

# LOCUS OF CONTROL AND DRINKING BEHAVIOR IN AMERICAN INDIAN ALCOHOLICS AND NON-ALCOHOLICS

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*Abstract: Many investigators have attempted to determine whether alcoholics differ from non-alcoholics in their perceived locus of control. The present study examined the responses of alcoholic and non-alcoholic American Indian males and females on Levenson's Multidimensional Locus of Control Scale. Subjects were 80 American Indian males and 40 American Indian females. All subjects were members of either an eastern (Cherokee) or western (Cheyenne) Oklahoma tribe. Results indicate no significant differences between the Cherokee male alcoholic and non-alcoholic group. Cheyenne male alcoholics reported significantly lower internal control scores than did Cheyenne male non-alcoholics. Within the female sample, alcohol use and tribal membership showed a significant interaction with locus of control. These findings suggest that locus of control may be a potentially useful clinical construct in the development of treatment plans and therapeutic issues for American Indian patients who are alcoholics.*

Numerous studies have been conducted on locus of control orientation in alcoholics but the results have been inconsistent; some studies found alcoholics to be more internally than externally oriented, while others have found just the opposite (Hinrichsen, 1976). Vuchinich and associates (Vuchinich, Tucker, Bordini, & Sullwold, 1981) have found that both alcoholic and non-alcoholic males tend to attribute their own drinking behavior to external factors. A study of alcoholic and non-alcoholic females has indicated that women assign major responsibility for problem drinking to the person doing the drinking (Beckman, 1979). Clinical evidence suggests that alcoholics deny personal responsibility for their drinking and attribute causation to external factors (Beckman, 1980). These findings suggest that locus of control may be a potentially useful clinical tool in the development of treatment plans and the prediction of treatment outcome for alcoholic patients.

Since the introduction of a locus of control concept in the early 1960s (Rotter, 1966), there has been an abundance of research investigating the internal-external dimension. On the basis of these studies, perceived control seems to be a significant behavioral determinant of a person's response to life events. Rotter defined the concept of internal

control as representative of a person's belief that rewards are contingent upon one's own behavior. Conversely, external control represents the belief that rewards are controlled by forces outside oneself and may occur independently of one's own actions (Rotter, 1966). Using this dual construct, extensive research has been devoted to utilizing locus of control as a predictor of various behaviors and a variety of research directions have been pursued.

Lefcourt (1976) suggested that the internal-external dimension of locus of control did not possess complete generality. Situational changes could affect the amount and locus of control exhibited. Therefore, the internal-external dimensions might successfully predict behavior in general, but fail in a specific situation. Contemporary trends in the locus of control research have indicated that the internal-external construct is not unidimensional but multidimensional in character (Lefcourt, 1981; Lefcourt, 1976; Lefcourt & Ladwig, 1965; Phares, 1976). Subsequent work by Rotter indicated that locus of control scales measuring expectancies in specific areas of functioning within the broader internal-external dimensions might have greater predictive power than general unidimensional scales (Rotter, 1975). Several of these goal-specific locus of control instruments have now been developed (Lefcourt, 1981).

Levenson (1973) examined the utility of investigating diverse agents of control. She created a three-factor measure of locus of control that consisted of "internality," "control by powerful others," and "control by chance." This division of external control into chance and powerful others might permit more predictive utility and allow for better clarification of external control (Ozolins, Caldwell, & Jaynes, 1983). In a study of alcoholic inpatients using Levenson's scale, Caster and Parsons (1977a, 1977b) found that alcoholics who scored highest on the chance dimension (external control) also had the least successful treatment outcome.

The present study examined the response of alcoholic and non-alcoholic American Indian males and females on Levenson's multidimensional locus of control scale. In view of the findings of Vuchinich et al. (1981) and Beckman (1980), we expected that both male and female alcoholics would report more belief in external control than their non-alcoholic counterparts.

