohio adolescent alcoholic treatment centers. Fifteen (15) subjects were "in-patients" and represented a participation rate of 71.4% of the twenty-one (21) potential subjects in treatment from July 20 through August 20, 1987. Thirty-one (31) subjects were posttreatment and represented a participation rate of 73.8% of the forty-two (42) potential posttreatment clients.

Four of the male posttreatment patients who agreed to participate were present for testing but their data was discarded due to their inattention throughout the viewing of the videotape and incomplete responses. One male in-patient's data was not included as the patient left the testing area prior to completing the questionnaire. Thus the original forty-six were reduced to forty-one usable responses.

Of the twenty seven (27) posttreatment patients who provided complete test data, fourteen (14) participated in the interview process.

As anticipated and reflective of the usual treatment population, males outnumbered females nearly two to one (27 male, 14 female). The participation of patients identified as "young adults" but included as a part of the
adolescent treatment program at one center included four subjects over the age of twenty (22, 22, 24, 26). The average age of the population tested was 17.4 and the modal age of 16 occurred in fifteen (15) subjects.

Only three black male patients represented a racial minority. Since all these patients were early in their treatment program no additional consideration of this variable was undertaken.

While a variety of locales were identified, the high number (20) of urban population was probably indicative of the proximity of the centers to metropolitan Columbus.

The in-patient population time in treatment ranged from two (2) days to thirty (30) days, with an average stay of 14.6 days. The time in treatment for the posttreatment population ranged from thirty-seven (37) days to three hundred and twenty-four (324). The average time in treatment for all subjects was 81.4 days.

As was anticipated, the majority of the subjects reside in other than a two-parent home. Fourteen (14) or 34% of the subjects live with both natural parents. One (1) subject was in an adoptive home, and three (3) live outside their homes. Fourteen (14) live with their mother or mother and stepfather while nine (9) live with their father or father and stepmother.
Only two (2) subjects indicated neither parent works. In thirty-nine per cent (39%) of the families, both parents are employed. While this may not be indicative of the usual family of the adolescent alcoholic due to disruptions caused by alcoholism among family members, it is reflective of the residential treatment population, probably due to the cost involved in residential treatment and the need for insurance to defray the cost.

Only one (1) participant reported being an only child. Sixteen (16) were the oldest sibling, eleven (11) were middle children, and thirteen (13) were the youngest sibling.

Twenty-five (25) or nearly sixty-one per cent (61%) of these adolescent subjects have been employed parttime. Only two indicated fulltime employment (ages seventeen and nineteen) and fourteen (14) indicated they have never been employed.

Table 2 on page 72 provides comparative information regarding the drug of choice and age. Polydrug abuse was most often identified (17 respondents), with alcohol (10 respondents) next. Marijuana (9 respondents) was identified more often as the drug of choice among the younger subjects.
TABLE 2
DRUG OF CHOICE, INCIDENCE AND AGE

<table>
<thead>
<tr>
<th>Drug of Choice</th>
<th>Number of Respondents</th>
<th>Average Age of Respondent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Polydrugs</td>
<td>17</td>
<td>17.5</td>
</tr>
<tr>
<td>Alcohol</td>
<td>10</td>
<td>18</td>
</tr>
<tr>
<td>Marijuana</td>
<td>9</td>
<td>16.4</td>
</tr>
<tr>
<td>Cocaine</td>
<td>3</td>
<td>20</td>
</tr>
<tr>
<td>Amphetamines</td>
<td>1</td>
<td>19</td>
</tr>
<tr>
<td>Hallucinogens</td>
<td>1</td>
<td>16</td>
</tr>
</tbody>
</table>

The age at which subjects began using/drinking ranged from three (3) years to fifteen (15) years, with an average age of 10.26 years. The modal response was age nine (9) with eight responses. The average duration of use was 7.1 years, with a range of two (2) to twenty-two (22) years. Modal response was six (6) years with six (6) responses.

Only four (4) subjects failed to exhibit physical, emotional, and sociological symptoms of the disease of alcoholism and are classified, for the purpose of this study, as alcohol abusers. These four (4) exhibited symptoms of psychological and sociological symptoms but no physical symptoms of the disease. They differed from the overall population in that their duration of use averaged only 3.25 years with a range of two (2) to five (5) years, while the average duration of use among all subjects was 7.1 years with a range of three (3) to twenty-two (22) years.
Eighteen (18) of the subjects had experienced prior treatment for alcoholism. Only two (2) subjects reported prior AA attendance on a regular basis, one of which had no prior treatment, while twelve (12), all of whom had prior treatment, reported occasional attendance at AA.

The primary reason for seeking treatment was pressure from the law or pressure from their family (14 respondents each). Two (2) identified pressure from school as the primary reason for seeking treatment. Eleven (11) answered that this was primarily their own decision.

Of the fourteen (14) subjects interviewed, responses were corroborated by their counselor as their significant other. In every case, the responses were substantiated. Two (2) of these subjects admitted to alcohol/drug use since discharge but are currently sober. While none reported any drug-related incidents with the law, four (4) identified minor legal encounters since discharge (speeding tickets, etc.). The posttreatment interviews revealed no difficulties at work or at school. Those reporting difficulties with peer or family relations generally identified improvement with non-drinking peers or relatives and worsened relationships with those who drink or use.
RELATIONSHIPS BETWEEN I-E, GSE, AND ASE Scores AND TIME IN TREATMENT

This section considers the relationships between the major independent variable of time in treatment and the dependent variables of scores attained on measurements of locus of control, generalized self-efficacy, and alcohol-specific efficacy expectations.

H0 1: There is no correlation between internal locus of control and longer time in treatment.

The independent variable of time in treatment is defined in two ways. First, the time in treatment is considered in days for each subject. Then the subjects are identified by two categories reflective of time in treatment: in-patients vs posttreatment patients. The dependent variable of I-E is also considered in two ways. First the I-E raw score is considered as the dependent variable. Next the Internal-External control orientation is identified, with "Internal" being those patients with scores of 13 or higher and "External" being those scoring 12 or less.
Considering time in treatment as days, and the I-E raw score, Table 3 (page 77) is a scatterplot which demonstrates a roughly linear relationship between these variables. Pearson r was used as the statistical test to determine the direction and extent of correlation. Results appear below in Table 4.

**TABLE 4**  
I-E SCORE AND TIME IN TREATMENT (days)

<table>
<thead>
<tr>
<th>Variables</th>
<th>n</th>
<th>r</th>
</tr>
</thead>
<tbody>
<tr>
<td>I-E Raw Score</td>
<td>41</td>
<td>.2924</td>
</tr>
<tr>
<td>Time in Treatment (days)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

p<.10, p>.05  
The r of .2924 indicates a low, positive correlation. Using these variables, the presumption that I-E scores would be higher with longer time in treatment was true.

