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SUBSTANCE ABUSE PREVALENCE AND TREATMENT UTILIZATION AMONG AMERICAN INDIANS RESIDING ON-RESERVATION

Mindy Herman-Stahl, Ph.D., and Jenny Chong, Ph.D.

Abstract: American Indians residing on-reservation were interviewed regarding their substance use and treatment utilization. One-third had a current substance abuse problem. Predictors included gender, tribe, age, employment status, household income, and educational attainment. Almost two-thirds of those with substance abuse problems had received no treatment within the past year. A combination of formal and informal treatment was the most common approach. Treatment utilization was predicted by gender, age, and insurance coverage.

Planning for substance abuse prevention and treatment services among American Indians living on reservation is a formidable task. While numerous stereotypes of American Indian drinking patterns have proliferated, actual research has lagged behind in supporting or refuting these assumptions (May, 1994). Anecdotal information attests to serious alcohol abuse problems on reservations. In a survey of over 60 American Indian reservations, 70% rated substance abuse problems among the top three health priorities (McKenzie, 1994). However, little empirical evidence exists about the true level of need among this population.

In the absence of up-to-date studies, public health specialists have relied on measures of mortality and morbidity. These measures indicate that alcohol abuse is a major factor in five of the ten leading causes of death among American Indians, and data suggest that 17% to 19% of all American Indian deaths are alcohol-related. American Indians suffer disproportionately from alcohol-related accidents, cirrhosis of the liver, homicide, and suicide (Indian Health Service [IHS], 1996). Analysis of 1991-1993 Indian Health Service (IHS) service area data indicate that the American Indian age-adjusted mortality as compared to all other races was 465% greater for alcoholism, 184% greater for accidents, 46% greater for suicide,

and 39% greater for homicide (IHS, 1996). While these data are alarming, they should not be used to propagate more stereotypes of American Indian drinking. May (1994) asserts that the mortality rate also may be increased by characteristics of rural living such as higher-risk environments, distance to medical care, less frequent use of seatbelts, and lower access to health services. In fact, several studies have shown that the proportion of nondrinkers is higher among American Indian adults than the general population (May, 1989). However, among American Indians who do drink, the proportion of problem drinkers appears to be much greater than the general population, and American Indian drinkers are more likely than non-Indian drinkers to drink large quantities, suffer blackouts, and experience a higher proportion of alcohol-related problems (May, 1994). This is true for American Indian youth as well, who have been found to initiate drug use earlier, drink heavier, and suffer from more negative consequences from drinking (Beauvais, Oetting, & Edwards, 1985).

Conducting large-scale, representative surveys of American Indians residing on reservation is difficult. The few that have been published are quite dated (Roy, Choudhuri, & Irvine, 1970; Sampath, 1974; Shore, Kinzie, Hampson, & Pattison, 1973). However, in 1988 a replication of one of the original psychiatric epidemiologic surveys was conducted (19 years after the original study) by Shore and colleagues in the same American Indian village (Kinzie, et al., 1992; Leung, Kinzie, Boehnlein, & Shore, 1993). Although rates of alcohol abuse and dependence as well as other psychiatric impairments had fallen over the years, the prevalence of alcohol use disorders was still strikingly high with three-quarters of the men (over age 20) and 39.4% of the women having a lifetime alcohol use disorder. Lifetime prevalence rates for alcohol use disorders were more than 3 times higher than those for the general population found in the Epidemiologic Catchment Area (ECA) study (Regier et al., 1988). Point prevalence estimates for alcohol were 36.4% for men and 7.0% for women. Rates were similarly high in a study of almost 2,500 American Indians residing on nine different reservations in South Dakota: approximately 30% were found to be in need of substance abuse treatment (Bray, Dalberth, Herman-Stahl, Walker, & Sanchez, 1999). A cross-sectional study comparing the CAGE to the Diagnostic and Statistic Manual Third Edition-Revised (DSM-III-R) found that 85% of men and 53% of women had lifetime diagnoses of alcohol dependence as assessed by the DSM-III-R (Saremi et al., 2001). Another epidemiologic survey on alcohol abuse and dependence found that 51% of American Indians living in three different reservation communities (including Pueblo, Plains, and Plateau cultures) had problems with alcohol. Men, young adults, and the unmarried had the highest rates of alcohol problems. Bereaved individuals and those experiencing high degrees of stress were also more prone to alcohol disorders (Manson, Shore, Baron, Ackerson, & Neligh, 1992).

While alcoholism among American Indians has been much discussed, little attention has been paid to emerging drug problems. Data on drug problems among American Indian adults is scant, although there is available information on the prevalence of illicit drug use among adolescents. Beauvais and Oetting and their colleagues at the Tri-Ethnic Center for Prevention have extensively studied the patterns of alcohol and drug use among American Indian youth (Beauvais, 1992a). They found that drug use was higher among American Indian youth than their non-Indian counterparts. Rates of lifetime use were particularly high for marijuana (83% vs. 35%), cocaine (23% vs. 6%), stimulants (37% vs. 12%), and hallucinogens (27% vs. 4%) (National Institute on Drug Abuse [NIDA], 1995). These data highlight the potential problems of drug use on reservations but do not provide any accurate indication of the number of adults who have drug abuse problems.

Because rates of alcohol-related problems appear higher among American Indians, information regarding access to treatment, particularly for those living on geographically isolated reservations is critical. There are numerous barriers to accessing and receiving qualified substance abuse services on reservation. Results from the National Medical Expenditure Survey demonstrate that American Indians encounter longer travel and waiting times and thus make fewer appointments for health care services in general (Beauregard, Cunningham, & Cornelius, 1991). Resource constraints, managed care, distance, and conversion to tribal compacting have all complicated the service delivery system (Manson, 2000; Noren, Kindig, & Sprenger, 1998). Common barriers identified in a survey of Native American Health Programs (McKenzie, 1994) included limited access, limited availability of specialty consultation, culturally insensitive services, inadequate data systems, confusion regarding eligibility, and incomplete infrastructure development. Moreover, American Indians residing in urban areas with no culturally competent treatment programs often return to reservations thus draining the resources available for those residing on-reservation (Center for Substance Abuse Treatment [CSAT], 1999). The types of treatments sought by American Indians may differ as many seek a more holistic approach to treatment that incorporates traditional values, beliefs, ceremonies, and processes (CSAT, 1999). Traditional healing is an important mental health resource and many Native healers are active in American Indian communities although utilization of healers is generally a private matter (Abbott, 1998; Nelson, McCoy, Stetter, & Vanderwagen, 1992).

The purpose of this study is two-fold: (a) to provide rigorous data regarding the level and correlates of substance abuse problems among American Indians on reservation in Arizona; and (b) to examine the frequency, characteristics, and correlates of substance abuse treatment

utilization among reservation-based American Indians. American Indian's utilization of both formal and informal treatment, including traditional methods of healing will be assessed.

Method

Background

In an effort to improve the quality of information used in planning state substance abuse treatment services, the Center for Substance Abuse Treatment (CSAT) initiated a series of request for proposals (RFP) to provide funding and technical assistance to state public health officials interested in collecting rigorous data to inform substance abuse policy and planning decisions. In September 1994, the Arizona Department of Health Services received funding to conduct studies throughout the state to determine the prevalence of substance abuse and dependence and the need for treatment. American Indians comprise 5-6% of the total population in Arizona and three-quarters of them live on reservation land. Reservations located in counties with high indicators of substance abuse (e.g., alcohol-related mortality, morbidity, and traffic accidents) were selected to participate. These proxy indicators were used since there were no reservation-specific indicators available. Before the study was conducted, approval was obtained from tribal councils, as well as tribal health departments and reservation-based substance abuse treatment centers. Presentations to the tribal councils regarding the purpose and benefits of the study, as well as the critical need for such information on the reservation were made. The tribal councils of all three reservations approved participation. The next step was to form community-planning committees involving persons from various agencies connected to issues of substance abuse in order to ensure that the study was conducted in a culturally sensitive fashion and addressed issues of primary concern to the community.

Data Collection

Data were collected by trained community members on each reservation. All interviewers were American Indian and accepted members of the community. Interviewers were recruited through several methods: recommendations by members of the planning committee, advertising through word of mouth, and recommendations by other researchers who had trained and employed American Indians for other studies conducted on the reservations. All interviewers conducted face-to-face surveys using laptop computers. Several days of training were conducted to teach

interviewers computer-assisted personal interviewing (CAPI) and to increase their knowledge of substance abuse and treatment and referral issues. Interviewers were fully trained on protection of confidentiality since fear of lack of confidentiality was thought to be the major reason inhibiting participation. No information about compromised confidentiality was ever transmitted back to the researchers or, to our knowledge, the tribal council or participating agencies. Furthermore, no interviewers were dismissed from the study due to inappropriate or unethical actions. Trainers monitored interviewers within the first several weeks of training to provide constructive feedback and ensure quality control. Monitoring continued throughout the data collection period. The majority of interviews (90%) were conducted in English although several interviewers were bilingual (to their Native language) and in some cases, particularly when interviewing elders, interviewers switched between English and the Native language (8.6%). Ten interviews (1.4%) were conducted predominantly in the Native language. Key words were translated and provided to interviewers to promote standardization in cases where Traditional language was inserted.

Sampling

Because substance abuse problems did not appear to concentrate in specific areas of the reservations, households were selected using skip patterns from random starting points. Household (or house lot) maps of every village or district were obtained from the relevant tribal agencies. Using an estimated 25% prevalence rate of substance abuse, an alpha set at 0.05, an estimated refusal rate of 10%-20%, and 80% power, the total number of house lots to be targeted on each reservation was determined. The proportion of ineligible households (e.g., Non-American Indian, non-residential) and vacant or unoccupied house lots were based on Census data or information provided by other agencies such as HUD or emergency services. Refusal rates were determined by speaking with experts who had conducted or were knowledgeable about conducting household surveys on the reservation. Seven percent of homes were vacant or unoccupied in Tribe A and two houses were ineligible because residents were not enrolled American Indians. Thirty-three percent of lots were vacant in Tribe B. Within Tribe C, 25% of house lots were vacant and 5% turned out to be businesses. Once a home was targeted, interviewers dropped off material about the study at the home including an article discussing the study published in the local newspaper and a copy of the tribal resolution supporting the study. Only adults 18 years of age and over who were enrolled members of the tribe were invited to participate. Individuals with the most recent birthday were selected in order to reduce selection bias. Participants were compensated for their time by payment of \$19.00 or a voucher worth \$19.00 for use at the local supermarket. To minimize bias, all

eligible households were contacted up to 10 times to ensure that the hard-to-reach were not systematically missed. No aggressive efforts were made to convert refusals, although interviewers were trained on techniques of gentle persuasion. The survey was carried out between 1996 and 1997. A total of 725 completed surveys were obtained, with the response rate calculated at 92% (the number of participating households/total eligible households contacted). Five individuals refused to participate from Tribe A, eight persons refused to be surveyed from Tribe B, and 25 persons refused at Tribe C. Reasons for refusal included disbelief in the usefulness of surveys, dissatisfaction with the Health Department, unwillingness to answer personal questions, inconvenient times, and disinterest. No information is available for comparing differences between those who agreed versus refused to participate in the survey. The low refusal rate was likely due to repeated attempts by interviewers to contact homes combined with the strong emotions elicited by the topic among community members who felt compelled to do something to help address the destruction caused by alcohol and drug use in their communities.

Instruments

Data were collected using a survey designed by the National Technical Center for substance Abuse Needs Assessment at Harvard University. Diagnoses of substance abuse and dependence were made using a modified version of the Substance Abuse Module of the Diagnostic Interview Schedule (DIS-SAM) (Robbins, Cottler, & Babor, 1990) with diagnostic criteria from the fourth edition of the Diagnostic and Statistical Manual for Mental Disorders (DSM IV) (American Psychiatric Association, 1994). Diagnoses for the following substances were calculated based on the presence and duration of symptoms: alcohol, marijuana, hallucinogens, cocaine, opiates, stimulants, depressants, and inhalants. This instrument has shown adequate reliability and validity in minority populations and has been successfully used with American Indians (Manson et al., 1992). The instrument was pilot tested at a American Indian residential treatment facility. Minor adaptations were made to the instrument to ensure that it was culturally relevant and addressed issues germane to reservation life.

Individuals were screened into the diagnostic portion of the interview if they reported using alcohol or drugs within the past 18 months (ceremonial use of peyote was excluded during screening). Those who qualified for a lifetime abuse or dependence diagnosis and who experienced one or more symptoms in the past 12 months were determined to have a substance abuse problem and were considered in need of treatment.

