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AMERICAN CULTURAL VALUES TO RECOVERY

The University of Arizona

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ALCOHOLISM TREATMENT AND THE
RELATIONSHIP OF NATIVE AMERICAN CULTURAL
VALUES TO RECOVERY

by
Philip John Flores

A Dissertation Submitted to the Faculty of the
DEPARTMENT OF PSYCHOLOGY
In Partial Fulfillment of the Requirements
For the Degree of
DOCTOR OF PHILOSOPHY
In the Graduate College
THE UNIVERSITY OF ARIZONA

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THE UNIVERSITY OF ARIZONA
GRADUATE COLLEGE

As members of the Final Examination Committee, we certify that we have read
the dissertation prepared by Philip John Flores

entitled ALCOHOLISM TREATMENT AND THE RELATIONSHIP OF
NATIVE AMERICAN CULTURAL VALUES TO RECOVERY

and recommend that it be accepted as fulfilling the dissertation requirement
for the Degree of Doctor of Philosophy.

<u>Peter Madson</u>	<u>1/17/83</u> Date
<u>Ralph Kerton</u>	<u>1/13/83</u> Date
<u>Richard H. H. H.</u>	<u>1/13/83</u> Date
<u>George Hohmann</u>	<u>1/13/83</u> Date
<u>Maurice W. Kahn</u>	<u>1/13/83</u> Date

Final approval and acceptance of this dissertation is contingent upon the
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College.

I hereby certify that I have read this dissertation prepared under my
direction and recommend that it be accepted as fulfilling the dissertation
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<u>Maurice W. Kahn</u>	<u>1/13/83</u>
Dissertation Director	Date

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Philip J. Flores

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ABSTRACT

Native American groups have been reported to suffer disproportionately higher rates of alcohol related disorders than does the dominant Anglo population. This problematic situation is compounded by the fact that Native American alcoholics have a far lower rate of alcoholism recovery than do most other groups receiving treatment. Research recommendations underscores the necessity of matching the philosophy and methods of a treatment program to fit the specific cultural values of Native American alcoholics.

To explore this hypothesis, this research project attempted to provide empirical and descriptive data which would help determine if specific value differences between Anglos and Native Americans could be identified. If once identified, the relationships of these values to alcoholism and recovery would be explored.

Subjects were voluntary admissions into an inpatient treatment program in a southwestern community mental health center over a nine month period (1981-82). Forty-three Native Americans (34 males, 9 females) completed a series of assessments which included the Rokeach Value Survey. Native American alcoholics (9 males) completing treatment two months later were given the same series of assessments as were two comparison groups of 20 non-alcoholic Native Americans (10 males, 10 females) and 20 alcoholic Anglos (16 males, 4 females). The Anglo staff at the treatment center was also given the Rokeach Value Survey.

This study provides evidence which supports the poorer prognostic rates of alcoholism recovery for Native Americans. Evidence is also presented which indicates that Native American's values are measurable and significantly different from Anglo values. This study failed to provide support for claims which suggest cultural influences overrides individual pathology and personality differences. Rather, this study suggests alcoholism overrides cultural influences and differences. Alcoholic Native Americans proved to be more similar to other alcoholics - even if these alcoholics were Anglos - than they were to their non-alcoholic cultural peers when value differences on the Rokeach Value Survey were excluded from comparisons.

CHAPTER 1

INTRODUCTION

Those cultures which have poorly defined norms of appropriate drinking usually have abnormally high alcoholism rates (Cahalan et al. 1970, Madsen 1974). Consequently, it is well recognized that cultural attitudes play an important part in the way individuals drink (Bacon 1974, Hanson 1973). However, until recently there has been a paucity of research recognizing that these same cultural factors play an equally important part in determining the effectiveness of alcoholism treatment (Pattison 1973, Beigel et al. 1974).

Nowhere is this problem more evident than with Native Americans. Evidence from Indian Alcohol Programs patterned after clinical, medical (antabuse), Alcoholics Anonymous, and non-ethnic or acultural models indicate a low level of efficiency in treatment (Ferguson 1968, 1970; Levy, J.E., and Kunitz, S.J. 1973, Savard 1963). Culture specific alcohol programs, developed in response to community perceptions of problem drinking in terms of culturally meaningful standards and expectations, constitute a viable alternative to these less effective approaches (Everett et al. 1973).

Pattison (1973) suggests that a comprehensive alcoholism treatment program requires a careful development of treatment facilities and methods which match the perceptions, styles, and needs of sub-populations of alcoholics. He further states that if this match is

not made the treatment program will be relatively unsuccessful, and if a good match is made the probability of success is increased.

Shore and Von Fumette (1972) state that the Pattison report underscores the necessity of matching the philosophy and methods of a treatment facility with the specific needs of an Indian community. While there is substantial opinion supporting the need for the Indianization of Indian Alcohol Program (Price, J.A. 1975, Shore and Von Fumette 1972, Kline and Roberts 1973), little effort has been made to accurately describe this process or to articulate treatment strategies which have been developed exclusively for Native American alcoholics.

The matching of Indian philosophy and culture to the treatment approach as Shore and Von Fumette (1972) and others recommend requires more than just hiring Indians to run Indian treatment programs. It requires identifying those values important to treatment and then adapting the treatment program to fit the characteristics of the target population. Therefore, two important questions have to be answered if the effectiveness of alcoholism treatment for Native Americans is to be enhanced.

1. What are the Native American cultural and spiritual values that must be addressed if Indian alcohol treatment is to be successful?

2. How can treatment strategies be adapted to fit the cultural and spiritual values of Native Americans?

As Everett et al. (1973) suggests, solutions, not validity, elegance, or aesthetics are called for when attempting to discover culturally

meaningful descriptions and explanations of problem drinking that might be useful in diagnostic, therapeutic, or prevention programs (Everett et al. 1973, Waddell 1975, Dozier 1966, MacAndrew and Edgerton 1969). "Efficacy," (Everett et al. (1973) report, "is a dependent variable in this process." It is directly influenced by the degree of identification in both cultural and personal terms, which members of an Indian community have already or are able to develop with the research process in support of their conceptualizations of problem drinking. By definition, the more meaningful the problem solving process, the more effective it is in contributing solutions to problem drinking as perceived by the local community (Everett et al. 1973; p. 3). Extending this argument, it would appear that treatment strategies which are successful with Anglo populations will only succeed with Indian populations to the degree that they parallel meaningful Native American values.

1. What are the Cultural Values to be Addressed If Indian Alcohol Treatment Or Success Is To Be Enhanced?

Addictive behavior and difficulties in interpersonal relations (Szasz 1966) can be assumed to leave traces in an individual's value system. If therapy is to be successful, it may surely be manifested as changes or rearrangements of value priorities. Rokeach (1975), presents convincing evidences that values do exist, can be easily assessed, are tantamount in influencing a person's attitudes and behavior, and can be easily changed by effective psychotherapy.

This would suggest that it is not enough to get Native American alcoholics in touch with their traditional tribal heritage

and the values of an earlier time. Although those days are gone forever, the values cannot be totally ignored either. A more practical solution would be the adaptation of a treatment approach reflecting the best of both worlds.

This review of the literature reveals there is a scarcity of empirical data available regarding Indian values and the relation of these values to alcoholism treatment. Evidence presented by Beutler (1979, 1978, 1981) and Bergin (1980) supports Frank's (1962, 1978) thesis that the persuasive components of psychotherapy are crucial to successful treatment. It would follow that the identification of values related to this persuasive process is important if treatment effectiveness is to be enhanced. Frank's thesis takes on added ramifications when considering the abundance of evidence presented here which recommends that alcoholism treatment should not be applied without considering the values of the person being treated. Likewise, Beutler (1979) recommends that research needs to be designed to help identify and investigate the role which these specific values have in the treatment process.

In reviewing psychotherapy in non-western cultures, Torrey (1972) and Frank (1973) both emphasize that a shared world view between therapist and client is an important added factor in effective intervention. Cross-culture therapy have accordingly involved sensitizing therapists to different culture values (Brein and David 1971; Higginbotham 1976, 1977; Pedersen et al. 1976). This is especially important

in light of recent evidence presented by Beutler (1979) which suggests that patient's values, attitudes and beliefs change in psychotherapy, and these changes are associated with the degree to which therapy is successful. Likewise successful patients are more likely to take on the specific values and attitudes of their own therapist rather than simply a more mature or adaptive set of beliefs. However this acquisition takes place only if the therapists' range of values falls within the patients latitude of acceptance. Research findings such as these underscore the importance of the therapist understanding the patients' value system as well as being cognizant of their own personal values if therapeutic gain is to be maximized.

This issue of values in therapy takes on added importance when considering Lovinger's (1979) opinion that the failure to take cognizance of any significant aspects of a patient's life is very likely to significantly restrict what therapy has to offer. Matsuni (1979) also provide evidence which shows that culturally sensitive therapy is a necessary component if misconceptions of the client's values are to be avoided. Getsinger (1978) gives an explicit example of such a mistake by showing that in one group time is a culturally-linked construct which may conflict with an Indian's strong orientation to the present.

Much work needs to be done to empirically test these procedures. Evidence must be gathered to show if and how these and other potential treatment strategies can provide viable alternatives and modifications of Native American alcoholism.

Culturally Linked Definitions of Alcoholism

Definitions of alcoholism pose unique theoretical problems for Native Americans (Kunitz and Levy 1973), because these definitions grew out of experiences with non-Indians. Extending them to Indians whose standards for appropriate behavior may be quite different may be extending the definition of alcoholism too far. "Such a definition when applied to Indians leads to the labeling of behavior as adaptive or maladaptive from the perspective of the dominant society and not the particular tribe in question (Kunitz and Levy 1973, p. 246)." Recognizing these limitations, it is important to determine their relationship because evaluations of treatment effectiveness should be linked as closely as possible to different alcoholism theories and cultural values.

Excluding the biological predetermination theory which is based on racial differences in metabolism (e.g., Fenna et al. 1971), three primary theories have emerged which "explain" Indian alcohol use: 1) lack of social control for Native Americans, both external and internal (Field 1962, Whittaker 1962, Waddell 1975); 2) assuagement theories which suggest that alcohol is used to assuage discomfort of one type or another including subsistence anxiety (Horton 1943), anxiety over suppressed aggression (Swanson 1971), acculturation anxiety (Berremar 1956), and sense of adequacy with a need for personal power (Waddell 1975); and 3) positive functions of alcohol use such as gains in spiritual power (Jilek-Aall 1971), facilitation of

interpersonal relations (Hamer 1965), and promotion of in-group solidarity (Littmar 1970).

Lack of Social Control for Native Americans

Waddell (1973, 1975) has written extensively about the use of alcohol among Papagos as a means of attaining individual power and social credit. While drinking within a family situation, social events, and native ceremonial contexts pose some problems for some Pimans, these situations do not contribute as extensively to alcoholism as does isolative convivial drinking where small groups of peers pool their monies to ingeniously acquire and consume various forms of alcohol. Waddell (1973, 1975) feels that they drink in this context not because they just seek the bottle, rather, they seek each other out to share the one identity which they have.

Meaningful relationships are confirmed by drinking, individuals define their self worth by drinking; they communicate the desire for trust in each other by sharing drinks; and they even seem to enjoy being happily drunk with friends . . . If Papago drinking is to be considered problematic, Papago cultural definitions about the misuse of drink and improper behavior needs to be seriously considered by rehabilitation programs. The usual model of rehabilitation programs is a combination of punitive action (incarceration), wise counsel and advice from knowledgeable institutional practitioners, some moral instruction rising out of Christian (frequently protestant) ethics, some physiological treatment and a dose of A.A. philosophy, most usually in English. Sometimes these various cognitive and physiological administrations miraculously work together to provide a Papago individual with a new orientation and life style. But the significant thing is that seldom, if ever, are meaningful Papago cognitive considerations taken into account in remedial programs probably because nobody really knows what they are or else they have judged them as contradictory to workable programs of action. (Waddell 1975, p. 14-15).

Assuagement Theories and Acculturation

Stress produced by acculturation has long been held to be an important factor among Native American drinkers (Horton 1943, Berremen 1956, and Graves 1967). As Longclaws et al. (1980) suggests, the relationship between the level of acculturation and stress experienced is complex. Low levels of acculturation due to little contact with Anglo society should keep acculturative stress at a minimum. However, those at the other extreme who have been completely acculturated are probably not experiencing acculturative stress either. Those in the middle, who identify with the dominant culture but do not have access to the goals of the dominant culture, should be experiencing the most stress (Graves 1967). Therefore it is not enough to assume that all Indian paraprofessionals would be equally effective in dealing with all alcoholic Indians. Considerations must be made in accordance with the principles laid down by Pattison (1973) to insure that the treatment philosophy is thoroughly understood by both the Indian receiving the treatment and the Indian administering it. This requires a shared understanding and teaching of the values inherent to that particular tribe.

Positive Functions of Alcohol Use:
Gains in Spiritual Power, etc.

Bradford (1975) feels that loss of dignity is one of the primary reasons for the high rate of alcoholism among Indians. "Until we get our dignity back it is going to be very hard to sober up Indians (p. 15)." "The key to reducing alcoholism" according to McConnell

(1975), "is as old as the Indian Tribes. It is a revival of the spiritual life which from unrecorded time until the arrival of the whiteman formed the basis of Indian daily existence. A spiritual life which alcohol and Christianity nearly obliterated" (p. 16).

Bradford (1975) sees the high rates of alcoholism as due to the influence of Christian people who have made Indian people ashamed of their spirituality. "We have been Christianized, we have been de-cultured, and we have been made wards of the government." Some Indians may find it hard and/or distasteful to adapt traditional spiritual values. In most Indian communities Christian sects have been active for many years, and in some cases traditional ways have been suppressed almost to the point of extinction (Bradford 1975). This suggests that treatment strategies have to address two separate issues: 1) The instillation of culture pride and Indian spirituality through deliberate re-education procedures and; 2) the recognition that less traditional Indians may react better to a more conventional psychologically oriented treatment approach.

Confusion between scientific and cultural criteria has been a recurring problem in alcoholism. Frank (1962) has tersely noted the insistence of researchers to examine value laden behavior by scientific criteria in isolation, rather than immediately involving cultural criteria. This criticism is shared by Wallace (1978) who, for instance, sees the ideological base of A.A. as providing a crucial component in the sober alcoholic's recovery process. In fact, he contends that alcoholic needs A.A.'s somewhat biased view of reality.

"The alcoholic can ill afford the dispassionate, disinterested, and indeed, almost casual play upon words and ideas of the inquiring academic intellectual."

Wallace feels strongly that the alcoholic recognizes intuitively the need for a stable and enduring belief system if he is to stay sober. Wallace has more difficulty in comprehending and discerning the equally biased view or reality of the academician. His contention is that:

Hidden neatly beneath the rhetoric of science and scientism are the actualities of dreadfully inadequate personality measuring instruments, inappropriate sampling procedures, inadequate measuring operations, improper choice of variables for study, grossly violated statistical assumptions, data gathering, recording and analyzing errors, and so on and so forth. It is any wonder then that the most outstanding quality of most academic research is now you see it, now you don't? Are we really amazed to find sober alcoholics clinging to their belief systems like drowning poets to their metaphors in a sea of confusion?

Wallace's criticism is directed at science's failure to examine its own value system. Whitehead (1953) has pointed out that science and religion share common properties - they are both based on a belief system and attempt to explain the nature of man in relation to the cosmos. Frank (1972), for instance, has facetiously drawn a comparison of the Catholic religion and the Religion of Mental Health.

The Mental Health movement resembles organized religions in some respects. Science is its theology and is followed by rituals like this conference in which various members of the priesthood read papers to their colleagues, who try to maintain an air of respectful attention. As a devotee of this religion, I would like to point out that, like all

religions, it leads its adherents to ignore phenomena that are inconsistent with its cosmology. One of these phenomena is the ability of alcohol to produce something similar to the mystical experience (pp. 242-243).

William James (1902) agreed when he wrote, "The sway of alcohol over mankind is unquestionable due to its power to stimulate the mystical faculties of human nature" (p. 379).

Jules Masserman has suggested that all humans have to cope with three basic fears, the fear of bodily disintegration, the fear of social disintegration - that is, the fear that no one cares, that one is isolated - and the fear that life is meaningless (1971). Extending this, Frank (1972) suggests the alcoholic's despair may arise largely from his reliance on alcohol temporarily to relieve the last two of these fears.

The line of thought suggests that the successful treatment of the alcoholic requires, above all, that therapy convince him that someone genuinely cares about him, and that life has meaning in order to replace the illusionary similar experiences that alcohol gives a great cost. It is worth remembering that the effective cure for an alcoholic is a religious conversion. Inducing this mystical experience is more difficult. Alcoholics Anonymous seems to be hinting at this goal in its reference to a Higher Power. As Frank (1972) suggests, "... because we adhere to the world view of science, we may too readily dismiss the potentials of forms of treatment based on acceptance of the healing power of the mystical experiences" (p. 244).

Granted that James (1902), Whitehead (1953), Wallace (1978) and Franks (1972) are correct, it would appear that the relationship between alcohol and spirituality is an important factor for both Anglos and Native Americans.

One crucial question therefore is not whether a quasi-religious treatment approach like A.A. works; but rather why does it work? This answer has long escaped scientists for a number of reasons. Part of the answer for psychology's lack of understanding may be the result A.A.'s, transcendental and non-positivistic foundations; variables which do not lend themselves easily to scientific investigation. As Kuhn (1962) suggests, a scientific community can often become a closed system with communication limited to only those with selected membership within the community. Under these conditions it is understandable that psychologists have generally been reluctant to leave their accepted scientific paradigm to investigate variables which do not fit nicely and neatly into its accepted and proven methodology.

Relation of Cultural Stress & Alcoholism

One of the most accepted and documented theories of Indian alcoholism presented in this paper is the one of alcohol assuagement and acculturation. Brod (1975) for example feels that considerations of cultural stresses (deculturation and acculturation) and cultural intoxication-permitting factors are essential in any dynamic formulation of Native Americans' problem drinking. In this theory, stress induced drinking is related to acculturation and the demands of Indians

to integrate into and identify with the dominant culture. The inability of Indians to satisfyingly meet these demands results in frustration and stress associated with deculturation (Hamer 1965; Lubart 1969). Likewise a number of researchers have implicated the stress of passive-dependence as an important determinant of Indian drinking (Curley 1967; Ablon 1971; Lechnyr 1970). Brod (1975) sums up this position when he states:

The importance of deculturation/acculturation is in the systematic shift of value and tradition that develop which lead to a state of transition. The value of achievement, autonomy and responsibility are basic to every culture, although the specific manifestation of these values vary considerably, having developed over centuries in congruence with particular communal styles. Historical techniques and solutions that have "worked" in providing access to the actualization of those values are tradition. In transition, transition necessarily deprecates faster than the value system they represent, because it is the increasing cost (of any sort) of maintaining a tradition, that an individual, a choice to disregard a costly tradition leaves guilt or self-deprecatory feelings. Alcohol intoxication at once displaces those residual uncomfortable feelings, and contributes to the furtherance of transition by rendering tradition cumbersome and difficult in comparison to its immediate gratification (p. 1390).

Given that culture is generally considered the single most significant factor influencing patterns of alcohol use and abuse, it is important to determine if all Indians have been equally stripped of their cultural identity. French and Hornbuckle (1980) suggests that this is not the case. According to their interpretation, Native Americans should be placed on a cultural continuum which can be subdivided into three social classifications.

- 1) Traditional Native Americans account for approximately 25 percent of the nations 800,000 Indians. Their psychological and phenomenological world view adhere most closely to the Harmony ethos, a world view which encompasses traditional Indian values. Within this perspective, a traditionalist can (and usually does) engage in about drinking at prescribed intervals and is still considered responsible by their groups own standards.
- 2) Middle-Class Native Americans constitute the smallest proportion of Native Americans in the United States--approximately less than 15 percent. They are most favored by white society and most likely to hold important positions within the white dominated Native American regulatory structure. In general they subscribe to the protestant ethic and those who have drinking problems manifest symptoms similar to their white counterparts.
- 3) Marginal Native Americans form the remaining 60 percent and they are torn between their traditional cultural heritage and the dictates of the larger Anglo society. Within this category the reservation marginals have better access to knowledge of their traditional heritage. Many marginals suffer from the dilemma of looking "Native American" but not knowing the exact nature of their traditional cultural heritage. For these, Pan-Indianism may offer a partial solution by providing a general Indian

ethnic image which can be shared by some five hundred separate Native American tribes in the United States (French and Hornbuckle 1977).

To be viable, a therapeutic model must address each of these sub-populations in culturally relevant terms. It is not enough to assume that because someone is an Indian he shares the values of all Indians. Some empirical evidence has been presented for this position.

Ferguson (1976) used an approach which expanded upon the work of Honigmann and Honigmann (1970) and assessed the degree of stake which alcoholic Indians had in either the dominant or traditional Native American society. These researchers found a significant relationship between "stake in society" and success in treatment. Those Indians who had no stake in either society or those with just a stake in the dominant Anglo society had the poorest recovery rate (23%). In contrast those Indians who had a stake in their traditional Indian society alone had a higher success rate (72%). Most surprising those who had a stake in both societies did best of all (74%). Rather than suffering from conflict of the values and loyalties, these Indians became what McFee (1968) had called the "150 percent man."

This finding has many important implications since it contradicts the common assumption that one must lose the old culture to the extent that one gains new one--to make room so to speak. The Indians with a stake in both societies had satisfactions and competencies from both (Leland 1977).

However one serious problem with the "Stake Theory" is that it does not provide a completely objective means for determining who has a stake in either the dominant Anglo society or the traditional Indian society. It also does not account for who develops what kind of stake, or how they do it. Research needs to be conducted to determine if there is some relationship between the variables presented here. Does acculturation lead to lower self-esteem and is it correct to conclude that those Indians who have a stake in the values of either the traditional Indian society or the dominant Anglo Society have higher self-esteem and less acculturation? Consequently does any of this relate to alcoholism and alcoholism recovery?

2. How Can These Strategies Be Meaningfully Adapted to Fit the Culture and Spiritual Values of Native American?

It appears safe to assume that most Indians do not come to treatment because they drink too much but rather because they are suffering from what Frank (1978) describes as demoralization due to their drinking. Therefore, at least part of treatment has to focus on restoring their morals, and there are two interrelated functions: 1) controlling their demoralization, and 2) overcoming symptoms.

Study confirms the hypothesis that part of the healing power of all forms of psychotherapy lies in their ability to mobilize the patients hope for relief (Frank 1978). Consequently, part of the success may be attributed to the therapist's ability to mobilize the patient's expectation of help. The therapist's power is based on the patient's perception of him as a source of help and it tends to be

greater than the patient's distress. Frank (1962) believes that in the absence of trust, confidence, or faith little can be accomplished.

Frank (1967) has also identified two sources which are necessary to involve the patient's expectancy for help.

1) The personal magnetism of the healer which is often strengthened by his own faith in what he does; 2) Another service of the patient's faith is the ideology of the healer or sect, which offers the patient a rational, however absurd, for making sense of his illness and the treatment procedure. It places the healer in the position of transmitter or controller of impressive healing forces. In this he is analogous to the shaman. . .The healer may pose as a scientist who has discovered new and potent scientific principles of healing, thus surrounding himself with the aura that anything labeled scientific inspires in members of modern Western societies . . . This works best with those patients who have favorable expectations from medicine and in general, accept and respond to symbols of healing (p. 70).

If Frank is correct, then it is important to determine the ideology and symbols of healing which will best evoke the healing expectancies of Native Americans. Since it is the purpose of this research project to formulate hypothesis identifying possible healing symbols and alternatives, only a few will be put forth here and identified. These are suggestions based not on empirical evidence, but on clinical experience. Research needs to be conducted to determine the degree of their actual effectiveness. Hopefully, this will lead to further discovery of more therapeutic strategies and treatment alternatives.

Ideology

The one belief which provides the common thread which unites all Indians spiritually is the harmony of nature. In traditional Indian cosmologies each species of game was ruled by a spiritual keeper, often personified. The hunters held their necessary quarry in conscious respect; overhunting was regulated by visions of the shaman. To kill too many game was to risk the ire of powers. This harmony was overturned by a curious interaction of Old World diseases and the economic materialism of the European fur trade (i.e., reduction of the endless herds of bison, the practice of forest burning etc.). Consequently, the times were out of balance, the great compact with the keepers of the game was broken. What had alienated the Indian from the keeper of the game was that they had lost faith in the traditional avenues of a spiritual redress. Nature and the animals had actually broken faith first. Now there was a state of war, accelerated by the goods that flowed from the killing by way of the traders. It had been no one sided ethical relationship the Indians had with their land, no condescending self-restraint. Rather, nature for virtually all North American Indians was sensate, animate and capable of aggressive behavior toward mankind. What had been involved was nothing less than mutual respect, a reciprocal recognition of needs. That harmony had been broken (Martin 1979).