The I-E raw score was also examined with in-patient vs posttreatment status. The t test was applied to this data to determine if the groups differed. Test results appear in Table 5.

**TABLE 5**  
I-E SCORE and PATIENT STATUS

<table>
<thead>
<tr>
<th>I-E Raw Score</th>
<th>n</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>In-Patients</td>
<td>14</td>
<td>11.2857</td>
<td>2.998</td>
</tr>
<tr>
<td>Posttreatment Patients</td>
<td>27</td>
<td>13.2963</td>
<td>2.839</td>
</tr>
</tbody>
</table>

\[ t = -2.11 \quad df = 39 \quad p < .05 \]
TABLE 3: PLOT OF TIME IN TREATMENT WITH IE

41 CASES PLOTTED.
The calculated $t$ exceeds the critical value for rejecting the null hypotheses at .05 level. The $t$ test indicates that there is a statistically significant difference between the I-E scores of in-patients (those with 35 or fewer days of treatment) and posttreatment patients. The significance at the .05 level indicates that the mean score attained by the posttreatment group was sufficiently higher than would be expected to occur accidentally 95 times out of 100.

The responses to the I-E scale were also considered using Rotter’s standard of "Internal" for those scoring 13 or over and "External" for those scoring 12 or less. Patients were categorized as in-patient if they were currently involved in residential treatment or posttreatment if they were in any phase of recovery or aftercare. Fourteen (14) of the twenty-seven (27) posttreatment subjects were identified as "internal" and seven (7) of the fourteen (14) residential subjects were "internal". A t test was used to determine if differences between control orientation of the treatment status groups exist. For statistical purposes, the internal classification was identified as "1" and the external classification was labeled group "2". Table 6 provides the results of the $t$ test.
Table 6
TREATMENT STATUS AND LOCUS OF CONTROL ORIENTATION

<table>
<thead>
<tr>
<th>Orientation</th>
<th>n</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>In-Patients</td>
<td>14</td>
<td>1.5714</td>
<td>0.514</td>
</tr>
<tr>
<td>Posttreatment</td>
<td>27</td>
<td>1.4815</td>
<td>0.509</td>
</tr>
</tbody>
</table>

\[ t = 0.53 \quad df = 39 \quad p > .05 \]

The t test indicates that these groups were essentially the same.

The internal-external classification was also compared to time in treatment in days. Point biserial correlation results are shown below in Table 7.

Table 7
INTERNAL-EXTERNAL LOCUS OF CONTROL AND DAYS IN TREATMENT

<table>
<thead>
<tr>
<th>Variables</th>
<th>n</th>
<th>r</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internal-External Locus of Control</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time in Treatment (days)</td>
<td>41</td>
<td>-.0799</td>
</tr>
</tbody>
</table>

\[ p > .05 \]

In this case a negligible, negative correlation between locus of control orientation and days in treatment was demonstrated. The negative correlation was due to assigning the lower score (1) to the internal classification.
Thus the first hypotheses, "There is no correlation between internal locus of control and longer time in treatment", is not accepted. Higher I-E raw scores were positively correlated with longer time in treatment, with the mean score of posttreatment patients averaging two points higher than in-patients. There was, however, only minimal and insignificant correlation between the overall control orientation and time in treatment.

HO 2: There is no correlation between higher GSE scores and longer time in treatment.

Again, time in treatment will be considered first in "days" and then in "in-patient" vs "posttreatment" categories.

Table 8 (page 81) provides a scatterplot which indicates a somewhat linear relationship between time in treatment identified in days and GSE scores.

Pearson r was used to consider the correlation between GSE score and time in treatment. Table 9 identifies the result of this statistic.
TABLE 8: PLOT OF TIME IN TREATMENT WITH GSE

41 CASES PLOTTED.
While the $r$ is too low to reject the null hypotheses ($p=0$) at the .05 level, this figure does represent a negative correlation at the .10 level.

The GSE scores were then studied in relation to in-patient vs posttreatment patient status to determine if the mean scores of these groups differ. The results of the $t$ test are shown below in Table 10.

<table>
<thead>
<tr>
<th>TABLE 10</th>
<th>GSE SCORES AND PATIENT STATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>GSE Scores</td>
<td>n</td>
</tr>
<tr>
<td>In-Patients</td>
<td>14</td>
</tr>
<tr>
<td>Posttreatment patients</td>
<td>27</td>
</tr>
</tbody>
</table>

$t=2.35$ \( df=39 \) \( p<.05 \), \( p<.02 \)

There is a significant difference, at the .02 level, between the scores attained by these groups.
Hypotheses 2 "There is no correlation between higher GSE scores and longer time in treatment" is rejected. There is a statistically significant, low negative correlation between GSE scores and time in treatment. The higher mean score for the in-patient group confirms a finding that opposes the original premise of this study. While it was presumed that the higher scores on this measurement would occur in the group with more time in treatment, the opposite result occurred. The higher scores on the GSE scale were attained by those patients with less time in treatment.

HO 3: There is no correlation between higher ASEE scores and longer time in treatment.

Again, a scatterplot depicting the relationship of the variables of ASEE and time in treatment was done. The results of this scatterplot are presented in Table 11 on page 84 and linearity was demonstrated.

Pearson r was calculated between the variables of ASEE scores and time in treatment. Table 12 shows the result of this statistic.
TABLE 11: PLOT OF TIME IN TREATMENT WITH ASEE
Table 12
ASEE SCORE AND TIME IN TREATMENT

<table>
<thead>
<tr>
<th>Variables</th>
<th>n</th>
<th>r</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASEE Score</td>
<td>41</td>
<td>.2612</td>
</tr>
<tr>
<td>Time in Treatment</td>
<td>41</td>
<td>.2612</td>
</tr>
</tbody>
</table>

The expectation that higher ASEE scores would occur with longer time in treatment was demonstrated, but at a low level.

Time in treatment was divided into "in-patient" and "posttreatment" categories and a t test was done. The results appear in Table 13.