Socio-demographic information was captured using single descriptive items. Respondents were asked whether they had any of the

following types of insurance: private health insurance, Medicaid or AHCCCS (i.e., Arizona Health Care Cost Containment System - Arizona's Medicaid program), Medicare, veterans or military benefits, Indian Health Service (IHS)¹, other, or no health insurance. Employment was assessed by asking individuals which of the following described their situation: employed full-time; employed, but on family leave or on leave for some other reason; employed part-time; unemployed; seasonal worker; full-time homemaker; or self-employed. Income was assessed by asking respondents whether their income was over or under \$15,000 and then reading choices within \$5,000 increments (e.g., 0-\$5,000, \$5,001-\$9,999, etc.). Educational attainment was measured by asking respondents how much school they had completed (no school, 1st-8th grade, some high school but no diploma, high school graduate or equivalent like GED, some college but no degree, associate degree, college degree, or advanced degree). All respondents who reported use of alcohol or drugs within the past 18 months were asked if they had ever received treatment for their alcohol or drug use. Respondents were asked specifically about their use of the following types of treatment services: detoxification (in a hospital; non-hospital, residential facility, or an outpatient program); residential rehabilitation (in a hospital, a residential facility which lasted longer than 30 days, or a residential facility which lasted fewer than 30 days); halfway or recovery house; outpatient or nonresidential treatment (intensive versus less intensive); outpatient methadone treatment; self-help groups; therapy from a psychiatrist, psychologist, social worker or counselor outside of a formal drug or alcohol program; talking to a religious or traditional leader, medicine person, or village elder; using alternative treatments like acupuncture, hypnosis, or vitamins or herbs; or participating in a program that used sweat lodges, talking circles or other traditional American Indian practices. We defined formal treatments as those that occurred in a structured program and were provided by licensed or credentialed professionals such as residential rehabilitation, methadone treatment, private hospital programs, and outpatient counseling. Informal or other recovery services were defined as those services individuals seek outside of structured programs including Alcoholics Anonymous (AA) or other recovery groups, speaking with elders or spiritual leaders, alternative therapies such as herbs, acupuncture, or use of traditional healers.

Results

The results section focuses on the descriptive and explanatory analyses concerning substance abuse and treatment utilization. We begin by providing descriptive information about the participants from the three tribes. The prevalence of substance abuse problems by age and gender is presented for the whole sample and then by tribe. Descriptive information

about utilization of formal and informal treatment is also provided. In order to assess the association between socio-demographic characteristics (explanatory variables) and substance abuse and treatment utilization (response variables) in a multivariate setting, Logistic Regression analyses were performed. Finally, Logistic Regressions were rerun adding interaction terms to examine whether the relationships between socio-demographic characteristics and the outcomes varied by tribe.

Results are based on combined analyses from all three participating Tribal Nations. Seven hundred and twenty-five persons completed the survey. Because the Tribal Nations requested anonymity, no identifying or descriptive information about the tribes are presented. However, some results are presented by tribe in order to examine whether problem rates are homogeneous across reservations. The data were weighted such that they represented the adult population age and gender distribution of each tribe. Forty percent of the sample was recruited from Tribe A, 25% from Tribe B, and 35% from Tribe C (Table 1). There were no significant differences in the percentage of females, the age distribution, or insurance coverage by tribes. Tribes did differ significantly on the following demographic and socioeconomic characteristics: unemployment ($X^2 = 33.98$, $df = 8$, $p < .001$), marital status ($X^2 = 16.46$, $df = 6$, $p < .01$), income ($X^2 = 75.14$, $df = 8$, $p < .001$), and educational achievement ($X^2 = 86.05$, $df = 4$, $p < .001$). Tribe C had the lowest unemployment rate and the highest educational and income level. Tribe C also had the lowest number of individuals reporting alcohol use within the past 18 months ($X^2 = 16.16$, $df = 2$, $p < .0001$).

One-third of American Indians residing on reservation had an alcohol or drug problem (Table 2). Alcohol abuse or dependence disorders were much more common than dual alcohol and drug problems or drug only problems. Males were more likely to have an alcohol only and dual alcohol and drug problem than females. Males and females were equally likely to have drug only problems. The prevalence of alcohol problems was consistent across young and middle-age groups and did not drop until after age 45. Eighty-eight percent of 46 to 55 year olds and 95.1% of individuals 56 years and older were free of substance abuse problems compared to 59.1% of 18 to 25 year olds, 64.1% of 26 to 35 year olds, and 68.5% of 36 to 45 year olds. Dual alcohol and drug disorders decreased with age from 14.5% of 18 to 25 year olds to 10.4% of 26 to 35 year olds, to 4.1% of 36 to 45 year olds. No instances of co-morbid alcohol and drug problems were found among reservation residents over the age of 45. Drug only problems were very uncommon, with generally less than 1% of the population abusing or being dependent on illicit substances in the absence of an alcohol use disorder.

Substance abuse varied significantly across tribes (see Table 3). Tribe B had the highest rates of alcohol or drug abuse problems and Tribe C the lowest. Among all tribes, alcohol only problems were the most

prevalent. Drug only problems were only reported in Tribe A (the most urban reservation). Females in Tribe C had particularly low rates of substance abuse problems. Substance abuse problems were greater among males in all tribes. Alcohol problems tended to persist through middle age for members of Tribes A and B, while the proportion of adults with substance abuse problems in Tribe C generally decreased with age. However, among those in Tribe C, the proportion of adults with dual alcohol and drug problems was consistent among 18 to 55 year olds, but decreased more substantially after age 35 for members of Tribes A and B.

Among those with a substance abuse problem, 64.5% did not receive any treatment in the past 12 months; 7.1% utilized formal treatment services only (e.g., outpatient, inpatient, detox); 13.6% used both formal and informal treatment services; while 15.2% used informal services only such as AA or Native healing (e.g., sweat lodges, medicine men) (See Table 4). Among those who used informal treatment, use of Native healing practices was more common than use of AA (27.4% vs. 14.3%, respectively). Significant differences in the types of treatment accessed were found by age ($X^2 = 20.69$, $df = 9$, $p < .01$) and income ($X^2 = 20.83$, $df = 12$, $p < .05$). Elders were least likely to receive treatment, while individuals between the ages of 18 and 25 were most likely to use formal services and those aged 26 to 35 were most likely to use informal or combined approaches to treatment.

Multivariate Logistic Regression analyses were conducted to examine the associations between socio-demographic characteristics and substance abuse problems. Variables significantly associated with substance abuse problems included gender, tribal affiliation, age, employment, income, and educational achievement. As shown in Table 5, males were 3.05 times more likely than females to have a substance abuse problem. Prevalence rates also varied by tribe with adults in Tribe A and Tribe B being 1.94 and 2.50 times more likely to have an alcohol or drug abuse disorder than adults in Tribe C. Young and middle-aged adults were more likely to have substance abuse problems than older adults: 18 to 25 year olds were 7.01 times more likely than adults over age 55 to have problems, individuals 26 to 35 years were 8.47 times more likely to have a substance abuse disorder than individuals over age 55, and adults aged 36 to 55 years were 7.06 times more likely than those over 55 to have a current substance abuse problem. Those whose employment status was "other" (e.g., homemakers, retired) were less likely to have substance abuse problems than those who were employed. A high income was protective such that those with higher household incomes were less likely to have substance abuse problems. Educational achievement was also protective: individuals who did not graduate from high school were 2.55 times more likely to have a substance abuse problem than those with more than a high school education, and individuals with a high school degree were 2.19 times more likely than those with more than a high school education to

Table 1
Sample Characteristics by Tribe (weighted) (n=725)

	Tribe A	Tribe B	Tribe C	Total
Sample size	288	180	257	725
% Female	54.3%	53.1%	51.1%	52.8%
18-25 years	27.5%	15.6%	18.0%	21.8%
26-35 years	25.7%	34.4%	26.6%	26.5%
36-55 years	19.2%	25.0%	20.4%	20.0%
56+ years	29.5%	25.0%	35.0%	31.7%
Unemployed	14.7%	16.1%	4.3%	10.1%
Employed	51.5%	58.1%	68.6%	59.5%
Other	33.7%	25.8%	27.0%	30.4%
% Married/Living Together	48.2%	56.3%	62.2%	54.8%
Separated/divorced/widowed	22.6%	18.8%	19.8%	21.2%
Single (never married)	29.1%	25.0%	18.0%	24.0%
% with Household Income <\$15,000	62.1%	54.6%	54.1%	58.0%
Private Health Insurance	27.3%	29.0%	24.3%	26.0%
Government-provided Health Insurance	69.7%	61.3%	73.1%	70.8%
No Health Insurance	3.0%	9.7%	2.7%	3.2%
% with less than a high school education	46.3%	28.1%	20.9%	34.3%
% with high school degree or equivalent	30.1%	40.6%	22.8%	27.3%
% with greater than a high school education	23.6%	31.3%	56.3%	38.4%
% screened into alcohol diagnostic model based on use within past 18 months	64.9%	68.8%	50.5%	58.6%

Note: Unemployed excludes those who are not seeking work or who are retired and disabled. Other employment includes homemakers or those retired or disabled. High school education includes a GED.

Table 2
Type of Substance Abuse Problem by Gender and Age
(n=725)

	No Substance Abuse Problem (%)	Alcohol Only (%)	Alcohol and Drug (%)	Drug Only (%)	Total Alcohol and/or Drug Problem (%)
Males	62.6	26.0	10.8	0.6	37.4
Females	82.0	14.6	2.9	0.5	18.0
18-25 yrs.	59.1	25.2	14.5	1.3	41.0
26-35 yrs.	64.1	25.0	10.4	0.5	35.9
36-45 yrs.	68.5	26.7	4.1	0.7	31.5
46-55 yrs.	88.4	11.6	0.0	0.0	11.6
56+	95.1	4.9	0.0	0.0	4.9
Total	72.9	19.8	6.7	0.6	32.5

Table 3
Type of Substance Abuse Problem by Gender and Age and Tribe (n=725)

	No Substance Abuse Problem (%)			Alcohol Only (%)			Alcohol and Drug (%)			Drug Only (%)		
	Tribe A	Tribe B	Tribe C	Tribe A	Tribe B	Tribe C	Tribe A	Tribe B	Tribe C	Tribe A	Tribe B	Tribe C
Males	54.7	46.7	72.8	28.2	40.0	22.2	15.9	13.3	5.1	1.2	0	0
Females	75.1	76.5	91.0	20.4	17.6	7.2	3.5	5.9	1.8	1.0	0	0
18-25 yrs.	50.5	50.0	74.1	27.4	33.3	20.7	20.0	16.7	5.2	2.1	0	0
26-35 yrs.	52.6	45.5	78.8	32.6	36.4	15.3	13.7	18.2	5.9	1.1	0	0
36-55 yrs.	60.6	55.6	79.1	35.2	33.3	16.4	2.8	11.1	4.5	1.4	0	0
56+	93.6	87.5	91.2	6.4	12.5	8.8	0	0	0	0	0	0
Total	65.7	58.8	82.4	24.1	29.4	14.2	9.2	11.8	3.4	1.1	0	0

Table 4
Treatment Utilization by Those with Current Substance Abuse Problems Within the Past 12 Months by Demographic Characteristic and Type of Substance Abuse Problem (n=196)

	No Treatment Services (%) (n=127)	Formal Services Only (%) (n=15)	Formal and Informal Services (%) (n=35)	Informal Services Only (%) (n=51)
Tribe A	63.8	7.9	14.2	14.2
Tribe B	58.3	8.3	0	33.3
Tribe C	66.7	5.3	14.0	14.0
Male	64.3	4.7	17.1	14.0
Female	64.7	10.3	7.6	17.6
18-25 years	68.2	15.2	6.1	10.6
26-35 years	53.6	4.3	21.7	20.3
36-55 years	71.1	2.2	11.1	15.6
56+ years	77.8	0	11.1	11.1
Employed	65.6	3.3	13.1	18.0
Other	55.0	15.0	17.5	12.5
Unemployed	70.6	11.8	11.8	5.9
Married	60.6	5.1	16.2	18.2
Divorced/separated/widowed	67.9	7.1	14.2	10.7
Single, never married	67.6	9.9	9.9	12.7
% income below \$15,000	63.3	9.2	11.5	15.3
% income above \$15,000	63.8	1.7	19.0	15.5
% less than high school degree	67.1	12.1	8.2	12.3
% with high school degree or equivalent	61.4	4.3	14.3	20.0
% with greater than a high school degree	64.8	3.7	18.5	13.0
Private Health Insurance	60.9	0	22.9	17.1
Government-provided health insurance	66.9	7.0	12.7	13.4
No health insurance	37.5	25.0	0	37.5
Total	64.1	7.1	13.6	15.2

Note: Unemployed excludes those who are not seeking work or who are retired and disabled. Other employment includes homemakers or those retired or disabled. High school education includes a GED.