Working with traditional Indian values in therapy would probably be most successful if this issue of harmony were directly incorporated within the treatment strategy. One avenue by which this

might be accomplished is through adaptation of the A.A. philosophy. Concepts like "surrender", "one day at a time", and in-group-cohesiveness are important variables which fit within cultural mores. As Frank (1978) suggest, those who respond well to symbols of healing are more likely to benefit from treatments. The Piman Maze could provide such a symbol. Waddell (1973) describes the mythical sacred implications which Elder Brother and the Maze have for Papago and Pima Indians. With revisions modeled after Steinberg's (1971) description of racially reworked A.A. format, important treatment concepts could be incorporated into more meaningful cultural interpretations.

Purpose of This Study

The purpose of this study was to investigate the relationship of alcoholism, alcoholism treatment, and recovery to the value orientation of Native Americans. Specifically this study attempted to determine if alcoholic Native American's values differ significantly from those of alcoholic Anglos and non-alcoholic Native Americans. Further, this study attempted to identify the relationship of an alcoholic's value orientation with that of self-esteem, Indian traditionalism, control orientation, and alcoholism recovery.

This study was a descriptive approach in which the importance of value differences and value changes in relation to alcoholism recovery was investigated. This study did not attempt to control for

all extraneous variables which influenced successful treatment outcome. Instead, this study examined the data retrospectively to determine if there were any identifiable characteristics as indicated by the standardized assessments which revealed differences in those Native Americans who complete treatment successfully and those who didn't.

This proposed study is the only study to date that provides empirical evidence regarding the importance of cultural values in alcoholism treatment. While there is substantial opinion in the literature concerning this subject, no study has yet tested this relationship empirically. The following hypotheses will be explored.

Exploratory Hypotheses

Exploratory Hypothesis One

Those Native American alcoholics who have value orientation most like those of the treatment team will be more likely to successfully complete the alcoholism treatment program.

Exploratory Hypothesis Two

Those Native American alcoholics who are less traditional (as measured by the adapted Richardson traditionalism scale) will be more likely to successfully complete the treatment program.

Exploratory Hypothesis Three

Those Native American alcoholics who successfully complete the treatment program will show a greater increase in self-esteem than those Native American alcoholics who do not complete the treatment program.

Exploratory Hypothesis Four

Native American alcoholics who are less traditional will have a significantly different value orientation than those Native American alcoholics who are more traditional.

CHAPTER 2

METHOD

Subjects

Three groups of subjects were selected: an alcoholic Native American group consisting of 43 subjects (see Appendix H and I for tribal affiliation), an alcoholic Anglo comparison group consisting of 20 subjects, and a non-alcoholic Native American comparison group consisting of 20 subjects (see Appendix J for tribal affiliation). The two alcoholic groups (both the Native Americans and the Anglos) were selected from the inpatient alcoholism treatment program at the Behavioral Health Agency of Central Arizona (BHACA), which is located one mile southwest of the Gila River Indian Reservation in Casa Grande, Arizona. Each alcoholic subject was a voluntary admission to BHACA without a previous history of severe brain impairment and/or severe psychiatric disorder.

The non-alcoholic Native American control group subjects were volunteers selected from the staff of the Indian Health Service (IHS) hospital on the Gila River Indian Reservation, in Sacaton, Arizona. In addition, the Anglo treatment staff at BHACA (N=17) was requested to fill out one of the assessment measures (Rokeach Value Survey) given to each of the three groups (alcoholic Native-Americans, alcoholic Anglos and non-alcoholic Native American) utilized in this study. Each of the Native American subjects participating (alcoholic

and non-alcoholic) in this study was a registered tribal member. Men and women under the age of 18 and over 56 were excluded from this study. While the non-alcoholic Native American subjects and the Anglo staff were not reimbursed financially for their involvement in the study, each alcoholic subject (both Native American and Anglo) was paid \$5.00 for their participation. However, regardless of whether the subject was paid or not, each understood their participation was completely voluntary and in no way affected their eligibility for treatment. The alcoholic Native American subjects were recruited over an eleven month period from June, 1981 to April, 1982. The alcoholic Anglo subjects were tested within a one month period in March, 1982. The non-alcoholic Native American subjects were tested over a one week period in April of 1981. The Anglo staff was also tested during a one week period in June, 1981.

Instruments

The Rokeach Value Survey (1973) presents the respondent with two sets of 18 values, one set designated as "terminal values" (a desirable end state of existence) and the other designated as "instrumental values" (a desirable mode of behavior). The respondent rank orders each set of terminal and instrumental values separately with the instruction to "arrange them in order of their importance to you, as guiding principles in your life." A value system might be defined as a rank ordering of all values in terms of their importance to a respondent.

Median test-retest reliabilities of the value systems reported elsewhere (Rokeach 1973) range between .78 and .80 for terminal values and between .70 and .72 for instrumental values (with time intervals that range from 3 to 7 weeks). The test-retest reliabilities of individual values (with comparable time intervals) range from .51 to .88 for the terminal values and from .45 to .70 for the instrumental values. A test-retest reliability completed by Toler (1975) with an alcoholic population revealed that rank-order correlations ranged from .62 to .86 for terminal values and .66 to .81 for instrumental values.

Rotters (1966) Internal-External Scale (I-E) consists of 23 forced-choice items plus 6 filler items intended to somewhat disguise the purpose of the scale. It is scored in an external direction so higher scores mean the person is more external in control orientation. Rotter reports consistent test-retest reliability over one month ranging from .60 to .83 and .49 to .61 for periods longer than two months. Moderate high internal consistency ranging from .65 to .76 is also reported. Rotter I-E scale has also been shown to have low correlations with intelligence, social desirability, and political affiliation.

The Michigan Alcoholism Screening Test (MAST) developed by Selyer (1967) is a 25 item face-valid questionnaire for alcohol dependency, with items related to the frequency, pattern, and consequences of drinking. The test is usually administered orally and

requires minimal training to administer. It is scored by summing the credits from 24 differently weighted items (1 item is noncredited) and is interpreted as indicating alcoholism when the total score exceeds a criterion of 4 points. Test content pertains to the respondent's self-appraisal of his drinking habits and to social, vocational and familial problems frequently associated with excessive drinking. Items answered in the key direction are differentially weighted; items scores being summed to produce a single over-all score representing the degree of alcohol involvement. Test-retest reliability has been reported to be consistently high, ranging from .95 to .99. A high degree of internal consistency has also been reported showing all MAST items correlating significantly with the total score.

Indian Culturalization Test. This 30 item multiple choice questionnaire was adapted from Richardsons' (1980) 25 item questionnaire which was constructed for the assessment of Sioux and North Plain Indians. Richardsons' questionnaire relies on face validity and was constructed on the basis of several years of experience in advising an inpatient alcohol treatment program where Indians met once a week to study and discuss Indian history and traditions. Most of the questions concern closeness to or identification with Indian customs, beliefs and language, and several items concern eating and drinking habits. Richardsons' items were weighted on an apriori basis, however, these weights might be improved by an item analysis. The test-retest reliability, estimated by the rank correlation method with 14 Indian

subjects ($r=.75$, $p < .05$), was judged sufficient enough for this research purpose. However, the ICT's reliability and construct validity is not clearly established.

Several items on the Richardson scale which were judged to pertain to only Sioux Indians were deleted from the form (i.e., item 17a), "I have eaten dog" (Shunka wata) and replaced by items which pertain to the common traditions of the Pima and Papago Indians (i.e., 16.2), "I believe in ka:cim - the Staying Sickness." These changes were made in accordance with suggestions provided by registered tribal members who served on the staff of the alcohol and drug abuse program (ADAP).

Rosenberg Self-Esteem Scale is a ten-item scale which examines the self-acceptance aspect of self-esteem. It is designed to provide a brief and easily administered unidimensional scale. It has high reliability for such a short scale (e.g., the Guttman Scale reproducibility coefficient = .92), and appears to have construct validity along with a coefficient of Scalability of 72 percent (Rosenberg 1965). Items, which are scored on a 4-point agree-disagree scale, include, "I feel that I do not have much to be proud of" and "I am unable to do things as well as most other people." Items were scored using the Guttman scaling procedure outlined by Rosenberg; through combinative scoring of items, this procedure allows a range of scores from 0 to 6.

The scale is based on "contrived items" (Stouffer et al. 1952), and yields six scales. Scale Item 1 is contrived from the combined responses to items 1, 2, and 3. If the respondent answers

2 out of 3 or 3 out of 3 positively, he/she receives a positive (that is, low self-esteem) score for item I.

Scale Item II is contrived from the combined responses to items 4 and 5. One out of 2 or 2 out of 2 positive responses are considered positive for Scale Item II.

Scale Items III, IV, and V are scored simply positive or negative based on responses to items 6, 7, and 8.

Scale item VI is contrived from the combined responses to items 9 and 10. One out of 2 or 2 out of 2 positive responses are considered positive.

The reproducibility and scalability coefficients suggest that the items have satisfactory internal validity. Silber and Tippet (1965) showed a two week test-retest reliability of $r=.85$ and Clair McCullough found a two-week test-retest reliability of $r=.88$, both with small college samples.

Higher scores on the Rosenberg indicate lower self-esteem.

Examiners

The majority of the tests were administered and scored by the primary investigator and two undergraduate students (one male, one female) at Central Arizona College which is a Community College located near Casa Grande, Arizona. Each of these students were Native Americans and registered tribal members of the Pima and Papago Indian Tribes respectively. Each was also employed as a mental health

technician by the Behavioral Health Association of Central Arizona (BHACA) and work at the alcoholism treatment unit where this study was conducted. Both were extensively trained in administering the test and worked primarily with all the Native American alcoholic subjects who participated in this study. Each student research assistant spoke their respective tribal language and was invaluable in providing a cultural liaison with those Native American subjects who had difficulty with the English language.

Procedure

All volunteer admissions into the alcohol treatment program at BHACA were contacted within the first seven days of their entering the alcoholism treatment program. If the individual expressed interest in participating in the research project after it had been fully explained to them, a human subject's consent form was signed and a voluntary agreement to participate in the study was obtained. Each subject was then asked to complete the following questionnaires (Appendix A).

- 1) Rokeach Scale of Values (1970) was administered to assess the similarity or differences in Native American values, Anglo values, alcoholic subjects values and non-alcoholic subjects values.
 - A) Each subject was requested to first fill out the value scale according to their own values.
 - B) After completion of their own value scale, each subject was then asked to fill out the value scale

again, but this time select their answers as if they were a member of the other culture (i.e., if a Native American, answer as you think an Anglo would).

- 2) The Michigan Alcoholism Screening Test (MAST), (1971), was administered as an objective assessment of the subjects degree of alcoholism.
- 3) The Rosenberg Self-Esteem Scale (1965) was administered as an objective measure of each subject positive or negative self-image.
- 4) The Rotter Internal-External Locus of Control (1966) was administered to assess the differences in control orientations for alcoholics, Native Americans, Anglos, and non-alcoholics.
- 5) The Indian Culturalization Test (ICT) was adapted after Richardsons Culturalization Test (1975) and administered to reflect the degree of investment in Native American culture. This test was administered to Native Americans only.

Native American staff members were utilized to administer all the assessments when alcoholic Native Americans were being tested.

At the time these assessments were given, demographic data was also obtained to determine the relationship of age, cultural background, education, sex, marital status, employment, drinking severity, arrest record, and drinking history to the completion or implementation of the alcoholism treatment program at BHACA.

Treatment Protocol

All subjects consenting to participate in this research project were subjected to the same treatment protocol provided by the BHACA alcoholism treatment program. An initial treatment plan was drawn up by the treatment team and typically requires each subject receive both individual and group counseling five days a week. The subjects were also exposed to daily lectures stressing the disease concept of alcoholism with abstinence as the primary goal of treatment. Films were shown and structured didactic presentations were also conducted throughout the treatment process in an attempt to increase the subjects awareness of the symptoms of alcoholism. This is essentially an educative process established to provide each recipient with a cognitive understanding of their own particular drinking patterns. Subjects were also required to attend weekly Alcoholics Anonymous (AA) meetings held at BHACA. Disulfiram (Antabuse) was also provided for those subjects who chose to partake of its availability.

One week prior to completion of the treatment program at BHACA, each alcoholic Native American was given the same five assessments with the same set of instructions as they were given at the time they first entered the program. The time intervals between the two testing dates was approximately two months. The two control groups (alcoholic Anglos and non-alcoholic Native Americans) as well as the Anglo staff were given only pre-test assessments.

The non-alcoholic subjects (Anglo and Native American) were recruited through letters sent out by the respective directors of BHACA and IHS hospital. The assessments were administered to these subjects in small groups (five to thirteen). A research member met with each group, explained the assessments and answered the subjects questions. Discussion, however, was discouraged until each member of the group had answered all questions on the assessments.

Statistical Procedures

This study descriptively identified Native Americans who entered an inpatient alcoholism treatment program. Two control groups, alcoholic Anglos in the same inpatient alcoholism treatment program and non-alcoholic Native-Americans were also descriptively identified in a similar manner. Data was gathered and categorized into six general areas for analysis.

1. Descriptive identifications were made by the compilation of means and percentages on the following assessments given each subject before entering treatment.
 - A. Rokeach Scale of Values.
 - B. Rotters' External-Internal Locus of Control.
 - C. Indian Culturalization Test.
 - D. Michigan Alcoholism Screening Test (MAST).
 - E. Rosenberg's Self-Esteem Scale.
2. An analysis of variance (ANOV) was performed on all three groups to determine if there were any significant

differences among the three groups on the four assessment measures. A further analysis of variance controlling for the two way interaction between groups and sex was also performed.

3. Post-test assessments were made after treatment to determine the degree of change, if any, in the five pre-test assessments. Comparisons were then made between pre and post test scores through the utilization of individual tests, analysis of variances, and the median sign test for ordinal data.
4. Further comparisons were made after the differences in those subjects who successfully completed the treatment program and those subjects who dropped out of the program were assessed. A t-test and analysis of variance were conducted to determine if there are any initial characteristics which would differentiate treatment completion subjects from those subjects who drop out of treatment.
5. An additional three group discriminant functional analysis (alcoholic Native Americans versus alcoholic Anglos versus non-alcoholic Native Americans) was performed using demographics and the four pre assessment measures (the ordinally ranked data on the Rokeach was excluded because of the difficulties imposed with analyzing non-parametric data with parametric procedures) as a further description of the population.

6. As a solution to the problem of ascertaining the overall agreement among each of the subjects set of rankings of the Rokeach in each of the subsamples studied, a Kendall Coefficient of Concordance: W , was performed to determine if there existed concordant group profiles for each subsample.

CHAPTER 3

RESULTS

Subjects Descriptive Demographics

Table 1 shows the demographic characteristics of each of the subsamples in this study (also see Appendix K). It was decided not to control for sex differences in the selection of subjects, but rather to randomly assign subjects to their respective groups controlling instead for alcoholics (i.e. in alcoholism treatment or not) and cultural differences (Native Americans or Anglo). Due to the lack of restrictions of the self selection procedure of subjects, male and female alcoholics were disproportionately represented in each of the alcoholic subsamples. Seventy-nine percent of the alcoholic Native Americans and eighty percent of the alcoholic Anglos were males. Sex differences did not exist, however, for the non-alcoholic Native Americans as males and females were equally represented among the twenty subjects recruited for this control group.

As previously stated, the equal sex representation of subjects in this control group is an artifact of the subject selection procedure utilized in this study rather than an intended match of males and females. It is important to note however, that the self-selection bias revealed male, female random ratios which are consistent with the 20% estimations of female alcoholism reported in the literature (Beckman 1975; Tamerin 1978). Considering the selection restrictions

Table 1. Demographic Characteristics of Subsamples.

	GROUP 1 INDIAN ALCOHOLICS			GROUP 2 ANGLO ALCOHOLICS			GROUP 3 NON-ALCOHOLIC INDIANS		
	MALE	FEMALE	TOTAL	MALE	FEMALE	TOTAL	MALE	FEMALE	TOTAL
Number of Subjects	34	9	43	16	4	20	10	10	20
Average Age	34.7	28.8	31.8	37.5	29.5	35.9	36.6	28.1	33.5
SEX Code Male = 1 Female = 2	Coded $\bar{X}$ = 1.20930			Coded $\bar{X}$ = 1.20000			Coded $\bar{X}$ = 1.50000**		
MARITAL STATUS Code Yes = 1 No = 2	Coded $\bar{X}$ = 1.76744			Coded $\bar{X}$ = 1.80000			Coded $\bar{X}$ = 1.35000*		
EMPLOYMENT Code Yes = 1 No = 2	Coded $\bar{X}$ = 1.97674			Coded $\bar{X}$ = 1.95000			Coded $\bar{X}$ = 1.00000*		
EDUCATION Code Below High School = 1 High School Degree = 2 High School + = 3 College Degree = 4	Coded $\bar{X}$ = 1.76744			Coded $\bar{X}$ = 1.80000			Coded $\bar{X}$ = 2.30000*		
INCOME Code 0-\$ 5,000 = 1 \$5,000-\$10,000 = 2 \$10,000 + = 3	Coded $\bar{X}$ = 1.23256			Coded $\bar{X}$ = 2.05000			Coded $\bar{X}$ = 2.90000**		

Coded $\bar{X}$ and significant level derived from Wilks' Lambda (U-Statistic) and Univariate F-ratio with 2 and 80 df.

* p < .001 comparison across all three groups

**p < .05 comparison across all three groups

enumerated above, there is a significant difference (Wilks Lambda = .3422, $p < .05$) among the three groups in the representations of males and females. While there is no reported difference between alcoholic Native Americans and alcoholic Anglos (Wilks Lambda = .6985), non-alcoholic Native Americans differ from alcoholic Native Americans (Wilks Lambda = .5808, $p < .01$) and alcoholic Anglos (Wilks Lambda = .4171, $p < .05$).

Despite the matching difficulties, all three groups did not differ significantly in their average ages; although male subjects across all three groups (alcoholic Native Americans, alcoholic Anglos, non-alcoholic Native Americans) were older (mean ages of 34.7, 37.5, 36.6 respectively) than female subjects (alcoholic Native Americans, alcoholic Anglos, and non-alcoholic Native Americans with mean ages of 28.8, 29.5, and 28.1 respectively). Reported difference in ages between male and females for all three groups was not significant. However, non-alcoholic Native Americans were significantly different from alcoholic Native Americans and alcoholic Anglos on all other demographic variables controlled for in the study. Non-alcoholic Native Americans were more likely to be married (WILKS LAMBDA = .5471, $p < .01$), employed (WILKS LAMBDA = .3681, $p < .001$), have a higher income (WILKS LAMBDA = .3681, $p < .001$), and a higher education (WILKS LAMBDA = .3638, $p < .001$) than either of the alcoholic groups (Native American or Anglo). In contrast, subjects in both alcoholic groups (Native American and Anglo) were significantly different on only one variable. Anglos were more likely to have higher income (WILKS LAMBDA = .6933,

$p < .001$) than Native Americans even though they were less likely to be employed (29 percent employment rate for alcoholic Native Americans compared to 15 percent for alcoholic Anglos). This difference in employment for the two groups was not significantly different however.

While lower income, greater marriage instability, higher unemployment, and lower education levels are all strong indicators of less social stability for the alcoholics in this study, a clear distinction between cause and effect relationships cannot be established for this population due to the limitations inherent in this research project. However, the distinct differences in social and economic circumstances between the alcoholic and non-alcoholic subsamples found here are consistent with the reported social consequences of alcoholism reported in the literature (Pattison, Coe and Rhodes 1969; Kissin, Rosenblatt and Machover 1968; Zimbergh 1978) and recent longitudinal studies (Valiant, Milofsky 1982; Valiant and Milofsky 1982) which suggests that the etiological hypothesis which views alcoholism as a symptom of psychological instability may be an illusion based on retrospective study.

Comparisons of the Three Treatment Groups

Several preliminary tests were performed on the three groups (alcoholic Native Americans, alcoholic Anglos, and non-alcoholic Native Americans) to determine if there were any differences among the groups in regards to their scores on the MAST, Rosenberg Self-Esteem, LOC, and the ICT. An analysis of variance was also conducted to determine

if differences in scores existed for men and women in each group in relation to these four measures.

Tables 2 and 5 indicate that alcoholic Native American males scored significantly higher than alcoholic Native American females on the MAST ($F = 26.32, p < .001$) and ICT ($F = 4.78, p < .05$), while there were no reported sex differences for alcoholic Native Americans on the Rosenberg Self Esteem (Table 3, $F = 1.289$) and the LOC (Table 4, $F = 1.010$).

Tables 5 and 6 indicate that non-alcoholic Native American males scored significantly higher than non-alcoholic Native American females on the MAST ($F = 5.233, p < .05$) and also scored in the more external direction of the LOC ($F = 5.47, p < .05$). There were no reported differences on the ICT (Table 9, $F = 0.330$) or the Rosenberg Self Esteem (Table 7, $F = .039$).

Table 11 illustrates that the alcoholic Anglo males only differed significantly from female alcoholic Anglos on the Rosenberg Self Esteem scale ($F = 6.98, p < .05$). Unlike alcoholic Native Americans, alcoholic Anglo females report a lower self-esteem than males. There were no reported sex differences in either the LOC (Table 12, $F = 2.01$) or the MAST (Table 10, $F = .829$) for the sub-sample of Anglo alcoholics.

An analysis of variance was also performed on all three groups to determine if there were any significant differences on the four assessment measures. Tables 13 and 14 illustrate significant differences exist for the three groups on the MAST scores ($F = 15.21$,

Table 2. Analysis of Variance, MAST Test Differences by Sex for Alcoholic Native Americans.

SOURCE	df	SUM OF SQUARES	MEAN SQUARES	F RATIO	F-PROB
Between Groups	1	2110.7232	2110.7232	26.232	< .001
Within Groups	41	3287.5555	80.1843		
TOTAL	42	5398.2788			

GROUP	N	$\bar{x}$	RANGE	STANDARD DEVIATION	STANDARD ERROR
MALE ALCOHOLIC INDIANS	34	36.0	12 to 51	8.30	1.42
FEMALE ALCOHOLIC INDIANS	9	18.78	8 to 45	11.24	3.74
TOTAL	43	32.39	8 to 51	11.33	1.72
FIXED EFFECTS				8.95	1.36
RANDOM EFFECTS					9.86

Tests for Homogeneity of Variances

Cochran's c = Max. Variance/Sum (Variances) = 0.6471, P = 0.173 (Approx.)

Bartlett - Box F = 1.273 P = 0.259

Maximum Variance/Minimum Variance = 1.833

Table 3. Analysis of Variance, Self-Esteem Differences by Sex for Alcoholic Native Americans.

SOURCE	df	SUM OF SQUARES	MEAN SQUARES	F RATIO	F-PROB
Between Groups	1	1.3242	1.3242	1.289	0.2628
Within Groups	41	42.1176	1.0273		
TOTAL	42	43.4419			

GROUPS	N	$\bar{x}$	RANGE	STANDARD DEVIATION	STANDARD ERROR
MALE ALCOHOLIC INDIANS	34	3.2353	1.0 to 5.0	1.0462	0.1794
FEMALE ALCOHOLIC INDIANS	9	3.6667	2.0 to 5.0	0.8660	0.2887
TOTAL	43	3.3256	1.0 to 5.0	1.0170	0.1551
FIXED EFFECTS				1.0135	0.1546
RANDOM EFFECTS					0.1945

Tests for Homogeneity of Variance

Cochran's c = Max. Variance/Sum (Variances) = 0.5934, P = 0.393 (Approx.)

Bartlett - Box F = 0.407 P = 0.523

Maximum Variance/Minimum Variance = 1.459

Table 4. Analysis of Variance, Locus of Control Differences by Sex for Alcoholic Native Americans.

SOURCE	df	SUM OF SQUARES	MEAN SQUARES	F RATIO	F-PROB
Between Groups	1	8.8373	8.8373	1.010	0.3207
Within Groups	41	358.6046	8.7465		
TOTAL	42	367.4419			

GROUP	N	$\bar{x}$	RANGE	STANDARD DEVIATION	STANDARD ERROR
MALE ALCOHOLIC INDIANS	34	8.4412	2.0 to 14.0	2.8835	0.4945
FEMALE ALCOHOLIC INDIANS	9	9.556	5.0 to 15.00	3.2447	1.0816
TOTAL	43	8.6744	2.0 to 15.00	2.9578	0.4511
FIXED EFFECTS				2.9574	0.4510
RANDOM EFFECTS					0.4557

Tests for Homogeneity of Variance

Cochran's c = Max. Variance/Sum (Variances) = 0.5587, P = 0.593 (Approx.)