Table 13
ASEE SCORES AND PATIENT STATUS

<table>
<thead>
<tr>
<th>ASEE Score</th>
<th>n</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>In-Patients</td>
<td>14</td>
<td>48.8571</td>
<td>9.734</td>
</tr>
<tr>
<td>Posttreatment Patients</td>
<td>27</td>
<td>52.1111</td>
<td>12.804</td>
</tr>
</tbody>
</table>

\[ t = -0.83 \quad df = 39 \quad p > .05 \]

As indicated above, the posttreatment group mean score was higher than the mean score demonstrated by the in-patient group, but the scores were not sufficiently different that one could state with confidence that these groups differed on this measurement.
Hypotheses 3 "There is no correlation between higher ASEE scores and longer time in treatment" is accepted on the basis of statistical significance, although, as anticipated, there was a positive correlation between higher ASEE scores and longer time in treatment.

Conclusions regarding I-E, GSE and ASEE scores and time in treatment:

This population demonstrated the anticipated findings of positive correlations between higher I-E scores and longer time in treatment and between higher ASEE scores and longer time in treatment. In both tests, the correlations were of modest magnitudes. However, these subjects demonstrated a negative correlation between higher GSE scores and time in treatment. This finding was unexpected and inconsistent with the original premise of this research.

The strongest correlation observed ($r = .2924$) was between I-E raw scores and time in treatment measured in days.
I-E, GSE, AND ASEE SCORES AND POSTTREATMENT INTERVIEW SCORES

Since participation in the interview process was a voluntary extension of the testing procedure, only fourteen (14) of the twenty-seven (27) subjects agreed to participate. The interview responses of these subjects were corroborated by the individual's counselor. In every case, the responses of the counselor validated each subject's responses. Two of the subjects readily admitted drug use since discharge from treatment - one of which was described as a slip and one had sustained use for approximately three months. In both cases, these individuals have maintained sobriety for the past three months.

Because of the low incidence of participants, the responses were first studied to see if the scores on the I-E, GSE, and ASEE were similar to the posttreatment patients who did not participate in the interview process. The interviewed versus the non-interviewed patients were also examined to determine if their time in treatment differed.

The I-E raw scores were compared and the result of the t test appear in Table 14.
As noted in Table 14, the interviewed group attained higher mean scores than those who declined to be interviewed but the differences were not great enough to state with statistical confidence that the groups differed on this measurement.

The GSE scores were also compared and the results of the t test appear below in Table 15.

The interviewed group attained higher mean scores than those who declined to be interviewed but, again, the differences were not sufficient to state with statistical confidence that the groups differed on this measurement.
Differences in mean scores of these groups on scores attained on the Alcohol-Specific Efficacy Expectation scale were also considered. The results of this t test appear in Table 16.

**TABLE 16**

<table>
<thead>
<tr>
<th>ASEE Scores of Interviewed vs Non-Interviewed Subjects</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASEE Scores</td>
</tr>
<tr>
<td>----------------</td>
</tr>
<tr>
<td>Interviewed</td>
</tr>
<tr>
<td>Non-Interviewed</td>
</tr>
</tbody>
</table>

\[ t = 5.22 \quad df = 25 \quad p < .001 \]

On the Alcohol-Specific Efficacy Expectation scale, the mean scores achieved by the interviewed patients were significantly greater (at the .001 level) than those who declined to be interviewed.

Time in treatment was also studied to determine if there were differences between the interviewed and non-interviewed groups. Results appear in Table 17.

**TABLE 17**

<table>
<thead>
<tr>
<th>Time in Treatment of Interviewed vs Non-Interviewed Subject</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time in Treatment</td>
</tr>
<tr>
<td>----------------------</td>
</tr>
<tr>
<td>Interviewed</td>
</tr>
<tr>
<td>Non-Interviewed</td>
</tr>
</tbody>
</table>

\[ t = 2.01 \quad df = 25 \quad p > .05 \]
The amount of time in treatment of those patients interviewed was greater than those who declined to be interviewed but the differences were not sufficiently greater to state with statistical confidence that that the groups differed on this measure.

This examination of scores and time in treatment indicate that those interviewed differed significantly in scores only on the alcohol-specific efficacy expectation scale. There were no significant differences in time in treatment, GSE scores, or I-E scores. Because the sample size of the interviewed group is small and because those interviewed differed from those who declined to be interviewed on the ASEE scale, those interviewed must be considered an accidental sample and, as Hopkins and Glass (1978) warn, one must be wary of drawing conclusions based on accidental samplings.

Keeping in mind this warning, the research question asks, "Do higher scores on any of the measurements correlate with improved posttreatment behaviors?" This section examines the interviewed group responses in regard to I-E, GSE, and ASEE scores to address the remaining hypotheses.

HO 4: There is no correlation between higher I-E scores and positive posttreatment drug/alcohol behaviors.
Posttreatment drug/alcohol behaviors were determined by interview scores as described on page 61. These interview scores were identified as the dependent variable in relation to the independent variable of I-E scores on the scatterplot labeled Table 18 on page 92.

With the linear relationship identified, Pearson $r$ was calculated. The correlation between I-E scores and Interview scores is identified in Table 19 below, identifying correlation at the .10 level. The $r$ of .4843 indicates a marked positive correlation between I-E scores and Interview scores.

<table>
<thead>
<tr>
<th>TABLE 19</th>
</tr>
</thead>
<tbody>
<tr>
<td>INTERVIEW SCORES AND I-E SCORES</td>
</tr>
<tr>
<td>----------------------------------</td>
</tr>
<tr>
<td>Variables</td>
</tr>
<tr>
<td>----------------------------------</td>
</tr>
<tr>
<td>Interview Scores</td>
</tr>
<tr>
<td>I-E Scores</td>
</tr>
<tr>
<td>----------------------------------</td>
</tr>
<tr>
<td>$p&lt;.10$</td>
</tr>
</tbody>
</table>

$H_0$: There is no correlation between higher GSE scores and positive posttreatment drug/alcohol behaviors.

The linear relationship between GSE scores and Interview scores was determined in the scatterplot (Table 20) on page 93. As noted in Table 21, the correlation between these scores resulted in the negligible calculated $r$ of .1464.
TABLE 18: PLOT OF I-E SCORES AND INTERVIEW SCORES
TABLE 21
INTERVIEW SCORES AND GSE SCORES

<table>
<thead>
<tr>
<th>Variables</th>
<th>n</th>
<th>r</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interview Scores</td>
<td>14</td>
<td>.1454</td>
</tr>
<tr>
<td>GSE Scores</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*p > .10, p > .05

H0 6: There is no correlation between higher alcohol-specific efficacy expectation scores and positive posttreatment behaviors.

The ASEE scores were examined in relation to the Interview Scores in the scatterplot labeled Table 22 on page 95 and with the linear relationship thus established, the correlation was analyzed using the Pearson r. As noted below, there was a low, positive correlation of .2091.