Table 5
Adjusted Odds Ratios and 95% Confidence Intervals (CI):
Demographic Correlates of Substance Abuse Problems
(*n*=725)

	Odds Ratio	Lower CI	Upper CI
Male vs. female	3.05*	2.03	4.57
Tribe A vs. C	1.94*	1.26	2.99
Tribe B vs. C	2.50*	1.02	6.14
18-25 years (vs. 56+ years)	7.01*	3.40	14.48
26-35 years (vs. 56+ years)	8.47*	4.22	16.96
36-55 years (vs. 56+ years)	7.06*	3.50	14.24
Other vs. employed	0.59*	0.35	0.98
Unemployed vs. employed	0.94	0.51	1.72
Separated/divorced/widowed vs. married	1.31	0.73	2.35
Single (never married) vs. married	1.37	0.86	2.18
Income - continuous	0.85*	0.76	0.95
Less than high school education vs. greater than high school education	2.55*	1.47	4.40
High school education vs. greater than high school	2.19*	1.36	3.53

* $p < .05$

Note: Unemployed excludes those who are not seeking work or who are retired and disabled. Other employment includes homemakers or those retired or disabled. High school education includes a GED.

have an alcohol or drug problem. Interaction terms were added to determine whether these relationships varied by tribe. Tribal interactions were found for education level, marital status, and age (not shown). The odds of a divorced, separated, or widowed adult having a substance abuse problem (as compared to a married adult) was higher in Tribe C than Tribe A. The odds ratio of an individual without a high school education having a substance abuse problem (compared to an individual with more than a high school education) was greater for adults in Tribe A as compared to Tribe C. Finally, the odds of younger and middle age adults having a substance abuse problem (as compared to adults over age 55) was greater in Tribe A than in Tribe C.

The next table (Table 6) examines correlates of past year treatment utilization. Males were 2.91 times more likely than females to receive treatment. Adults in Tribe A were more likely to receive treatment than those in Tribe C. Adults aged 26 to 35 were the most likely to utilize treatment services in the past year. Interestingly, those with insurance (private or government-provided) were less likely to receive care. Employment, marital status, income, and educational achievement were not significant correlates of past year treatment utilization. Interactions between tribe and the other socio-demographic variables were not significant.

Discussion

A substantial portion of American Indians on Arizona reservations suffer from substance abuse problems, particularly alcohol abuse or dependence. Despite the high prevalence of alcohol use disorders in the population, it is important to note that a large number of American Indians are nondrinkers: 41.5% of those surveyed reported no alcohol use at all in the past 18 months. The proportion of the adult population abstaining from alcohol is much higher among American Indians than the general population (less than 20% of the adult household population nationally abstains from alcohol) (Substance Abuse and Mental Health Services Administration [SAMHSA], 2000). May (1989) notes that there are two kinds of nondrinkers - those who are lifelong abstainers and those who are former drinkers who have quit. Consistent with other studies (Leung et al., 1993), alcohol use appears to be bi-modally distributed in the community with large proportions of individuals abstaining and large proportions drinking heavily.

It has been hypothesized that economic deprivation and lack of opportunity are significant contributors to alcohol problems on reservation (Beauvais, 1998). Consistent with this hypothesis, we found that the Tribal Nations with the highest level of education and household income had the lowest levels of problem alcohol and drug use. Both education attainment and income were significantly associated with substance abuse problems even after controlling for gender, age, and tribal affiliation, although

Table 6
Adjusted Odds Ratios and 95% Confidence Intervals (CI):
Demographic Correlates of Past Year Treatment Utilization
(*n*=725)

	Odds Ratio	Lower CI	Upper CI
Male vs. female	2.91*	1.74	4.86
Tribe A vs. C	2.59*	1.47	4.58
Tribe B vs. C	2.44	0.82	7.27
18-25 years (vs. 56+ years)	3.30*	1.33	8.20
26-35 years (vs. 56+ years)	5.80*	2.56	13.14
36-55 years (vs. 56+ years)	3.92*	1.70	9.05
Other vs. employed	0.72	0.38	1.37
Unemployed vs. employed	0.49	0.22	1.10
Separated/divorced/widowed vs. married	1.41	0.70	2.84
Single (never married) vs. married	0.85	0.47	1.56
Income-continuous	0.90	0.78	1.03
Less than high school education vs. greater than high school education	0.83	0.42	1.62
High school education vs. greater than high school education	1.38	0.78	2.44
Private insurance vs. no insurance	0.18*	0.06	0.55
Government insurance vs. no insurance	0.35*	0.13	0.96

* $p < .05$

Note: Unemployed excludes those who are not seeking work or who are retired and disabled. Other employment includes homemakers or those retired or disabled. High school education included a GED.

Note: 31 individuals who were not diagnosed as needing treatment received treatment within the past 12 months.

surprisingly unemployment was not. It is possible that the way employment categories were coded disguised significant contrasts. For example, many of the people interviewed were self-employed as artisans, while others worked part-time or seasonal jobs (e.g., firefighting in the national forests during the summer when dry conditions are common). Thus, standard categorization systems for employment may not be effective for reservation populations whose work status may be in a state of flux. Poverty was rampant in this sample, with 54% reporting a household income of less than \$15,000 and an unemployment rate of 10.1%. Clearly economic vitalization and autonomy are central to maintaining a healthy lifestyle among reservation residents.

Substance abuse problems are more common among males and young to middle age adults. Concurrent with other research, our study found that high problem rates persist until about 45 years of age when rates begin to drop off (Bray et al., 1999; Leung et al., 1993; Manson et al., 1992). Rates may be lower among older adults because of high levels of alcohol-related mortality or because individuals eventually age-out of heavy or problematic drinking (Quintero, 2000). Mail and Johnson (1993) report that many men eventually quit drinking as they begin to take on responsibilities associated with being an elder, and heavy drinking females report quitting substance use around the age of 35 to 40 when they see their behavior is inconsistent with the expectations they endorse for their children.

Although males were 2 to 3 times more likely to have alcohol or drug problems than females, the proportion of females reporting substance abuse problems is much larger than the Arizona general population (18% vs. 6%) or the U.S. female population as a whole (Arizona Department of Health Services [ADHS], 1998; Kessler et al., 1994). In addition, females had rates of drug-only problems that were equivalent to males. The proportion of female problem drinkers in our study is higher than that found by Leung et al. (1993), but similar to rates found by Bray and colleagues (1999). It is difficult to make direct comparisons to other studies due to differences in methodologies and definitions of what constitutes a substance abuse problem. Pathways to alcohol abuse may differ for women: Women may be more likely to develop problem use while in relationships with substance abusing men or to turn to alcohol in an effort to relieve the negative affect associated with victimization, grief, and loss. Many American Indian women presenting for substance abuse treatment have a history of trauma including child sexual abuse and domestic violence (Brindis et al., 1995). Future research should seek to delineate the differences in substance use etiology for American Indian men and women.

Although problems with alcohol greatly outnumber problems with drugs, the proportion of adults with drug problems is still much higher than the Arizona and U.S. non-reservation household population (ADHS, 1998, Kessler et al., 1994), particularly among those who already have problems with alcohol. Whereas alcohol has been the primary drug of addiction, Mail and Johnson (1993) report a growing concern among Tribal Nations for illicit drug use and poly-drug use. Experimentation with illicit drugs appears to start earlier for American Indian youth (Beauvais & LaBoueff, 1985), and early and excessive use may greatly increase the probability of future substance abuse problems. As such, treatment and prevention providers should focus on the role of illicit drugs both in the pathways to addiction and in the treatment of concomitant disorders.

Approximately two-thirds of individuals with a substance abuse problem had not received care in the past year. Women and elders were the least likely to receive care. Responsibilities such as taking care of children may make women less available to seeking care. Women also

may be less likely to come into contact with systems that can identify, refer, or mandate substance abuse treatment such as the criminal justice or employment systems. Because substance use is less common among elders, there may be more stigma associated with seeking treatment. Attitudes toward treatment or world-views of illness and healing may also impact treatment-seeking behavior of older American Indians (Manson, 2000). The rural and isolated nature of many reservations presents special challenges for both the outreach and provision of care. Most people who received treatment used informal services whether alone or in conjunction with formal services. Use of informal services may result from poor access to formal programs as well as a desire to incorporate traditional aspects of healing and spirituality into recovery. In this study 27.4% of people with a substance abuse problem reported use of traditional healing practices including sweat lodges, traditional ceremonies, consultation with village elders, or use of medicine men. What little research there is on treatment effectiveness among American Indians suggests that culturally diverse treatments that include traditional forms of healing and use ethnically matched counselors may increase treatment success (May & Moran, 1995; Weibel-Orlando, 1989). The use of AA was less frequent: 14.3% of those with a substance abuse problem reported use of this service. American Indians on reservation may assume that AA is incompatible with their belief system, although use seems to be increasing as the traditional Twelve Step philosophy is being expanded to include tribal values and beliefs (Abbott, 1998; CSAT, 1999; Womack, 1996).

Private insurance coverage was low in the population; however, insurance coverage did not facilitate access to treatment in this study. Many insurance plans provide inadequate coverage for substance abuse treatment. Furthermore, even if substance abuse treatment is covered under insurance, access or availability may be limited. More health services research is needed to understand the structural barriers to substance abuse treatment among American Indians including the association between payment systems and access to health care. Moreover, given the popularity of traditional healing among this population, future research should explore rationales for selecting types of treatment as well as the effectiveness of traditional healing.

It is important to recognize that there is a great deal of diversity in the cultural, geographical, and economic characteristics of Tribal Nations (Weisner, Weibel-Orlando, & Long, 1984). Our study did find differences in substance use and treatment seeking behavior by tribe. Substance use may be affected by a number of contextual or cultural characteristics including the historical context of alcohol introduction, tribal history of political and economic oppression, migration, adherence to traditional culture, cultural perspectives on substance use (e.g., ceremonial use, vision quests) as well as community attitudes, norms, and policies regarding alcohol

(Beauvais, 1998; Weisner, Weibel-Orlando, & Long, 1984). As such, researchers need to take into account the macro level characteristics associated with substance use across different reservations.

Several limitations to this study should be noted. Data were collected from a representative household sample of three reservations in the State of Arizona. The resultant sample had a higher proportion of female participants than would be expected by chance (results were weighted to the population to correct for this), thus we cannot be certain that the individuals within households were randomly selected as intended. Participation of the adult over the age of 18 with the most recent birthday was requested, but it is possible that whoever answered the door overrode this request and selected the person with the lowest substance use to participate. Similarly, attitudes toward research or service utilization could have influenced self-selection for participation. The sample consists of American Indians from only three reservations and these reservations were selected due to high county-level indicators of alcohol-related mortality and morbidity. Because there is a great deal of diversity among Tribal Nations, we cannot generalize findings from these three Nations to all American Indians residing on reservation in Arizona or the United States. Fear of lack of confidentiality or social desirability may have motivated some respondents to underestimate their substance use; thus, these data are limited by use of a single reporter. Validation of substance use by multiple reporters or methods may strengthen future research in this area. Nevertheless, the rates of substance misuse found in this population are consistent with those of other epidemiologic studies of American Indians (Bray et al., 1999; Kinzie et al., 1992). The Diagnostic Interview Schedule has been used worldwide and can be used effectively with American Indians (Manson, Walker, & Kivlahan, 1987); however, further efforts to continue to assess the cross-ethnic and cross-language equivalence of this and other diagnostic measures are needed. In our study, 72 individuals conducted their interview in their Native language or in a mix of English and their Native language. Although key terms were translated and information about the need for standardization in translation was discussed in training, we cannot assure standardization across all interviews. Finally, this study did not include off-reservation American Indians and more research is needed to compare alcohol and drug use between those residing on and off-reservation.

Conclusion

Many American Indians on reservation abstain from alcohol use and many others have problems resulting from excessive and out-of-control use. Given this extreme distribution of drinking patterns, more research is needed to understand more moderate or controlled patterns of drinking. Dramatic differences exist within and between Tribal Nations and across

people. Thus, a deeper understanding of the interpersonal and contextual influences on excessive substance use is crucial. Rather than focusing solely on estimating psychopathology in American Indian communities, research should focus on understanding issues of resilience such as identifying factors associated with resistance to substance use initiation or successful recovery. Understanding the correlates and predictors of substance use and abuse among American Indians is important for the development of empirically grounded and culturally sensitive prevention and treatment models (Beauvais, 1992b; May & Moran, 1995; Stubben, 1997). Only through comprehensive, community-driven, and culturally sensitive efforts can the myriad problems associated with substance abuse in American Indian communities be combated.

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Footnote

¹Members of Federally recognized tribes and their descendants are eligible for health care services provided by IHS, an arm of the U.S. Public Health Service. However, due to fiscal constraints, health care services must sometimes be rationed. Thus, eligibility does not necessarily guarantee receipt of service.

SELF-DESTRUCTIVE BEHAVIORS IN AMERICAN INDIAN AND ALASKA NATIVE HIGH SCHOOL YOUTH

Michael L. Frank, Ph.D., and David Lester, Ph.D.

Abstract: Analysis of responses of 10,251 high school students surveyed in the 1997 National School-Based Youth Risk Survey indicated that American Indian and Alaska Native youths engaged more often in risky behaviors than White or Black youths. The pattern of involvement in risky behavior was different for youths from the three ethnic groups.