## Method

### Subjects

Eighty American Indian males and 40 American Indian females were tested with Levenson's multidimensional locus of control scale (Levenson, 1973). In each group, half of the subjects were alcoholic and half were non-alcoholic. Alcoholic subjects were either current inpatients in an alcohol treatment program or had recently (within six months) completed inpatient treatment and were receiving outpatient aftercare

services. The non-alcoholic subjects (social drinkers and abstainers) were recruited from the same geographical area as the alcoholic subjects. Non-alcoholic subjects had no history of treatment for alcoholism, and had had no drinking-related arrests or vehicular accidents due to alcohol usage. Many of the non-alcoholic subjects were family members of alcoholic subjects and/or medical outpatients at an Indian Health Service facility.

All subjects were members of either an eastern (Cherokee) or western (Cheyenne) Oklahoma tribe who were at least half Indian (preference was given to full-bloods in screening subjects for eligibility), who could produce proof of degree of Indian blood or a roll number that could be verified with tribal or Bureau of Indian Affairs records. Subjects were matched for age, education, and drinking history across all groups. Subjects gave informed consent and were paid for their participation.

The age range of the male group was 19 to 65 years. The Cheyenne male alcoholics had a mean age of  $32.90 \pm 9.38$  years, and an average of  $11.20 \pm 1.15$  years of education, while the non-alcoholic Cheyenne males averaged  $31.80 \pm 9.56$  years of age and had a mean of  $11.65 \pm 1.49$  years of education. The Cherokee male alcoholic group had a mean age of  $32.00 \pm 6.79$  years and an average of  $11.00 \pm 1.62$  years of education; and the Cherokee male non-alcoholic group had a mean age of  $31.90 \pm$  years and  $11.30 \pm 1.13$  years of education.

The age range of the female group was 21 to 59 years. The Cheyenne female alcoholics had a mean age of  $38.30 \pm 10.47$  years and an average of  $11.00 \pm 1.49$  years of education, while non-alcoholic Cheyenne females averaged  $34.00 \pm 11.52$  years of age and had a mean of  $11.30 \pm$  years of education. The Cherokee female alcoholic group had a mean age of  $32.50 \pm 10.19$  years and  $11.60 \pm 2.01$  years of education, and the non-alcoholic Cherokee females had a mean age of  $36.00 \pm 9.54$  years and  $12.10 \pm 1.28$  years of education.

### Procedure

Subjects took a series of paper-and-pencil tests in group settings as part of a large research project. The informed consent process was explained first, and then subjects were given instructions for completing the self-report questionnaires. All test protocols were identified only with research numbers. Consent forms and other identifying information were removed from research folders. Subjects were paid for their participation in the study. All tests were administered and scored (blindly) by two female American Indian psychologists.

The test battery included Levenson's multidimensional locus of control scale (Levenson, 1973). This scale is a widely used clinical instrument that assesses belief in control by self (internal control), control by chance and control by powerful others (external control). The scale contains 24 items, with eight items for each of the three locus of control dimensions. The subject indicates strong, moderate, or mild agreement or

disagreement with each statement. Responses to each item are summed, with a higher score signifying strong agreement and a lower score signifying strong disagreement, yielding a separate score between 8 and 48 for each dimension. According to Levenson, the highest score of the three scales is indicative of the individual's locus of control orientation.

### Results

Locus of control for male and female groups were subjected to a 2 x 2 analysis of variance using the variables of tribal membership, and alcohol usage. There were no interaction of main effects in the male sample and only one interaction on the locus of control external variable in the female sample.

Independent group-tests were performed to determine the degree of difference of mean locus of control scores between Cherokee alcoholic and non-alcoholic groups and between Cheyenne alcoholic and non-alcoholic groups. These tests indicated no significant differences within the Cherokee groups, while the Cheyenne male alcoholics reported significantly lower internal control scores than non-alcoholics ( $t=2.27$ ,  $p<.01$ ).

Alcohol use and tribal membership produced interaction effects in the female sample ( $F=6.34$ ,  $p<.01$ ). *T*-tests on female locus of control scores indicated significant differences between Cherokee alcoholics and non-alcoholics on the external locus of control scales ( $t=3.08$ ,  $p<.01$ ), with alcoholic women scoring in the direction of externality more often than non-alcoholic women. There were no significant differences between female Cheyenne alcoholics and non-alcoholics.

Comparison of mean scores are presented for males in Table 1 and for the females in Table 2.