Bartlett - Box F = 0.180 P = 0.671

Maximum Variance/Minimum Variance = 1.266

Table 5. Analysis of Variance, Indian Culturalization Test Differences by Sex for Alcoholic Native Americans.

SOURCE	df	SUM OF SQUARES	MEAN SQUARES	F RATIO	F-PROB
BETWEEN GROUPS	1	171.9111	171.9111	4.786	0.034
WITHIN GROUPS	41	1472.6928	35.9193		
TOTAL	42	1644.6039			

GROUP	N	$\bar{x}$	RANGE	STANDARD DEVIATION	STANDARD ERROR
MALE ALCOHOLIC INDIANS	34	63.47	50 to 75	5.73	0.98
FEMALE ALCOHOLIC INDIANS	9	58.55	50 to 73	6.94	2.31
TOTAL	43	62.44	50 to 75	6.25	0.95
FIXED EFFECTS				5.99	0.91
RANDOM EFFECTS					2.68

Tests for Homogeneity of Variance

Cochran's c = Max. Variance/Sum (Variances) = 0.5587, P = 0.593 (Approx.)

Bartlett - Box F = 0.180 P = 0.671

Maximum Variance/Minimum Variance = 1.266

Table 6. Analysis of Variance, MAST Differences by Sex for Non-Alcoholic Native Americans.

SOURCE	df	SUM OF SQUARES	MEAN SQUARES	F RATIO	F-PROB
BETWEEN GROUPS	1	793.8000	793.8000	5.233	0.0345
WITHIN GROUPS	18	2730.4000	151.6889		
TOTAL	19	3524.2000			

GROUP	N	$\bar{x}$	RANGE	STANDARD DEVIATION	STANDARD ERROR
MALE ALCOHOLIC INDIANS	10	22.00	3.0 to 9.0	14.0396	4.4397
FEMALE ALCOHOLIC INDIANS	10	9.40	1.0 to 31.0	10.3086	3.2599
TOTAL	20	15.70	1.0 to 39.0	13.6193	3.0454
FIXED EFFECTS				12.3162	2.7540
RANDOM EFFECTS					6.3000

Tests for Homogeneity of Variance

Cochran's c = Max. Variance/Sum (Variance) = 0.5587, P = 0.593 (Approx.)

Bartlett - Box F = 0.180 P = 0.671

Maximum Variance/Minimum Variance = 1.266

Table 7. Analysis of Variance, Self-Esteem Differences by Sex for Non-alcoholic Native Americans.

SOURCE	df	SUM OF SQUARES	MEAN SQUARES	F RATIO	F-PROB
BETWEEN GROUPS	1	0.0500	0.0500	0.039	0.8451
WITHIN GROUPS	18	22.9000	1.2722		
TOTAL	19	22.9500			

GROUP	N	$\bar{x}$	RANGE	STANDARD DEVIATION	STANDARD ERROR
MALE ALCOHOLIC INDIANS	10	1.100	0.0 to 3.0	0.8756	0.2769
FEMALE ALCOHOLIC INDIANS	10	1.000	0.0 to 4.0	1.3333	0.4216
TOTAL	20		0.0 to 4.0	1.0990	0.2458
FIXED EFFECTS				1.1279	0.2522
RANDOM EFFECTS				0.2522	

Tests for Homogeneity of Variance

Cochran's c = Max. Variance/Sum (Variances) = 0.6987, P = 0.226 (Approx.)

Bartlett - Box F = 1.466 P = 0.226

Maximum Variance/Minimum Variance = 2.319

Table 8. Analysis of Variance, Locus of Control Differences by Sex for Non-Alcoholic Native Americans.

SOURCE	df	SUM OF SQUARES	MEAN SQUARES	F RATIO	F-PROB
Between Groups	1	20.0000	20.0000	5.471	0.0311
Within Groups	18	65.8000	3.6556		
TOTAL	19	85.8000			

GROUP	N	$\bar{x}$	RANGE	STANDARD DEVIATION	STANDARD ERROR
MALE ALCOHOLIC INDIANS	10	7.90	5.0 to 11.0	1.8529	0.5859
FEMALE ALCOHOLIC INDIANS	10	9.90	7.0 to 13.0	1.9692	0.6227
TOTAL	20	8.90	5.0 to 13.0	2.1250	0.4752
FIXED EFFECTS				1.9120	0.4275
RANDOM EFFECTS					1.0000

Tests for Homogeneity of Variance

Cochran's c = Max. Variance/Sum (Variance) = 0.5304, P = 0.859 (Approx.)

Bartlett - Box F = .032 P = 0.859

Maximum Variance/Minimum Variance = 1.129

Table 9. Analysis of Variance, Indian Culturalization Test Differences by Sex for Non-Alcoholic Native Americans.

SOURCE	df	SUM OF SQUARES	MEAN SQUARES	F RATIO	F-PROB
BETWEEN GROUPS	1	20.0000	20.0000	0.330	0.5729
WITHIN GROUPS	18	1091.8000	60.6556		
TOTAL	19	1111.8000			

GROUP	N	$\bar{x}$	RANGE	STANDARD DEVIATION	STANDARD ERROR
MALE ALCOHOLIC INDIANS	10	59.900	42.0 to 70.0	9.8708	3.1214
FEMALE ALCOHOLIC INDIANS	10	57.900	49.0 to 63.0	4.8865	1.5452
TOTAL	20	58.900	42.0 to 70.0	7.6496	1.7105
FIXED EFFECTS				7.7882	1.7415
RANDOM EFFECTS					1.7415

Tests for Homogeneity of Variance

Cochran's c = Max. Variance/Sum (Variances) = 0.8032, P = 0.048 (Approx.)

Bartlett - Box F = 3.920 P = 0.048

Maximum Variance/Minimum Variance = 4.081

Table 10. Analysis of Variance, MAST Differences by Sex for Alcoholic Anglos.

SOURCE	df	SUM OF SQUARES	MEAN SQUARES	F RATIO	F-PROB
BETWEEN GROUPS	1	115.1999	115.1999	0.829	0.3746
WITHIN GROUPS	18	2501.0000	138.9444		
TOTAL	19	2616.1998			

GROUP	N	$\bar{x}$	RANGE	STANDARD DEVIATION	STANDARD ERROR
MALE ANGLO ALCOHOLICS	16	34.500	10 to 43	12.4150	3.1038
FEMALE ANGLO ALCOHOLICS	4	28.500	18 to 37	7.9373	3.9686
TOTAL	20	33.300	10 to 53	11.7343	2.6239
FIXED EFFECTS				11.7875	2.6358
RANDOM EFFECTS					2.6358

Tests for Homogeneity of Variance

Cochran's c = Max. Variance/Sum (Variances) = 0.8032, P = 0.048

Bartlett - Box F = 3.920 P = 0.048

Maximum Variance/Minimum Variance = 4.081

Table 11. Analysis of Variance, Self-Esteem Differences by Sex for Alcoholic Anglos.

SOURCE	df	SUM OF SQUARES	MEAN SQUARES	F RATIO	F-PROB
BETWEEN GROUPS	1	12.0125	12.0125	6.989	0.0165
WITHIN GROUPS	18	30.9375	1.7188		
TOTAL	19	42.9500			

GROUP	N	$\bar{x}$	RANGE	STANDARD DEVIATION	STANDARD ERROR
MALE ANGLO ALCOHOLICS	16	3.0625	0.0 to 5.0	1.3401	0.3350
FEMALE ANGLO ALCOHOLICS	4	5.0000	4.0 to 6.0	1.1547	0.5774
TOTAL	20	3.4500	0.0 to 6.0	1.5035	0.3362
FIXED EFFECTS				1.3110	0.2932
RANDOM EFFECTS					1.0861

Tests for Homogeneity of Variance

Cochran's c = Max. Variance/Sum (Variances) = 0.8032, P = 0.048

Bartlett - Box F = 0.093 P = 0.761

Maximum Variance/Minimum Variance = 1.347

Table 12. Analysis of Variance, Locus of Control Differences by Alcoholic Anglos.

SOURCE	df	SUM OF SQUARES	MEAN SQUARES	F RATIO	F-PROB
BETWEEN GROUPS	1	12.0125	12.0125	2.017	0.1726
WITHIN GROUPS	18	107.1875	5.9549		
TOTAL	19	119.2000			

GROUP	N	$\bar{x}$	RANGE	STANDARD DEVIATION	STANDARD ERROR
MALE ANGLO ALCOHOLICS	16	8.8125	6 to 13	1.8697	0.4674
FEMALE ANGLO ALCOHOLICS	4	10.7500	6 to 16	4.2720	2.1360
TOTAL	20	9.200	6 to 16	2.5047	0.5601
FIXED EFFECTS i				2.4403	0.5457
RANDOM EFFECTS					0.9702

Tests for Homogeneity of Variance

Cochran's c = Max. Variance/Sum (Variances) = 0.8392, P = 0.022 (Approx.)

Bartlett - Box F = 4.215, P = 0.041

Maximum Variance/Minimum Variance = 5.221

Table 13. Analysis of Variance, MAST Differences in Three Groups.

SOURCE	df	SUM OF SQUARES	MEAN SQUARES	F RATIO	F-PROB
BETWEEN GROUPS	2	4389.3738	2194.6969	15.216	0.0000
WITHIN GROUPS	80	11538.6791	144.2335		
TOTAL	82	15928.0730			

GROUP	N	$\bar{x}$	RANGE	STANDARD DEVIATION	STANDARD ERROR
GROUP 1 - INDIAN ALCOHOLICS	43	32.3953	8.0 to 51.0	11.3771	1.7289
GROUP 2 - ANGLO ALCOHOLICS	20	33.3000	10.0 to 53.0	11.7343	2.6239
GROUP 3 - NON-ALCOHOLICS INDIANS	20	15.7000	1.0 to 39.0	13.6193	3.0454
TOTAL	83	28.5904	1.0 to 53.0	13.9372	1.5298
FIXED EFFECTS				12.0097	1.3182
RANDOM EFFECTS					5.7102

Tests for Homogeneity of Variance

Cochran's c = Max. Variance/Sum (Variances) = 0.4106, P = 0.446 (Approx.)

Bartlett - Box F = 0.463 P = 0.630

Maximum Variance/Minimum Variance = 1.443

Table 14. Analysis of Variance, Self-Esteem Differences in Three Groups.

SOURCE	df	SUM OF SQUARES	MEAN SQUARES	F RATIO	F-PROB
BETWEEN GROUPS	2	81.5738	40.7869	29.842	0.000
WITHIN GROUPS	80	109.3419	1.3668		
TOTAL	82	190.9157			

GROUP	N	$\bar{x}$	RANGE	STANDARD DEVIATION	STANDARD ERROR
GROUP 1 - INDIAN ALCOHOLICS	43	3.3256	1.0 to 5.0	1.0170	0.1551
GROUP 2 - ANGLO ALCOHOLICS	20	3.4500	0.0 to 6.0	1.5035	0.3362
GROUP 3 - NON-ALCOHOLIC INDIANS	20	1.0500	0.0 to 4.0	1.0990	0.2458
TOTAL	83			1.5259	0.1675
FIXED EFFECTS				1.1691	0.1283
RANDOM EFFECTS					0.7810

Tests for Homogeneity of Variance

Cochran's c = Max. Variance/Sum (Variances) = 0.5020, P = 0.043 (Approx.)

Bartlett's - Box F = 2.204 P = 0.111

Maximum Variance/Minimum Variance = 2.185

$p < .001$) and the Rosenberg self-esteem scale ($F = 29.84$, $p < .001$) There were no reported differences in LOC (Table 15, $F = .267$) or on the ICT (Table 16, $F = 3.79$) for the two Native American groups.

An analysis of variance controlling for the two-way interaction between group and sex was performed on the two Native American subsamples, Tables 17, 18, 19 and 20 illustrates there is a significant difference for groups ($F = 18.31$, $p < .001$) and differences for sex ($F = 27.86$, $p < .001$) in the MAST scores; a difference for groups ($F = 61.78$, $p < .001$), but no difference for sex ($F = .495$) in the self-esteem; no difference for either group ($F = 3.68$) or for sex ($F = .073$) on the LOC; and no difference for groups ($F = 1.739$) or for sex ($F = 3.841$) on the ICT although the sex differences were close to being significant ($F\text{-prob.} = .055$).

An analysis of variance controlling for the two-way interaction between group and sex was performed on all three groups. Tables 21, 22, and 23 illustrate there is significant difference for groups ($F = 10.81$, $p < .001$) and for sex ($F = 21.472$), $p < .001$) on the MAST; no significant differences for groups ($F = .453$), but one existing for sex ($F = 5.507$, $p < .05$) on the LOC; and a significant difference for groups ($F = 34.685$, $p < .001$) and for sex ($F = 4.029$, $p < .05$), although there was confounding for these two variables ($F = 3.356$, $p < .05$).

A multiple range test, the Scheffé Procedure, was then performed on the three groups to determine if the differences in scores

Table 15. Analysis of Variance, Locus of Control Differences in Three Groups.

SOURCE	df	SUM OF SQUARES	MEAN SQUARES	F RATIO	F-PROB
BETWEEN GROUPS	2	3.8232	1.9116	0.267	0.7662
WITHIN GROUPS	80	572.4419	7.1555		
TOTAL	82	576.2651			

GROUP	N	$\bar{x}$	RANGE	STANDARD DEVIATION	STANDARD ERROR
GROUP 1 - INDIAN ALCOHOLICS	43	8.6744	2.0 to 15.0	2.9578	0.4511
GROUP 2 - ANGLO ALCOHOLICS	20	9.2000	6.0 to 16.0	2.5047	0.5601
GROUP 3 - NON-ALCOHOLIC INDIANS	20	8.9000	5.0 to 13.0	2.1250	0.2910
TOTAL	83	8.8554	2.0 to 16.0	2.6510	0.2910
FIXED EFFECTS				2.6750	0.2936
RANDOM EFFECTS					0.2936

Tests for Homogeneity of Variance

Cochran's c = Max. Variance/Sum (Variances) = 0.4478, P = 0.196 (Approx.)

Bartlett's - Box F = 1.375 P = 0.253

Maximum Variance/Minimum Variance = 1.937

Table 16. Analysis of Variance, Indian Culturalization Test Differences in Alcoholic and Non-Alcoholic Native Americans.

SOURCE	df	SUM OF SQUARES	MEAN SQUARES	F RATIO	F-PROB
BETWEEN SQUARES	1	171.2460	171.2460	3.790	0.562
WITHIN GROUPS	61	2756.4047	45.1870		
TOTAL	62	2927.6506			

GROUP	N	$\bar{x}$	RANGE	STANDARD DEVIATION	STANDARD ERROR
ALCOHOLIC INDIANS	43	62.4419	50.0 to 75.0	6.2576	0.9543
NON-ALCOHOLIC INDIANS	20	58.900	42.0 to 70.0	7.6496	1.7105
TOTAL	63	61.3175	42.0 to 75.0	6.8717	0.8658
FIXED EFFECTS				6.7221	0.8469
RANDOM EFFECTS					1.8258

Tests for Homogeneity of Variance

Cochran's c = Max. Variance/Sum (Variances) = 0.5991, P = 0.269 (Approx.)
 Bartlett - Box F = 1.082 P = 0.298
 Maximum Variance/Minimum Variance = 1.494

Table 17. Analysis of Variance, Two-Way Interaction MAST by Groups and Sex for Alcoholic and Non-Alcoholic Native Americans.

SOURCE OF VARIATION	SUM OF SQUARES	df	MEAN SQUARE	F-RATIO	SIGNIFICANT OF F
MAIN EFFECTS	6646.731	2	3323.366	32.582	0.000
*GROUPS 1, 2	1868.375	1	1868.375	18.318	0.000
SEX	2841.782	1	2841.782	27.861	0.000
TWO WAY INTERACTION	62.742	1	62.742	0.615	0.436
GROUP SEX	62.742	1	62.742	0.615	0.436
EXPLAINED	6709.473	3	2236.491	21.927	0.000
RESIDUAL	6017.955	59	101.999		
TOTAL	12727.428	62	205.281		

*Group 1. Indian Alcoholics
2. Non-Alcoholic Indians

Table 18. Analysis of Variance, Two-Way Interaction Self-Esteem by Group and Sex for Alcoholic and Non-Alcoholic Native Americans.

SOURCE OF VARIATION	SUM OF SQUARES	df	MEAN SQUARE	F-RATIO	SIGNIFICANT OF F
MAIN EFFECTS	71.233	2	35.616	32.320	0.000
*GROUPS 1, 2	68.087	1	68.087	61.786	0.000
SEX	0.545	1	0.545	0.495	0.485
TWO WAY INTERACTION	0.829	1	0.829	0.752	0.389
GROUP SEX	0.829	1	0.829	0.752	0.389
EXPLAINED	72.062	3	24.021	21.797	0.000
RESIDUAL	65.018	59	1.102		
TOTAL	137.079	62	2.211		

*Group 1. Indian Alcoholics
2. Non-Alcoholic Indians

Table 19. Analysis of Variance, Two-Way Interaction Locus of Control by Group and Sex for Alcoholic and Non-Alcoholic Native Americans.

SOURCE OF VARIATION	SUM OF SQUARES	df	MEAN SQUARE	F-RATIO	SIGNIFICANT OF F
MAIN EFFECTS	27.229	2	13.614	1.893	0.160
*GROUPS 1, 2	0.522	1	0.522	0.073	0.789
SEX	26.534	1	26.534	3.689	0.060
TWO WAY INTERACTION	2.303	1	2.303	0.320	0.574
GROUP SEX	2.303	1	2.303	0.320	0.574
EXPLAINED	29.532	3	9.844	1.368	0.261
RESIDUAL	424.405	59	7.193		
TOTAL	453.937	62	7.322		

*Group 1. Indian Alcoholics
2. Non-Alcoholic Indians

Table 20. Analysis of Variance, Two-Way Interaction Indian Culturalization Test by Group and Sex for Alcoholic and Non-Alcoholic Native-Americans.

SOURCE OF VARIATION	SUM OF SQUARES	df	MEAN SQUARE	F-RATIO	SIGNIFICANT OF F
MAIN EFFECTS	338.204	2	169.102	3.890	0.026
*GROUPS 1, 2	75.597	1	75.597	1.739	0.192
SEX	166.958	1	166.958	3.841	0.055
TWO WAY INTERACTION	24.954	1	24.954	0.574	0.452
GROUP SEX	24.954	1	25.954	0.574	0.452
EXPLAINED	363.158	3	131.053	2.785	0.049
RESIDUAL	2564.493	59	43.466		
TOTAL	2927.651	62	47.220		

*Group 1. Indian Alcoholics
2. Non-Alcoholic Indians

Table 21. Analysis of Variance, Two-Way Interaction MAST by Group and Sex for All Three Groups.

SOURCE OF VARIATION	SUM OF SQUARES	df	MEAN SQUARE	F-RATIO	SIGNIFICANT OF F
MAIN EFFECTS	7126.735	3	2375.578	21.472	0.000
*GROUPS 1, 2	2391.875	2	1195.937	10.810	0.000
SEX	2737.342	1	2737.342	24.742	0.000
TWO WAY INTERACTION	282.381	2	141.191	1.276	0.285
GROUP SEX	282.381	2	141.191	1.276	0.285
EXPLAINED	7409.117	5	1481.823	13.394	0.000
RESIDUAL	8518.956	77	110.636		
TOTAL	15928.072	82	194.245		

*Group 1. Indian Alcoholics
2. Non-Alcoholic Indians

Table 22. Analysis of Variance, Two-Way Interaction Self-Esteem by Group and Sex for All Three Groups.

SOURCE OF VARIATION	SUM OF SQUARES	df	MEAN SQUARE	F-RATIO	SIGNIFICANT OF F
MAIN EFFECTS	86.595	3	28.865	23.163	0.000
*GROUPS 1, 2	85.448	2	43.224	34.685	0.000
SEX	5.021	1	5.021	4.029	0.048
TWO WAY INTERACTION	8.365	2	4.183	3.356	0.40
GROUP SEX	8.365	2	4.183	15.240	0.00
EXPLAINED	94.961	5	18.992	15.240	0.00
RESIDUAL	95.955	77	1.246		
TOTAL	190.916	82	2.328		

*Group 1. Indian Alcoholics
2. Non-Alcoholic Indians

Table 23. Analysis of Variance, Two Way Interaction Locus of Control by Group and Sex for All Three Groups.

SOURCE OF VARIATION	SUM OF SQUARES	df	MEAN SQUARE	F-RATIO	SIGNIFICANT OF F
MAIN EFFECTS	41.839	3	13.946	2.020	0.118
*GROUPS 1, 2	6.251	2	3.125	0.453	0.638
SEX	38.016	1	38.016	5.507	0.022
TWO WAY INTERACTION	2.833	2	1.417	0.205	0.815
GROUP SEX	2.833	2	1.417	0.205	0.815
EXPLAINED	44.673	5	8.935	1.294	0.275
RESIDUAL	531.592	77	6.904		
TOTAL	576.265	82	7.028		

*Group 1. Indian Alcoholics
2. Non-Alcoholic Indians

on the four pre-test measures revealed any significant comparisons between groups. Group 3 (non-alcoholic Native Americans) was found to be significantly different from Group 1 (alcoholic Native Americans) and Group 2 (alcoholic Anglos) on the MAST (Table 24, $p < .05$) and the Rosenberg Self Esteem scale (Table 25, $p < .05$).

The results on the Scheffé Range Test suggests that alcoholic Native Americans share more similarities with Anglo alcoholics than they do with non-alcoholic Native Americans on measures of low self-esteem and high alcoholism symptoms. Also higher MAST scores (higher the score, the more symptoms of alcoholism) and lower self-esteem appear to significantly differentiate males from females for the two alcoholic groups. Anglo female alcoholics appear to suffer lower self-esteem with no increase of alcoholism symptomology, while alcoholic Native American females experience less severe forms of alcoholism with no increase in loss of self-esteem when compared to their Indian brothers.

The only subsample which appears to differentiate on the LOC was non-alcoholic Native American women. They scored significantly higher ($p < .05$) than all other subsamples in this study.

Since the ICT was given only to Native Americans, no comparisons were available for Anglos. Alcoholic Native American males scored significantly higher than alcoholic Native American females ($p < .05$) indicating more investment for males in their traditional tribal values. Interestingly, sex differences did not exist for the non-alcoholic Native Americans. This difference in ICT scores was

Table 24. Multiple Range Test - Scheffé Procedure Mast.

$\bar{x}$	GROUPS	1. ALCOHOLIC INDIANS	2. ALCOHOLIC ANGLOS	3. NON-ALCOHOLIC INDIANS
32.3953	1. Alcoholic Indians			< .05* Difference in Group Means
33.3000	2. Alcoholic Anglos			< .05* Difference in Group Means
15.7000	3. Non-Alcoholic Indians			

$$*8.4922 \times \text{Range} \times \left(\sqrt{1/\bar{x}} + (/\bar{x}) \right)$$

Group 3 is different from Groups 1 and 2.

Table 25. Multiple Range Test - Scheffé Procedure Self-Esteem.

$\bar{x}$	GROUPS	1. ALCOHOLIC INDIANS	2. ALCOHOLIC INDIANS	3. NON-ALCOHOLIC INDIANS
3.3256	1. Alcoholic Indians			< .05* Difference in Group Means
3.4500	2. Alcoholic Anglos			< .05* Difference in Group Means
1.0500	3. Non-Alcoholic Indians			

* $0.8267 \times \text{Range} \times (\sqrt{1/\bar{x}}) + (1/\bar{x})$

Group 3 is Different from Groups 1 and 2.

also an important variable when comparing those alcoholic Native Americans who completed treatment with those alcoholic Native Americans who failed to complete treatment. This relationship will be explored later in this report when these two groups are compared at length along the variables described here.

Michigan Alcoholism Screening Test

The distribution of MAST scores for the three groups are shown in Table 26. Although known practicing alcoholics were excluded from the control group of non-alcoholic Native Americans, there relatively elevated scores (when compared to normal controls in other studies (i.e. Zung and Charalampous 1974), see Table 27) suggest that a number of subjects in the non-alcoholic control group in this study were either "closet alcoholics" or recovering alcoholics who were currently abstinent. A retrospective evaluation of the item analysis conducted on all three subsamples suggest that in fact a number of these subjects were "recovered alcoholics" (i.e., on item 1, subjects denied the current use of alcohol but reported historical verification of alcoholism symptoms). Despite the elevated score ($\bar{X} = 15.70$) on the MAST for the non-alcoholic control group, there was a significant difference ($p < .001$) of this mean score from the two alcoholic groups ($\bar{X} = 32.8$ and $\bar{X} = 33.3$ for alcoholic Native American and Anglos respectively).

Females score lower (shown less alcoholism symptoms) than males ($p < .001$) across all three groups. Alcoholic anglo females, scored more similar to male alcoholics (Anglo and Native American)

Table 26. Mast Item Analysis for Three Groups.