There has been great interest in whether the different forms of self-destructive behaviors may be associated, especially in adolescents. In other words, does participation in one of the behaviors predict participation in another? Kelley and associates (Kelley et al., 1985) constructed and validated a measure of self-destructiveness which includes questions on such behaviors as gambling, excessive drinking, poor health care behavior, and thrill-seeking. High scores on the scale were associated with having a stronger external locus of control score, substance abuse and cheating in academic studies, and the scale appeared to have adequate reliability in several cultures including Hong Kong and India as well as the United States (Kelley et al., 1985; Kelley et al., 1986).

Flisher, Ziervogel, Chalton, Leger, and Robertson (1996) studied high school youth in South Africa and found that risky behaviors, such as alcohol, cannabis, carrying knives, and not using seat belts, were strongly associated with one another. These risky behaviors are also predictive of behaviors that are of concern to public health workers, such as suicidal behavior. For example, Woods, Lin, Middleman, Beckford, Chase, and DuRant (1997) studied youths in the 9th through 12th grade in the Massachusetts Youth Risk Survey in 1993 and found that engaging in risky behaviors (such as regular cigarette use, not using seat belts, carrying guns, and substance use) were predictive of attempting suicide. Simon

and Crosby (1997) found that unplanned suicide attempts in high school youths (but not planned attempts) were predicted by carrying guns, using marihuana, and engaging in sexual intercourse.

Jessor and colleagues have conducted a number of studies on the association of risky behaviors among adolescents. For example, Fortenberry, Costa, Jessor, and Donovan (1997) found that not using contraceptives during sexual intercourse was associated with behaviors such as alcohol and drug abuse, delinquency, poor diet, exercise, and not using seatbelts. They concluded that "substantial organization [exists] among adolescent health and problem behaviors" (p. 307). Turbin, Jessor, and Costa (2000) found that smoking in adolescents was related to a cluster of problem-behaviors such as alcohol and drug use, sexual intercourse, and delinquency.

The incidence and causes of risky and self-destructive behaviors among American Indian youth has been of particular concern because the levels of these behaviors seems to be greater among American Indians than among other ethnic groups in the United States. Some groups of American Indian youths have high rates of attempted and completed suicide and of drug and alcohol abuse (e.g., Bachman, 1992). Young American Indians who are suicidal have been found to come from homes with parental conflict, and their suicidality was predicted by alcohol and drug abuse (Dinges & Quang, 1994). On the Navaho reservation, Grossman, Milligan, and Deyo (1991) found that youths who had attempted suicide more often consumed hard liquor and had poor health, as well as having a history of sexual and physical abuse and a family history of suicidal behavior.

Interestingly, Garrison, Jackson, Abby, McKeown, and Waller (1991) did not find a higher incidence of suicidal ideation and suicide attempts in a small sample of Black high school students as compared to White students. Vega, Gil, Warheit, Apospori, and Zimmerman (1993) found that psychoactive drug use predicted future suicide attempts in a small sample of Black youths, while alcohol and cigarette use did not.

The National Institute for Occupational Safety and Health now conducts an annual survey of high school youth across the U.S. for their involvement in risky behaviors. In the 1997 survey (National Technical Information Service [NTIS], 1997) 16,262 questionnaires were completed by students in grades 9 through 12. The present study examined this data set to see how the involvement of American Indian and Alaska Native youth in risky behaviors compared to the involvement of White and Black youth.

Method

The Centers for Disease Control and Prevention (CDC) set up a Youth Risk Behavior Surveillance System in order to "monitor the prevalence of youth behaviors that most influence health" (NTIS, 1997, p.1). As part of

this project, the CDC administered a questionnaire to high school students across the United States to assess their involvement in behaviors that can result in unintentional and intentional injuries, behaviors such as tobacco use, alcohol and drug use, sexual behaviors that might result in sexually-transmitted diseases and unintended pregnancies, dietary behaviors, and physical activity. The CDC made a coding manual available¹ and the data set on diskette.²

The sample was chosen from public, Catholic, and other private schools in all 50 states and the District of Columbia. Fifty-four sampling units were selected from 1,719 in the United States using stratified sampling for urban and non-urban units. Within the 54 units chosen, 191 schools were selected, and within the schools one or two classes were randomly selected for each grade, 9 through 12. The questionnaire contained 88 questions and was administered in classrooms in a way to ensure anonymity for the respondents. Parental consent was obtained prior to administration of the questionnaire.

The school response rate was 79.1% and the student response rate was 87.2%. A total of 16,262 questionnaires were completed in 151 schools. Of these, 5,554 were from White youth, 4,558 from Black youth, and 139 from American Indian or Alaska Native youth (NTIS, 1997).³ Given the focus on the American Indian and Alaska Native students in the present paper, details of where these students came from (region of country, urban/sub-urban/rural, etc.) would be of interest. The data set, however, did not provide such information.

The modal ages were 17 for the American Indian and Alaska Native youths, 17 for the Black youths, and 16 for the White youths. The percentages of males were, respectively, 51%, 46%, and 54%. The modal grade for all three groups was 12th. The American Indian and Alaska Native youths had parents who had completed significantly less education than the parents of White youths. For example, 25% of the fathers of American Indian and Alaska Native youths were college graduates, 23% of the fathers of Black youths, and 44% of the fathers of White youths.

The results reported here are limited by the questions asked by the survey. Twelve questions were chosen from the 88 questions asked in the survey to study here. There were several questions for each risky behavior. A scale was constructed for the present study by choosing the item in each set of questions for each risky behavior which permitted a yes/no answer for recent involvement in the risky behavior. The follow-up questions often pertained to engaging in the behaviors on school property, the age when the behavior was first engaged, and the intensity of the involvement. For example, the questions on smoking cigarettes were:

1. Have you ever tried smoking, even one or two puffs?
2. How old were you when you smoked a whole cigarette for the first time?
3. During the past 30 days, on how many days did you smoke cigarettes?

4. During the past 30 days, on the days you smoked, how many cigarettes did you smoke per day?
5. During the past 30 days, how did you usually get your own cigarettes?
6. When you bought cigarettes in a store during the past 30 days, were you ever asked to show proof of age?
7. During the past 30 days, on how many days did you smoke cigarettes on school property?
8. Have you ever tried to quit smoking?

Question 3 was chosen since it measures recent involvement in the risky behavior and had the highest response rate. The other questions were seen as less pertinent for constructing the scale of risky behaviors, although it might be possible to construct a scale that took into account the extent of involvement in the behavior. The present scale, however, coded the questions so as to permit one simple response for each risky behavior of recent involvement versus non-recent involvement, thereby weighting each risky behavior equally. The item on smoking was, therefore, restricted to use in the past 30 days since this was the only recent time period used in the survey. However, the survey question on attempted suicide asked about the past 12 months, not the past 30 days. Obviously, a questionnaire designed by independent researchers would almost certainly phrase many of the questions differently.

The definitions of engaging in risky behaviors were:

1. How often do you wear a seat belt when riding in a car driven by someone else? Answer "never" or "rarely."
2. During the past 30 days, how many times did you drive a car or other vehicle when you had been drinking alcohol? Answer other than "0 times."
3. During the past 30 days, on how many days did you carry a weapon such as a gun, knife, or club? Answer other than "0 days."
4. During the past 12 months, how many times were you in a physical fight? Answer other than "0 times."
5. During the past 12 months, how many times did you actually attempt suicide? Answer other than "0 times."
6. During the past 30 days, on how many days did you smoke cigarettes? Answer other than "0 days."
7. During the past 30 days, on how many days did you have at least one drink of alcohol? Answer other than "0 days."
8. During the past 30 days, how many times did you use marijuana? Answer other than "0 times."
9. During the past 30 days, how many times did you use any form of cocaine, including powder, crack, or freebase? Answer other than "0 times."
10. Have you ever had sexual intercourse? Answer "Yes."
11. How do you describe your weight? Answer other than "About the right weight."

12. On how many of the past 7 days did you exercise or participate in sports activities for at least 20 minutes that made you sweat and breathe hard, such as basketball, jogging, fast dancing, swimming laps, tennis, fast bicycling, or similar aerobic activities? Answer "0 days."

Results

The percentages of youths behaving unsafely in the areas investigated are shown in Table 1 where it can be seen that the major difference was that the American Indian and Alaska Native youths engaged in more unsafe behaviors than the White or Black youths, especially carrying weapons, attempted suicide, marihuana use, and cocaine use. The results are shown for males and females separately also in Table 1.

To quantify this a little more precisely, a self-destructive score was calculated based on these twelve behaviors. The scale proved to be quite reliable. Cronbach's alpha was 0.67 for the White youths, 0.57 for the Black youths, and 0.79 for the American Indian and Alaska Native youths. Although the reliability is low for the Black students and only moderate for the White students, the reliability is acceptable for the American Indian and Alaska Native students.

The difference by ethnic group and sex were statistically significant, but not the interaction term (see Table 2). The mean scores and standard deviations for each group are shown in Table 2. It can be seen that American Indian and Alaska Native male and female youths obtained higher self-destructiveness scores than both White and Black youths.

Conclusion

The present results from the National School-Based Youth Risk Survey in 1997 indicated that American Indian and Alaska Native youths engaged in more risky behaviors overall than White and Black youths.

A more detailed examination of the results indicated different patterns of involvement in risky behaviors for American Indian and Alaska Native, White, and Black youths. For males, American Indian and Alaska Native youths engaged more often in carrying weapons, attempted suicide, and drug use (cigarettes, marihuana, and cocaine) than White or Black youths. For females, American Indian and Alaska Native youths engaged more often in attempting suicide and cocaine use than White or Black youths.

The NTIS survey is school-based, and thus the respondents are enrolled in high school. Different results might be obtained were the sample to include youths who are not attending high school or those attending schools on American Indian and Alaska Native reservations. However, even with the limitations of the sample, the large percentages of youths from all three ethnic groups engaging in risky behaviors indicates the

Table 1
Risky Behaviors by Ethnic Group (Percentage Showing
"Unsafe" Behavior)

	American Indian & Alaska Native	White	Black	$\chi^2(df=2)$ (critical value=5.99)
Total Sample				
seat belt	30.2%a	17.9%	31.7%a	262.09
driving/drinking	20.0%a	17.1%a	10.3%	98.11
carry weapon	31.9%	18.6%	20.7%	19.06
physical fight	48.1%a	35.3%	39.8%a	27.90
attempted suicide	27.0%	7.0%a	7.7%a	68.75
cigarettes	46.0%a	40.4%a	21.5%	388.50
alcohol use	54.3%a	52.7%a	40.4%	146.30
marihuana use	38.8%	24.5%a	25.6%a	14.89
cocaine use	12.3%	3.2%	0.7%	136.21
sexual intercourse	68.2%a	43.3%	73.8%a	924.10
weight	45.7%ab	45.9%a	38.7%b	53.18
exercise	21.2%a	16.9%a	29.7%	229.30
Males				
seat belt	36.6%a	22.6%	36.1%a	112.45
driving/drinking	26.1%a	20.2%a	15.7%	18.44
carry weapon	52.9%	30.2%a	28.3%a	20.26
physical fight	56.7%a	46.0%a	47.9%a	4.35 ns
attempted suicide	22.2%	4.0%a	5.2%a	47.20
cigarettes	56.3%	39.9%	27.4%	88.96
alcohol use	56.5%a	54.4%a	43.5%	55.73
marihuana use	49.3%	26.8%	33.7%	39.25
cocaine use	17.1%	3.9%	1.3%	75.60
sexual intercourse	76.1%a	42.1%	81.8%a	766.50
weight	41.4%ab	43.5%a	32.5%b	61.69
exercise	17.4%ab	11.6%a	16.6%b	26.51
Females				
seat belt	23.9%a	12.5%	28.1%a	190.41
driving/drinking	13.6%a	13.5%a	5.8%	85.61
carry weapon	9.2%ab	5.2%a	14.4%b	120.29
physical fight	39.4%a	22.7%	33.1%a	70.82
attempted suicide	32.2%	10.5%a	9.7%a	31.15
cigarettes	35.5%a	41.0%a	16.5%	337.42
alcohol use	52.3%a	50.7%a	37.9%	81.56
marihuana use	28.4%ab	21.9%a	19.0%b	8.87
cocaine use	7.4%	2.3%	0.2%	60.00
sexual intercourse	60.0%a	44.7%	67.3%a	254.40
weight	50.0%ab	48.7%a	43.9%b	12.08
exercise	25.0%a	23.3%a	40.7%	175.98

Groups sharing the same letter of the alphabet did not differ significantly.