Table 1  
Mean Locus of Control Scores for Male Alcoholics & Non-alcoholics

	CHEROKEE		CHEYENNE	
	Alcoholic	Non-alcoholic	Alcoholic	Non-alcoholic
AGE	36.20	33.10	34.05	30.35
{SD}	10.85	11.00	9.77	9.31
		( $t=0.87$ )		( $t=1.22$ )
EDUC	11.30	11.15	11.40	11.50
{SD}	1.55	1.45	1.27	1.39
		( $t=0.31$ )		( $t=0.24$ )
LOC-I	38.65	37.05	36.85	41.45
{SD}	6.39	10.05	5.06	5.62
		( $t=0.60$ )		( $t=2.72$ )*

Table 1 (Continued)  
Mean Locus of Control Scores for Male Alcoholics & Non-alcoholics

	CHEROKEE		CHEYENNE	
	Alcoholic	Non-alcoholic	Alcoholic	Non-alcoholic
LOC-C {SD}	29.30 7.62	24.85 8.31	28.10 8.52	26.35 8.22
		( <i>t</i> =1.76)		( <i>t</i> =0.66)
LOC-P {SD}	25.65 8.88	22.65 7.84	24.00 6.81	22.95 8.11
		( <i>t</i> =1.13)		( <i>t</i> =0.44)
LOC-E {SD}	27.20 7.33	23.50 6.47	25.75 6.65	24.20 7.32
		( <i>t</i> =1.69)		( <i>t</i> =0.70)
<i>p</i> <.01				

Table 2  
Mean Locus of Control Scores for Female Alcoholics & Non-alcoholics

	CHEROKEE		CHEYENNE	
	Alcoholic	Non-alcoholic	Alcoholic	Non-alcoholic
AGE {SD}	32.50 10.19	36.00 9.54	38.30 10.47	34.00 11.52
		( <i>t</i> =0.68)		( <i>t</i> =0.87)
EDUC {SD}	11.60 2.01	12.10 1.28	11.00 1.49	11.30 1.33
		( <i>t</i> =0.66)		( <i>t</i> =0.47)
LOC-I {SD}	36.40 2.14	40.30 4.00	36.50 2.12	38.10 4.63
		( <i>t</i> =1.19)		( <i>t</i> =0.99)
LOC-C {SD}	29.30 5.60	20.90 4.43	26.30 6.65	29.30 7.63
		( <i>t</i> =3.72)*		( <i>t</i> =0.94)
LOC-P {SD}	26.70 6.67	21.50 7.68	23.00 8.43	25.80 6.86
		( <i>t</i> =1.62)		( <i>t</i> =0.81)
LOC-E {SD}	28.20 5.69	21.40 4.06	24.90 6.62	27.60 7.04
		( <i>t</i> =3.08)		( <i>t</i> =0.88)
<i>p</i> <.01				

## Discussion

Both the alcoholic and non-alcoholic males and females were more internally than externally oriented, as expected by the norms (Levenson, 1973). There were no significant mean differences between Cherokee alcoholic and non-alcoholic males. However, a significant difference was found for the internal scale between Cheyenne alcoholic and non-alcoholic males. The non-alcoholic males scored higher than the alcoholic males on this scale as predicted. Given this finding, it could be speculated that American Indian alcoholics may experience a lower level of belief in personal power/control than do non-alcoholics. This may not be purely a function of cultural differences, but probably is a combinative effect of alcohol and cultural beliefs clashing in contemporary society. These findings suggest a consistency with those of Lefcourt (1976), which indicated that situational changes might affect the amount and direction of locus of control. In spite of a significantly lower level of internal control--and contrary to our expectations--the Cheyenne alcoholic males did not report significantly higher levels of external control.

The Cherokee alcoholic women, as expected, scored higher on the combined external scale than did their non-alcoholic counterparts. There were no significant differences between Cheyenne alcoholic and non-alcoholic women. Contrary to our predictions, alcoholic women did not score lower on the internal scale than non-alcoholic women. Perhaps this finding reflects the changing roles of females in contemporary society. Traditionally, most American Indian women accepted very little responsibility outside the home environment; their roles centered around homemaking, child care, and family maintenance. However, within the last two decades, Indian family structures have changed as necessitated by the economic realities of American society. More Indian females have become heads of households and taken on the role of a single parent. Thus, they have been required to enter the work force outside the home. This additional responsibility may be a significant factor in the emergence of the American Indian woman as one with a greater amount of perceived control, as suggested by the findings within the female sample.