ITEM #	GROUP 1 INDIAN ALCOHOLICS N = 43			GROUP 2 ANGLO ALCOHOLICS N = 20			GROUP 3 NON-ALCOHOLIC INDIANS N = 20			CHI SQUARE	D.F.	SIGN LEVEL
	YES	NO	0	YES	NO	0	YES	NO	0			
1.	44%	56%	0%	15%	75%	10%	55%	5%	40%	33.92	4	<.001
2.	81	19		65	35		40	60		10.73	2	<.01
3.	67	33		80	20		25	75		14.56	2	<.001
4.	21	79		35	65		55	45				N. S.
5.	79	21		65	35		30	70		14.25	2	<.001
6.	33	67		15	85		25	75				N. S.
7.	65	35		25	75		20	80		15.33	2	<.001
8.	42	58		20	80		80	20		12.51	2	<.01
9.	77	23		90	10		80	20				N. S.
10.	79	21		75	25		25	75		22.12	2	<.001
11.	67	33		85	15		35	65		10.91	2	<.01
12.	40	60		55	45		10	90		9.21	2	<.01
13.	63	37		65	35		25	75		9.08	2	<.01
14.	72	28		50	50		10	90		21.11	2	<.001
15.	86	14		55	45		35	65		13.62	2	<.01
16.	81	19		75	25		30	70		14.14	2	<.001
17.	88	12		65	35		20	80		28.56	2	<.001
18.	37	63		20	80		15	85				N. S.
19.	63	37		35	65		5	95		19.25	2	<.001
20.	51	49		55	45		40	60				N. S.
21.	32	67		40	60		20	80				N. S.
22.	16	84		35	65		0	100		8.75	2	<.05
23.	23	77		75	25		5	95		25.47	2	<.001
24.	74	26		60	40		35	65		8.97	2	<.05
25.	72	28		60	40		30	70		10.01	2	<.01
TOTAL	$\bar{X} = 32.8$			$\bar{X} = 33.3$			$\bar{X} = 15.70$					
MALES	$\bar{X} = 36.0$			$\bar{X} = 34.50$			$\bar{X} = 22.0$					
FEMALES	$\bar{X} = 18.7$			$\bar{X} = 28.5$			$\bar{X} = 9.4$					

Table 27. Mast Percentages of Item Responses.

INDIAN ALCOHOLICS N = 43			INDIAN NON-ALCOHOLICS N = 20			ALCOHOLICS ZUNG (1975) N = 116			NON-ALCOHOLICS ZUNG (1975) N = 103		
1.	YES%	NO%		YES%	NO%		YES%	NO%		YES%	NO%
1.	44	56	0	15	75	0	14	86		99	1
2.	81	19		65	35		80	20		18	82
3.	67	35		80	20		86	14		7	93
4.	21	79		35	65		34	66		98	2
5.	79	21		65	35		91	9		6	94
6.	33	67		15	85		15	85		99	1
7.	65	35		25	75		53	47		11	89
8.	42	58		20	80		36	64		96	4
9.	77	23		90	10		65	35		0	100
10.	79	21		75	25		30	70		9	91
11.	67	33		85	15		66	22+		7	86+
12.	40	60		55	45		37	63		0	100
13.	63	37		65	35		46	54		1	99
14.	72	28		50	50		52	48		0	100
15.	86	14		55	45		39	61		0	100
16.	81	19		75	25		61	39		0	100
17.	88	12		65	35		85	15		22	78
18.	37	63		20	80		31	69		1	99
19.	63	37		35	65		49	51		0	100
20.	51	49		55	45		28	72		0	100
21.	32	67		40	60		45	55		1	99
22.	16	84		35	65		21	79		0	100
23.	23	77		75	25		31	69		0	100
24.	74	26		60	40		49	51		4	96
25.	72	28		60	40		45	55		1	99
Per- Points N cent			Per- Points N cent			Per- Points N cent			Per- Points N cent		
0-3	0	0	0-3	4	10	0-3	1	1	0-3	90	87
4	0	0	4	1	5	4	1	1	4	8	8
5-51	43	100%	5-50	16	85	5-50	114	98	5-50	5	5

than they did to alcoholic Native American females or non-alcoholic Native American females.

The item analysis reported in Table 26 suggests a number of significant differences among the three groups. Alcoholic Native Americans were:

1. More likely to be arrested for their drinking.
2. Less likely to seek psychiatric help.
3. More likely to experience D.T.
4. More likely to drink before noon.
5. More likely to be fired from a job.
6. More likely to feel they are a normal drinker.
7. More likely to have experienced black-outs.
8. More likely to experience guilt about their drinking.
9. More difficulty in stopping drinking.
10. Less likely to experience marital problems.
11. Less likely to attend an A-A meeting.

Rosenberg Self-Esteem Scale

As predicted and shown by Beckman (1978), female alcoholics evidence much lower self-esteem than comparison groups and male alcoholics. Table 28 shows this was true in this study for both alcoholic Anglo females ($\bar{X} = 5.0$ to $\bar{X} = 1.00$, $p < .001$) and alcoholic Native American females ($\bar{X} = 3.67$ to $\bar{X} = 1.00$, $p < .001$) when compared to the non-alcoholic comparison groups. While Anglo alcoholic females scored significantly lower in self-esteem than Anglo alcoholic males ($\bar{X} = 5.00$ to $\bar{X} = 3.06$, $p < .001$), this was not the case when

Table 28. Rosenberg Self-Esteem Scale Comparisons.

COMPARISONS		SCORE	
ALCOHOLIC INDIANS			
MEN	(N = 34)	3.23 ± 1.04	
WOMEN	(N = 9)	3.67 ± 0.87	
TOTAL	(N = 43)	3.32 ± 1.01	
NON-ALCOHOLIC INDIANS			
MEN	(N = 10)	1.10 ± 0.87*	
WOMEN	(N = 10)	1.00 ± 1.33*	
TOTAL	(N = 20)	1.05 ± 1.09*	
ANGLO ALCOHOLICS			
MEN	(N = 16)	3.06 ± 1.34	
WOMEN	(N = 4)	5.00 ± 2.15	
TOTAL	(N = 20)	3.45 ± 1.50*	.001 SEX DIFFERENCE
BECKMAN (1978) ALCOHOL STUDY		2ND TEST	1ST TEST
MEN	(N = 120)	3.27 ± 1.62	3.94 ± 1.74**
WOMEN	(N = 120)	2.90 ± 1.69	4.19 ± 1.82**
9 MALE ALCOHOLICS TEST-RETEST			
MEN	(N = 9)	2.33 ± .86	2.67 ± 1.00

*p < .001 Sex difference

**p < .01

alcoholic Native American females were compared to alcoholic Native American males $\bar{X} = 3.67$ to 3.23).

It is clear, based on the evidence presented here, that both alcoholic Native Americans and Anglos have lower self-esteem scores than non-alcoholics ($p < .001$). Interestingly, alcoholic Anglo females have lower self-esteem scores than alcoholic Native American females. The latter subsample scored closer to the male alcoholics in both comparison groups than they did to females. Of course the small number of alcoholic Anglo female subjects ($N = 4$) could be a bias sampling of this trend. Table 29 gives a percentage breakdown of both sexes in all three groups.

Locus of Control

As shown previously (Table 4), the alcoholic and non-alcoholic groups did not differ significantly in their overall control orientation. Women in both the alcoholic and non-alcoholic groups were more externally oriented than men, although the difference was only significant for non-alcoholic Native Americans ($p < .05$). The non-alcoholic Native American female higher externality score on the LOC is especially interesting in light of the abundance of literature (i.e., Rotter 1966) suggesting that internal control is related to mental health and alcoholism recovery (O'Leary and Donovan 1975). It is important to remember that the subsample (non-alcoholic Native American females) had the lowest scores on the self-esteem measure (indicating high self-esteem).

Table 29. Self-Esteem Comparisons Per Group.

		HIGH	PERCENTAGES OF RESPONSES SELF-ESTEEM					LOW
3 GROUPS		0	1	2	3	4	5	6
Non-Alcoholic Indians								
	Male (10)	40%	20%	30%	10%	0%	0%	0%
	Female (10)	80%	0%	10%	0%	0%	10%	0%
$\bar{X} = 1.05^*$	Total (20)	60%	10%	20%	.05%	.05%	0%	0%
Alcoholic Indians								
	Male (34)	0%	.03%	26%	24%	41%	.06%	0%
	Female (9)	0%	0%	.11%	22%	55%	11%	0%
$\bar{X} = 3.32$	Total (43)	0%	-.2%	.23%	24%	44%	.07%	0%
Alcoholic Anglos								
	Male (16)	0%	.06%	25%	12.5%	44%	12.5%	0%
	Female (4)	0%	0%	25%	25%	0%	0%	50%
$\bar{X} = 3.45$	Total (20)	0%	.05%	25%	15%	35%	10%	10%

* $p < .001$

Table 30 lists the means and standard deviations for all the subsamples in this study. Interesting, alcoholic Native Americans who completed the treatment program were more internally controlled ($\bar{X} = 6.5$) than non-completers, non-alcoholic Indians, and alcoholic Anglos, although this difference was not significant. Table 31 shows an item comparison for all groups on all questions of the LOC. There are a number of significant items scores similarly for almost all Native American subjects which indicates a trend toward external control when Native Americans are asked to rate their efficacy in relation to government and politics (i.e., #19. With enough effort we can wipe out political corruption, #3. One of the major reasons why we have war is because people don't take enough interest in politics).

Table 32 gives a comparison of the LOC scores in this study with those presented by Rohsenow and O'Leary (1978). Comparisons of externality scores indicates that the alcoholic and control subsamples measured in this study are higher than those reviewed in locus of control research on alcoholic populations.

Indian Culturalization Test ICT

Table 33 illustrates the results on the ICT scores for alcoholic subsamples in this study. There were significant sex differences for both Native American groups; alcoholic Native American males scoring higher (more invested in traditional Indian values) than alcoholic Native American females ($t = 2.46$, $p < .05$) and non-alcoholic Native American males scoring higher than non-alcoholic Native American females ($F = .330$, $p < .06$). There was also a

Table 30. Locus of Control Comparisons.

		STANDARD DEVIATION	RANGE
Alcoholic Indians			
Men	$\bar{X} = 8.44$	2.88	2 - 14
Women	$\bar{X} = 9.56$	3.24	5 - 15
Total	8.67	2.95	2 - 15
Anglo Alcoholics			
Men	$\bar{X} = 8.81$	1.86	6 - 13
Women	$\bar{X} = 10.75$	4.27	6 - 16
Total	$\bar{X} = 9.2$	2.50	6 - 16
Non-Alcoholic Indians			
Men	$\bar{X} = 7.90$	1.85	5 - 11
Women	$\bar{X} = 9.90$	1.96	7 - 13
Total	$\bar{X} = 8.90$	2.12	5 - 13
Alcoholics Completing Program			
Men	$\bar{X} = 6.55$	4.3	2 - 14
Women	$\bar{X} = 9.90$	---	-----
Total	$\bar{X} = 6.55$	4.3	2 - 14
Comparison to Rohsenhow and O'Learys Scores on Review of LOC Studies for Alcoholics			
O'Leary Control Groups	$\bar{X} = 7.97$	3.5	
O'Leary, et al. Anglo Groups	$\bar{X} = 6.43$	3.8	
Alcoholic Indians	$\bar{X} = 8.67$	2.9	
Anglo Control	$\bar{X} = 9.20$	2.5	

Table 31. Locus of Control Item Analysis.

	NON-ALCOHOLIC INDIAN 10 Male 10 Female	NON-INDIAN ALCOHOLICS 16 Male 4 Female	ALCOHOLIC INDIANS 34 Male 9 Female			INDIANS COMPLETING PROGRAM	
	Total*	Total*	Total*	M* +	F*	*	*
1.	0	2	11	0	1	0	0
2.	1	0	3	2	1	0	0
3.	20	18	41	33	8	9	9
4.	8	14	16	12	4	2	4
5.	7	12	27	22	5	7	7
6.	0	0	8	7	1	3	2
7.	13	12	15	12	3	2	3
8.	8	8	16	13	3	2	1
9.	6	6	14	12	2	1	1
10.	4	6	12	11	1	4	3
11.	14	10	15	10	5	2	2
12.	8	12	13	9	4	2	2
13.	0	4	14	13	1	5	4
14.	0	2	6	3	3	2	3
15.	10	2	22	15	7	3	4
16.	9	9	24	18	6	5	5
17.	9	15	9	7	2	0	0
18.	9	1	12	11	1	2	2
19.	14	7	30	25	5	6	6
20.	6	1	5	3	2	0	1
21.	4	13	19	12	7	0	0
22.	14	10	19	13	6	3	3
23.	6	13	15	9	6	5	5
24.	7	7	9	7	2	2	2
	$\bar{X} = 8.9$	$\bar{X} = 9.2$	$\bar{X} = 8.67$	$\bar{X} = 8.4$	$\bar{X} = 9.5$	$\bar{X} = 6.5$	$\bar{X} = 6.6$

*Number of external responses.

Table 32. Locus of Control Score Comparisons to Rohsenow and O'Leary's Review of Previous Research.

STUDY	N	MEAN I-E SCORE		CONTROL SAMPLE
		ALCOHOLIC	CONTROL	
Gross & Morosko (1970)	100	6.52	8.15	Rotter's Male Norms, College
Gross & Morosko (1970)	100	6.11	8.15	Rotter's Male Norms, College
Gross & Morosko (1970)	62	6.74	8.42	Rotter's Male Norms, College
Distenfanso et al. (1972)	50	5.7	8.15	Rotter's Male Norms, College
Distenfanso et al. (1972)	50/50	5.7	9.5	Emotionally Disturbed Inpatients
Gross & Nerviano (1972)	266/200	7.35	7.35	Opiate Addict Inpatients
Costello & Manders (1974)	14/14	4.7	6.6	Ex-Alcoholic Counselors
Costello & Manders (1974)	21	7.09	-	(None)
Chess et al. (1971)	13/13	6.0	2.3	Hospital Employees
Butts & Chotlos (1973)	74/68	8.28	6.01	Matched Steelworkers
Donovan & O'Leary (1975)	23/23	6.39	7.52	Matched Patients & Staff
Alcoholic Native Americans	34/9	8.67	8.90	Non-Alcoholic Native Americans
Alcoholic Anglos	16/4	9.2	8.90	Non-Alcoholic Native Americans

Table 33. Indian Culturalization Test Comparisons.

70-80 Very Traditional 60-69 Somewhat Traditional		50-59 Not Very Traditional 40-49 Avoids Traditional Values				
		MEAN	S.D.	MODE	MEDIAN	RANGE
N = 20	Non-Alcoholic					
	Native Americans	58.90*	±7.65	61.0	60.83	42 - 70
	(Male = 10)	59.90*	±9.87	-	-	42 - 70
	(Female = 10)	57.90*	±4.88	-	-	49 - 63
N = 43	Alcoholic					
	Native Americans	62.44*	±6.25	60.0	62.25	50 - 75
N = 9	Alcoholic Native					
	Americans Completing	66.55*	±6.93	75.0	67.00	55 - 75
	Treatment (Pretest)					
N = 9	Alcoholic Native					
	Americans Completing	61.66*	±8.74	65.0	62.00	48 - 73
	Treatment (Posttest)					
N = 34	Alcoholic Native					
	Americans <u>Not</u>	61.35*	±5.68	-	-	-
	Completing Treatment					
	(Pretest)					
N = 25	Male Alcoholic Native					
	Americans Not Completing	62.36	±4.94	-	-	-
	Treatment (Pretest)					
N = 9	Female Alcoholic Native					
	Americans Not Completing	58.55	±6.94	-	-	-
	Treatment (Pretest)					

* p < .05

reported significant difference between the alcoholic and non-alcoholic subsamples with alcoholic Native Americans scoring higher than the non-alcoholic Native Americans ($F = 3.79, p < .06$). Alcoholic Native Americans who completed the treatment program had the highest ICT scores ($\bar{X} = 66.55$) for all subgroups in the Native American subsamples. These 9 male alcoholic Native Americans were significantly higher than non-alcoholic Native Americans ($p < .05$), alcoholic Native American females ($t = 2.45, p < .05$), alcoholic Native American males who didn't complete the program ($t = 1.99, p < .06$) and all alcoholic Native Americans who failed to complete the program ($t = 2.07, p < .06$). Surprisingly, the only post-test score to show any significant change on the four measures analyzed was the ICT (Pre-test $\bar{X} = 66.5$, Posttest $\bar{X} = 61.66, t = 2.21, p < .06$). This change in scores suggest that apparently these alcoholic Native American Indians who completed treatment became less invested in their traditional values, perhaps being influenced by the values of the Anglo staff.

Discriminant Function Analysis

Considering the significant difference obtained on the four pre-test measure (MAST, Self-Esteem, LOC, and ICT) and the demographic variables (i.e. marriage, employment, etc.), it was decided to determine which and to what extent these variables would aid in differentiating among the three groups. A series of univariate F tests (Wilks Lambda) and discriminant function analyses were performed. In determining which variables to use, each of the four

pre-test measures and the six demographic variables were used as a discriminant to identify significant differences among the three groups (alcoholic Native American, alcoholic Anglo and non-alcoholic Native American). A discriminant function analysis was performed between each set of groups (alcoholic Native American with alcoholic Anglo, alcoholic Native American with non-alcoholic Native American, and alcoholic Anglo with non-alcoholic Native American). Finally, an additional discriminant function analysis (GRP 1 vs GRP 2 vs GRP 3) was performed using all ten of the identified variables. Each variable was selected for entry into the analysis based on its ability to minimize Wilks Lambda. Means were inspected to determine the nature and direction of the relationship between the discriminating variable and the group. A secondary classification analysis was also undertaken to test the adequacy of the derived determined functions, and these scores were converted into probabilities of group membership. Each subject was then assigned to the group with the highest probability and accuracy of prediction (%) results were obtained. This prediction percentage offers additional information as to the potency of the discrimination.

Tables 34, 35, 36, 37, 38, and 39 show the discriminating variables that were selected for inclusion in the discriminant function analysis. Discriminant analysis results are also shown for percent gain on each variable and the correct percent classification for each group.

The three group (Table 38) discriminant function analysis revealed 81.93% of the subjects were correctly classified. Alcoholic

Table 34. Discriminant Function Analysis for Alcoholic Native Americans and Alcoholic Anglos.

VARIABLE LIST	GROUP MEANS		(U-STATISTIC) WILKS LAMBDA	F-RATIO (UNIVARIATE)	SIGN. LEVEL
	GRP 1	GRP 2			
1. MAST	32.39	33.30	0.9986	0.8503	N.S.
2. SELF-ESTEEM	3.32	3.45	0.9975	0.1492	N.S.
3. LOC	8.67	9.2	0.9923	0.4727	N.S.
4. SEX	79%	80%	0.9998	0.6985	N.S.
5. MARRIAGE	23%	20%	0.9986	0.8117	N.S.
6. EMPLOYMENT	29%	15%	0.9994	0.3322	N.S.
7. INCOME (10,000+)	0.0%	30%	0.6933	0.2698	<.001
8. EDUCATION (H.S+)	16%	10%	0.9995	0.2859	N.S.
9. AGE	31.79	35.90	0.9595		N.S.

SUMMARY TABLE		
DISCRIMINATORS I.D.	PROGRESSIVE WILKS LAMBDA	SIGNIFICANCE LEVEL
1. INCOME	0.693350	< .001
2. MAST	-	N.S.
3. SELF-ESTEEM	-	N.S.
4. LOC	-	N.S.
5. SEX	-	N.S.
6. MARRIAGE	-	N.S.
7. EMPLOYMENT	-	N.S.
8. EDUCATION	-	N.S.
9. AGE	-	N.S.

CLASSIFICATION RESULTS			
ACTUAL GROUP	NO. OF CASES	PREDICTED GROUP MEMBERSHIP	
		GROUP 1.	GROUP 2.
ALCOHOLIC INDIAN (1)	43	33 = 76.7%	10 = 23.3%
ALCOHOLIC ANGLO (2)	20	6 = 30.0%	14 = 70.0%

PERCENT OF "GROUPED" CASES CORRECTLY CLASSIFIED = 74.60%

Table 35. Discriminant Function Analysis for Alcoholic and Non-Alcoholic Native Americans.

VARIABLE LIST	GROUP MEANS		(U-STATISTIC) WILKS LAMBDA	F-RATIO (UNIVARIATE)	SIGN. LEVEL
	GRP 1	GRP 2			
1. MAST	32.39	15.70	0.70104	0.2601	<.001
2. SELF-ESTEEM	3.32	1.05	0.48433	0.6495	<.001
3. LOC	8.67	8.7	0.99847	0.9349	N.S.
4. ICT	62.44	58.90	0.94151	0.3790	<.005
5. SEX (MALE)	79%	50%	0.91307	0.5808	<.01
6. MARRIAGE (YES)	23%	70%	0.83711	0.1187	<.001
7. EMPLOYMENT (YES)	29%	100%	0.53488	0.5304	<.001
8. INCOME (10,000+)	0%	90%	0.19976	0.2444	<.001
9. EDUCATION (H.S.+)	16%	100%	0.88527	0.7905	<.01
10. AGE	31.79	33.55	0.99006	0.6122	N.S.

DF = 1, 62

SUMMARY TABLE

DISCRIMINATORS I.D.	PROGRESSIVE WILKS LAMBDA	SIGNIFICANCE LEVEL
1. INCOME	0.199762	<.001
2. MAST	0.176975	<.001
3. SELF-ESTEEM	0.150473	<.001
4. LOC	--	N.S.
5. ICT	--	N.S.
6. SEX	--	N.S.
7. MARRIAGE	--	N.S.
8. EMPLOYMENT	--	N.S.
9. INCOME	--	N.S.
10. EDUCATION	--	N.S.

CLASSIFICATION RESULTS

ACTUAL GROUP	NO. OF CASES	PREDICTED GROUP MEMBERSHIP	
		GROUP 1.	GROUP 2.
INDIAN ALCOHOLICS	43	42 = 97.7%	1 = 2.3%
NON-ALCOHOLIC INDIANS	20	0 = 0.0%	20 = 100%

PERCENT OF "GROUPED" CASES CORRECTLY CLASSIFIED = 98.41%

Table 36. Discriminant Function Analysis for Alcoholic Anglos and Non-Alcoholic Native Americans.

VARIABLE LIST	GROUP	MEANS	(U-STATISTIC) WILKS LAMBDA	F-RATIO (UNIVARIATE)	SIGN. LEVEL
	GRP 1	GRP 2			
1. MAST	33.30	15.70	0.6646	.1917	<.001
2. SELF-ESTEEM	3.45	1.05	0.5336	.3321	<.001
3. LOC	9.20	8.90	0.9956	.1668	N.S.
4. SEX (MALE)	80%	50%	0.9011	.4171	<.05
5. MARRIAGE (YES)	20%	70%	0.7928	.9929	<.05
6. EMPLOYMENT (YES)	15%	100%	0.2463	.1163	<.001
7. INCOME (10,000+)	35%	90%	0.6712	.1861	<.001
8. EDUCATION (H.S.+)	10%	100%	0.8743	.5460	<.05
9. AGE	35.90	33.55	0.9855	.5565	N.S.

SUMMARY TABLE			df = 1, 38
DESCRIMINATORS I.D.	PROGRESSIVE WILKS LAMBDA	SIGNIFICANT LEVEL	
1. EMPLOYMENT	0.2463	<.001	
2. SELF-ESTEEM	0.1757	<.001	
3. MAST	0.1362	<.001	
4. MARRIAGE	0.1194	<.001	
5. EDUCATION	0.1041	<.001	
6. SEX	--	N.S.	
7. INCOME	--	N.S.	
8. LOC	--	N.S.	
9. AGE	--	N.S.	

CLASSIFICATION RESULTS			
ACTUAL GROUP	NO. OF CASES	PREDICTED GROUP MEMBERSHIP	
		GROUP 2.	GROUP 3.
ANGLO ALCOHOLICS (2)	20	19 = 95.0%	1 = 5.0%
INDIAN NON- ALCOHOLICS (3)	20	0 = 0.0%	20 = 100.0%

PERCENT OF "GROUPED" CASES CORRECTLY CLASSIFIED = 97.50%

Table 37. Discriminant Function Analysis for Three Groups.