Table 2
Mean Self-Destructiveness Scores by Ethnic Group and Sex Means (and Standard Deviations) Shown

	American Indian & Alaska Native	White	Black
females	3.60 (2.37)	2.93 (2.15)	3.08 (1.88)
males	4.80 (3.03)	3.39 (2.38)	3.51 (2.11)
total	4.22 (2.78)	3.18 (2.29)	3.28 (2.00)
TWO-WAY ANOVA			
sex	<i>F</i> =30.94	<i>df</i> =1/10240	<i>p</i> < .001
ethnic group	<i>F</i> =19.29	<i>df</i> =2/10240	<i>p</i> < .001
sex by ethnic group	<i>F</i> =2.09	<i>df</i> =2/10240	<i>p</i> = 0.12, ns
ONE-WAY ANOVAs			
Females (all three groups differed significantly from one another)	<i>F</i> =6.29	<i>df</i> =2/5079	<i>p</i> = .002
Males (all three groups differed significantly from one another)	<i>F</i> =14.43	<i>df</i> =2/5161	<i>p</i> < .0001

importance of appropriate education programs to encourage youths to refrain from engaging in these risky behaviors, especially since these youths in this sample were enrolled in school where it is relatively easier to expose them to public health education.

The results also suggest the importance of addressing more than single problem behaviors. Programs designed to reduce the incidence of smoking in American Indian adolescents may have little impact on the overall level of self-destructive and risky behaviors. Programs should have a more general focus.

Furthermore, more research needs to be conducted into the antecedents and causes of all these self-destructive behaviors, and programs designed to address or counteract these factors. For example, a program to raise the self-esteem of adolescents may have an impact on many of these self-destructive behaviors rather than just one.

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Footnotes

¹1997 YRBS, Division of Adolescent and School Health, National Center for Chronic Disease Prevention and Health Promotion, Centers for Disease Control and Prevention, Mailstop K-33, 4770 Buford Highway, NE, Atlanta, GA, 30341-3724.

²NTIS, 5285 Port Royal Road, Springfield, VA 22161. NTIS Order No. PB98-502479.

³In addition, 4547 were from Hispanic youths, 641 from Asian or Pacific Islanders, 695 from "others" and 128 had missing data for ethnic group. The survey intentionally over-sampled from schools with Black and Hispanic students in order to increase their proportion in the sample. The survey did not do this for Asian or American Indian and Alaska Native students.

A MEASURE OF TRADITIONALISM FOR AMERICAN INDIAN CHILDREN AND FAMILIES: PSYCHOMETRIC PROPERTIES AND FACTOR STRUCTURE

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Abstract: Factor analytic findings from culturally specific instruments measuring traditionalism as one aspect of cultural identity are described, based on the self-reports of American Indian children and parents. Findings indicate that traditionalism is a multidimensional construct that can be measured reliably. Results are important because few psychometrically adequate instruments exist to assess either traditionalism or acculturation among American Indian families. Implications for refinements in measuring child and family acculturation and examining the relationship with the social/emotional development of American Indian children are discussed.

The literature indicates that, in comparison to children of other ethnic minority groups, American Indian and Alaska Native children are at greater risk for emotional and behavioral disorders and negative psychosocial conditions such as poverty, family and community violence, substance abuse, and substandard living conditions (e.g., Beiser & Attneave, 1982; Berlin, 1987; Gotowiec & Beiser, 1993-94; Manson, Walker, & Kivlahan, 1987; U.S. Office of Technology Assessment, 1990). In addition, there is evidence that the stress of attempting to adapt to two disparate cultures has significant impact on overall mental health (Rogler, Cortes, & Malgady, 1991), drug abuse (Fuentes & Westbrook, 1996), suicide rates (Lester, 1999), and eating disorder symptoms (Perez, Voelz, Pettit, & Joiner, 2002). Conversely, strengthening cultural or ethnic identity may reduce problems such as substance abuse (Gilchrist, Schinke, Trimble, & Cvetkovich, 1987), suicide (Lester, 1999), loneliness, and depression (Roberts & Phinney,

1999); while enhancing emotional well-being (LaFromboise, Coleman, & Gerton, 1993) social adjustment (Coleman, Casali, & Wampold, 2001), self-esteem, coping ability, and optimism (Phinney, Cantu, & Kurtz, 1997; Roberts & Phinney, 1999). Understanding how American Indian and Alaska Native children and families adapt to living in a bicultural context is a critical aspect of promoting positive social and emotional development, preventing emotional and behavioral problems, and effectively treating problems when they arise.

Traditional indigenous cultures are an essential, but highly complex, resource for promoting positive mental health and addressing mental health problems among American Indian and Alaska Native children (Berlin, 1987; Tharp, 1991). Sociocultural level movements that "selectively return the life style of a group to a quasi-traditional form" (Berry, 1980, p. 270) involve changes at the individual level in identity, attitudes, beliefs, and stress reactions (Berry, 1980; Segall, Lonner, & Berry, 1998). Retraditionalization, the increasing reliance on "cultural beliefs, customs, and rituals as a means of overcoming problems and achieving Indian self determination" (LaFromboise, Trimble, & Mohatt, 1990, p. 637) has been called essential to the revitalization of American Indian and Alaska Native communities. In part due to the influence of retraditionalization, traditional cultures and the psychological constructs of biculturalism and cultural identity have come to be frequently emphasized in mental health and substance abuse programs for young people (e.g., Indian Health Service, 1994; Legah & Benally, 1990). Increased understanding of these constructs means increased understanding of the influences on mental health and well being for American Indian and Alaska Native children and families, and development of more appropriate prevention and intervention strategies.

The focus of the present research is on individual traditional orientation ("traditionalism") as one aspect of extant models of acculturation and cultural identity. Specifically, this report focuses on a sample of elementary-school students and their families from a southwestern American Indian tribe, utilizing a portion of an extant data set from the Flower of Two Soils project (Beiser, 1986; 1989; Sack, Beiser, Phillips, & Baker-Brown, 1993), a longitudinal study of mental health and academic performance across different tribal groups of American Indian children and families. Goals of the analyses reported here are to refine the scale structure and establish reliability of separate instruments for parents and children measuring culture-specific traditional behaviors, beliefs, and values.

Traditionalism and Models of Acculturation

Persistent and pervasive social pressure to change and adapt in response to contact with multiple cultures is a fact of life for most American Indian and Alaska Native children and families (Berlin, 1987). In the context of a pluralistic society, the study of traditionalism and cultural identity requires

an understanding of these change processes, which are often collectively termed acculturation. Acculturation refers to the changes experienced by members of a distinct cultural group, as a result of continuous contact with members of different cultures (Birman, 1994; Redfield, Linton, & Herskovits, 1936). Changes encompass both cultural and psychological phenomena, including values, attitudes, beliefs, and behaviors (Berry, 1980), and vary across individual group members in accordance with individual and contextual differences (Berry, Trimble, & Olmedo, 1986).

In anthropology and psychology, the acculturation paradigm is commonly used to conceptualize social change through processes of mutual cultural exchange and influence. But historically, value-laden concepts of development and modernization have influenced the psychological study of sociocultural change (Berry, 1980). Under these outdated approaches, acculturation referred to the unidimensional movement of a minority culture along a continuum, away from reliance on aspects of traditional culture, and toward increasing internalization of the dominant culture. This linear conceptualization was used to imply the superiority of the majority culture, and promote the elimination of indigenous cultures in favor of adopting the ways of the dominant society (Oetting, Swaim, & Chiarella, 1998).

Modern theories provide a less value-laden, more empirically based, and multidimensional understanding of acculturation (Azar, 1999; Olmedo, 1979). Two widely accepted models are the two-dimensional model developed by Berry and colleagues (e.g., Berry & Annis, 1974; Berry, Wintrob, Sindell, & Mawhinney, 1982) and the orthogonal model developed by Oetting and colleagues (e.g., Oetting, E. R. & Beauvais, 1991; Oetting, Swaim, & Chiarella, 1998). In addition, Coleman and colleagues have recently developed a sequential model that provides a dynamic perspective on how individuals cope with cross-cultural contact (e.g., Coleman, Casali, & Wampold, 2001).

Berry's two-dimensional model was developed in part through research with indigenous communities in Canada and the U.S., and formed the basis for the measures of acculturation used in *Flower of Two Soils* (Beiser, 1989). The two-dimensional model describes attitudes to acculturation that allow for identification with both minority and majority cultures. The model is based on the idea that an individual faced with acculturation decides to what degree s/he will maintain connection with traditional culture and identity, *and* to what degree s/he will seek positive connections with the majority culture (Berry, Wintrob, Sindell, & Mawhinney, 1982). Based on the degree to which an individual identifies with the majority and traditional cultures, s/he falls into a category of either integration, assimilation, separation, or marginality (see Figure 1).

If the option of integration (more commonly called biculturalism) is chosen, connections with both cultures are sought and maintained. With assimilation, traditional culture is relinquished and the ways of the dominant

Figure 1
A Two-Dimensional Model of Acculturation
(adapted from Berry et. al., 1986)

		Traditional culture and identity are valued and retained	
		YES	NO
Positive connection with majority culture is sought	YES	integration	assimilation
	NO	separation	marginality

society are adopted. Separation, or traditionalism, involves adherence to traditional ways and avoidance of adopting the introduced culture. Marginality may include some mixture of elements from both cultures (Dana, 1993), but is not really an option in the true sense of the word, since it is not typically chosen by minority group members; rather, it is imposed on them through simultaneous loss of the original culture and exclusion from substantial participation in the new culture.

The orthogonal model (Oetting & Beauvais, 1991; Oetting, Swaim, & Chiarella, 1998), like the two-dimensional model, allows for independent identification with both cultures. Oetting’s contribution is the concept of continuous, independent measurement on each dimension. Thus a categorical model, which assigns the individual to a discrete group, is transformed into a model allowing for assessment of cultural identification on both dimensions, and placement of the individual anywhere within a two-dimensional space. The present report provides findings pertaining to assessment on one axis of this two-space, i.e., assessment of identification with traditional culture.

An alternate paradigm (Coleman, Wampold, & Casali, 2001) for understanding how individuals respond to cross-cultural contact is based on a sequential rather than a dimensional or orthogonal conceptualization. That is, an individual who is in contact with a second culture will have to make a series of choices, consciously or unconsciously, about how to associate with minority and majority cultures. These choices will be reflected in his or her behavior, and the individual will adopt specific strategies for coping with cross-cultural situations based on these choices. In support of this model, Coleman and colleagues found that adolescents’ goals and strategies in responding to cross-cultural situations do vary according to the social context, that is, they reflect a sequential process. One implication of this model is that young people with a strong bicultural identity may have a wider range of options, greater success, and experience

lower levels of stress, in coping with a wide variety of cross-cultural situations.

The goals of analyses reported here are consistent with the goals of acculturation research discussed in the literature (Berry et al., 1986; Olmedo, 1979), as follows: (a) development of a method to quantify cultural variables, in this case variables that describe traditionalism; (b) to systematically explore structural relationships among cultural variables, i.e., the interdependence structure of traditionalism variables; and (c) to improve precision in the definition and measurement of acculturation and cultural identity, by developing a reliable and valid measure of traditionalism for children and families.

Methods

Sample

Analyses reported in the present study were based on responses from 186 children or parents from a southwest Athabascan tribe, who participated in *Flower of Two Soils* (Beiser, 1989), and who completed an interview including the traditionalism protocol. In order to maximize sample size in the present analysis, data were retained for all subjects who completed the traditionalism interview. In many cases, data for both parent and child were not available. Thus, analyses are for samples of 91 children and 95 parents, with 35 parent/child dyads included in these samples. An additional 34 families (total $N = 200$) participated in the project but neither parent nor child completed the traditionalism scale.

Traditionalism scales were included in the assessments conducted during the third and final year (1988) of data collection, and in consideration of the logistical difficulties of longitudinal research in a rural reservation setting, considerable attrition was expected across the 3-year data collection period (Beiser, 1989). However, data across all *Flower of Two Soils* sites show no systematic differences with respect to attrition for gender, academic achievement, IQ, depression, or instrumental competence (Sack, Beiser, Phillips, & Baker-Brown, 1993). However, among those children entering the study while in second grade, the children who dropped out had lower social and instrumental competency scores, and higher depression scores (Beiser, Lancee, Gotowiec, Sack, & Redshirt, 1993).

Children were in grades four and six during the final year of the study. All participants resided on the reservation at the time of the study, and came from several communities in different areas of the reservation. Selected demographic characteristics are presented in Table 1.

Procedures

Community Involvement

From its inception, the Flower of Two Soils project was designed and implemented as a community-based research project. Before becoming involved, community and school representatives met with the project principal investigator to discuss the project and its proposed procedures. Communities became involved only if they felt that they would be willing and able to actively participate in the research process, and if they were satisfied with the project's potential to provide returns to the community commensurate with the support provided by the community (Beiser, 1989).

When participation had been decided upon, community members appointed a community advisory board to work with project staff on every phase of the project. The board was composed of parents, school personnel, elders, and representatives of the tribal government. Duties of the board included reviewing proposed instruments, consulting on translation procedures, advising on personnel recruitment, preparing the community for the project, determining the appropriate applications of project findings in the community, and monitoring progress of the project. Community input played a critical role in development of traditionalism instruments.