TABLE 23
ASEE SCORES AND INTERVIEW SCORES

<table>
<thead>
<tr>
<th>Variables</th>
<th>n</th>
<th>r</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASEE Scores</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interview Scores</td>
<td>14</td>
<td>.2091</td>
</tr>
</tbody>
</table>

*p > .10, p > .05
TABLE 22: PLOT OF ASEE SCORES AND INTERVIEW SCORES
Conclusions regarding I-E, GSE and ASEE scores and posttreatment behaviors:

None of these scores reflected statistically significant correlations with improved posttreatment behaviors. However, all correlations were in the expected, positive direction.

Since those interviewed did not differ from one another but differed significantly with those declining to be interviewed on the ASEE score, and since all interviewed are currently sober, it is possible that the potential significance of the ASEE scores was greater than the statistics indicate.

RELATIONSHIPS BETWEEN EXTRANEOUS VARIABLES AND MAJOR VARIABLES

This type of study must examine those variables that do not relate directly to the variable(s) being addressed in the research study but may impact upon the subjects being studied and conclusions drawn from the data. These extraneous variables could present plausible, rival hypotheses and could jeopardize the internal validity of the study.
In this study the extraneous variables were based on three characteristics: demographics, family considerations, and alcohol/drug history. Demographics were studied to determine the impact of age, sex, race, and locale on the major variables being addressed in this study. Race was originally considered but was eliminated from statistical study since there were only three (3) minority participants and they were all early in their treatment program. Family considerations were identified due to the nature of the disease of alcoholism and the potential for dysfunctional family situations. These variables included the custodial setting, parent's employment, and the patient's position in the family. The alcohol/drug history included drug of choice, age started using, duration of use, prior treatment, prior AA affiliation, primary reason for seeking treatment and diagnostic classification based on the presence or absence of physical, emotional and social symptoms.

These extraneous variables were related to the major variables considered in this study. The results of the statistical analysis of the relationships are identified in Table 24 on page 98.
## TABLE 24
RELATIONSHIPS BETWEEN EXTRANEOUS VARIABLES AND MAJOR VARIABLES

<table>
<thead>
<tr>
<th>Extraneous Variable</th>
<th>I-E Score</th>
<th>GSE Score</th>
<th>ASEE Score</th>
<th>Time in Treatment</th>
<th>Statistical Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex</td>
<td>-1.73</td>
<td>0.17</td>
<td>-1.56</td>
<td>0.03</td>
<td>t</td>
</tr>
<tr>
<td>Age</td>
<td>.39*</td>
<td>-.15</td>
<td>.28*</td>
<td>.44*</td>
<td>r</td>
</tr>
<tr>
<td>Locale</td>
<td>1.96</td>
<td>.48</td>
<td>4.96*</td>
<td>.60</td>
<td>F</td>
</tr>
<tr>
<td>Position in Family</td>
<td>1.57</td>
<td>1.68</td>
<td>1.34</td>
<td>2.16</td>
<td>F</td>
</tr>
<tr>
<td>Parents Employed</td>
<td>1.25</td>
<td>.48</td>
<td>2.07</td>
<td>1.91</td>
<td>F</td>
</tr>
<tr>
<td>Patient Employed</td>
<td>2.29*</td>
<td>-0.90</td>
<td>-0.18</td>
<td>1.41</td>
<td>t</td>
</tr>
<tr>
<td>Home Setting</td>
<td>1.44</td>
<td>1.98</td>
<td>1.12</td>
<td>2.68*</td>
<td>F</td>
</tr>
<tr>
<td>Drug of Choice</td>
<td>.28</td>
<td>2.34</td>
<td>1.85</td>
<td>2.47*</td>
<td>F</td>
</tr>
<tr>
<td>Age Started Using</td>
<td>-.07</td>
<td>.14</td>
<td>.02</td>
<td>-.16</td>
<td>r</td>
</tr>
<tr>
<td>Duration of Use</td>
<td>.30*</td>
<td>-.19</td>
<td>.17</td>
<td>.40*</td>
<td>r</td>
</tr>
<tr>
<td>Prior Treatment</td>
<td>1.83</td>
<td>1.31</td>
<td>.42</td>
<td>1.02</td>
<td>F</td>
</tr>
<tr>
<td>Prior AA</td>
<td>.23</td>
<td>.88</td>
<td>.72</td>
<td>1.26</td>
<td>F</td>
</tr>
<tr>
<td>Diagnostic Class</td>
<td>-0.10</td>
<td>-1.97</td>
<td>0.44</td>
<td>1.44</td>
<td>t</td>
</tr>
<tr>
<td>Reason Seeking</td>
<td>2.75</td>
<td>1.33</td>
<td>4.99*</td>
<td>1.31</td>
<td>F</td>
</tr>
</tbody>
</table>

*Denotes rejection of the null hypotheses at the .05 level
There were significant relationships between age and I-E score and between ASEE score and time in treatment. The older patients included in this study were those in the young adult program and all were posttreatment patients. They were all interviewed and demonstrated current sobriety. While these explanations may account for the differences, the positive correlations between age, scores, and time in treatment threatens both the internal and external validity of the study and additional study of the impact of age on scores is indicated in future studies.

Locale was demonstrated to have a relationship with ASEE scores. The rural group mean of 61.0000 was significantly higher than the urban (48.5000) or the suburban (47.6667) means. This demonstrated difference in scores threatens the internal validity of this study and additional study regarding this variable is indicated.

Prior employment of the patient had a statistically significant impact on I-E scores between those individuals who worked parttime (25 subjects) and those who were never employed (14 subjects). The mean score of those employed (13.4800) was significantly higher than those who never worked (11.0714). The fact that work is positively correlated with higher internal control orientation threatens the internal validity of this study and relationships between these variables should be considered in any future studies.
Duration of use was also statistically significant in relation to I-E scores and time in treatment. A positive correlation between duration of use and internal scores may be reflective of the similar correlation between age and I-E scores, since the longterm users in this study tended to be the older subjects. Duration of use remains a threat to both the internal and external validity of this study.

The reason for seeking treatment demonstrated significant differences in ASEE scores between those whose primary reason was the law (Mean=45.6429) as opposed to those who made a self-choice (Mean=60.4545). This finding would be consistent with the premise of this study, since accepting the diagnosis is identified as the primary motivating factor in self-efficacy.

Both the home setting and drug of choice had significant relationships with time in treatment. Since neither had significance with the dependent variables, however, they are not a threat to the internal validity of the study.