VARIABLE	WILKS LAMBDA (U STATISTIC)	F-RATIO (UNIVARIATE)	SIGNIFICANCE LEVEL	GROUP MEANS OR PERCENTAGES		
				GROUP 1	GROUP 2	GROUP 3
1. MAST	0.72442	0.1522	<.001	32.39	33.30	15.70
2. SELF-ESTEEM	0.57272	0.2984	<.001	3.32	3.45	1.05
3. LOC	0.99337	0.2672	N.S.	8.67	9.20	8.90
4. SEX (MALE)	0.92120	0.3422	<.05	79%	80%	50%
5. MARRIAGE (YES)	0.84671	0.7242	<.005	23%	20%	70%
6. EMPLOYMENT (YES)	0.55727	0.3178	<.001	29%	15%	100%
7. INCOME (AVG) (10,000+)	0.36381	0.6995	<.001	0%	35%	90%
8. EDUCATION (AVG) (H.S.+)	0.90390	0.4253	<.05	16%	10%	100%
9. AGE	0.96642	0.1390	N.S.	31.79	35.90	33.55

Table 38. Discriminant Function Analysis for Three Groups.

DISCRIMINATORS IDENTIFIED	PROGRESSIVE WILKS LAMBDA	SIGNIFICANCE LEVEL
1. INCOME (10,000+)	0.3638	.001
2. SELF-ESTEEM	0.2681	.001
3. MAST	0.2167	.001
4. EMPLOYMENT (YES)	0.1839	.001
5. MARRIAGE (YES)	0.1674	.001
6. SEX (MALE)	--	N.S.
7. EDUCATION (H.S.+)	--	N.S.
8. LOC	--	N.S.
9. AGE	--	N.S.

CLASSIFICATION RESULTS

ACTUAL GROUP	NO. OF CASES	PREDICTED GROUP MEMBERSHIP		
		GROUP 1.	GROUP 2.	GROUP 3.
Alcoholic Indian 1)	43	34 = 79.1%	8 = 18.6%	1 = 2.3%
Alcoholic Anglo 2)	20	6 = 30.0%	14 = 70.0%	0 = 0.0%
Non-Alcoholic Indian 3)	20	0 = 0.0%	0 = 0.0%	20 = 100.0%

PERCENT OF "GROUPED" CASES CORRECTLY CLASSIFIED = 81.93%

Table 39. Discriminant Comparisons by Marriage, Income and Employment.

	INCOME ABOVE 10,000 (%)	MARRIED (%)	EMPLOYED (%)
GROUP 1 ALCOHOLIC NATIVE AMERICANS N = 43	0 = 0.0%	10 = 23%	13 = 30%
GROUP 2 ALCOHOLIC ANGLOS N = 20	3 = 15%	4 = 20%	3 = 15%
GROUP 3 NON-ALCOHOLIC NATIVE AMERICANS N = 20	18 = 90%*	13 = 65%	20 = 100%

Native Americans were classified correctly 79.1% of the time. Alcoholic Anglos were classified 70.0% of the time. Non-alcoholic Native Americans were classified 100% of the time. The identified discriminating variables in descending rank order of importance were: 1) Income ($p < .001$), 2) Self-Esteem ($p < .001$), 3) MAST ($p < .001$), 4) Employment ($p < .001$), and 5) Marriage ($p < .001$). The variables sex, education, LOC, and age failed to be of any discriminant value for these three groups.

The two group (Table 34) discriminant function analysis between the alcoholic Native Americans and the alcoholic Anglos revealed 74.60% of the subjects were correctly classified. Alcoholic Native Americans were classified 76.7% of the time and alcoholic Anglos 70.0% of the time. The only identified discriminating variable was the income difference ($p < .001$) between the two groups, alcoholic Anglos having higher incomes than alcoholic Native Americans even though there was no significant differences between employment rates.

The two group (Table 35) discriminant function analysis between alcoholic Native Americans and non-alcoholic Native Americans revealed 98.4% of the subjects were correctly classified. Alcoholic Native Americans were classified correctly 97.7% of the time and non-alcoholics were classified 100.0% of the time. The identified discriminating variables in descending rank order of importance were: 1) income ($p < .001$), 2) MAST ($p < .001$), and 3) Self-Esteem ($p < .001$). The variables LOC, ICT, sex, marriage, employment,

income, and education failed to be of any discriminate value for these two groups.

The two group (Table 36) discriminate function analysis between alcoholic Anglos and non-alcoholic Native Americans revealed 97.50% of the subjects were correctly classified. Alcoholic Anglos were correctly classified 95.0% of the time and non-alcoholic Native Americans were correctly classified 100.0% of the time. The identified discriminating variable in descending rank order of importance were: 1) Employment ($p < .001$), 2) Self-Esteem ($p < .001$), 3) MAST ($p < .001$), 4) Marriage ($p < .001$), and 5) Education ($p < .001$). The variables of sex, income, LOC, and age failed to be of any discriminate value for these two groups.

While the series of discriminant functions performed here reveal a significantly high percentage of correct classifications for each group in this study, this analysis needs to be cross-validated on other samples. It is necessary to determine the degree of shrinkage in correct classifications that would occur if these discriminators were applied to other samples. Predictions based on the samples tested in this study cannot be generalized because discriminant functions inherently exploit the chance characteristics as well as the systematic influences of the data in each group studied. Thus, the weights generated from this present study would most likely be over-estimations of the power of the variables investigated if applied to other samples.

The results from the discriminate function analysis reveal that non-alcoholic Native Americans are different from alcoholics (both Anglo and Native Americans) on a number of important variables. Non-alcoholic Native Americans are more likely to have higher self-esteem, lower alcoholism symptoms, higher income, and are more likely to be married and employed than alcoholics of both groups. While the cause and effect relationship of these variables can only be speculated, it is important to note the relationship of social indicators to alcoholism and self-esteem.

Upon examination of the alcoholic discriminators, it was found that these two groups (Anglo and Native American alcoholics) only differed on income. In fact, alcoholic Native Americans are much more similar to alcoholic Anglos than they are to non-alcoholic Native Americans. Speculation on this relationship would suggest that the effects of alcoholism crosses cultural barriers and produces symptoms and social consequences similar for individuals in different cultures.

Rokeach Value Survey

Before comparing the Instrumental and Terminal Values of the Rokeach Value Survey for the four subsamples (alcoholic Native Americans, alcoholic Anglos, non-alcoholic Native Americans and the Anglo staff), a preliminary tests was performed to determine if there existed concordant group profiles for each subsample.

As a solution to the problem of ascertaining the over-all agreement among each of the subject's set of rankings in each subsample studied, the degree of association between all possible pairs of rankings was determined and the averages of these coefficients were computed to derive the degree of their overall association. These rankings were compared to determine how they would match up if there was no agreement among the sets of rankings, and then compared to determine how they would match up if there were perfect agreement among the sets of rankings for each of the four subsamples. The coefficient of concordance is an index of the divergence of the actual agreement shown in the data from the maximum possible (perfect) agreement. Kendall Coefficient of Concordance: W is such a coefficient.

Table 40 shows the Kendalls W rank correlation coefficients for each of the four groups with both the terminal and instrumental values. The relative low Kendall W (range = .2819 to .3816) indicates a low moderate level of agreement for all four of the groups. Considering these concordance levels, the results from the Rokeach Value Survey on these four subsamples should be interpreted with some caution.

Intergroup differences for the value rankings were analyzed by a nonparametric Median Test (Siegel 1956) for each of the four groups. A significant pairwise comparison was performed to determine the differences between each group (GRP 1 vs GRP 2 vs GRP 3 vs GRP 4). As shown in Table 41, alcoholic Native Americans differed from Anglos

Table 40. Coefficient of Concordance for Four Groups, Kendalls' W.

SUBJECTS	NUMBER	18 VALUE RANKINGS	KENDALLS' W	CHI ²	SIGNIFICANCE
INDIAN ALCOHOLICS	N = 43	1. Instrumental Values	.2819	205.03	< .001
		2. Terminal Values	.3632	265.52	< .001
ANGLO STAFF	N = 17	1. Instrumental Values	.3861	111.57	< .001
		2. Terminal Values	.3442	99.47	< .001
ANGLO ALCOHOLICS	N = 20	1. Instrumental Values	.3725	126.66	< .001
		2. Terminal Values	.3056	103.89	< .001
NON-ALCOHOLIC INDIANS	N = 20	1. Instrumental Values	.3130	106.42	< .001
		2. Terminal Values	.3204	108.94	< .001

Table 41. The Personal Values of Alcoholic Native Americans, Anglos and Non-Alcoholic Control Groups (Anglo and Native American).

	INDIAN ALCOHOLICS (N = 43) GROUP (1)	INDIAN NON-ALCOHOLICS (N = 20) GROUP (2)	ANGLO ALCOHOLICS (N = 20) GROUP (3)	STAFF ANGLO (N = 17) GROUP (4)	SIGNIFICANT PAIRWISE COMPARISON*
Terminal Values					
A comfortable life	4.7(3)	7.5(6)	8.5(7)	14.0(15)	GRP 4 > GRP 1
An exciting life	14.7(18)	14.5(16)	8.5(8)	14.25(16)	GRP 2 > GRP 3
A sense of accomplishment	9.1(8)	9.5(10)	10.5(13)	12.0(12)	
A world at peace	13.6(15)	12.5(14)	7.5(6)	4.0(1)	
A world of beauty	13.6(16)	14.5(15)	15.5(18)	11.2(11)	GRP 3 > GRP 4
Equality	10.1(12)	9.5(11)	10.5(14)	6.0(4)	
Family security	3.0(1)	7.5(7)	5.8(5)	6.0(5)	
Freedom	10.6(13)	6.5(4)	5.5(4)	7.6(7)	GRP 1 > GRP 3, GRP 4
Happiness	4.4(2)	5.0(2)	4.0(2)	9.6(10)	GRP 4 > GRP 1
Inner harmony	9.7(11)	7.5(8)	12.5(17)	7.2(6)	
Mature love	9.7(10)	9.5(9)	8.5(9)	8.6(8)	
National security	14.4(17)	16.8(18)	12.5(16)	15.6(18)	GRP 2 > GRP 3
Pleasure	9.3(9)	11.0(13)	10.1(11)	13.3(14)	
Salvation	13.1(14)	16.5(17)	10.5(12)	13.0(13)	
Self-respect	5.0(4)	4.0(1)	3.5(1)	5.0(2)	
Social recognition	8.9(7)	10.5(12)	11.4(15)	14.2(17)	GRP 4, GRP 3 > GRP 1
True friendship	7.3(6)	7.0(5)	9.5(10)	9.2(9)	
Wisdom	7.2(5)	6.7(3)	4.5(3)	5.2(3)	
Instrumental Values					
Ambitious	5.4(3)	7.0(4)	11.0(11)	12.7(15)	GRP 4, GRP 3 > GRP 1, GRP 2
Broad-minded	6.8(4)	7.1(5)	13.8(16)	9.6(8)	GRP 3 > GRP 1
Capable	7.2(5)	11.0(13)	8.0(6)	6.0(3)	
Cheerful	11.0(13)	10.1(10)	11.0(12)	10.2(12)	
Clean	4.6(2)	13.5(18)	5.5(3)	15.0(17)	GRP 2, GRP 4 > GRP 1, GRP 3
Courageous	13.8(17)	10.5(11)	6.5(5)	6.0(4)	GRP 1 > GRP 3, GRP 4
Forgiving	9.9(10)	8.7(8)	8.5(7)	11.7(14)	GRP 4 > GRP 2
Helpful	7.4(6)	10.0(9)	6.5(4)	8.8(7)	GRP 2 > GRP 3
Honest	9.2(7)	2.0(1)	2.5(1)	2.4(1)	GRP 1 > GRP 2, GRP 3, GRP 4
Imaginative	14.8(18)	12.5(15)	15.1(18)	10.0(11)	GRP 1, GRP 3 > GRP 4
Independent	11.7(14)	5.0(2)	8.5(8)	8.7(6)	GRP 1 > GRP 2, GRP 3, GRP 4
Intellectual	12.3(16)	12.5(14)	11.1(13)	11.2(13)	
Logical	12.0(15)	13.5(17)	11.1(14)	7.8(5)	GRP 1, GRP 2 > GRP 4
Loving	9.7(9)	7.8(7)	8.5(9)	10.0(10)	
Obedient	9.4(8)	10.5(12)	14.5(17)	16.6(18)	GRP 4, GRP 3 > GRP 1, GRP 2
Polite	10.4(12)	12.5(16)	12.5(15)	14.0(16)	
Responsible	10.2(11)	6.5(3)	5.5(2)	3.2(2)	GRP 1 > GRP 3, GRP 4
Self-controlled	3.3(1)	7.5(6)	8.5(10)	10.0(9)	GRP 3, GRP 4 > GRP 1

Figures shown are median ranking and, in parentheses, composite rank orders,
*p < .05; Median Sign Test.

(alcoholic and staff) on a number of Terminal Values while non-alcoholic Native Americans showed much less difference in their rankings when compared to both Anglo groups. There were no statistically significant value differences between the two Native American groups. The two Anglo groups only differed significantly on one value (a World of Beauty). Non-alcoholic Native Americans showed the remarkable ability to differ on only one value with both the alcoholic Anglos (National Security).

In contrast, alcoholic Native Americans showed statistically significant differences on four values. The alcoholic Native American values of Happiness (2), A Comfortable Life (3), and Social Recognition (7) were all ranked significantly higher, while the value of Freedom (13) was ranked significantly lower.

As Table 41 also shows, there were a number of statistically significant differences in instrumental values between alcoholic Native Americans and other three groups. There was only one statistically significant difference between the alcoholic Anglos and the Anglo staff on the value of Clean (composite rank of (17) for the Anglo staff to the composite rank of (3) for alcoholic Anglos). Native Americans of both groups (alcoholics and non-alcoholics) showed remarkable similarity in values, only differing significantly on the values of Honest and Clean (non-alcoholic Native Americans ranking the two values respectively (1) and (18) while the alcoholic Native Americans ranked these same values (7) and (2) respectively. In contrast, the alcoholic Native Americans had statistically

significant value differences on 11 values. The values of Self-Controlled (1), Clean (2), Ambitious (3), Broadminded (4), Honest (7), Obedient (8) were all ranked significantly higher and the values of Responsible (11), Imaginative (18), Independent (14), Logical (15), and Courageous (17) were all ranked significantly lower for the alcoholic Native Americans when their values were compared to the other three groups.

A comparison of the differences between all the groups indicates that Native Americans scored significantly different on the Rokeach Value Survey from the Anglos. Accordingly, Anglos from the alcoholic and non-alcoholic groups were very similar in their value rankings as were the Native Americans from both the alcoholic and non-alcoholic groups. Apparently cultural similarities proved to be more of a moderator on this measure than similar alcoholism histories. The differences in value rankings was greatest when the alcoholic Native Americans were compared to the Anglo staff (a total of 14 value differences for both instrumental and Terminal values compared to 11 for the alcoholic Anglos and 3 for the non-alcoholic Native Americans).

Comparison of Alcoholic Native Americans Values with Rokeach Norms for Different Populations

In view of the differences found between the alcoholic Native Americans and the Anglo population, this group (alcoholic Native Americans) was compared with the values of a number of different populations reported by Rokeach (1975) and Toler (1980). The value data for these populations were collected through interviews conducted

as part of the National Opinion Research Center Survey reported by Rokeach. Toler's study is the only study to date which has presented value rankings for alcoholics. Values for the different populations reported by Rokeach which were used for statistical comparisons of the value rankings of alcoholic Native Americans included:

1. Rokeach's Population Norms
2. Toler's Alcoholics
3. Cultural Norms for the Following Groups:
 - A. Blacks
 - B. Israel
 - C. Australia
4. Values Rankings by Education
 - A. High School and Below
 - B. College Degree
 - C. Ph.D. and "Scientist"
5. Sex Differences for
 - A. Males
 - B. Females
6. Income Levels Below \$5,000.

Since the individual rank scores for each of the subjects in these eleven groups were unavailable for comparisons, it was decided instead, to use the median rank averages for each group. The unavailability of the standard deviation for the median scores prevented the use of the previously described Median Sign Rank Test (Siegel 1956). Instead, the One Sample Case t-test was performed to determine if the instrumental and Terminal Value rankings on the Rokeach Value Survey were significantly different when each of these eleven groups

were compared to the alcoholic Native Americans values reported in this study.

The One Sample Case t-test required taking the mean value of each of the 36 values reported by the alcoholic Native Americans and subtracting the median reported value of the comparison group. This score was then divided by the quotient of the standard deviation divided by the number of subjects ranking that value -1 (Gaines 1982; Theis 1982).

Formula:

$$t = \frac{\bar{X} - \text{Reported Median}}{\text{St. Dev.} / \sqrt{N-1}}$$

In order to control for the lack of power inherent in this test, it was decided to report only significant differences on values that exceeded the $p < .001$ level of significance.

The results of these comparisons are presented in Table 42, 43 and 44. Alcoholic Native Americans were significantly different from the normative values presented by Rokeach on a number of important value rankings. Most importantly, the number of reported value differences increased as the educational level of the population got greater. Total value differences for individuals with a below high school education, college degree, and Rokeach normative population are 13, 16 and 13 respectively. These value differences were similar to the differences reported (11, 14) in the Anglo comparison groups. However, when alcoholic Native Americans were compared to Ph.D.

Table 42. Comparison of Alcoholic Native American's Personal Values and the Normative Values Presented by Rokeach by Education.

	INDIAN ALCOHOLICS (N = 43)	HIGH SCHOOL & BELOW (N = 244)	COLLEGE DEGREE (N = 86)	PH.D. "SCIENTISTS" (N = 101)	ROKEACH NORMS (N = 1,195)
Terminal Values					
A comfortable life	4.7(3)	8.0(7)*	13.8(15)*	14.8(15)*	9.6(12)*
An exciting life	14.7(18)	15.5(18)	13.4(14)	8.5(8)*	15.4(18)
A sense of accomplishment	9.1(8)	9.1(11)	5.4(4)*	3.7(1)*	8.8(8)
A world at peace	13.6(15)	2.9(1)*	3.4(1)*	7.3(7)*	3.3(1)*
A world of beauty	13.6(16)	13.4(15)	11.2(12)	11.2(12)	13.5(15)
Equality	10.1(12)	8.4(8)	8.0(7)	6.7(6)*	9.6(11)
Family security	3.0(1)	3.6(2)	6.5(5)	5.3(4)	3.6(2)
Freedom	10.6(12)	5.7(3)*	5.1(3)*	5.7(5)*	5.6(3)*
Happiness	4.4(2)	7.3(4)	9.6(10)*	11.4(12)*	7.6(4)
Inner harmony	9.7(11)	11.2(13)	9.2(9)	9.2(9)	10.4(13)
Mature love	9.7(10)	13.1(14)*	10.1(11)	10.0(10)	12.1(14)
National security	14.4(17)	8.9(10)*	13.0(13)	15.0(16)	9.1(9)*
Pleasure	9.3(9)	14.6(17)*	16.0(18)*	15.4(17)*	14.7(17)*
Salvation	13.1(14)	7.9(6)*	15.1(17)	17.6(18)*	8.5(7)*
Self-respect	5.0(4)	7.7(5)	6.8(6)	4.4(2)	7.7(5)
Social recognition	8.9(7)	14.1(16)*	14.3(16)*	13.0(14)*	14.6(16)*
True friendship	7.3(6)	9.6(12)	8.6(8)	10.5(11)*	9.3(10)
Wisdom	7.2(5)	8.4(9)	4.6(2)	5.3(3)	7.9(18)
Instrumental Values					
Ambitious	5.4(3)	6.0(2)	8.0(4)	9.2(10)*	6.7(3)
Broad-minded	6.8(4)	8.0(8)	5.8(3)	6.6(5)	7.4(5)
Capable	7.2(5)	9.9(10)	8.7(8)	6.1(3)	9.4(10)
Cheerful	11.0(13)	9.3(9)	11.7(15)	13.0(14)	9.9(12)
Clean	4.6(2)	7.8(7)	14.3(16)*	16.1(17)*	9.3(8)*
Courageous	13.8(17)	7.2(6)*	8.0(5)*	7.2(6)*	7.8(6)*
Forgiving	9.9(10)	7.0(4)	8.2(6)	11.0(12)	7.0(4)
Helpful	7.4(6)	7.1(5)	9.5(11)	9.7(11)	8.3(7)
Honest	9.2(7)	3.3(1)*	3.7(1)*	3.6(1)*	3.2(1)*
Imaginative	14.8(18)	15.8(18)	9.0(9)*	7.3(7)*	15.3(18)
Independent	11.7(14)	10.7(14)	8.4(7)*	8.4(9)*	10.6(13)
Intellectual	12.3(16)	13.7(16)	9.4(10)	6.2(4)*	13.1(15)
Logical	12.0(15)	15.4(17)*	11.2(14)	7.6(8)*	13.9(17)
Loving	9.7(9)	9.9(11)	9.6(12)	11.5(13)	9.4(9)
Obedient	9.4(8)	12.8(15)*	16.6(18)*	17.3(18)*	13.5(16)*
Polite	10.4(12)	10.4(13)	14.6(17)*	15.0(16)*	10.9(4)
Responsible	10.2(11)	6.9(3)	5.6(2)*	5.9(2)*	6.6(2)
Self-controlled	3.3(1)	10.0(12)*	10.4(13)*	11.9(14)*	9.5(11)*
Number of Significant Differences					
		TERM. 8	TERM. 7	TERM. 11	TERM. 7
		INST. 5	INST. 9	INST. 12	INST. 5
		TOTAL 13	TOTAL 16	TOTAL 23	TOTAL 12

*Figures shown are median rankings, in parentheses, composite rank orders.

*All comparisons were made with the Alcoholic Indian Group (N = 43) $p < .001$.

Table 43. Comparisons of Alcoholic Native Americans and Different Cultures, Toler's (1975) Alcoholics, and Individuals with Incomes Below \$5000.

	INDIAN ALCOHOLICS (N = 43)	BLACKS (N = 198)	AUSTRIA (N = 100)	ISRAEL (N = 120)	INCOME BELOW 5000 (N = 200)	ALCOHOLICS NORMS (N = 84)
Terminal Values						
A comfortable life	4.7(3)	6.7(5)	12.6(13)*	12.8(15)*	8.4(7)*	10.4(10)*
An exciting life	14.7(18)	15.2(18)	9.2(11)*	8.7(9)*	15.3(18)	11.1(11)*
A sense of accomplishment	9.1(8)	10.1(11)	6.3(4)	7.5(7)	10.2(12)	7.3(7)
A world at peace	13.6(15)	3.5(1)*	8.2(9)*	4.7(1)*	3.0(1)*	12.9(14)
A world of beauty	13.6(16)	14.0(16)	13.0(15)	14.5(17)	12.6(14)	13.2(15)
Equality	10.1(12)	4.6(2)*	9.0(10)	9.3(10)	8.4(8)	11.8(12)
Family security	3.0(1)	5.0(4)	9.5(12)*	7.9(8)*	4.5(2)	5.8(5)
Freedom	10.6(13)	4.9(3)*	4.9(3)*	6.5(4)*	5.2(3)*	8.2(9)
Happiness	4.4(2)	7.5(6)	7.5(7)	6.0(3)	8.0(6)*	5.3(3)
Inner harmony	9.7(11)	11.0(12)	7.7(8)	10.9(13)	10.9(13)	5.4(4)*
Mature love	9.7(10)	13.5(14)*	6.6(5)	6.5(5)	14.0(16)*	7.1(6)
National security	14.4(17)	11.4(13)	13.9(17)	5.6(2)*	9.5(11)*	16.5(18)
Pleasure	9.3(9)	14.2(17)*	12.7(14)*	11.2(14)	14.4(17)*	12.7(13)*
Salvation	13.1(14)	9.3(9)*	15.9(18)	15.9(18)	7.2(4)*	14.9(17)
Self-respect	5.0(4)	7.5(7)	7.5(6)	9.7(11)*	7.2(5)	4.3(1)
Social recognition	8.9(7)	13.6(15)*	13.7(16)*	13.5(16)*	13.8(15)*	13.6(16)*
True friendship	7.3(6)	9.6(10)	4.9(2)	110.1(12)	8.5(10)	8.2(8)
Wisdom	7.2(5)	8.5(8)	4.7(1)	7.3(6)	8.4(9)	5.1(2)
Instrumental Values						
Ambitious	5.4(3)	5.2(2)	7.8(6)	8.7(6)	6.8(3)	6.5(5)
Broad-minded	6.8(4)	8.0(8)	4.6(2)	9.2(9)	7.1(4)	6.0(2)
Capable	7.2(5)	10.3(12)	8.2(8)	6.5(4)	10.4(14)	7.8(6)
Cheerful	11.0(13)	10.3(13)	8.5(9)	12.2(14)	8.6(9)	11.6(13)
Clean	4.6(2)	5.3(3)	13.9(17)*	12.6(15)*	7.3(5)	10.8(11)*
Courageous	13.8(17)	7.8(7)*	8.7(10)*	9.8(12)*	8.0(8)*	9.2(8)*
Forgiving	9.9(10)	7.6(5)	9.2(11)	14.3(18)*	6.4(2)*	9.6(10)
Helpful	7.4(6)	7.6(6)	10.2(13)	9.3(10)	7.3(6)	11.1(12)*
Honest	9.2(7)	3.7(1)*	4.0(1)*	5.1(1)*	3.6(1)*	4.3(1)*
Imaginative	14.8(18)	15.8(18)	11.5(15)*	13.1(16)	15.8(18)	14.9(18)
Independent	11.7(14)	10.0(9)	7.9(7)*	9.9(13)	10.2(12)	9.4(9)
Intellectual	12.3(16)	12.5(16)	10.6(14)	7.7(6)*	13.4(16)	13.2(16)
Logical	12.0(15)	15.0(17)	9.9(12)	5.9(3)*	14.7(17)	11.6(14)
Loving	9.7(9)	11.9(15)*	7.5(4)	9.1(8)	10.3(13)	8.6(7)
Obedient	9.4(8)	11.5(14)	15.3(18)*	13.6(17)*	12.4(15)*	13.6(17)*
Polite	10.4(12)	10.2(11)	12.1(16)	9.7(11)	10.1(11)	11.9(15)
Responsible	10.2(11)	7.5(4)	5.2(3)*	5.2(2)*	7.7(7)	6.1(3)*
Self-controlled	3.3(1)	10.0(10)*	7.7(5)*	7.6(5)*	9.8(10)*	6.1(4)*
Number of Significant Differences						
		TERM. 7 INST. 4 TOTAL 11	TERM. 7 INST. 8 TOTAL 15	TERM. 8 INST. 9 TOTAL 17	TERM. 9 INST. 5 TOTAL 14	TERM. 5 INST. 7 TOTAL 12

*Figures shown are median rankings and, in parentheses, composite rank orders.