Instruments

The Flower of Two Soils project collected information from parents, children, and teachers using measures of mental health, cognitive ability, academic achievement, and a variety of family measures, including the traditionalism scales, which are the only measures utilized in this report (for a complete description of other instruments see, Beiser, 1986; Sack et al., 1993). All instruments were administered through interviews conducted with children and caregivers. All assessments and interviews were conducted or supervised by local, bilingual masters-level psychometricians. A lengthy structured interview was used to obtain family data from parents or a primary caretaker of the participating child. The instrument included a wide range of demographic items, but in the present study, only those family variables are reported that provided a basic demographic description of the sample (see Table 1).

The major cultural measure, initially termed the "Traditionalism Scale," was developed after beginning the longitudinal project, when members of the research team and community advisory boards became aware of the impact of acculturation on the measures being used in the project, and on the communities at large. Project staff and advisory boards

Table 1
Demographics of Child and Caregiver Participants

Demographic Variable	%
Percent of respondents:	
parents	87%
grandparents	5%
other relative	8%
female (caregiver)	90%
median age of caregiver (SD)	35 (8.5)
average years education (SD)	11 (4.3)
Percent of households	
single parent	27%
receiving income support or unemployment	31%
without running water	11%
Percent of children: female	53%
Mean child age (SD)	11.5 (1.2)
Child average years living on reservation (SD)	11.0 (1.4)

worked together to develop instruments for parents and children to tap areas such as knowledge of language, traditional history, and tribal lore; as well as identification with traditional healing ceremonies and life transition rituals. While these instruments were tribally specific with respect to item content, they were designed to measure common cultural dimensions described in the literature (e.g., Berry et al., 1986; Olmedo, 1979), including: (a) food preferences, (b) preferences in dress and grooming, (c) knowledge of traditional beliefs, and (d) adherence to traditional practices.

Child and adult traditionalism scales each included 96 items, plus seven to nine items apiece specific to female caregiver, male caregiver, female child, or male child. Most items were either Likert-type or yes/no, both on a scale ranging from zero to two. Some items also allowed for descriptive answers or asked for the respondent to provide examples; these items were also scored yes/no according to whether or not the respondent had knowledge in the area assessed by the item. The instrument was administered in interview format, in conjunction with other measures used in *Flower of Two Soils*, and took approximately 45 minutes to complete. The item pools thus obtained from adult and child respondents provide the basis for the present analyses, and the derived instruments are referred to here as the Traditionalism Scale for Parents (TSP) and the Traditionalism Scale for Children (TSC).

The initial step in refining item pools was to identify items with high frequencies of missing responses. All items with greater than 10% missing responses were dropped from subsequent analyses, with 20 items dropped from the TSP in this manner, and 10 items dropped from the TSC. Upon examination, many of these items were apparently phrased in a manner that allowed participants to respond "I don't know." Items that were "branched," asking the respondent to provide further information about a previous item that was responded to affirmatively, presented a similar problem with high frequencies of missing values. Since responses to these items were only given by individuals who responded affirmatively to the previous "root" item, these items were also set aside. Because the relatively small sample size precluded separate analyses by gender, gender-specific items were also excluded.

Examination of all dropped items indicated that non-response was typically associated with problems in the structure or format of the items, rather than being associated with one particular content area or some other type of systematic bias. After this process of elimination, initial psychometric analyses proceeded with 44 items for the TSP and 53 items for the TSC, with all remaining missing values for each item replaced by the sample mean response (for adult and child samples, respectively) for that item. Although it would have been desirable, for purposes of comparison, to have identical scales for parents and children, even at this basic level of item analysis the items performed differently for parents and children, and this continued to be the case as analyses proceeded.

Results

Initial analysis of scale internal consistency for the 44-item TSP yielded corrected item-total correlations ranging from -0.23 to 0.80, and inter-item correlations ranging from -0.47 to 0.83. Likewise, analysis of internal consistency for the 53-item TSC yielded corrected item-total correlations ranging from -0.16 to 0.55, and inter-item correlations ranging from -0.34 to 0.63. Items having negative coefficients were carefully examined as the process of item selection continued in conjunction with findings from principle components factor analysis and subsequent further analysis of internal consistency. Items that continued to perform poorly were dropped. This iterative process resulted in final retention of 32 items for the TSP and 41 items for the TSC on which the factor analysis was conducted.

In discussing the findings from the factor analysis, the term "structure coefficient" is used and refers to the correlation between variable and factor, which is also typically called "factor loading" in the literature. This choice of terminology reflects an attempt to establish consistent and accurately descriptive nomenclature in the factor analytic literature, as recommended by Thompson & Daniel (1996).

Traditionalism Scale for Children (TSC)

Factor Analysis

Based on simple structure and interpretability of content, a five-factor orthogonal solution was chosen for the TSC, accounting for 42.5% of overall variance, and converging in ten iterations. A structure coefficient cutoff at .40 was applied flexibly to determine which variables to retain within each factor for the purpose of constructing subscales. Items that doubly loaded on two factors were placed in both factors/subscales if they were logically and meaningfully related to the other items loading on the factors and if they contributed to the information provided by the subscale. Otherwise, an item with a double loading was retained only within the factor where it seemed to best fit. Items retained within each subscale are listed in Table 2, and are ranked within each factor by magnitude of structure coefficients. For each item, an abbreviated version of the item content is presented.

Twelve items were included in factor one, with structure coefficients ranging from .702 to .349. Factor one included items such as, "I pick plants and herbs to use such as wild onion and wild tea." Items loading on this factor involve reliance on animals, plants, and natural products derived from plants and animals. One item appeared to be an exception to this pattern ("Have you ever heard of Gobernador Knob?"), but this item actually refers to a place that figures prominently in traditional teachings about the natural world and the life forms found within it. Therefore, the subscale formed by factor one was labeled, "Plants and Animals."

Ten items were included in factor two, with structure coefficients ranging from .635 to .391. Factor two included items such as, "I feel sacred songs are important for the veterans of our tribe and for our people who performed honorable deeds and tasks." Another item was, "If someone died in a family, I would make it a point to visit the bereaved family in a separate house or at a special occasion to give them water and have someone speak encouraging words to them." Items loading on this factor involved a variety of culture-specific beliefs and behaviors. Therefore, the subscale formed by factor two was labeled, "Beliefs & Behaviors."

Nine items were included in factor three, with structure coefficients ranging from .642 to .408. Factor three included items such as, "Have you used sheepskin for beds at ceremonies?" Items loading on this factor appeared to represent a construct involving knowledge and participation in traditional ceremonies. Even those items that did not specifically refer to ceremonies involved geographical features that often figure in ceremonies. Therefore, the subscale formed by factor three was labeled, "Traditional Ceremonies."

Table 2
Traditionalism Scale for Children (TSC) - Structure
Coefficients of 41 Retained Items

Item	Coefficient
 Factor 1 - Plants & Animals	
Ever heard of Gobernador Knob	.702
Use mountain herbs to give thanks	.623
Women prepare game which men hunted	.603
I use sage or cedar after long illness	.593
Give mountain herbs for spiritual strength	.545
Believe wild tea can prevent tooth decay	.477
Pick wild berries	.436
Use a hair tie with a natural yarn	.436
Pick plants & herbs such as wild onion	.434
Use sheepskins rather than blankets	.433
Have burned sage or cedar for ceremonies	.404
Use horses for transportation	.349
 Factor 2 - Beliefs & Behaviors	
Important that grandparents give [traditional] names	.635
Believe in the legends of the [traditional] way	.616
Sacred songs important for veterans	.566
If someone died - visit the family	.555
Prepare a meal for any visitor	.521
Sacred songs important for leaving reservation	.520
Look for signs when time for planting	.491
Use herbal plants after sweat bath	.485
Have you ever visited a medicine man	.460
Women have had a kinaalda ceremony	.391

Table 2 Continues on Next Page

Table 2 (Continued)
Traditionalism Scale for Children (TSC) - Structure
Coefficients of 41 Retained Items

Item	Coefficient
Factor 3 - Traditional Ceremonies	
Ever heard of black mountain mesas	.642
Do you go to [traditional] ceremonies	.591
Ever heard of the four sacred mountains	.583
What is a shoe game	.583
Use sheepskin for beds at ceremonies	.509
Ever traveled to another type of ceremony	.480
Have you ever visited a medicine man	.436
Ever traveled to attend a shoe game	.427
Do you know what healing ceremonies are	.408
Factor 4 - Language	
Language your parents speak to you	.764
Language you speak at home	.740
Language you speak to your parents	.694
Language adults speak to each other	.654
Sing animal songs for your livestock	.464
Live in a Hogan most of the year	.407
Factor 5 - Food Preference	
Prefer dried foods to fried	.540
Like mutton meat more than beef steak	.536
I miss corn meal mush	.527
Prefer mutton stew to beef stew	.457
Pick plants & herbs such as wild onion	.400
Rather have blue cornmeal or kneel down bread	.313

Six items were included in factor four, with structure coefficients ranging from .764 to .407. Four out of the six items on this subscale concerned the languages spoken by children, parents, and other family members. Another item was, "Do you sing animal songs for your livestock?" These songs would be sung in the Native language. Items loading on this factor clearly represented a construct involving the language or languages spoken within the family, and factor four was therefore labeled, "Language."

Six items were included in factor five, with structure coefficients ranging from .540 to .313. Factor five included items such as, "When I haven't had cornmeal mush for awhile, I miss it." All items loading on this factor were concerned with food, and factor five was therefore labeled, "Food Preference."

Psychometric Properties

Psychometric and descriptive data for the TSC and its subscales are presented in Table 3. The 41 scale items fell into the five subscales previously described ranging from six to twelve items apiece (a few items were included on more than one subscale). The full scale yielded an alpha coefficient of .86. All TSC subscales had alpha coefficients between .73 and .78, with the exception of Food Preferences, which had an alpha of .61.

Table 3
Traditionalism Scale for Children (TSC) Full Scale and
Subscale Psychometric and Descriptive Findings (N=91)

Psychometric/ Descriptive Data	Full Scale	Plants & Animals	Bellefs & Behaviors	Traditional Ceremonies	Language	Food Preference
N of Items	41	12	10	9	6	6
Scale Mean (SD)	33.2(12.9)	5.9 (4.2)	9.5 (4.5)	6.65 (4.5)	7.5 (4.1)	4.7 (2.5)
Mean Inter-Item Correlation	.13	.23	.26	.23	.33	.21
Range of Item- Total Correlation	.11 to .57	.27 to .50	.34 to .63	.35 to .54	.32 to .65	.31 to .39
Alpha Coefficient	.86	.75	.78	.73	.76	.61

The mean inter-item correlation for the full scale was .13. The low inter-item correlation was to be expected and reflects the multidimensional nature of the construct under study. All subscales had mean inter-item correlations between .21 and .33. Similarly, some item-total correlations for the full scale were rather low, ranging from .11 to .57, with fourteen out of forty-one items having item-total correlations less than .30. The large majority of item-total correlations among the subscales ranged between .35 and .55. Retention of all items was justified by the content of the items fitting well into the scale. Furthermore, internal consistency analyses (alpha coefficients) would not be appreciably improved by dropping items with relatively lower correlation coefficients.

Traditionalism Scale for Parents (TSP)

Factor Analysis

Factor analysis of the TSP was conducted using the same procedures as those employed with the TSC. Based on simple structure and interpretability of content, a three-factor solution using 32 items was selected, accounting for 46.9 percent of total variance, and converging in six iterations. A structure coefficient cutoff of .40 was consistently adhered to when determining which variables to retain from each factor for the purpose of constructing TSP subscales. Abbreviated wordings for the items and the structure coefficients are listed for each factor in Table 4.

Factor one contained thirteen items with loadings ranging from .822 to .444. The three highest loading items on factor one concerned the languages spoken by parents and children, such as, "Which language do you speak to your children?" Factor one also included items concerning food preferences, and items asking about traditional practices, such as, "Have you ever visited a medicine man?" All items in factor one, whether referring to language spoken, foods eaten, or specific traditional spiritual practices, involved specific culturally determined behaviors. Therefore, the subscale formed by factor one was labeled "Language & Behavior."

Ten items were included in factor two, with structure coefficients ranging from .679 to .465. Factor two included items such as, "Most of the women in my family have had a kinaalda [puberty] ceremony." Many items in factor two involved family practices. The highest loading item was, "I believe in the legends of the [traditional] Way." Two items dealt with food preference, but it is notable that both involved corn, which figures importantly in traditional spiritual beliefs. Factor two involved several behaviors, particularly those occurring in a family context, that stem from traditional beliefs, as well as some items directly pertaining to traditional beliefs. Therefore, the subscale formed by factor two was labeled "Family & Beliefs."