Summary of Major Findings

This study examined the relationships of I-E scores, GSE scores and ASEE relative to time in treatment, on the premise that those with longer time in treatment would have
higher scores and those with higher scores would have improved posttreatment behaviors.

On the I-E scores, there was a statistically significant relationship between higher raw scores and posttreatment status. However, there was no significant relationship between overall control orientation and treatment status.

With the GSE scores there was statistically significant negative correlation between treatment status and scores and a strong negative correlation with overall time in treatment. These findings are inconsistent with the original premise of this study.

With ASEE scores, the presumption that higher scores would occur with longer time in treatment was demonstrated, but not at a significant level. Therefore, it cannot be stated with statistical significance that these differences appeared other than by accident.

The posttreatment interview scores were examined in relation to the I-E, GSE, ASEE scores to determine if those with higher posttreatment behaviors would score higher on these measures. While all correlations were in a positive direction, none proved to be statistically significant. The subjects who declined to be interviewed differed significantly from those interviewed on the ASEE score.
Those extraneous variables which were identified as having significant correlation with major dependent variables, but no relationship with the independent variable of time in treatment, were locale, patient employment, and reason for seeking treatment and are threats to the internal validity of this study. Age and duration of use had significant correlations with both the dependent and independent variables and are threats to both the internal and external validity of this study. Home setting and drug of choice had significance only with the independent variable and are not threats to the internal validity.
CHAPTER V

SUMMARY, CONCLUSIONS, IMPLICATIONS, and RECOMMENDATIONS

This chapter presents a brief summary of the study and conclusions, implications and recommendations for further study.

SUMMARY OF THE STUDY

Background

The principles of Alcoholics Anonymous provide the foundation of residential treatment programs for adolescent alcoholics. When these principles are implemented in a residential treatment program through motivation inspired by a belief in their ability to halt the progress of their disease, they hold remarkable similarities to the psychological constructs of locus of control and self-efficacy. Since these constructs are not identified, per se, as a method of treatment, the attitudes and beliefs of patients as related to locus of control and efficacy expectations are not examined at any stage of the treatment.
or posttreatment program.

Locus of control has been studied among alcoholic populations with mixed results. However, self-efficacy has received little attention by researchers in the field of alcohol studies, even though it has been demonstrated to be useful in predicting success in relation to other health issues that require changes in behavior to effect a desire outcome, such as weight control and smoking cessation. The two constructs, born of the same social learning theory, have seldom been studied in relation to one another.

If strong correlations between measurements of these constructs could be demonstrated in relation to progress in treatment and positive treatment outcomes, these measurement could be of value in evaluating readiness for discharge.

Purpose

The purpose of this correlational study was to compare the independent variable of time in treatment with the dependent variables of locus of control, generalized self-efficacy, and alcohol specific self-efficacy. The statistical analysis compared the separate scores attained on Rotter's Internal-External Locus of Control (I-E) scale, Worthington and Tipton's Generalized Self Efficacy (GSE) Scale and an Alcohol Specific Efficacy Expectation (ASEE)
Scale designed for use in this study.

Posttreatment patients were interviewed to attain a score demonstrating posttreatment behaviors in areas of vocational, educational, legal, adaptive behaviors and alcohol/drug use since discharge. This posttreatment interview score was treated as a dependent variable with the independent variables being the scores on the locus of control and general and specific efficacy scales.

Since the data was obtained after the fact and without benefit of pretreatment scores, it was necessary to consider other variables that could present plausible, rival explanations of results obtained in the study. In this case these extraneous variables related to demographics, family considerations, and drug/alcohol history. These variables, and the results of statistics used to consider their impact, were reported on page 102.

Procedure

The criteria for participation was to have undergone, or be currently participating, in a residential treatment center specializing in adolescent treatment for alcoholism. The central Ohio area has four (4) such centers and all were contacted. One center initially declined to participate; one agreed to participate and later withdrew due to changed personnel who did not view research as a mission of their facility. Two centers agreed to
participate and made initial contact with patients and parents seeking individual participation. Confidentiality and volunteer participation were stressed throughout the study.

Both institutions experienced a decline in their census and the decline was maintained throughout the period encompassed in this study. The number of participants was low (41 subjects) despite a participation rate of 71.4% (14 subjects) of available in-patients and 73.8% (27 subjects) of the available posttreatment clients.

Posttreatment clients were encouraged to participate in the interview process but, since the entire procedure was voluntary, patients were free to discontinue their participation after testing. Only fourteen (14) of the twenty-seven (27) agreed to participate in the interview process. Each posttreatment interview subject was aware that their responses would be corroborated by a significant other. In this study, the significant other was the counselor who was knowledgeable about the patient's progress.

A videotape was produced that included the twenty-nine (29) forced-choice items on Rotter's I-E test, the ten (10) Likert-scale items on Worthington and Tipton's generalized self-efficacy (GSE) scale and the twelve Likert-scale items on the alcohol-specific efficacy expectation (ASEE) scale.
developed for use in this study. Each item was read as it appeared on the screen. The test was intended for group administration and the data collection for this study was done in groups of two (2) to eight (8). The answer sheet included a questionnaire that was used to collect additional data needed for study of the extraneous variables. Instructions were read verbatim from the script which is included in Appendix G.

Interviews were then conducted with those posttreatment patients who were willing to participate in this portion of the study. The interview record appears in Appendix F. All interview responses were corroborated by a significant other who were interviewed separately and were asked to respond to the same information without being aware of the subject's responses.

CONCLUSIONS

The questions considered in this study were to determine if patients with longer time in treatment score higher on measures of internal-external locus of control, generalized self-efficacy, and alcohol-specific efficacy expectations, and do those posttreatment patients who have more positive posttreatment behaviors in the areas of vocational, educational, legal, family and peer relationships, and alcohol/drug use have higher scores on
these measures.

In this type of correlational research, the data can be collected and statistically tested to determine if significant correlations are present. Knowledge of the subject matter and review of the literature can provide the basis for the research questions but only relationships can be studied. No causative effect(s) are suggested by this design.

This study produced only two statistically significant findings related to the major variables of this study:

(1) As anticipated, there was a significant, positive relationship between higher (scored in the internal direction) raw scores on the I-E items and patient status when patients were divided into in-patient and posttreatment groups.

(2) In opposition to the anticipated finding, there was a significant, negative correlation between GSE scores and posttreatment status.

Except for the GSE scores, all correlations were in the expected direction but no other findings were statistically significant. While this finding was unexpected, in retrospect, it is not surprising since the experiences that occur throughout treatment are not designed to build generalized self-efficacy but are designed to enhance the patient's more specific efficacy regarding alcohol/drugs.
Except for the GSE scores, all correlations were in the expected direction but no other findings were statistically significant.