*All comparisons were made with the Indian Alcoholic Group (N = 43), $p < .001$.

Table 44. Comparisons of Alcoholic Native-American Males and Females with Rokeach's (1973) Normative Data for Males and Females.

	GROUP 1 MALE INDIAN ALCOHOLICS (N = 34)	GROUP 2 MALE POPULATION (N = 665)	GROUP 3 FEMALE INDIAN ALCOHOLICS (N = 9)	GROUP 4 FEMALE POPULATION (N = 774)
Terminal Values				
A comfortable life	5.6(2)	7.8(4)	4.4(2)*	10.0(13)
An exciting life	13.5(18)	14.6(18)	9.5(10)*	15.8(18)
A sense of accomplishment	10.2(13)	8.3(7)	7.1(6)	9.4(10)
A world at peace	11.9(14)*	3.8(1)	12.8(14)*	3.0(1)
A world of beauty	12.9(15)	13.6(15)	11.0(11)	13.5(15)
Equality	10.0(12)	8.9(9)	7.2(7)	8.3(8)
Family security	6.0(4)	3.8(2)	4.2(1)	3.8(2)
Freedom	8.9(7)*	4.9(3)	12.1(12)*	6.1(3)
Happiness	5.3(1)*	7.9(5)	6.3(4)	7.4(5)
Inner harmony	9.2(8)	11.1(13)	8.1(9)	9.8(12)
Mature love	9.4(9)*	12.6(14)	13.4(16)	12.3(14)
National security	13.1(16)*	9.2(10)	14.8(18)*	9.8(11)
Pleasure	8.5(6)*	14.1(17)	14.1(17)	15.0(16)
Salvation	13.1(17)*	9.9(12)	13.3(15)*	7.3(4)
Self-respect	5.9(3)	8.2(6)	6.0(3)	7.4(6)
Social recognition	9.4(10)*	13.8(16)	7.7(8)*	15.0(17)
True friendship	7.1(5)	9.6(11)	12.4(13)	9.1(9)
Wisdom	9.6(11)	8.5(8)	6.5(5)	7.7(7)
Instrumental Values				
Ambitious	5.4(1)	5.6(2)	10.0(12)*	7.4(4)
Broad-minded	7.9(5)	7.2(4)	9.8(10)	7.7(5)
Capable	9.8(10)	8.9(8)	5.4(3)*	10.1(12)
Cheerful	9.3(7)	10.4(12)	11.6(15)	9.4(10)
Clean	6.5(3)	9.4(9)	4.7(1)	8.1(8)
Courageous	13.6(18)*	7.5(5)	9.7(9)	8.1(6)
Forgiving	9.5(8)	8.2(6)	12.3(17)	6.4(2)
Helpful	7.0(4)	8.3(7)	12.0(16)	8.1(7)
Honest	10.8(14)*	3.4(1)	5.2(2)	3.2(7)
Imaginative	12.8(17)	14.3(18)	13.0(18)*	16.1(18)
Independent	10.2(12)	10.2(11)	8.1(6)	10.7(14)
Intellectual	11.2(15)	12.8(15)	9.4(8)	13.2(16)
Logical	11.7(16)	13.5(16)	7.7(4)	14.7(17)
Loving	8.4(6)*	10.9(14)	11.4(14)*	8.6(9)
Obedient	9.5(9)*	13.5(17)	9.8(11)	13.1(15)
Polite	10.8(13)	10.9(13)	11.2(13)	10.7(13)
Responsible	9.8(11)*	6.6(3)	8.0(5)	6.8(3)
Self-controlled	6.2(2)	9.7(10)	9.3(7)	9.5(1)
Number of Significant Differences	TERM. 8 INST. 5 TOTAL 13		TERM. 7 INST. 5 TOTAL 12	

*Figures shown are median rankings and, in parentheses, composite rank orders.

*Comparisons were made between the following groups: (1) vs (2), (3) vs (4), $p < .001$.

"Scientists," the disparity in value similarity jumped to a total value difference of 23.

Comparisons show that scientists rank a Sense of Accomplishment (1) and Social Recognition (2) as their top Terminal values while alcoholic Native Americans only ranked these same values 8 and 14 respectively. Both groups agreed on Family Security as their number one ranking. However, the alcoholic Native American's ranking of Happiness (2) and Comfortable Life (3) were only ranked 13 and 15 respectively by the Ph.D. "scientist." Instrumental values comparisons show a similar disparity in the Ph.D. "Scientists" rankings of Honest (1), Responsible (2), and Intellectual (4). These are the same values that alcoholic Native Americans rank 7, 11, and 16 respectively. Alcoholic Native Americans rankings of Self Control (1), Clean (2), and Ambition (3) are all values that Ph.D. Scientists only ranked 14, 17, and 10 respectively.

The value differences reported here have some interesting implications for professionals hoping to work with Native American populations. It appears, at least on the basis of the data presented here, that one could speculate the more education an individual receives, the greater the value disparity with Native Americans. Considering the similarity between alcoholic and non-alcoholic Native Americans on the value rankings of the Rokeach, there may be some generalizable considerations for value differences with other Native Americans. Of course, the limits of this particular study does not

allow the implications made here to be applied with any degree of certainty to other Native American populations.

Table 43 shows comparisons of alcoholic Native American's values with blacks (11 differences), individuals with incomes below \$5000 (14 differences), other alcoholics (12 differences) and different cultures (Israel=17 differences and Austria=18 differences).

Table 44 shows that alcoholic Native American males and females share approximately the same degrees of value similarity with Rokeach male and female norms (12 and 13 differences reported respectively). The reported value differences for the same sex matching yields approximately the same number of differences that alcoholic Native Americans shared with the Rokeach population in general (12 differences). The most surprising of these value differences is the male alcoholic Native Americans ranking of Honest (14). This has proved to be a significantly lower ranking of this value which consistently differs alcohol Native American males from all the subsamples and normative data presented in this study and by Rokeach in his research with a vast number of different populations.

The Perceived Values of Native American and Anglos

After each subject in the study completed the ranking of their own personal values on the Rokeach Value Survey, they were then asked to rank the values as they thought the other culture would (i.e., if a Native American, rank each value as you would suspect an Anglo would).

Tables 45 and 46 show the median rankings for each group (alcoholic Native Americans, alcoholic Anglos, and non-alcoholic Native Americans) and their perceived rankings of the other groups values. Intergroup differences were analyzed by a nonparametric Median Test (Seigel 1956). As shown in Table 46, there was a statistical significant difference for 11 of the Terminal values when the Native Americans value rankings were compared to the Anglo staff reported personal values. Comparison of the perceived alcoholic Native American rankings of Anglo values and the reported personal values of the Anglo staff revealed 7 statistically significant differences in the Instrumental Values. Alcoholic and non-alcoholic Native Americans perceived Anglos as holding the values of a Comfortable Life (1), Exciting Life (2), and Happiness (3) as the most important Terminal values. Anglo staff members ranked these as 15, 16 and 10 respectively. Native Americans perceived the Anglos as holding the Terminal values of Inner Harmony (17) and Equality (18) in the least importance relative to the 18 values presented. Comparisons of the Instrument values show that Native Americans perceived Anglos as holding the values of Ambitious (1) and Broadminded (2) as the most important of these values. In contrast, Anglos ranked these same two values 15 and 18 respectively. The values of Forgiving (18), Loving (17), Helpful (16) and Honest (15) were perceived as the least important values for Anglos.

Table 45 shows the median rankings for the two Anglo groups (alcoholic and non-alcoholic staff) and their perceived rankings of alcoholic Native American values. These perceived values of Anglos

Table 45. Comparison of Anglo's Perception of Native American Values and Reported Personal Values.

	GROUP 1 ANGLO STAFF PERCEIVED INDIAN VALUES (N = 17)	GROUP 2 ANGLO ALCOHOLIC PERCEIVED INDIAN VALUES (N = 20)	GROUP 3 ALCOHOLIC INDIAN VALUES (N = 43)
Terminal Values			
A comfortable life	14.0(15)**	6.5(3)	4.7(3)
An exciting life	10.0(10)	10.5(11)	14.7(18)
A sense of accomplishment	14.2(16)	8.5(7)	9.1(8)
A world at peace	12.0(13)	10.5(12)	13.6(15)
A world of beauty	8.6(7)**	12.5(17)	13.6(16)
Equality	8.7(9)	5.5(2)**	10.1(12)
Family security	8.6(8)	10.5(13)*	3.0(1)
Freedom	4.0(2)*	6.5(4)	10.6(13)
Happiness	5.3(4)	11.5(14)***	4.4(2)
Inner harmony	5.7(5)*	9.5(8)	9.7(11)
Mature love	10.0(11)	9.7(10)	9.7(10)
National security	16.6(18)	15.1(18)	14.4(17)
Pleasure	10.0(12)	11.5(16)	9.3(9)
Salvation	14.6(17)	11.5(15)	13.1(14)
Self-respect	4.0(1)	7.8(5)	5.0(4)
Social recognition	14.0(14)**	9.5(9)	8.9(7)
True friendship	6.0(6)	8.5(6)	7.3(6)
Wisdom	5.7(3)	4.5(1)	7.2(5)
Instrumental Values			
Ambitious	14.0(17)***	5.5(2)	5.4(3)
Broad-minded	12.6(14)*	6.5(4)	6.8(4)
Capable	9.6(12)	4.1(1)	7.2(5)
Cheerful	6.2(4)	12.5(16)	11.0(13)
Clean	13.0(15)***	8.5(6)*	4.6(2)
Courageous	6.0(3)***	5.5(3)**	13.8(17)
Forgiving	9.2(11)	8.5(7)	9.9(10)
Helpful	7.1(6)	10.5(11)*	7.4(6)
Honest	4.8(1)**	9.7(10)	9.2(7)
Imaginative	9.2(10)*	10.5(12)*	14.8(18)
Independent	7.7(8)	8.5(8)	11.7(14)
Intellectual	14.0(16)	11.5(15)	12.3(16)
Logical	14.8(18)	13.0(18)	12.0(15)
Loving	5.2(2)	10.5(13)	9.7(9)
Obedient	11.0(13)	10.5(14)	9.4(8)
Polite	8.0(9)	12.5(12)	15.4(12)
Responsible	6.7(5)	8.5(9)	10.2(11)
Self-controlled	7.7(7)	6.5(5)	3.3(1)
Number of Significant Differences			
	TERM. 5 INST. 6 TOTAL 11	TERM. 3 INST. 4 TOTAL 7	

*Figures shown are median rankings and, in parentheses, compromise rank orders.

*Comparisons were made between the following groups: (1) vs (3) and (2) vs (3), $p < .05$;

** $p < .01$, *** $p < .001$.

Table 46. Comparison of Native American Perception of Anglo Values and Reported Personal Values.

	GROUP 1 INDIAN ALCOHOLICS PERCEIVED ANGLO VALUES (N = 43)	GROUP 2 NON-ALCOHOLIC INDIANS PERCEIVED ANGLO VALUES (N = 20)	GROUP 3 REPORTED ANGLO VALUES (STAFF) (N = 17)
Terminal Values			
A comfortable life	3.6(1)***	3.5(1)***	14.0(15)
An exciting life	9.0(9)	4.5(2)*	14.2(16)
A sense of accomplishment	6.8(6)	6.1(5)*	12.0(12)
A world at peace	10.7(14)	6.3(6)	4.0(1)
A world of beauty	13.2(16)	15.0(17)	11.1(11)
Equality	12.5(15)*	16.5(18)*	6.0(4)
Family security	6.0(5)	7.5(8)	6.0(5)
Freedom	5.0(2)	6.5(7)	7.6(7)
Happiness	5.2(3)**	13.5(15)*	9.6(10)
Inner harmony	14.7(17)***	12.5(14)	7.2(6)
Mature love	9.2(10)	10.7(12)	8.6(8)
National security	10.6(13)	5.5(4)**	15.6(18)
Pleasure	9.2(11)**	9.0(10)**	13.3(14)
Salvation	14.9(18)	11.5(13)	13.0(13)
Self-respect	9.0(8)*	8.8(9)	5.0(2)
Social recognition	5.7(4)**	4.5(3)***	14.2(17)
True friendship	8.3(7)	14.5(16)	9.2(9)
Wisdom	10.0(12)**	10.0(11)**	5.2(3)
Instrumental Values			
Ambitious	1.8(1)***	3.1(2)***	12.7(15)
Broad-minded	6.2(2)**	9.1(7)	9.6(8)
Capable	7.0(5)	8.5(6)	6.0(3)
Cheerful	12.0(13)	13.8(15)	10.2(12)
Clean	9.0(8)	12.5(13)	15.0(17)
Courageous	12.3(14)*	9.8(9)	6.0(4)
Forgiving	16.4(18)**	16.5(18)**	11.7(14)
Helpful	11.2(12)	15.1(16)*	8.8(7)
Honest	12.8(15)**	15.8(17)***	2.4(1)
Imaginative	10.1(11)	10.5(11)	10.0(11)
Independent	6.8(4)	3.8(3)	8.8(6)
Intellectual	7.1(6)	2.1(1)	11.2(13)
Logical	7.7(7)	4.5(4)	7.8(5)
Loving	13.9(17)***	10.5(10)	10.0(10)
Obedient	13.7(16)	11.5(12)	16.6(18)
Polite	9.6(9)	13.0(14)	14.0(16)
Responsible	6.6(3)	9.5(8)	3.2(2)
Self-controlled	9.7(10)	6.0(5)	10.0(9)
Number of Significant Differences			
	TERM. 8	TERM. 9	
	INST. 6	INST. 4	
	TOTAL 14	TOTAL 13	

*Figures shown are median rankings, and in parentheses, composite rank orders.

*Comparisons were made between the following groups: (1) vs (3), (2) vs (3), $p < .05$.

** $p < .01$, *** $p < .001$.

were compared to the reported personal values of non-alcoholic Native Americans. Anglo staff members perceived Native Americans as holding the Terminal values of Social Recognition (14) and a Comfortable Life (15) in relative low importance while holding the values of Equality (2) and Inner Harmony (5) in higher importance. Native Americans actually ranked the Terminal values of Social Recognition (7) and a Comfortable Life (3) in a relative high position while holding the values of Equality (12) and Inner Harmony (11) in less relative importance. Comparison of Instrumental values rankings revealed that Anglos perceive Native Americans holding the values of Ambitious (17), Clean (15) and Broadminded (14) in relative unimportance while holding the values of Honest (1) and Courageous (3) in greater importance. Native Americans ranked the values of Ambitious (3), Clean (2) and Broadminded (4) much higher while ranking the values of Honest (7) and Courageous (17) much lower.

Interestingly, Anglos perceptions of Native American values were more accurate than Native American's ranking of Anglos values. It is also important to note that the perceived value rankings of the alcoholic Anglos were more accurate than those of the Anglo staff (7 differences compared to 11 differences).

Pre-Post Comparisons on Alcoholics Completing the Treatment Program

Nine of 43 inpatient alcoholic Native Americans completed treatment. Of the nine female alcoholics who started inpatient treatment, none completed the two month treatment program. Therefore,

Pre-Post measures were available for only nine male alcoholics. Table 47 presents the demographic comparisons of these two groups.

A t-Test was performed on the pretest and posttest scores on the MAST, Self-Esteem, LOC and ICT for the nine male alcoholic Native Americans who completed treatment. Table 48 shows that none of the four measures changed in any statistically significant fashion, although the ICT was close to significance ($t=2.21$, $p < .058$). The change in ICT scores from a $\bar{x}=66.56$ to a $\bar{x}=61.67$ suggests that for these nine alcoholic male Native Americans, there was a substantial drop of their investment in traditional cultural values from the time when they first entered treatment.

Comparisons were also made between the nine male completers and the female and male alcoholic Native Americans who failed to complete treatment. This later group was then pooled and a t-Test was performed on all three groups. Tables 49, 50 and 51 show the results of these comparisons.

Male alcoholics completing treatment showed statistically significant differences from female alcoholic Native Americans on the MAST ($t=3.80$, $p < .01$), Self-Esteem ($t=2.27$, $p < .05$), and the ICT ($t=2.45$, $p < .05$). Speculation of these assessed differences suggest that male alcoholic Native Americans who complete treatment have higher self-esteem, greater investment in traditional cultural values and more alcoholism symptoms than female alcoholic Native Americans who failed to complete the treatment program.

Table 47. Demographics of Native American Alcoholics who Completed Inpatient Treatment and Native American Alcoholics who Fail to Complete Inpatient Treatment.

NON- COMPLETERS COMPLETERS												
		N	AGE	% MARRIAGE	% EMPLOYED	% PART EMPL.	EDUCATION			INCOME		
							H.S.	H.S.	H.S.+	-5000	5-10	10000+
	MALES	25	28.5	26%	12%	20%	44%	48%	08%	84%	16%	0%
	FEMALES	9	28.8	11%	33%	22%	44%	44%	12%	66%	33%	0%
MALES	9	40.8	33%	33%	0%	12%	44%	44%	66%	33%	0%	

Table 48. t-Test Pre-Post Comparisons for Nine Male Alcoholics Completing Treatment.

VARIABLE	N	$\bar{X}$	S.D.	S.E.	DIFF. MEAN	S.D.	S.E.	2-TAIL CORR. PROB.	T VALUE	DF	2-TAIL PROBABILITY
MAST 1 (Pretest)	9	37.67	9.77	3.25	-0.667	12.67	4.22	0.401 0.285	-0.16	8	N.S. (0.87)
MAST 2 (Posttest)	9	38.33	12.88	4.29							
ICT 1 (Pretest)	9	66.56	6.93	2.31	4.889	6.62	2.21	0.665 0.050	2.21	8	N.S. (0.058)
ICT 2 (Posttest)	9	61.67	8.74	2.91							
LOC 1 (Pretest)	9	6.56	4.33	1.44	0.000	5.85	1.95	0.023 0.953	0.00	8	N.S. (1.00)
LOC 2 (Posttest)	9	6.56	4.03	1.34							
SELF-ESTEEM (Pretest)	9	2.67	1.00	0.33	0.333	1.22	0.40	0.144 0.711	0.82	8	N.S. (0.43)
SELF-ESTEEM (Posttest)	9	2.33	0.86	0.28							

Table 49. t-Test Comparisons for Alcoholic Native Americans Completing Treatment and Female Alcoholic Native Americans who Failed to Complete Treatment.

VARIABLE	N	MEAN	S.D.	S.E.	F VALUE	2-TAIL PROB.	POOLED VARIANCE ESTIMATE			SEPARATE VARIANCE ESTIMATE		
							T VALUE	DF	2-TAIL P	T VALUE	DF	2-TAIL P
GROUP 1 MAST	9	37.666	9.772	3.257	1.32	.701	3.80 16 .002			3.80 15.69 0.002		
GROUP 2	9	18.777	11.245	3.748								
GROUP 1 SELF-ESTEEM	9	2.667	1.000	0.333	1.33	.694	-2.27 16 .038			-2.27 15.68 0.038		
GROUP 2	9	3.667	0.866	0.289								
GROUP 1 LOC	9	6.555	4.333	1.444	1.78	.431	-1.66 16 .116			-1.66 14.83 0.117		
GROUP 2	9	9.555	3.245	1.082								
GROUP 1 ICT	9	66.555	6.930	2.310	1.01	.994	2.45 16 .026			2.45 16.00 0.026		
GROUP 2	9	58.555	6.948	2.316								

GROUP 1 = MALE ALCOHOLIC INDIANS COMPLETING TREATMENT

GROUP 2 = FEMALE ALCOHOLIC INDIANS NOT COMPLETING TREATMENT

Table 50. t-Test Comparisons for Alcoholic Native American Males Completing Treatment and Alcoholic Native American Males who Failed to Complete Treatment.

VARIABLE	N	MEAN	S.D.	S.E.	F VALUE	2-TAIL PROB.	POOLED VARIANCE ESTIMATE			SEPARATE VARIANCE ESTIMATE		
							T VALUE	DF	2-TAIL P	T VALUE	DF	2-TAIL P
GROUP 1 MAST GROUP 2	9 25	37.667 35.400	9.772 7.848	3.257 1.570	1.55	.385	0.70	32	.491	0.63	11.93	0.542
GROUP 1 SELF-ESTEEM GROUP 2	9 25	2.6667 3.4400	1.000 1.003	0.333 0.201	1.01	1.000	-1.98	32	.056	-1.99	14.23	0.067
GROUP 1 LOC GROUP 2	9 25	6.5556 9.1200	4.333 1.833	1.444 0.367	5.59	.001	-2.46	32	.020	-1.72	9.05	0.119
GROUP 1 ICT GROUP 2	9 25	66.5566 62.3600	6.930 4.940	2.310 0.988	1.97	.191	1.96	32	.059	1.67	11.07	0.123

Table 51. t-Test Comparisons for Alcoholic Native Americans Completing Treatment and All (Male and Female) Native Americans Failing to Complete Treatment.

VARIABLE	N	MEAN	S.D.	S.E.	F VALUE	2-TAIL PROB.	POOLED VARIANCE ESTIMATE			SEPARATE VARIANCE ESTIMATE		
							T VALUE	DF	2-TAIL P	T VALUE	DF	2-TAIL P
GROUP 1 MAST	9	37.667	9.772	3.257	1.37	6.76	-1.60 41 .118			-1.75 14.40 0.101		
GROUP 2	34	31.000	11.439	1.962								
GROUP 1 SELF-ESTEEM	9	2.6667	1.000	0.333	1.08	.799	2.29 41 .027			2.24 12.22 0.045		
GROUP 2	34	3.5000	0.961	0.165								
GROUP 1 LOC	9	6.556	4.333	1.444	3.73	.007	2.57 41 .014			1.79 9.16 0.107		
GROUP 2	34	9.2353	2.244	0.385								
GROUP 1 ICT	9	66.3529	6.930	2.310	1.48	.401	-2.33 41 .025			-2.07 11.02 0.062		
GROUP 2	34	61.3529	5.688	0.976								

GROUP 1 = MALE ALCOHOLIC INDIANS

GROUP 2 = ALCOHOLIC INDIANS (MALE AND FEMALE)

Table 49 shows that male alcoholic completers did not differ statistically from non-completing male alcoholic Native Americans in any significant fashion. However, the self-esteem difference was close to significance ($t=1.99$, $p < .0.067$). This would suggest that male alcoholic Native Americans who completed treatment showed higher self-esteem upon entering treatment than those male alcoholic Native Americans who failed to complete treatment.

Table 50 shows that male alcoholic Native Americans completing treatment differ significantly from the pooled group of male and female alcoholic Native American non completers on the self-esteem ($t=2.24$, $p < .05$) and ICT ($t=2.07$, $p < .062$). Speculation on these results would suggest that lower self-esteem and less investment in traditional cultural values may adversely effect treatment outcome. However, considering the obvious confounding of sex and the small number of subjects who even managed to complete treatment, little can be said with any certainty beyond the fact that alcoholism treatment of Native American alcoholics proves difficult. Whether this difficulty is made greater by the severity of the alcoholism of this population or the value differences from the Anglo staff is beyond the scope of this study.

Pretest and Posttest comparisons were made on the Rokeach Value Survey for both reported personal values and perceived values of Anglos. A Median Rank Sign Test was performed to determine if there were any statistically significant differences in values rankings as

a result of treatment. Table 52 shows only five changes in personal values and one change in perceived Anglo values. Examination of these significant changes in value rankings failed to reveal any coherent trends for male alcoholic Native Americans completing treatment. The most that can be said for this measure is that a two month inpatient treatment program does little to change the reported values of alcoholic Native Americans.