Table 4
Traditionalism Scale for Parents (TSP) - Structure Coefficients
of 32 Retained Items

Item	Coefficient
Factor 1 - Language & Behavior	
Language you speak to your children	.822
Language you speak at home	.791
Language your children speak to you	.714
Like mutton meat more than beef steak	.649
Use mountain herbs to give thanks	.603
I use sage or cedar after long illness	.512
Give mountain herbs for spiritual strength	.510
Prefer mutton stew to beef stew	.482
I miss fry bread	.465
Have you ever visited a medicine man	.463
Have burned sage or cedar for ceremonies	.454
Ever traveled to attend a shoe game	.447
Do you go to [traditional] ceremonies	.444
Factor 2 - Family & Beliefs	
Believe in the legends of the [traditional] way	.679
When young did you hear coyote stories & legends	.670
I miss cornmeal mush when I haven't had it for awhile	.664
I have a [traditional] name	.630
Family have a sheep corral	.591
Women have had a kinaalda ceremony	.586
Family have a horse corral	.564
Give mountain herbs for spiritual strength	.544
Rather have blue cornmeal or kneelown bread	.536
Do you go to [traditional] ceremonies	.465
Factor 3 - Plants & Animals	
Prefer dried foods to fried	.706
Use herbal plants after sweat bath	.588
Have burned sage or cedar for ceremonies	.583
Believe wild tea can prevent tooth decay	.582
I use sage or cedar after long illness	.535
Use a hair tie with a natural yarn	.520
Pick plants & herbs such as wild onion	.490
Sleep on a sheepskin rather than mattress	.490
Women prepare game which men hunted	.489
Pick wild berries	.465
Use sheepskins rather than blankets	.460
Look for signs when time for planting	.444
Ever heard of the four sacred mountains	.441

Thirteen items were included in factor three, with structure coefficients ranging from .706 to .441. Factor three included items such as, "I use a hair tie with a natural wool yarn as a sign of respect." Like the Plants & Animals subscale on the TSC, items in factor three involved reliance on plants, animals, and natural products derived from plants and animals. Therefore, the subscale formed by factor three was similarly labeled "Plants and Animals."

Psychometric Properties

Psychometric and descriptive data for the TSP and its subscales are presented in Table 5. The 32 scale items fell into the three previously described subscales with ten to thirteen items apiece. Alpha coefficients for the full scale TSP and subscales ranged from .83 to .96, all well within the acceptable range. The mean inter-item correlation for both the full scale and the Plants & Animals subscale was .28. For the other two subscales, the mean inter-item correlation was slightly greater than .40. Item-total correlations ranged broadly from .18 to .81, but fell below .30 for only four out of thirty-two items, and a majority of item-total correlations exceeded .50 on the full scale TSP. All item-total correlations within subscales fell between .30 and .78, with most exceeding .50.

Table 5
Traditionalism Scale-Parents (TSP) Psychometric and
Descriptive Findings (N=95)

Psychometric/ Descriptive Data	Full Scale	Language & Behavior (LB)	Family & Beliefs (FB)	Plants & Animals (PA)
N of Items	32	13	10	13
Scale Mean (SD)	32.0 (14.6)	15.2 (7.9)	12.2 (6.0)	8.6 (5.5)
Mean Inter-Item Correlation	.28	.41	.42	.28
Range of Item- Total Correlation	.18 to .81	.33 to .78	.47 to .73	.30 to .65
Alpha Coefficient	.96	.90	.87	.83

Conclusion

Dimensions of Traditionalism

Acculturation has been described in the literature as a multidimensional construct (Berry, 1980; Birman, 1994; Olmedo, 1979). This study assessed only one dimension of acculturation, specifically, traditionalism. Assessing this single dimension of acculturation describes only a part of the process of cultural adaptation in which minority persons are engaged (Dana, 1993; Mendoza, 1989; Rogler, Cortes, & Malgady, 1991; Sodowsky, Lai, & Plake, 1991). Factor analytic findings indicate that traditionalism itself is also a multidimensional construct that can be measured reliably among children and adults, both at the global level and at the level of individual constructs. These findings are consistent with those previously documented for adults (e.g., Olmedo, 1979; Pomales & Williams, 1989) indicating that traditionalism is measurable with a reasonable degree of reliability and validity. A cautionary note here is that the degree of measurement reliability among children was slightly lower, although this is a common finding across a variety of different measurement instruments (Anastasi, 1976).

Establishing a reliable measure of traditionalism is especially significant because few psychometrically adequate instruments exist to assess traditionalism or acculturation among American Indian and Alaska Native families (Dana, 1993). The measure studied here provides highly culture-specific information associated with one tribal group. This specificity can be both a strength and a limitation, depending on the desired application. In any case, a similar process of scale development could be employed with other tribal groups, to produce scales with similar psychometric properties. This line of research would also be useful for quantitatively identifying important differences across tribal groups, as indicated by any differences in factor structure that might emerge through replication.

The literature indicates that factor analysis is a useful tool for exploring the multiple dimensions of traditionalism (Dana, 1993; Olmedo, 1979). In addition to describing specific dimensions that may constitute traditionalism, factor analysis also identified similarities and differences in the manifestation of traditionalism between children and adults. For instance, each respondent group produced a subscale that was nearly identical, in terms of content, involving reliance upon plants and animals, and natural products derived from them. This consistency may indicate this dimension of traditionalism is particularly robust, at least among this particular American Indian tribe.

Children's responses produced separate dimensions for language and food preference. On the other hand, parent responses were such that language and food preference clustered together, along with other behavioral items such as engaging in traditional healing and spiritual practices. Previous factor analytic studies, primarily involving Hispanic or immigrant populations (e.g., Pomales & Williams, 1989) have consistently identified language as the strongest and first factor to emerge. Frequently, this factor is global in nature and includes a range of other culturally determined behaviors in addition to language (Olmedo, 1979). Similar findings emerged from the present analysis, particularly with respect to adult responses on the TSP. However, children's responses split this global factor into two, one of which was almost exclusively composed of items assessing language usage within the family. It may be that since increasing numbers of children from this tribe are primary English-speakers, other types of traditional behavior are emerging as distinct from speaking the language.

The language/behavior dimension of parent traditionalism shared some overlap with the family/beliefs factor of the TSP. Both these dimensions of parent traditionalism included some items dealing with spiritual practices, but family/beliefs was dominated by the heavily loading item, "I believe in the legends of the [traditional] way." Interestingly, the family/beliefs dimension included all TSP items that referred specifically to traditional characteristics of the respondent's family as a whole. These items may provide an especially far-reaching assessment of the cultural context of the respondents. Because the concept of "family" in American Indian cultures typically encompasses extended family, these items may assess behaviors and experiences within a rather large group of family members who influence the respondent.

For children, involvement in and knowledge of traditional ceremonies emerged as a distinct facet of traditionalism. In a post hoc comparison of subscale score means, the traditional ceremonies subscale was the only TSC scale to show differences in conjunction with the age of child respondents, with sixth grade children scoring approximately one-half standard deviation higher than fourth grade children (Morris, 1998). This difference may reflect that older children have had more opportunities to learn about and participate in ceremonies. The traditional ceremonies dimension of child traditionalism may be particularly important to mental health promotion and prevention efforts, as it has been positively associated with children's social competence (Morris, 1998).

The second factor commonly emerging in previous factor analytic studies of traditionalism concerns culture-specific attitudes and value orientations (Olmedo, 1979). Items specifically developed to assess acculturation attitudes were not available for this analysis. However, factors involving values, in the form of family practices, traditional spiritual beliefs, and ceremonial practices, did emerge as part of the TSP family/beliefs

subscale and the TSC beliefs/behaviors subscale. Further refining our ability to assess relative values and attitudes of parents and children in this area could be highly useful for communities seeking to develop prevention and intervention programs for families. There are some indications that parent acculturation attitudes are associated with parent perceptions of child competencies (Morris, 1998), and future research should include an expanded focus on attitudes and values in relation to traditionalism and other dimensions of acculturation.

Although not directly related to the present analysis, other findings suggested that the extent of traditionalism was associated with the age and identity of the respondent. This was particularly true if a grandparent was the informant, in which case TSP full-scale scores exceeded those of parents by nearly two standard deviations (Morris, 1998). These intergenerational differences provide some evidence for the construct validity of the instrument, since traditionalism would be expected to be greater in older generations (Olmedo & Padilla, 1978).

Limitations and Recommendations for Future Research

Review of relevant literature indicates that quantitative data describing family and child traditionalism among American Indians and Alaska Natives are extremely rare. This study used existing data, from a project not specifically designed to study traditionalism or acculturation, to conduct an exploratory analysis of traditionalism. Although measures were based loosely on the two-dimensional model of acculturation, items were not devised with an a priori model of the traditionalism construct. Therefore, exploratory factor analysis, with its attendant limitations, was the appropriate technique for providing a springboard to further research, which may determine if the factor structure can be replicated using confirmatory (or additional exploratory) factor analytic techniques. Despite shortcomings in the design and data, findings do provide an addition to the slim body of research in this area, as well as some direction for future research.

The ratio of participants to items in these analyses, at around two to one, was lower than is typically desired; a ratio of at least five to one is more adequate. It is possible that spurious structure coefficients compromised the reliability of the factor structure. However, Stevens (1996) reported empirical data demonstrating that factors with four or more structure coefficients of .60 or greater will be reliable regardless of sample size, and most of the TSC and TSP factors meet or nearly meet this criterion. Replication could further establish reliability (or alternatives) for the factor structure reported here. Given the challenges of conducting research with American Indian and Alaska Native participants and obtaining adequate sample sizes, future research in this area might best focus on fewer carefully selected items, such as those that emerged with the highest loadings in the factor analyses reported here.

If reliability of the factor structure can be firmly established, future research should seek to determine the utility of specific items in the grouping of factors. Discriminant analysis can identify those items that are essential to the differentiation of subscales from one another, thus helping to establish the discriminant validity of subscales.

Although detailed data for variables that were dropped from the final versions of parent and child traditionalism scales were not reported here (for a full description see Morris, 1998), the excluded variables hold implications for further refinements in assessment of traditionalism. Some items were dropped for poor psychometrics, and these can be ruled out for future consideration in measurement of traditionalism. For example, many of the poorly performing items dealt with phenomena that are becoming very rare (such as regularly sleeping on sheepskins); nor did negatively worded items perform well.

On the other hand, future investigators may also wish to consider resurrecting certain types of items. For example, the gender-specific items were not analyzed simply due to insufficient sample size, but such items should still be considered for their utility to describe gender-related aspects of traditionalism. Some of the items in "branched" format, eliminated from the present analysis, were those providing numerical data (e.g., "How many times have you visited a medicine man?"). These items displayed relatively high variability in responses when examined at the item level, indicating that such items may do a good job of assessing a range of frequency for specific types of traditional behaviors. Furthermore, these items are also descriptive of what a family actually does, providing useful information for those attempting to provide services designed to meet the needs of specific families. Future research should consider including such items.

Since the typical response to items assessing rare and highly traditional practices is so close to zero (i.e., "never") and item variance is low, such items may not provide much information within a scale. However, such low frequency items should be carefully examined before being excluded from scale development, since some may be useful for their ability to discriminate the most traditional respondents. Whether as part of a scale, as separate "critical items" checked for an affirmative response, or included in an interview format, these items could help to identify those respondents with an unusually high degree of traditional knowledge or experiences. This information might be useful in certain applications, such as making decisions regarding how much of a mediating effect traditionalism may have, when assessment of acculturation is used as part of a larger psychological assessment (Dana, 1993).

It must be noted that the extant data set from Flower of Two Soils is now well over ten years old. This constitutes a significant limitation of current analyses, since during that time a variety of sociocultural, economic, political, and technological changes may have influenced traditionalism within the population studied. Assessing the breadth and impact of such

changes is beyond the scope of this paper, but it is possible there has been a differential effect across the dimensions of traditionalism identified here, potentially altering the construct itself. However, when studied as an aspect of acculturation, traditionalism is by its nature a dynamic construct, and the goal of research should be to understand traditionalism within the context of changing cultures. This report provides one set of data points toward that goal; additional research with contemporary data sets are now needed to further our understanding.

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PROJECT EAGLE: TECHNIQUES FOR MULTI-FAMILY PSYCHO-EDUCATIONAL GROUP THERAPY WITH GIFTED AMERICAN INDIAN ADOLESCENTS AND THEIR PARENTS

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Abstract: This article describes Project Eagle, a model for short-term psycho-educational therapy with gifted and talented American Indian adolescents and their parents. Descriptions of Project Eagle's program organization as well as its culturally relevant techniques and activities are provided. The program evaluation includes: participant ratings of the activities, cultural relevance, feelings of being respected, interaction with parents and overall effectiveness of the program. Additional qualitative analysis provides information regarding the program's impact upon participants.

Many American Indian youth feel estranged in their schools (over 80% now attend public schools) and their own communities as they see few future opportunities due to cultural deterioration and limited economic opportunities (Little Eagle, 1993). A report to the Senate Select Committee on Indian Affairs stated American Indians, particularly adolescents, have more serious mental health problems than are reported for all race populations in the United States (Office of Technology Assessment, 1990). The report lists problems such as developmental disabilities, depression, suicide, anxiety, alcohol and substance abuse, low self-esteem and alienation, running away, and school dropout as high priority areas.