Interview responses supported earlier alcohol studies in which recovering alcoholics responded honestly and openly to interview questions in studies such as this when they are aware that their answers will be corroborated by a significant other.

Among the extraneous variables, age and duration of use correlated significantly with both dependent and independent variables, presenting a significant threat to both the internal and external validity of this study.

Locale, prior employment of the patient, and reason for seeking treatment had statistically significant findings when considered with dependent variables, but were not related to the independent variable of time in treatment.

All posttreatment interviews demonstrated positive correlations, but none were statistically significant. The interviewed subjects differed significantly from the posttreatment patients who declined to be interviewed on every measure which included ASEE scores.

IMPLICATIONS AND RECOMMENDATIONS FOR FURTHER STUDY

1. Since the principles of locus of control and self-efficacy are identified as basic components of
residential treatment, more research is needed to examine these constructs in relation to treatment populations. It would be helpful to test each patient on admission to determine their control orientation and efficacy at that time and follow their progress with periodic testing to determine if changes occur.

2. The significant, negative correlation between the GSE scores and treatment status may suggest a generally low self-efficacy among this population or it may be that this particular measure, which was used previously with healthy college students, may not be appropriate for the population of adolescent alcoholics. This test should be compared with other measures of generalized self-efficacy with an adolescent alcoholic population.

3. The statistically significant finding of higher I-E scores and posttreatment status lends credence to the premise of this study and encourages continuing research in exploring relationships between locus of control and alcoholism.

4. The impact of age and duration of use on ASEE scores in the posttreatment population should be studied further.
Only with study of larger populations can the true significance of this correlation be understood. Were those who declined to be interviewed different in their drug/alcohol behaviors than those who were interviewed? Could their posttreatment behavior have been an explanation for the differences, rather than age or duration of use?

5. Future researchers should consider examining the extraneous variables of locale, patient employment, and reason for seeking treatment since there variables had significant correlations with this particular population.

6. The treatment emphasis on acceptance of a "higher power" may make it difficult to measure control and efficacy. Some statements which refer to "luck" or "fate" may be misleading in the context of alcohol treatment.

7. The homogeneity and small number of interviewed patients may mask the true significance among the posttreatment variable of ASEE in this study. Future studies need to have a more diverse group than the few successfully recovering patients identified here. Since all correlations were in the expected direction, further study is indicated.
8. The age at which these patients started using/drinking (average age=10.26 years) provides support to health educators who advocate introduction of drug education programs at an earlier age.
Appendix A
Permission to use GSE Test
April 3, 1985

Dear Colleague,

Thank you for your interest in our article on the measurement of generalized self-efficacy and in the scale. I am enclosing two versions of our scale. The shorter one is comprised of the items we found to be the best discriminators. The total score for the scale is simply the sum of the item scores (1 to 7). Some items are obviously reverse scored. They are items 1, 2, 9, 10, 11, 12, 22, 25, and 26 on the longer version and items 4 and 5 on the shorter version. These scales are, of course, still experimental and there are no published data on them other than the JPA article.

If you are not already aware of it, you may be interested to know that Sherer and Maddux developed a generalized self-efficacy scale at the same time we developed ours. As it turns out the essence of their items are similar to ours (although I have not correlated the two scales.) One of their studies is cited in the list of references in our article, the other is: "The self-efficacy scale: Construction and validation," Psychological Reports, (1966), 51, 663-671.

I hope you find our scale helpful. Whether or not you use our scale, I would very much appreciate summaries of the results of your related research.

Sincerely,

Robert M. Tipton, Ph.D.
Professor of Psychology

Enclosures

Good luck with your project —
I would greatly appreciate a copy of your findings.
Appendix B
Permission from Shepherd Hill and Maryhaven, Inc
April 8, 1987

Ms. Wilma Tompkins
12143 Twincreek Drive
Pickerington, OH 43147

Dear Ms. Tompkins:

I am writing at the request of the Shepherd Hill Research Committee to inform you that your research proposal "Proposal for Study to Include Shepherd Hill Adolescent Patients" has been reviewed by this committee and accepted contingent upon (1) approval by the OSU Human Subjects Committee and (2) a personal meeting between you and the committee so that you can respond to questions raised by members.

Please notify us when you have received your go-ahead from the OSU Human Subjects Committee. At that time we will schedule you to meet with our Research Committee which normally meets on the first Tuesday of each month at 3:30 p.m.

Committee members and Shepherd Hill Staff look forward to working with you on this interesting project.

Sincerely,

Linda Dove, for the Shepherd Hill Research Committee

cc: Dr. Robert Barnes, Chairman
Shepherd Hill Research Committee
Following review of her research proposal by personnel at Maryhaven, Inc., Maryhaven agrees to provide Wilma Tompkins the opportunity to test patients in the adolescent alcohol treatment unit and the aftercare program, and to interview aftercare patients, provided appropriate consent forms are signed by the patient and, if under legal age, the parent. Patient participation is voluntary.

[Signatures]

[End of Document]
Appendix C
Human Subjects Committee Approval
With regard to the employment of human subjects in the proposed research protocol:

87B0118 THE RELATIONSHIPS OF GENERALIZED SELF-EFFICACY, LOCUS OF CONTROL AND ALCOHOL-SPECIFIC EFFICACY EXPECTATIONS OF RESIDENTIALLY-TREATED ADOLESCENT ALCOHOLICS, Robert Kaplan, Wilma Tompkins, Health, Physical Education and Recreation

THE BEHAVIORAL AND SOCIAL SCIENCES REVIEW COMMITTEE HAS TAKEN THE FOLLOWING ACTION:

____ APPROVED   ____ DISAPPROVED

X APPROVED WITH CONDITIONS*   ____ WAIVER OF WRITTEN CONSENT GRANTED

* Conditions stated by the Committee have been met by the Investigator and, therefore, the protocol is APPROVED.

It is the responsibility of the principal investigator to retain a copy of each signed consent form for at least four (4) years beyond the termination of the subject's participation in the proposed activity. Should the principal investigator leave the University, signed consent forms are to be transferred to the Human Subjects Review Committee for the required retention period. This application has been approved for the period of one year. You are reminded that you must promptly report any problems to the Review Committee, and that no procedural changes may be made without prior review and approval. You are also reminded that the identity of the research participants must be kept confidential.

Date: July 10, 1987  

Signed:  

(Chairperson)
Appendix D
Questionnaire
Questionnaire

This questionnaire is divided into two (2) sections.