Table 52. Pre-Post Value Comparisons for Male Alcoholics Completing Treatment.

	INDIAN ALCOHOLICS (N = 9) PRETEST	INDIAN ALCOHOLICS (N = 9) POSTTEST	INDIAN ALCOHOLICS PERCEIVE ANGLOS (N = 9) PRE	(N = 9) POST
Terminal Values				
A comfortable life	6.0(4)	8.7(9)	4.7(2)	6.7(5)
An exciting life	16.2(17)	13.0(16)	9.0(10)	11.0(11)
A sense of accomplishment	10.0(10)	8.0(7)	10.0(11)	7.2(7)
A world at peace	13.0(16)	5.0(3)	11.2(15)	4.0(2)
A world of beauty	10.7(11)	14.2(17)	13.7(16)	15.0(17)
Equality	10.0(9)	13.0(15)	11.0(14)	15.2(18)
Family security	3.0(2)	12.7(14)*	4.0(1)	4.2(3)
Freedom	11.0(13)	11.2(13)	6.0(4)	4.0(1)
Happiness	5.0(3)	3.2(1)	5.0(3)	14.6(16)
Inner harmony	8.0(6)	10.0(11)	14.0(17)	11.0(12)
Mature love	8.2(7)	7.0(5)	11.0(13)	12.2(13)
National security	13.2(15)	8.0(6)	8.0(9)	14.0(14)
Pleasure	13.0(14)	6.0(4)	6.3(5)	5.7(4)
Salvation	16.0(18)	8.0(8)*	15.0(18)	14.7(15)
Self-respect	2.3(1)	9.0(10)	7.0(6)	9.2(8)
Social recognition	9.0(8)	5.0(2)	7.0(7)	7.0(6)
True friendship	6.0(5)	11.0(12)*	8.0(8)	10.7(10)
Wisdom	10.7(11)	115.0(18)	10.0(12)	9.7(9)
Instrumental Values				
Ambitious	7.7(7)	6.0(4)	4.0(1)	1.66(1)
Broad-minded	6.0(2)	5.6(3)	8.0(8)	5.7(5)
Capable	9.0(12)	10.0(12)	10.0(10)	7.0(7)
Cheerful	8.0(18)	12.7(16)*	12.0(13)	5.0(3)
Clean	5.0(2)	11.2(13)	5.0(2)	13.0(4)
Courageous	15.0(17)	13.2(16)	11.75(12)	11.0(12)
Forgiving	10.0(14)	4.0(1)	10.0(9)	13.0(14)
Helpful	9.0(11)	13.0(15)	7.0(6)	11.0(11)
Honest	6.0(4)	15.0(18)	6.3(4)	9.7(10)
Imaginative	15.8(18)	10.0(11)	15.2(18)	8.0(9)
Independent	8.0(9)	7.0(5)	13.2(17)	13.2(16)
Intellectual	11.0(15)	10.0(10)	12.2(15)	5.3(4)
Logical	14.0(16)	13.6(17)	12.0(14)	6.0(6)
Loving	9.0(10)	9.2(8)	13.0(16)	16.7(18)
Obedient	7.0(5)	9.0(7)	5.7(3)	12.2(13)
Polite	10.0(13)	5.0(2)	7.6(7)	132. (17)**
Responsible	7.0(6)	10.0(9)*	6.7(5)	3.2(2)
Self-controlled	4.0(1)	8.0(6)	11.0(11)	7.2(8)

*Figures shown are median rankings and, in parentheses, composite rank orders.

*p < .05, **p < .01, ***p < .001.

CHAPTER 4

DISCUSSION

Alcoholism Recovery and Value Orientation

Interpretations from these results are limited because of the small number of alcoholic Native Americans who successfully completed treatment. A number of shortcomings in the analysis of data from the treatment of this population is unavoidable, including the lack of follow up for those alcoholic Native Americans who failed to complete treatment. These subjects proved impossible to locate and none responded to the promise of monetary rewards in attempts to have them contact the treatment program after they dropped out of treatment. Reinterviewing and retesting of all 43 inpatients would have been desirable. "Captive" subjects during initial hospitalization, interviewing and testing the patients at the start of treatment had posed a troublesome but less severe problem.

Systematically collected data on non problem drinking Native Americans would have added substantially to this study. The control group of designated non-alcoholic Native Americans proved to be misleading. Many of these subjects (56%) were either recovering alcoholics, non-alcohol consumers or showed alarming signs of alcoholism symptoms themselves (MAST score $\bar{X} = 15.7$). Two month follow-up and retesting of the two control groups would have also proved desirable.

Careful and more systemetized classification of treatment success (i.e., Independent clinical evaluators) would have also been perferred.

However, with these limitations in mind, the results of this study lend evidence to the hypothesis that Native Americans (both alcoholic and non-alcoholic) have distinct identifiable value differences from non Native American populations. The relationship of these values to alcoholism and alcoholism recovery is more difficult to discern. It appears that the relationship of alcoholism symptoms, self-esteem, and social-economic circumstances have a far greater impact on the etiology, maintenance, and recovery of alcoholism than any identifiable cultural values. In fact, alcoholic Native Americans proved to be more similar to other alcoholics (even if these alcoholics were Anglo) than they are to their non-alcoholic cultural peers when value differences are excluded from the comparisons. However, the relationship between cultural values and social-economic consequences is sufficiently complex to disallow firm conclusions at this point. The complexity of this relationship to alcoholism treatment for Native Americans will be explored at length in the following pages.

The Relationship of Sex, Self-Esteem, and Alcoholism

The severity of alcoholism for the Native American subjects in this study parrallels that of other Native American groups reported in the literature (Shore and Von Fumette 1972; Ferguson 1970). The findings in this study also lends support to the conclusion that Native American groups suffer a disproportionately higher rate of alcohol related

disorders than the dominant general Anglo population (Frederick 1973; Cockerham 1977; Seivers 1968). This reported problematic situation is usually compounded by the fact that Native Americans usually have a far lower alcoholism recovery rate than most other groups entering treatment (Wilson and Shore 1975). While the failure of this study to adequately match for an Anglo comparison group prevents any firm statements being made specifically about the populations investigated here, the 21% success rate reported for alcoholic Native Americans falls far below the 50% approximations consistently reported in the literature for the dominant culture (Matakas et al. 1978).

The differences between the sexes in the number of patients treated at the BHACA program is consistent with the 20% female alcoholism rates reported by Beckman (1978). While the 0% success rate of alcoholic Native American females is alarming, it may be an artifact of the low (N=9) number of female subjects in this study. However, the retention and rehabilitation rates for female alcoholics reported in the literature is far below that of males and consistent with the findings reported here (Maglin 1974; Tamerin 1978; Levy and Doyle 1974).

Previous studies examining self-concept in alcoholics consistently conclude that when compared to a control group of non-alcoholics and alcoholic males, female alcoholics suffer from lower self-esteem (Beckman 1978; Tamerin 1978). While the self-esteem of both the female alcoholic subsamples and the male alcoholic subsamples was below that of the non-alcoholic comparison groups, it was the

alcoholic Anglo females who suffered the lowest self-esteem. Speculation in the relationships of self-esteem to alcoholism would suggest that female alcoholism may carry greater stigma in the dominant Anglo culture than it does in the non-dominant Native American culture. It has been suggested that for some Native American tribes, alcoholic drinking is socially accepted and viewed as an appropriate form of protest against the dominant Anglo culture (Littmar, 1970).

The relationship of self-esteem to the MAST scores is an interesting one. It has been suggested that the central feature of alcoholism is a preoccupation with being inadequate and inept and a sense of futility about being able to fulfill the feminine role (Blane 1968). The same argument could be easily extended for Native-Americans in general. As Rosenberg (1979) demonstrated, minority status is not related to poor self-esteem. Rather it appears related to inclusion and exclusion in an identified and desired group. High self-esteem, according to Rosenberg is correlated with: 1) high education and occupation; 2) locus of control; and 3) political effectiveness; all variables in lesser supply to Native Americans and females.

Rosenberg's thesis that self-esteem is related to social and political potency takes on added importance in light of the Native American responses to the Locus of Control and the Rokeach Value Survey. Native Americans (both alcoholic and non-alcoholic) in this study were nearly unanimous in their external responses to questions on the LOC which referred to personal political effectiveness (see

Table 31). Likewise, the importance of self-esteem surfaced on the value survey also. While Rokeach (1973) reported a value ranking of five on Self-Respect for the dominant Anglo culture, this was the value consistently ranked number one by Native Americans and Toler's (1975) alcoholics. Speculation on this relationship might suggest that self-respect is a value highly ranked because of its scarcity to these two groups.

Considering the relative high self-esteem scores from the non-alcoholic Native Americans, it is important to understand the relation of this score to other minority groups studied by Rosenberg (1965, 1979). Minority status appears unrelated to poor self-esteem. Rather the effect of self-esteem is related to inclusion or exclusion in an identical desired group. Also, it appears that low self-esteem is not related globally to Anglo or the dominant culture, but is correlated to three important factors: 1) Education and Occupation, 2) Locus of Control and Intelligence, and 3) Political efficacy.

In examining the self-concepts of Native Americans, systematic research is hard to find. A study by Trimble (1974) however, strongly casts doubt upon the assumption of low self-esteem among non-alcoholic Native Americans. Obviously, a single study, even one of relatively high quality, does not suffice to establish an empirical generalization, but it certainly lends no support to the assumption of low self-esteem among members of this disprivileged group. More likely the evidence Rosenberg (1979, 1965) presents which indicates that low-esteem is correlated with anxiety and depression would do more

to explain the status of these alcoholic Native Americans assessed in this study.

If the relationship between alcoholism and low self-esteem is a causal one, it would appear as one decreased the other would follow. This was the case for the MAST scores and the self-esteem ratings presented for the subsamples in the study except for the alcoholic Anglo females. Overall, this study found that the MAST provides a highly useful and reliable measure of alcohol misuse in Native Americans. The MAST has long been recognized as a useful tool for the measurement of alcoholism symptoms in the dominant culture (Zung 1974). Unfortunately, there is little research addressing the relationship of self-esteem to this measure of alcoholism. However, even with the significant relationships of self-esteem and alcoholism reported in this study, the hypothesis that alcoholic Native Americans completing treatment would show greater increases in self-esteem was not substantiated by the data presented here.

Locus of Control and Recovery

It is important to discuss this particular measure if for no other reason than it is one of the most widely used assessments in alcoholism research (Rohsenow and O'Leary 1978). This scale has raised interesting questions because it has produced opposite results to those originally hypothesized for alcoholics. There have been several possible explanations advanced to explain the unexpected findings of internal orientation among alcoholics. One is that alcoholics may not only believe they can control their drinking, but

may also have learned that they have a readily available method to control their moods and emotions as well. Rohsenow and O'Leary (1978) question the common assumption that internal control is necessarily a desired aim for alcoholics. They suggest that perhaps a "happy medium" between the low scores of alcoholics and the high scores of their general psychiatric population might be a better indication of psychological health. In view of this suggestion, perhaps psychotherapy for alcoholics ought to be oriented more toward shifting control orientation from internal to external. This is what Alcoholics Anonymous has always tried to do. The A.A. program emphasizes the admission of "powerlessness over alcohol" and giving up control to a "higher power." While this program cannot, of course, be said to have been proven right by the findings from the I-E scale, it is possible that A.A. emphasizes a feature of the alcoholic personality which has therapeutic significance.

Interestingly, it was these alcoholic Native American males who completed the treatment program that has the lowest I-E scores ($\bar{X} = 6.1$). This would suggest that adopting a strategy different from the one prescribed for Anglo alcoholics would require more emphasis on internal control for alcoholic Native Americans. The lower I-E scores for those that completed treatment is consistent with this hypothesis. However the internal-external relationship is a complicated one when viewed in relation to the convergence-similarity relationship reported in the literature. Beutler's (1981) review of the literature on this subject suggests that convergence of patient

and therapist belief systems and personalities is associated with improvement and that initial discrepancy among belief systems facilitates convergence. Since this study did not assess LOC scores for the counselors and staff the BHACA treatment program, little can be said about the similarity-locus of control interaction. However value comparisons on the Rokeach were available to be analyzed.

Similarity Convergence Relationships

In the present study, the relationship between initial patient therapist (pre-therapy) value similarity and convergence can be best described as insignificant. None of the three hypothesis postulated was substantiated by the data presented here.

The fact that the data did not support an improvement relationship between similarity and convergence could have at least three explanations. First the low number of alcoholic Native American who completed treatment was not substantiated enough to allow accurate comparisons to be made.

A second explanation for the absence of a value similarity convergence might be that, from the standpoint of the alcoholic Native-Americans, the perceived importance and/or credibility of the treatment staff was of little consequence. For example, suppose alcoholic Native Americans did not view their particular counselor as a credible, significant figure in their lives. In this case, the counselors values would probably not affect the degree of influence they had with respect to the alcoholic Native Americans. This of

course could also explain why so few of the alcoholic Native Americans stayed in treatment.

Still another reason for the failure to establish a significant value change effect could be explained on methodological grounds. The concordance rate on the Kendall W suggested that the median rankings on the RVS for each group of subjects was not a strong representation of each group profile. It is also reasonable to entertain the possibility that Rokeach's (1973) Value Survey (RVS) is not sufficiently sensitive or specific enough for use with Native Americans.

Comparison of Anglo and Native American Values

In this study the similarity of obtained values for Native Americans (alcoholics and non-alcoholics) and the significant differences of these values from Anglo values is viewed as support for a general theory of cultural differences between the two populations. Further support is found for this idea when a comparison is made of the values of the combined Native American groups and the general population. Such a comparison indicates substantial differences between the values of the two groups. Particularly noteworthy is the significantly higher values placed on societal goals (i.e., A world at Peace, Equality, Freedom, National Security) by the general population. In contrast, Native Americans seemingly prefer more personal (Happiness, Self-Respect, and a Comfortable Life) and group oriented values (Social Recognition, Family Security, and True Friendship). These values are also different from the more personally hedonistic

values presented by Toler's (1975) alcoholics (An Exciting Life, Wisdom, and Inner Harmony).

As stated previously, the value differences have some important implications for professionals hoping to work with Native Americans. On the basis of the data presented here, the more education one receives the greater the value disparity with Native Americans. This along with the perceived values differences of the two different cultures leads one to wonder how the two ever relate at all.

Unfortunately, each respective group holds a stereotypical prejudiced view of the other. Anglos tend to view Native Americans as the Noble Savage who shuns a Comfortable Life, Social Recognition and Ambition in order to pursue Courage, Inner Harmony and Freedom. These perceptions, according to the data presented here show they are grossly misleading. On the other hand, Native Americans are equally limited in their views of Anglos, seeing them as Ambitious, seeking Social Recognition, a Sense of Accomplishment, and Responsibility to the point that Anglos care little for such values as Honesty, Helpfulness, Forgiveness and Loving.

For reasons not entirely clear at this time, the alcoholic Anglos were more accurate in their perception of Native American values than the more educated Anglo staff. In contrast, the Native Americans were less accurate in their perception of Anglo values. The reason for this inaccuracy is unclear at this time and is beyond the scope of this study. Whatever the reason for the prejudicial bias of Native Americans, it would be important for a treatment program to

be cognizant of the implications this may have for treatment. Considering the crucial importance that trust plays in psychotherapy and alcoholism treatment, it may be one reason why so few alcoholic Native Americans in this study failed to respond to treatment. However, it should be noted that the two cultures share some important value similarities like Self-Respect, Family Security, True Friendship, Loving, and Happiness which should be explored since they would undoubtedly provide an important foundation for treatment.

Summary and Recommendations

The first goal of this study was to investigate and identify value differences between Native Americans and Anglos. If these values were identified, their relationship with alcoholism and recovery was to be determined. This study provides evidence which indicates that Native American values are measureable and distinctly different from Anglo values. The relation of these values to alcoholism and recovery was more difficult to discern. The most that can be said as the result of the data presented here is that the value disparity between these two cultures may be the reason why so few alcoholic Native Americans remain in treatment. If the similarity and convergence of values in psychotherapy is as important as some would have us believe, it is not surprising that the success rate for alcohol Native Americans is so low when they are treated in Anglo based treatment programs. My previous research at the Sacaton alcoholism program suggests that the higher 45% success rate reported

by this alcohol treatment program may be due to the fact that the entire treatment staff is Native American (Flores 1982).

This study fails to disprove earlier claims by Shore and Pollack (1980) which suggest that cultural influences override individual pathology and personality differences. This study does however suggest that alcoholism overrides cultural influences and differences.

French and Hornbuckles (1980) claim that Native Americans are caught in a world wherein they are trying to find out who they are and where they are, and where they fit in takes on some interesting implications when alcoholic Native Americans are viewed in relation to feminism and alcoholism.

Both Native Americans and women alcoholics share the same low self-esteem and poor treatment success ratios. Most therapists agree that a fairly high level of self-esteem is necessary for adequate independent functioning in society. Beckman (1978) has shown that most successfully treated female alcoholics report substantial increases in self-esteem, presumably as a result of treatment. Therefore a crucial task for future clinical study is to determine the most effective way to raise the self-esteem of female and Native American alcoholics.

Any alcoholism treatment program serving women and Native Americans must consider their characteristically low self-esteem at the time they enter treatment, and the extent to which such a characteristic may interfere with treatment. If, as hypothesized by

Beckman (1978), there is feedback between behavior and self-esteem, a person with low self-esteem can be expected to exhibit ineffectual or self-destructive behavior consistent with low self-esteem. This is frequently the case with alcoholic Native Americans. However, it may require more than exhortation for the alcoholic Native American and the female Anglo alcoholic to feel better about themselves. The reality of low income, underemployment, and divorce are socioeconomic circumstances which both groups share and were shown to be important discriminators in this study.

The therapist treating the alcoholic Native American may find that cultural influences will play an equally important part in influencing self-esteem and alcoholism recovery. Re-establishing an Indian's strong sense of cultural pride could help alleviate the problems surrounding feelings of alienation and low self-esteem. French and Hornbuckle suggest that Native American alcoholics must come to feel proud of being Indians before they can further develop necessary skills and talents. Any program which does not take into account the Indian alcoholics self-identity and self-image will fail (French and Hornbuckle 1980).

It is important that individuals who work with Native American alcoholics be aware of the larger social, political, and cultural issues involved. They must also be aware of their own subjective involvement in life and the limitation of their own values. It does little good to have a middle class therapist tell an alcoholic Native American male client that he would be all right if only he would

follow the therapists prescribed role model, one usually based upon the therapists own frame of reference. Life is more complicated than that.

Conclusions

None of the four exploratory hypotheses were confirmed by the data found in this study.

Exploratory Hypothesis One

While there were significant differences between the alcoholic Native Americans and the Anglo staff on a number of values measured by the Rokeach Value Survey, these values were not clearly related in any significant fashion to allow conjecture about treatment or prognosis.

Exploratory Hypothesis Two

There was no evidence to support the hypothesis that less traditional Native American alcoholics would be more likely to successfully complete the treatment program. Actually, an inverse trend was suggested by the data. Alcoholic Native Americans scoring highest on the ICT were more likely to successfully complete the treatment program. However the low significance level ($p < .06$) and small N(9) suggest this claim cannot be made with any degree of certainty. Also, the confounding of traditionalism with age (older Native Americans scored higher on the traditionalism scale) makes any definite statement about this relationship difficult.

Exploratory Hypothesis Three

The few alcoholic Native Americans (N=9) who did successfully complete treatment did not show a statistically significant change in self-esteem. However, pre-test comparisons between alcoholic Native American treatment program completers (N=9) and non-completers (N=34) revealed that the former had significantly higher self-esteem rankings ($p < .05$) prior to entering treatment.

Exploratory Hypothesis Four

There was no evidence for any significant relationship between Native American values and Indian traditionalism. More traditional alcoholic Native Americans did not differ significantly from less traditional alcoholic Native Americans on the Rokeach Value Survey. However, female Native Americans scored significantly ($p < .05$) lower than male Native Americans on the Indian Culturalization Test (ICT).

The differences that this study found between alcoholics (both Anglo and Native American) and non-alcoholic Native Americans has some important implications for further research. An important question that must be raised in other investigations is whether the group differences found in this study were due primarily or exclusively to alcoholism. The significant differences found in the psychological data (i.e. self-esteem rating, value rankings) presented here could also be the result of the significant demographic differences (i.e. education, income) among the groups. For instance, Rokeach (1975) has presented convincing evidence that variables like income, education, sex and social economic status strongly influence values. While

alcoholism must surely leave some traces of change in an individual, it alone cannot account for the differences found among the groups in this study. Caution should therefore be used in interpreting the results of these reported differences. because of the sample inequities of the groups investigated in this study and the methodological difficulties enumerated above.

APPENDIX A

SUBJECT CONSENT FORM

ALCOHOLISM TREATMENT OUTCOME & EFFECTIVENESS

The purpose of this project is to explore variables related to alcoholism treatment and recovery. You will be asked to participate in a series of assessments that inquire regarding personal values, drinking habits, and more general psychological patterns of behavior both before and after treatment. After you have finished, you will be asked to take the same series of assessments 3 months later.

It is to be understood that your participation in this project is voluntary at all times. You will probably find the project interesting and informative, but you may refuse to participate. If you do participate, you may withdraw at any time. Since your performance and opinions are very important to us, we will treat all your information strictly confidential. The project findings will be recorded in summary form only; no names of particular individuals will be used. Your records will be kept with a code number, not identified by name, and will be seen only by the research team.

The risks involved with this project are minimal. However it is important to understand that with any treatment there is a possibility that some people may get worse. If this should occur, proper referrals will be made. Anyone participating in this project will not be compensated if psychological damage should occur.

I have read the above "Subject's Consent." The nature, demands, risks, and benefits of the project have been explained to me. I understand that I may ask questions and that I am free to withdraw from the project at any time without incurring ill will (or affecting my medical care). I also understand that this consent form will be filed in an area designated by the Human Subjects Committee with access restricted to the principal investigator or authorized representatives of the particular department. A copy of this consent form is available to me upon request.

Please sign below to indicate that you agree to participate in this study.

SIGNATURE

DATE

APPENDIX B

ROKEACH VALUE SURVEY (RVS)

Copies of the Rokeach Value Survey (RVS) may be obtained by writing to Halgren Tests, 873 Persimmon Avenue, Sunnyvale, California 94087.

APPENDIX C

INDIAN CULTURALIZATION TEST (ICT)

INDIAN CULTURALIZATION TEST

1. a) Full Blood
b) Half Breed
c) Quater Breed
2. a) I grew up in an Indian home.
b) Grew up in a White home.
3. a) I speak Indian well.
b) Speak Indian fairly well; adequately.
c) Speak very little Indian.
4. a) I understand Indian.
b) I understand Indian fairly well; adequately.
c) Understand very little.
5. a) My religion is Indian.
b) Used to practice Indian religion.
c) My religion is "White" Catholic, Protestant, etc.
d) I am not religious.
6. a) I believe in the Medicine Man.
b) I used to go to the Medicine Man when I was young.
c) I don't believe in Indian Medicine Men.
7. a) I believe in "Bad Medicine."
b) "Bad Medicine" scares me.
c) "Bad Medicine" is evil.
8. a) I wish I lived like an Indian.
b) I wish that I was a White Man.
9. a) I grew up on a Reservation.
b) Grew up as an Urban.
10. a) I learned English outside of the home.
b) Learned ENGLISH at home.
11. a) I believe in the Indians very much.
b) I understand the things they do.
c) I don't understand Indian Culture.
12. a) I love Indian history.
b) I know some Indian history.
c) I don't know much about Indian people.

13.
 - a) I'd like to live 100 years ago as an Indian.
 - b) The way Indians are living today is the way I want to live.
 - c) I don't want to give up my modern city ways.
14.
 - a) I believe in the Pima Maze and the teachings of Elder Brother.
 - b) I understand what the Pima Maze is and what it symbolizes.
 - c) The Pima Maze means very little to me.
15.
 - a) I won a Pima Maze symbol.
 - b) I don't own a Pima Maze symbol, but I would like to.
 - c) I don't understand why anyone would want a Pima Maze.
16.
 - a) I believe in Ká:úm - the Staying Sickness.
 - b) I know what Ká:úm is and I am not sure I believe it.
 - c) Ká:úm or Staying Sickness is an old wives tale.
17.
 - a) I know where the sacres places are and visit them occassionally.
 - b) I believe in the (Sacred places).
 - c) I don't know what the sacred places are and would never visit them.
18.
 - a) I am involved in Tribal Council activities.
 - b) I voted in the last Tribal election.
 - c) I am a Tribal member of the _____ tribe.
 - d) I don't belong to any tribe.
19. As an Indian, how traditional would you say you are?
 - a) Very traditional
 - b) Traditional
 - c) Some what traditional
 - d) Non-traditional
20. How traditional might other people say you are?
 - a) Very traditional
 - b) Traditional
 - c) Some what traditional
 - d) Non-traditional
21.
 - a) I cook and enjoy traditional Indian food like fry bread.
 - b) I hardly ever eat traditional Indian food.
 - c) I prefer Big Mac, Hamburgers and coke.
22.
 - a) When I grew up I often referred to more than one person as mother.
 - b) I believe all my relative should share child rearing.
 - c) I believe that only a child's mother and father has the right to raise their children.