To put these results in perspective, it may be useful to look at the data relative to studies using a Caucasian sample reporting on the same instrument. In a study of white alcoholics and non-alcoholics, Shelton and colleagues (Shelton, Parsons, Leber & Yohman, 1982) found that non-alcoholic males scored significantly higher on the internal control dimension than did alcoholic males ( $t=2.32, p<.05$ ). A comparison of mean scores from our study and those of Shelton, et al. was conducted using z-tests to determine the degree of difference between mean scores. The white alcoholic males were significantly older than both the Cherokee and Cheyenne alcoholic male groups ( $p<.001$ ), and had a significantly higher level of education than either the Cherokee or Cheyenne alcoholics ( $p<.05$ ).

Although these comparisons may be considered statistically invalid, they are presented as a major point of interest of their applicability in cross-cultural research.

Internal locus of control scores were similar for white alcoholics and Cherokee male alcoholics. These same groups differed significantly on both external scales. Cherokee male alcoholics attributed control to chance ( $z=3.75$ ,  $p<.001$ ) and powerful others ( $z=2.19$ ,  $p<.05$ ) significantly more often than white alcoholics. Cheyenne alcoholic males reported belief in internal control significantly less often than did white alcoholics ( $z=1.98$ ,  $p<.01$ ). Conversely, these same groups differed significantly on both external scales. Cheyenne male alcoholics attributed control to chance ( $z=2.86$ ,  $p<.01$ ) and powerful other ( $z=1.76$ ,  $p<.05$ ) significantly more often than did white alcoholics.

We compared the results from the female sample of the current study with those of an earlier study from this laboratory using Caucasian female alcoholics and non-alcoholics (Jones-Saumty, Parsons & Fabian, 1980). Once again z-tests were employed to determine the degree of difference between mean scores. The female Caucasians were definitely older than either of the female Indian groups and significantly older than the Cherokee group ( $p<.01$ ). Likewise, the Caucasian females had a significantly higher level of education than either the Cherokee ( $p<.05$ ) or Cheyenne ( $p<.01$ ). All three groups were similar on overall locus of control orientation. However, both the Cheyenne and Cherokee females indicate a greater tendency toward externality than their Caucasian counterparts. Specifically, the Cheyenne females scored significantly higher on the chance construct ( $p<.01$ ) than did the white females (groups combined). The Cherokee females reported significantly higher scores on both of the external scales, chance ( $p<.01$ ) and powerful other ( $p<.01$ ). It should be noted that scores on the internal scale were similar across the Indian and white groups, and mean differences were statistically not significant.

Further, a Pearson product moment correlation of all subjects (80 males and 40 females) revealed a substantial relationship between the powerful others and chance scales in this American Indian sample ( $r=0.53$ ,  $p<.001$ ). This finding suggests the reliability of the scale for measuring external control and provides some further value for the cross-cultural comparisons previously made. Additionally, a relationship was found between the powerful other and internal scales ( $r=.21$ ,  $p<.01$ ) that could be indicative of the pervasive level of traditionality within this American Indian sample. Certainly, one of the tenets of that traditionality seems to be the belief in an omnipotent and beneficent guidance influencing their lives. However, this belief seems to be compatible with the belief in internal control, thus lending a sense of balance to a people who must maintain a lifestyle encompassing two distinct cultural identities.

This study examined the response of alcoholic and non-alcoholic American Indian males and females on a multidimensional locus of control scale. Results indicate a similarity of belief in internal control across the

alcoholic versus non-alcoholic dimension as well as the Cherokee versus Cheyenne dimension within the female sample. Conversely, there seems to be a similarity in belief in external control across the alcoholic and tribal dimensions within the male sample.

Although the multidimensional locus of control scale allows greater predictability and extended utility, our results suggest that additional study is indicated to determine the effects of other variables such as depression, anxiety, expectancy of reinforcement, and intellectual functioning on perceived control.

Information regarding locus of control could be used as a salient component in the integration of treatment planning and the determination of therapeutic issues. Such information becomes important in view of the dearth of data on American Indian alcoholism and its concomitants.

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