INSTRUCTIONS FOR SECTION 1: The first section contains twenty-nine (29) questions. Each question contains two (2) statements which are labeled (A) and (B). While you may agree somewhat with both statements or you may not agree totally with either statement, you are asked to respond to each item by selecting the one with which you MOST agree. The questions are not meant to trick you in any way. There are no right or wrong answers. PLEASE do not skip any question.

1. (A) Children get into trouble because their parents punish them too much.
   OR
   (B) The trouble with most children nowadays is that their parents are too easy with them.

2. (A) Many of the unhappy things in people’s lives are partly due to bad luck.
   OR
   (B) People’s misfortunes result from mistakes they make.

3. (A) One of the major reasons why we have wars is because people don’t take enough interest in politics.
   OR
   (B) There will always be wars, no matter how hard people try to prevent them.

4. (A) In the long run people get the respect they deserve in this world.
   OR
   (B) Unfortunately, an individual’s worth often passes unrecognized no matter how hard he tries.

5. (A) The idea that teachers are unfair to students is nonsense.
   OR
   (B) Most students don’t realize the extent to which their grades are influenced by accidental happenings.

6. (A) Without the right breaks one cannot be an effective leader.
   OR
   (B) Capable people who fail to become leaders have not taken advantage of their opportunities.

7. (A) No matter how hard you try some people just don’t like you.
   OR
   (B) People who can’t get others to like them don’t understand
8. (A) Heredity plays the major role in determining one's personality.
   OR
   (B) It is one's experiences in life which determine what they're like.

9. (A) I have often found that what's going to happen will happen.
   OR
   (B) Trusting in fate has never turned out as well for me as making a decision to take a definite course of action.

10. (A) In the case of the well-prepared student there is rarely if ever such a thing as an unfair test.
    OR
    (B) Many times exam questions are so unrelated to course work that studying is really useless.

11. (A) Becoming a success is a matter of hard work; luck has little or nothing to do with it.
    OR
    (B) Getting a good job depends mainly on being in the right place at the right time.

12. (A) The average citizen can have an influence in government decisions.
    OR
    (B) This world is run by the few people in power, and there is not much the little guy can do about it.

13. (A) When I make plans, I am almost certain I can make them work.
    OR
    (B) It is not always wise to plan too far ahead because many things turn out to be a matter of good or bad fortune anyhow.

14. (A) There are certain people who are just no good.
    OR
    (B) There is some good in everybody.

15. (A) In my case getting what I want has little or nothing to do with luck.
    OR
    (B) Many times we might just as well decide what to do by flipping a coin.

16. (A) Who gets to be the boss often depends on who was lucky enough to be in the right place first.
    OR
    (B) Getting people to do the right thing depends upon ability; luck has little or nothing to do with it.

17. (A) As far as world affairs are concerned, most of us are the
victims of forces we can neither understand nor control.

OR

(B) By taking an active part in political and social affairs the people can control world events.

18. (A) Most people don't realize the extent to which their lives are controlled by accidental happenings.

OR

(B) There really is no such thing as "luck".

19. (A) One should always be willing to admit mistakes.

OR

(B) It is usually best to cover up one's mistakes.

20. (A) It is hard to know whether or not a person really likes you.

OR

(B) How many friends you have depends on how nice a person you are.

21. (A) In the long run the bad things that happen to us are balanced by the good ones.

OR

(B) Most misfortunes are the result of lack of ability, ignorance, laziness, or all three.

22. (A) With enough effort we can wipe out political corruption.

OR

(B) It is difficult for people to have much control over the things politicians do in office.

23. (A) Sometimes I can't understand how teachers arrive at the grades they give.

OR

(B) There is a direct connection between how hard I study and the grades I get.

24. (A) A good leader expects people to decide for themselves what they should do.

OR

(B) A good leader makes it clear to everybody what their jobs are.

25. (A) Many times I feel that I have little influence over the things that happen to me.

OR

(B) It is impossible for me to believe that chance or luck plays an important role in my life.

26. (A) People are lonely because they don't try to be friendly.

OR

(B) There's not such use in trying too hard to please people; if they like you, they like you.
27. (A) There is too much emphasis on athletics in high school.  
OR  
(B) Team sports are an excellent way to build character.  

28. (A) What happens to me is my own doing.  
OR  
(B) Sometimes I feel that I don’t have enough control over the direction my life is taking.  

29. (A) Most of the time I can’t understand why politicians behave the way they do.  
OR  
(B) In the long run the people are responsible for bad government on a national scale as well as on a local level.  

INSTRUCTIONS FOR SECTION II: This section contains statements concerning attitudes and feelings about yourself. Some of these statements are concerned with alcohol/drugs while some are of a general nature. Please indicate the extent to which you agree or disagree with each of these statements by marking an X on the line at the point you feel best reflects your agreement or disagreement. There are no trick questions and there are no right or wrong answers. Please respond to each statement and do not leave any item blank.  

30. I am a very determined person.  

<table>
<thead>
<tr>
<th>1</th>
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<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
</table>

31. Once I set my mind to a task almost nothing can stop me.  

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<tr>
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<th>7</th>
</tr>
</thead>
</table>

32. I believe it is shameful to give up something I start.  

<table>
<thead>
<tr>
<th>1</th>
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33. Sometimes things just don’t seem worth the effort.  

<table>
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<th>1</th>
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<th>6</th>
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</tr>
</thead>
</table>
34. I would rather not try something that I'm not good at.

1 2 3 4 5 6 7

35. I can succeed in most any endeavor to which I set my mind.

1 2 3 4 5 6 7

36. Nothing is impossible if I really put my mind to it.

1 2 3 4 5 6 7

37. When I have difficulty getting what I want, I just try harder.

1 2 3 4 5 6 7

38. I have more willpower than most people.

1 2 3 4 5 6 7

39. I would endure physical discomfort to complete a task because I just don't like to give up.

1 2 3 4 5 6 7

40. I believe I am an alcoholic/addict.

1 2 3 4 5 6 7

41. I believe it is possible for me to drink/use in moderation.

1 2 3 4 5 6 7
42. I am sure that I will be able to maintain complete abstinence after I am discharged from treatment.