23. a) I agree with the Tribal custom of the bride moving in with her husband's parents when they first get married.
b) I think it is alright of a newly married couple to live with the wife's parents.
c) I think that it is best not to live with any parents after first married.
24. a) I eat herbs often.
b) I have eaten herbs a few times.
c) I never eat herbs.
25. a) I only work when I need money.
b) I never stayed on a job over six months.
c) I work on jobs usually over a year.
26. a) Time is nothing; I'm here today and gone tomorrow.
b) I have trouble getting to work on time.
c) I'm almost always to work on time.
27. a) When drunk I am violent.
b) "Hit the streets" and shout.
c) Drink quietly.
28. a) Problem drinker, not in A.A.; nothing goes right.
b) I'm an alcoholic in A.A.
c) A non-drinker.
29. a) Medicine: White man's dosage seems too strong for me.
b) I'm sensitive to medications and have to think about them.
c) I never noticed.
30. a) Deprivation: I grew up hungry.
b) Lived in poverty.
c) Average to better economy.

APPENDIX D

LOCUS OF CONTROL (LOC)

LOCUS OF CONTROL SCALE

Direction: For each item, circle either "a" or "b" depending on which of the two statements best describes how you feel. Remember that you must circle only one.

1. A: Children get into trouble because their parents punish them much.
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.
B: People's misfortunes result from the mistakes they make.
3. A: One of the major reasons why we have wars is because people don't take enough interest in politics.
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.
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.
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.
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.
B: People who can't get others to like them don't understand how to get along with others.
8. A: I have often found that what is going to happen will happen.
B: Trusting to fate has never turned out as well for me as making a decision to take a definite course of action.
9. A: In the case of the well prepared student there is rarely if ever such a thing as an unfair test.
B: Many times exam questions tend to be so unrelated to course work that studying is really useless.

10. A: Becoming a success is a matter of hard work, luck has little or nothing to do with it.
B: Getting a good job depends mainly on being in the right place at the right time.
11. A: The average citizen can have an influence in government decisions.
B: This world is run by the few people in power, and there is not much the little guy can do about it.
12. A: When I make plans, I am almost certain that I can make them work.
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.
13. A: In my case getting what I want has little or nothing to do with luck.
B: Many times we might just as well decide what to do by flipping a coin.
14. A: Who gets to be the boss often depends on who was lucky enough to be in the right place first.
B: Getting people to do the right thing depends upon ability, luck has little or nothing to do with it.
15. A: As far as world affairs are concerned, most of us are the victims of forces we can neither understand, nor control.
B: By taking an active part in political and social affairs the people can control world events.
16. A: Most people don't realize the extent to which their lives are controlled by accidental happenings.
B: There really is no such thing as luck.
17. A: It is hard to know whether or not a person really likes you.
B: How many friends you have depends upon how nice a person you are.
18. A: In the long run the bad things that happen to you are balanced by the good things.
B: Most misfortunes are the result of lack of ability, ignorance, laziness, or all three.
19. A: With enough effort we can wipe out political corruption.
B: It is difficult for people to have much control over the things politicians do in office.

20. A: Sometimes I can't understand how teachers arrive at the grades they give.
B: There is a direct connection between how hard I study and the grades, I get (got).
21. A: Many times I feel that I have little influence over the things that happen to me.
B: It is impossible for me to believe that chance or luck plays an important role in my life.
22. A: People are lonely because they don't try to be friendly.
B: There's not much use in trying too hard to please people, if they like you, they like you.
23. A: What happens to me is my own doing.
B: Sometimes I feel that I don't have enough control over the direction my life is taking.
24. A: Most of the time I can't understand why politicians behave the way they do.
B: In the long run the people are responsible for bad government on a national as well as on a local level.

APPENDIX E

ROSENBERG SELF-ESTEEM SCALE

ROSENBERG SELF-ESTEEM SCALE

Please indicate the degree to which you agree with the following statements by circling the correct number.

1. I feel that I'm a person of worth, at least on an equal plane with others.
 1. strongly agree
 2. agree
 3. disagree
 4. strongly disagree
2. I feel that I have a number of good qualities.
 1. strongly agree
 2. agree
 3. disagree
 4. strongly disagree
3. All in all, I am inclined to feel that I am a failure.
 1. strongly agree
 2. agree
 3. disagree
 4. strongly disagree
4. I am able to do things as well as most other people.
 1. strongly agree
 2. agree
 3. disagree
 4. strongly disagree
5. I feel I do not have much to be proud of.
 1. strongly agree
 2. agree
 3. disagree
 4. strongly disagree
6. I take a positive attitude toward myself.
 1. strongly agree
 2. agree
 3. disagree
 4. strongly disagree

7. On the whole, I am satisfied with myself.

1. strongly agree
2. agree
3. disagree
4. strongly disagree

8. I wish I could have more respect for myself.

1. strongly agree
2. agree
3. disagree
4. strongly disagree

9. I certainly feel useless at times.

1. strongly agree
2. agree
3. disagree
4. strongly disagree

10. at times I think I am no good at all.

1. strongly agree
2. agree
3. disagree
4. strongly disagree

APPENDIX F

MICHIGAN ALCOHOLISM SCREENING TEST (MAST)

NAME _____
DATE _____
SCORE _____

- Yes _____ No _____ 1. Do you feel you are a normal drinker? If patient denies any use of alcohol, check here. _____
- Yes _____ No _____ 2. Have you ever awakened the morning after some drinking the night before and found that you could not remember a part of the evening before?
- Yes _____ No _____ 3. Does your spouse (or parents) ever worry or complain about your drinking?
- Yes _____ No _____ 4. Can you stop drinking without a struggle after one or two drinks?
- Yes _____ No _____ 5. Do you ever feel bad about your drinking?
- Yes _____ No _____ 6. Do friends or relatives think you are a normal drinker?
- Yes _____ No _____ 7. Do you ever try to limit your drinking to certain times of the day or to certain places?
- Yes _____ No _____ 8. Are you always able to stop drinking when you want to?
- Yes _____ No _____ 9. Have you ever attended a meeting of Alcoholics Anonymous (AA)?
- Yes _____ No _____ 10. Have you gotten into fights when drinking?
- Yes _____ No _____ 11. Has drinking ever created problems with you and your spouse?
- Yes _____ No _____ 12. Has your spouse (or other family member) ever gone to anyone for help about your drinking?
- Yes _____ No _____ 13. Have you ever lost friends or girlfriends/boyfriends because of drinking?
- Yes _____ No _____ 14. Have you ever gotten into trouble at work because of drinking?
- Yes _____ No _____ 15. Have you ever lost a job because of drinking?

- Yes_____ No_____ 16. Have you ever neglected your obligations, your family, or your work for two or more days in a row because you were drinking?
- Yes_____ No_____ 17. Do you ever drink before noon?
- Yes_____ No_____ 18. Have you ever been told you have liver trouble? Cirrhosis?
- Yes_____ No_____ 19. Have you ever had delirium tremens (DT's), severe shaking, heard voices, or seen things that weren't there after heavy drinking?
- Yes_____ No_____ *20. Have you ever gone to anyone for help about your drinking?
- Yes_____ No_____ *21. Have you ever been in a hospital because of your drinking?
- Yes_____ No_____ *22. Have you ever been a patient in a psychiatric hospital or on a psychiatric ward of a general hospital where drinking was part of the problem?
- Yes_____ No_____ *23. Have you ever been seen at a psychiatric or mental health clinic, or gone to a doctor, social worker or clergyman for help with an emotional problem in which drinking had played a part?
- Yes_____ No_____ 24. Have you ever been arrested, even for a few hours, because of drunken behavior?
- Yes_____ No_____ 25. Have you ever been arrested for drunk driving or driving after drinking?

*Do not include this hospital episode or any out-patient consultation that led to this hospital episode.

APPENDIX G

RICHARDSON'S ORIGINAL INDIAN CULTURALIZATION TEST

Standard Form 507

GPO 416-16-81472-2 502-000

CLINICAL RECORD

Report on _____
or
Continuation of S. F. _____
(Strike out one line) (Specify type of examination or data)

(Sign and date)

INDIAN CULTURALIZATION TEST

POMR Information

Indian Culture Quotient (ICQ)

Background Steeped in High Degree of Indian Culture	65+ pts
Consistently Identifies Himself as a Real Indian	35-64 pts
Would Like to Think of Himself as an Indian, at Times	25-34 pts
Tries to Avoid Any Connections With Indian People	10-24 pts
Sees Himself the Same as Anyone Else	0-9 pts

Rationale

This Indian Culturalization Test was designed by Dr. Edwin H. Richardson, since most standardized tests are not applicable to Indian people, particularly if they have grown up in "Traditional Indian Ways." The ICQ score will aid in determining how much the Indian Value System will affect scores on other tests.

DIRECTIONS: For each question, circle the letter of the response which best applies to you.

	Score
1. a. FULL BLOOD (Lakota h'ca) b. THREE QUARTERS (ya mni) c. HALF BREED (okise) d. QUARTER BREED (to paik bapapi) e. ONE EIGHTH	5,4,3,2,1 pts
2. a. I GREW UP IN AN INDIAN HOME (Lakota teepied icage) b. GREW UP IN A WHITE HOME (wasicu teepied icage)	4,1 pts
3. a. I SPEAK INDIAN WELL (tanyan di wahdaka) b. SPEAK INDIAN FAIRLY WELL; ADEQUATELY (iyecetu) c. SPEAK VERY LITTLE INDIAN (itaya ci'stinna)	5,3,1 pts
4. a. I UNDERSTAND INDIAN (tanyan okahniga) b. UNDERSTAND INDIAN FAIRLY WELL; ADEQUATELY (iyecetu) c. UNDERSTAND VERY LITTLE (itaya ci'stinna)	5,3,1 pts
5. a. MY RELIGION IS INDIAN (Dakota wocekiye he mita wa) b. USED TO PRACTICE INDIAN RELIGION (Dakota wocekiye onapemicyata kta) c. MY RELIGION IS "WHITE" CATHOLIC, PROTESTANT, etc. (Wocekiye wasicu he mita wa) d. I AM NOT RELIGIOUS (Wocekiye wica wa da sni)	5,3,1,0 pts
6. a. I BELIEVE IN THE MEDICINE MAN (Dakota pequta wicaasta he wicawada) b. I USED TO GO TO THE MEDICINE MAN WHEN I WAS YOUNG (Wanka Wichaca ahuni wanblake sa mi jickle ha hu) c. I DON'T BELIEVE IN INDIAN MEDICINE MEN (Wanka Wichaca ki cha tu wngla)	4,3,0 pts
7. a. I BELIEVE IN "BAD MEDICINE" (Pajuta chita wijuwala shni) b. "BAD MEDICINE" SCARES ME (Pajuta chita ko wakapa) c. "BAD MEDICINE" IS EVIL (Pajuta ki chita)	5,3,1 pts
8. a. I WISH I LIVED LIKE AN INDIAN (Lakota ti heced iyokipi waste wadaka) b. I WISH THAT I WAS A WHITE MAN (Wasicu he ma ca ni-ee-waun)	3,0 pts
9. a. I GREW UP ON A RESERVATION (o'ya te me ta eh tan wa hi) b. GREW UP AS AN URBAN (o'ton we ed i ma cha ga)	5,0 pts
10. a. I LEARNED ENGLISH OUTSIDE OF THE HOME (mi ci ya tan kata) b. LEARNED ENGLISH AT HOME (Wa-si-cu i-api o spe mo ci ya ti-ynta)	4,0 pts

(Continue on reverse side)

PATIENT'S IDENTIFICATION (For typed or written entries give: Name—last, first, middle; grade; date; hospital or medical facility)

REGISTER NO.

WARD NO.

REPORT ON _____ or CONTINUATION OF _____

Standard Form 507

GENERAL SERVICES ADMINISTRATION AND
INTERAGENCY COMMITTEE ON MEDICAL RECORDS
FPMR 101-11.20 6-6
OCTOBER 1975

107-106

11. a. I BELIEVE IN THE INDIANS VERY MUCH (Ombkim nina wica wada) b. I UNDERSTAND THE THINGS THEY DO (Wo e cun ecum kin o waka hni ja) c. I DON'T UNDERSTAND INDIAN CULTURE (Kakota wa e cum pi kin owaka hni ge sni) 5,3,0 pts
12. a. I LOVE INDIAN HISTORY (Eaha ni Dakota wa e chumb okda kapi waste wa daka) b. I KNOW SOME INDIAN HISTORY (Dakota wa e chum kin on ge sdo va ye) c. I DON'T KNOW MUCH ABOUT INDIAN PEOPLE (Dakota oyate kin owaka kni ge sni) 4,2,0 pts
13. a. I'D LIKE TO LIVE 100 YEARS AGO AS AN INDIAN (Keto pa gi owanca he han wa ni wa cin) b. THE WAY INDIANS ARE LIVING TODAY IS THE WAY I WANT TO LIVE (De han Kakota to omb kin, he ced ni ja wa on wacin) c. I DON'T WANT TO GIVE UP MY MODERN CITY WAYS (Taku waste ste o ton we ed o yu ha pi e, hena o hi ni bdu ha wacin) 4,3,0 pts
14. a. I BELIEVE TREES HAVE SOULS & THERE IS A CHIEF TREE (Can kin hena nagi yukan pi wica wala nan hetan wanji itan con) b. TREES ARE BEAUTIFUL & SHOULD NOT BE DESTROYED (Can hena waste, ga han, yu sica pte sni) c. THE WOODS ARE TO BE USED LIKE ANYTHING ELSE (chan can hena, taku owase kta ete ce tu) 5,2,0 pts
15. a. I BELIEVE THE SACRED PIPE IS ALIVE (Cha nupa wankan he ni he ced wica wada) b. I HAVE SEEN A PEACE PIPE (Cha na pi wu'kan he wan-bda-ka) c. I DON'T UNDERSTAND WHAT THE PIPE IS SUPPOSED TO DO (Ta ku e chun kte qun he owaka hni qe sne) 5,2,0 pts
16. a. I HAVE MY OWN SACRED PIPE (Canupa wakan waji bdu ha) b. I HAVE SMOKED THE PIPE (Canupa wakan mi ja miipa) c. A PIPE EVERYONE SMOKES COULD SPREAD DISEASES (Canupa wankan kin he to we ked es ompa can wo t zan yu kan) 5,3,0 pts
17. a. I HAVE EATEN DOG (Shunka wata) b. I WOULD EAT DOG IF I WAS AT A HOLY MEETING (Mi ja shunka wata omi ce wankan wan ed) c. I DON'T SEE HOW A PERSON CAN EAT A DOG (To kun on ge shunka yu ta pi he can owaka hni ge sni) 6,2,0 pts
18. a. I EAT HERBS OFTEN (Do kod pozuta wa ta ece) b. I HAVE EATEN HERBS A FEW TIMES (A huna pajuta wa ta) c. I NEVER EAT HERBS (To-na-wa ya za ke sni) 5,3,0 pts
19. a. I ONLY WORK WHEN I NEED MONEY (Mazaska wachi chuna ajula woshi achumi) b. I NEVER STAYED ON A JOB OVER SIX MONTHS (Wi nupi wi nupa ha hu yi la owaka sni) c. I NEVER STAYED ON A JOB OVER SIX MONTHS (Wi shakpa ha hu yi la ayasna inawaka) 5,4,2 pts
20. a. TIME IS NOTHING; I'M HERE TODAY AND GONE TOMORROW (Ompatu ha na toka sni-oka bla wa oui) b. I HAVE TROUBLE GETTING TO WORK ON TIME (Ta si sna woshi wa wi tu haul wo washi) c. I'M ALMOST ALWAYS TO WORK ON TIME (Eyia Huntu cha ayl wi ya waouyalo) 4,2,1 pts
21. a. WHEN DRUNK I AM VIOLENT (I mato mni can nina masica) b. "HIT THE STREETS" AND SHOUT (I ma do mni can oton we ed wa un ga a wa ki sa ece) c. DRINK QUIETLY (A wa hpa yena wa bda tkan ece) 4,3,0 pts
22. a. PROBLEM DRINKER, NOT IN A.A.; NOTHING GOES RIGHT (Wa bda tkan can taku ovasin e ye cetu sni) b. I'M AN ALCOHOLIC IN A.A. (waya tkam on wana kud mayuza waya ta tke sni oko da keiye ovapa) c. A NON-DRINKER (Tona wa bda tke sni) 4,3,0 pts
23. a. MEDICINE: WHITE MAN'S DOSAGE SEEMS TOO STRONG FOR ME (Wasicu pezuta kin nina wasake) b. I'M SENSITIVE TO MEDICATIONS & HAVE TO THINK ABOUT THEM (Pezuta kin i wacu can awacan mi ece) c. I NEVER NOTICED (Pezuta i wacu can a wa bde ze sni ece) 5,3,0 pts
24. a. PAIN: I HAVE BEEN "PIERCED" FOR THE SUN DANCE (Maku pa si pa pi eca mu) b. I DON'T EVEN THINK OF PAIN (Ma ya zan kin awacan mi sni) c. I AM SOMEWHAT AWARE OF PAIN (Awacan mu ece) d. I WON'T TAKE PAIN (Ma ya zan kin he wacin sni) 7,5,3,0 pts
25. a. DEPRIVATION: I GREW UP HUNGRY (Do cin i ma cha ghe) b. LIVED IN POVERTY (I yo ti ya i ma ca ga) c. AVERAGE TO BETTER ECONOMY (Ma zi ce ga es nakun wo han bou ha) 5,3,0 pts

APPENDIX H

NATIVE AMERICAN ALCOHOLIC'S TRIBAL AFFILIATION

Table H-1. Native American Female Alcoholic's Tribal Affiliation.

	AGE	SEX	ED.	MARITAL STATUS	INCOME	EMPLOYMENT	TRIBE
1.	23	F	H.S.	No	5000+	No	Pima
2.	24	F	H.S.+	No	5-10	Yes	Pima/ Papago
3.	21	F	H.S.	Yes	5-10	No	Papago
4.	35	F	H.S.	No	5000+	No	Papago
5.	41	F	H.S.+	No	5000+	Part.	Papago
6.	34	F	H.S.+	No	5000+	Yes	Pima
7.	22	F	H.S.	No	5-10	Yes	Pima
8.	33	F	H.S.+	No	5000+	Part.	Pima
9.	26	F	H.S.+	No	5000+	No	Pima

APPENDIX I

MALE NATIVE AMERICAN ALCOHOLIC'S TRIBAL AFFILIATION

Table 1-1. Male Native American Alcoholic's Tribal Affiliation.

	AGE	SEX	ED.	MARITAL STATUS	INCOME	EMPLOYED	TRIBE	COMP. TREATMENT
1.	29	M	H.S.	No	5+	No	Papago	N
2.	26	M	H.S.	No	5+	No	Pima	N
3.	41	M	H.S.+	Yes	5-10	Yes	Pima	Y
4.	37	M	H.S.+	Yes	5+	No	Papago	Y
5.	45	M	H.S.	No	5+	Yes	Papago	Y
6.	42	M	H.S.	No	5+	No	Papago	Y
7.	21	M	H.S.	No	5+	No	Pima	N
8.	38	M	H.S.+	No	5+	No	Navajo	Y
9.	21	M	H.S.↓	No	5+	No	Maricopa	N
10.	22	M	H.S.↓	No	5+	No	Sioux	N
11.	40	M	H.S.	No	5-10	No	Papago	N
12.	42	M	H.S.↓	No	5+	Part.	Papago	N
13.	37	M	H.S.	Yes	5+	No	Papago	N
14.	38	M	H.S.	No	5+	No	Navajo	N
15.	45	M	H.S.↓	No	5+	No	Yaquis	N
16.	21	M	H.S.	No	5+	No	Pima	N
17.	26	M	H.S.	No	5+	No	Pima	N
18.	29	M	H.S.+	No	5+	No	Papago	N
19.	38	M	H.S.	No	5+	No	Papago	N
20.	26	M	H.S.↓	Yes	5+	No	Papago	N
21.	43	M	H.S.	No	5+	No	Papago	N
22.	22	M	H.S.	No	5+	No	Sioux	N
23.	28	M	H.S.↓	Yes	5-10	Part.	Pima	N
24.	20	M	H.S.↓	Yes	5-10	No	Papago	N
25.	24	M	H.S.↓	Yes	5+	Part.	Papago	N
26.	22	M	H.S.↓	No	5+	No	Apache	N
27.	48	M	H.S.+	Yes	5+	No	Pima	Y
28.	46	M	H.S.↓	No	5-10	Yes	Pima	Y
29.	41	M	H.S.	No	5+	No	Papago	Y
30.	39	M	H.S.	No	5-10	No	Papago	Y
31.	38	M	H.S.	No	5+	No	Papago	N
32.	27	M	H.S.↓	No	5+	Part.	Papago	N
33.	30	M	H.S.↓	Yes	5-10	Part.	Pima	N
34.	28	M	H.S.↓	No	5+	No	Pima	N

$$1120/34 = 32.9$$

APPENDIX J

NON-ALCOHOLIC NATIVE AMERICANS TRIBAL AFFILIATION

Table J-1. Non-Alcoholic Native Americans Tribal Affiliation.

	AGE	SEX	ED.	MARITAL STATUS	INCOME	EMPLOYED	TRIBE
1.	44	M	H.S.	Yes	10+		Pima
2.	28	M	H.S.+	No	10+		Pima
3.	43	M	H.S.+	Yes	10+		Pima
4.	23	F	H.S.+	No	10+		Navajo
5.	45	F	↓H.S.	Yes	10+		Pima
6.	36	M	H.S.+	No	10+		Pima
7.	36	F	H.S.+	No	10+		Pima
8.	36	F	H.S.	Yes	10+		Pima
9.	23	F	H.S.+	Yes	10+		Pima
10.	27	F	H.S.+	Yes	5-10		Apache
11.	26	M	H.S.	Yes	10+		Pima
12.	23	M	H.S.	No	10+		Pima
13.	46	M	↓H.S.	Yes	10+		Pima
14.	28	F	H.S.	Yes	10+		Pima
15.	44	M	H.S.	Yes	10+		Pima
16.	25	F	H.S.	No	5-10		Pima
17.	28	F	H.S.	No	10+		Pima
18.	44	M	H.S.	Yes	10+		Pima
19.	32	M	H.S.+	Yes	10+		Papago
20.	31	F	H.S.	Yes	10+		Pima

APPENDIX K

DEMOGRAPHIC CHARACTERISTICS OF SUBSAMPLES
CLASSIFIED BY PERCENTAGES

Table K-1. Demographic Characteristics of Subsamples Classified by Percentages.

	INDIAN ALCOHOLICS			ANGLO ALCOHOLICS			NON-ALCOHOLIC INDIANS		
	MALE	FEMALE	TOTAL	MALE	FEMALE	TOTAL	MALE	FEMALE	TOTAL
Number of Subjects	34	9	43	16	4	20	10*	10*	20
Average Age	32.9	28.8	32.1	37.5	29.5	35.9	36.6	30.6	33.6
Marital Status (%)									
Married	26.5	11.1	23.2	18.7	25.0	20.0	70.0	60.0	65.0
Unmarried	73.5	88.9	76.8	81.3	75.0	80.0	30.0	40.0	35.0
Employment (%)									
Full	9.0	33.0	13.9	18.7	0.0	15.0	100.0	100.0	100.0**
Part	14.7	22.0	16.2	0.0	0.0	0.0	0.0	0.0	0.0
Unemployed	76.3	45.0	70.9	81.3	100.0	85.0	0.0	0.0	0.0
Education (%)									
College	17.6	11.1	16.3	0.0	50.0	10.0	40.0	40.0	40.0
H.S. Diploma	47.1	44.5	46.5	62.5	50.0	60.0	50.0	50.0	50.0
Below H.S.	35.3	44.4	37.2	37.5	0.0	30.0	10.0	10.0	10.0
Income									
10,000 +	0.0	0.0	0.0	37.5	25.0	35.0	100.0	80.0	90.0
5,000-10,000	20.6	33.0	23.2	50.0	25.0	45.0	0.0	20.0	10.0
-5,000	79.4	67.0	76.7	12.5	50.0	20.0	0.0	0.0	0.0

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