1 2 3 4 5 6 7

43. I am convinced that I can avoid the use of drugs/alcohol when I am at work or at school.

1 2 3 4 5 6 7

44. I am convinced that I can avoid the use of drugs/alcohol when I am with friends who are using/drinking.

1 2 3 4 5 6 7

45. I am convinced that I can avoid the use of drugs/alcohol when I am alone.

1 2 3 4 5 6 7

46. I am certain that I will be able to work my AA program on a daily basis.

1 2 3 4 5 6 7

47. I believe it will be relatively easy to avoid using drugs/alcohol when I am at school or at work.

1 2 3 4 5 6 7

48. I believe it will be relatively easy to avoid using alcohol/drugs when I am with friends who are using/drinking.

1 2 3 4 5 6 7

49. I believe it will be relatively easy to avoid using alcohol/drugs when I am alone.

1 2 3 4 5 6 7

50. I believe it will be relatively easy to work my daily AA program.

1 2 3 4 5 6 7
51. I believe it will be relatively easy to remain completely abstinent.

Thank you for completing this test. I appreciate your assistance.
Appendix F
Interview Record
INTERVIEW RECORD

Test #: 
Date of Discharge  
Sex:  
Age:  

1. EMPLOYMENT STATUS:  
(a) Have you been employed since discharge? YES NO 
If yes, occupation:  
(b) Are you currently employed? YES NO  
(c) Have you been fired from any job since discharge? YES NO  
If yes, reason:  

2. SCHOOL STATUS:  
(a) Grade level: 9 10 11 12 graduated dropped out  
(b) Major area of study:  
College Prep Vocational(Specific area)  
Occupational Work Experience General Education  
(c) If in school, complete the following:  
Days absent since discharge:  
Reasons:  
Academic Progress Prior to Treatment  
Failing Average Good  
Academic Progress Since Treatment  
Failing Average Good  

3. LEGAL STATUS:  
(a) Have you been arrested since discharge? YES NO 
If yes, charges:  
(b) Are you currently on probation? YES NO  
If yes, conditions and status:  

4. ALCOHOL STATUS:  
(a) Since discharge, which best describes relationship with alcohol?  
Complete abstinence 
Abstinence with "slip" 
Reduced consumption 
Same use as prior to treatment 
Increased use  
(b) Since discharge, which best describes relationship with other drugs?  
Complete abstinence 
Abstinence with "slip" 
Reduced consumption 
Same use as prior to treatment 
Increased use  
If any use, name drug(s):  

5. ADAPTIVE BEHAVIORS:  
(a) How would you describe the following relationships since discharge?  
Relationships at work some-improved-worse  
Relationships at school some-improved-worse  
Relationships with peers some-improved-worse  
Relationships with family some-improved-worse  

INTERVIEWER COMMENTS/OBSERVATIONS:
Appendix G
Script
(This script will be read verbatim at the beginning of each test.)

Good (morning, afternoon, evening)!

My name is Wilma Tompkins and I am a graduate student at The Ohio State University. I am here today to administer a test which is part of a research project being done under the direction of Dr. Robert Kaplan of Ohio State.

We appreciate your willingness to be a part of this study. The purpose of the study is to examine attitudes and feelings of adolescent patients in alcohol treatment centers such as (Talbot Hall/Shepherd Hill). There are no right or wrong answers to these questions but we do need for you to give honest answers based on YOUR feelings. We also need for you to answer every question. Your answers will be held in confidence and no one except myself will see your individual answers. That includes personnel at this treatment center, your family, counselor, etc. Your answers, along with the answers of other patients in other treatment centers will be compiled into statistics that will add to the growing body of research information about adolescent alcoholism. You are a vital part of this study and your participation is important; however your participation is voluntary and you are free to choose not to participate now or anytime during the test. If you do not wish to participate please indicate so at this
You are now being provided with an answer sheet. The questions have been videotaped and will be read as they appear on the screen. The test is divided into two sections. The first section contains 29 questions. You will be given two statements and are asked to choose the statement you MOST agree with. In some cases you may agree with both or you may not agree with either one, but for every question you are asked to circle A or B as the one you most agree with. For example, if Statement A said "Someday I expect to win the lottery" and Statement B said "I believe I will be successful if I work hard", you would circle the one you most believe to be true. Do not be concerned about how your answer might appear to someone else but circle the answer that YOU believe.

In the second section you will be given one statement. You are asked to mark an X at the point on the line that you think best describes the extent to which you agree or disagree with the statement. If you totally disagree with the statement, mark an X on the far left of the line under the number 1. If you totally agree with the statement, mark an X on the far right under the number 7. If you partially agree or partially disagree with the statement, mark an X at the point on the line which best describes what you believe. For example, if the statement said "I have a great deal of common sense", mark an X at the point on the line that shows how much you agree or disagree with the statement.
It will not be possible to go back to repeat questions, so mark your answers quickly and go on to the next.

Are there any questions before we begin?

(At the conclusion of the test for recovery and aftercare clients only, the following statement will be read.)

You have agreed, in addition to responding to the written test, to participate in an interview which will consist of questions about your progress since discharge from treatment. Interviews will begin now. If you can stay to complete your interview at this time, it would be appreciated. If it is not possible to stay this evening, interviews will be held again next Thursday both immediately before and after your meeting. The interview is a vital part of the study and we appreciate your participation. However, if you choose to discontinue your participation in the study at this time, you are free to do so. Please note your test # in the upper right hand corner of the front page of your answer sheet. You will need to inform your interviewer of your test # at the time of the interview. If you elect to wait until next week for your interview, please write the number down and bring it with you next week.
Appendix H
Consent Form
THE OHIO STATE UNIVERSITY  Protocol No. 87B0118

CONSENT FOR PARTICIPATION IN
SOCIAL AND BEHAVIORAL RESEARCH

I consent to participating in (or my child's participation in) research entitled:

The relationships of Generalized Self-Efficacy, Locus of Control and
Alcohol-specific Efficacy Expectations of Residentially-treated Adolescent Alcohol

Robert Kaplan or his/her authorized representative has
(Principal Investigator)
explained the purpose of the study, the procedures to be followed, and the expected duration of my (my child's) participation. Possible benefits of the study have been described as have alternative procedures, if such procedures are applicable and available.

I acknowledge that I have had the opportunity to obtain additional information regarding the study and that any questions I have raised have been answered to my full satisfaction. Further, I understand that I am (my child is) free to withdraw consent at any time and to discontinue participation in the study without prejudice to me (my child). The information obtained from me (my child) will remain confidential.

Finally, I acknowledge that I have read and fully understand the consent form. I sign it freely and voluntarily. A copy has been given to me.

Date: ____________________  Signed: ____________________

(Participant)

Signed: ____________________
(Principal Investigator or his/her Authorized Representative)

Signed: ____________________
(Person Authorized to Consent for Participant - If Required)
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