"Gifted" American Indian adolescents are particularly at risk for underachieving academically and for adjustment problems (Robbins, 1991; Tonemah, 1987). Because gifted American Indian students and their families have unique problems, unique approaches are needed to address their issues. Tonemah (1987) and Torrence (1962) contend there is

imperative need to create specialized programs to help minorities fathom life beyond their disadvantaged environments for identity crystallization. Renzulli (1993) argues that the democratic ideal can only be achieved where education accommodates the full range of individual differences. For American Indian youth, often living in a larger society whose values and customs are at odds with those in their American Indian communities, this personality dynamic becomes ever more important as they struggle to find and hold an identity whose worth is acknowledged (Mitchell & O'Neil, 1998). Psychologists and counselors are frequently called on to address these problems and have done so to varying degrees of success. Unfortunately, our interventions have most often been of a tertiary nature. The logical solution to these and other problems facing American Indian communities rest in proactive rather than reactive efforts.

Some researchers (LaFromboise & Rowe, 1983) have suggested that many psycho-educational skills programs provided to American Indians have been culturally biased (i.e., assertiveness training groups that encourage direct and sustained eye contact, parenting groups that do not acknowledge traditional American Indian parenting techniques). According to LaFromboise and Rowe, these programs have subsequently been unsuccessful because of resistance many American Indians may exhibit toward such forms of outside influences. They argue that "less prescriptive" and more flexible social skills programs are needed. In other words, if we are to adequately address psycho-social problems with American Indian populations, we must begin by focusing on those aspects of personality that help inoculate the individual against such problems rather than the narrower focus on actual problems we now tend to take. The Project Eagle program offers gifted American Indian adolescents and their parents a safe environment to express their feelings and thoughts. It utilizes culturally relevant and appropriate psycho-educational group techniques to promote cultural identity, self-disclosure, processing, altruism, positive parent/child interaction, and leadership skills. This article describes Project Eagle's organization, examples of the activities, the project's overall effectiveness, and offers a list of completed community projects. While we would caution that Project Eagle is not a "cookbook" presentation designed to provide step-by-step guidance to clinicians, it may provide a template for primary prevention efforts with American Indian groups.

Organization

Project Eagle was originated as a three-year leadership program funded by the Office of Indian Education. After those first three years in the early 1990's, several of the Project Eagle facilitators chose to continue to conduct Eagle programs in response to requests made by tribes and schools across the United States. Thousands of adolescents and their

parents across the country have participated in Project Eagle in various formats. Recently, working with gifted American Indian students and their parents in Arizona, Kansas, New Mexico, North Dakota, Oklahoma, and South Dakota, what we feel to be an ideal format has been painstakingly worked out. In phase one, Eagle participants meet on a fall weekend, four hours on a Friday evening and eight hours on Saturday, for intensive psycho-educational and leadership sessions in the areas of conflict management, communication, problem solving, decision making, leadership theory, and group cohesion. In phase two, individual Eagle families and/or Eagle community groups plan and implement a community/tribal or school project to be completed during the winter months. In phase three, in the spring, Eagle participants convene for another seven-hour, intense psycho-educational and leadership session concluding with an evening of sharing results of projects and special recognition activities.

Selection of Participants

Project Eagle brochures, letters, and application forms are sent to tribes and schools with American Indian populations. Typically school counselors, principals, and tribal leaders receive the information. They are asked to nominate American Indian students, age 13 to 19, with "leadership potential" and to give them an application form. A parent or guardian is required to sign a letter of commitment to participate with their child in the sessions in order for the student to participate. Once Eagle facilitators receive completed nomination and application forms from potential Eagle participants, the nominee is sent an American Indian Gifted and Talented Assessment to complete and return.

The multi-criteria non-standardized American Indian Gifted and Talented Assessment Model (AIGTAM) (Tonemah & Brittain, 1985) assesses exhibited leadership, grade point averages, intelligence scores, standardized achievement test scores, creativity, and critical thinking. School counselors and students fill out this form. Also included in the model is a Tribal-Cultural Checklist designed to assess knowledge and acceptance of traditions and culture. A tribal elder fills out this portion of the AIGTAM. The potential Eagle participants are also asked to write an essay about what qualities they believe good leaders typically exhibit.

Once Project Eagle facilitators receive potential Eagle participant information, a selection committee is chosen, drawing from leaders of various tribes and counselors, to review the AIGTAM's and essays and select those students and their parents who appear most appropriate to participate in the program. There are not rigid cutoff criteria for acceptance into the Eagle program. The AIGTAM has functioned as an excellent screening device, especially the Tribal-Cultural and Leadership Checklists. Some potential Eagle participants may not have participated in any of their

tribal ceremonies or activities. Upon follow up, they often express either that they wish to learn more about their tribal ways or they say that they do not wish to participate in Project Eagle since it attempts to be culturally relevant. Some potential Eagle participants have practically zero leadership attributes checked off on the Leadership Checklist. The selection committee has recommended follow up calls. School counselors often report that the applicants have leadership potential and should be given a chance to participate. Coupled with the other AIGTAM information and the leadership essays, the selection committee determines their acceptance or rejection. Six to ten students and their parents or guardians are selected for each site.

Because the Eagle group is specifically created for gifted American Indian students and participation is selective, pride in being part of the group is generated which contributes to greater group cohesion. Eagle participants begin the project with high expectations, an awareness of what is required, and high motivation to excel. Research suggests that high motivation and high expectation levels upon becoming a part of a group, which is related to the selection process in this instance, is the single best predictor of positive outcome (Foulkes & Anthony, 1957; Taylor, 1961).

Structure

The attainment of a close-knit Eagle community is a gradual process that involves a succession of stages. Implementing a structural framework is crucial to providing participants with stability and a sense of purpose. Though research has not pinpointed the specific components of structure that make it valuable, there is clear evidence that structure provides a more therapeutic ingredient than less directive alternatives (Kinder & Kilmann, 1976). Structure reduces the ambiguity about group sessions so Eagle participants have a better understanding about how they will involve themselves in constructive interactions. Bednar, Melnick, and Kaul (1974) report that "lack of structure in early sessions not only fails to facilitate early group development but actually feeds client distortions, interpersonal fears, and subjective distress, which interferes with group development and contributes to premature client dropouts" (p. 34).

In letters and telephone conversations Eagle facilitators acquaint participants with predetermined goals. These goals include the following: trust, expression of feelings, more effective communication, problem solving, decision-making, listening, honesty, commitment, cooperation, knowledge, visionary outlook, self awareness, and the courage to take risks. Participants also identify their own personal and family goals for their psycho-educational therapy in the Eagle program. Their goals have included better communication, greater emotional connectedness, and building trust.

Eagle group facilitators also explain their facilitative, rather than instructive, roles. A facilitative role helps group members to take responsibility for their actions and learning. Group facilitators are instructed that sharing of experiences, risk-taking, and interpersonal validation among members have the most beneficial impact upon learning and positive group experience (Dies, 1994, p.61). Group facilitators are taught to refrain from asserting their "expert" knowledge, experience, or personal values in words or tone. Such didactic teaching tends to evoke feelings of anxiety and competitiveness and may cause some participants to become overly dependent on group leaders to lead discussions. Instead, group facilitators are to express empathy, flexibility, and spontaneity. Participants are encouraged to learn from their shared experiences and are asked to reflect upon their interactions.

Agenda

Early on, Eagle group facilitators work hard at building trust. This involves an emphasis on playful community building. For example, during "Nice to Meet You, But I Gotta Blaze," participants begin by sitting in a circle. A person, standing in the middle, brings one or two participants to the center and they introduce themselves. The person in the middle asks the person(s) a question, often a humorous one, and then having listened to the response, shouts, "Nice to meet you, but I gotta blaze!" At this point everyone must find another unoccupied chair. The problem is that there is one less chair than there are persons. The person left without a chair begins the game again. Processing involves asking questions such as: "How does laughing affect our mental state of being? What is beneficial or detrimental about laughing at yourself? Describe a time when it was hurtful to laugh at someone. What is or is not unique about Indian humor?" Fun activities allow participants to become acquainted with each other. Though these warm-up activities can result in intimate sharing, they are less likely to do so than the later activities.

Eagle group facilitators prefer to ease into the intimate moments after participants have developed a higher level of trust. For instance, "Accepting the Honor, Aye," which involves direct sharing of feelings between group members is reserved for the second day of therapy. During "Accepting the Honor, Aye," one participant is seated in the center of the other participants. Each participant offers the center person a compliment, but he/she rebuffs each compliment in various ways. After this round, participants discuss how it felt to have their compliments rejected and describe the different types of rejections. Then ways of receiving compliments are discussed. At this point, each participant is consecutively placed in the center to receive kind remarks. Many comment that the

second part of the activity is much like being placed near the fire in peyote meetings to receive blessings from other church members. They have reported that they appreciated the activities similarity to their ceremonies.

The agenda is carefully patterned to interweave highly active activities with more reflective ones. The activities are further designed to help participants experience the full range of their beings (physical, mental, emotional, and spiritual). Also, as the program progresses, facilitators gradually relinquish some of the control over the activities in order that participants have greater and greater autonomy in their decision-making. By the end of the first marathon session, participants are planning their community projects on their own. Concrete examples will elucidate these descriptors throughout this paper.

Cultural Identity

Having all the Eagle participants assembled in a circle to begin the Eagle program, the first activity is the Eagle Indian naming ceremony. Each person gives himself/herself a new name to be used during Eagle interactions. A naming ceremony is an important activity amongst most tribes. Most generally, an elder family member or a tribal member gives a name to the infant or youth. The Eagle name is to represent a quality or attribute that the person wants to be able to better express. Once a participant has named the quality, he or she is to identify something in nature that represents that particular quality. The representative, typically an animal, becomes that participant's Eagle name. During the sessions, individuals are addressed by their Eagle name to support their attempts to actualize the quality or attribute. Each person is supported in taking risks, which bring him or her closer to their self-aspiring identity. Labels received at home and school are set-aside for the duration of the sessions. The naming ceremony allows one to step out of the old perceived roles, assume a new identity, and to experiment with neglected potentialities. In one instance, an Eagle parent, who happened to be a medical doctor, named himself Spider "to express his creative side." One young man named himself Deep River to represent his desire to be powerful beneath the surface but to have a calm, relaxing presentation. An exceptionally shy young man of immense size changed his name to "Native American Nightmare" to become "someone to no longer be ignored." Another named herself Gray Squirrel because she felt that she was disorganized but felt she had the potential to "get her stuff together and accomplish something."

The Eagle naming ceremony grounds participants in traditional tribal perceptions that one's personal identity is integrally connected to the whole of life. Brave Buffalo, a 19th century Teton Sioux medicine man said, "I have noticed in my life that all men have a liking for some special animal, tree, plant, or spot of the earth. If men would pay more attention to these

preferences and seek what is best to do in order to make themselves worthy of that toward which they are so attracted, they might have dreams which would purify their lives" (Curtis, 1994, pp. 80-81). Tribal beliefs about interdependence and kinship with creation can facilitate a more global perspective towards problem solving as well as stimulate the imagination. Gifted people of all cultures have often described their creative acts as a simultaneous grasping of whole fields of related details. Holistic perspectives, rather than fragmentary, narrow fields of attention, form the foundation of the Eagle learning process.

Play

During Eagle sessions playfulness has proven to be key in breaking down barriers to self-expression and in helping members to feel safe. The naming ceremony is followed by an activity called "Counting Coup," which involves placing participants in groups of about eight. A person in the middle of the circle holds a nerf bat and waits for one of the persons on the perimeter to call the Eagle name of one of the other participants. The person in the middle tries to tap the identified person before he or she is able to call out the Eagle name of another participant. When the person in the center taps another with a nerf bat before he/she calls out another's name, he/she moves to the perimeter, while the person tapped moves to the center. The playful physical contact in "Counting Coup" further diminishes feelings of separation/isolation and helps participants to trust one another. Processing that follows "Counting Coup" often entails the following questions: "How did you feel when someone tapped you with the nerf bat? How much physical space do you typically need? ...Psychological space? What factors allow you to become closer to your parents? ...Children? How much space do you need to become independent? What are examples when parents give their children too much space?"

The inter-member bonding that occurs during this activity is vital for group cohesion, self-disclosure, and collaboration. Hierarchies that exist in everyday social environments are altered through play. Play also helps to loosen participants' linear and structured ways of thinking and problem solving. Handling difficulties playfully, with a touch of humor, and with little fear of dire consequences allows participants to experiment, take more chances, and to dare unusual approaches and solutions.

Processing and Self-Disclosure

Following the Counting Coup activity, shy participants often find themselves laughing and speaking to group members before they think to restrict themselves. In these situations, facilitators may simply use mirroring statements and descriptive remarks to help participants elaborate and

explain themselves. The processing sometimes moves into unpredictable areas. Group facilitators are careful not to regulate discussion too closely, but rather guide the interaction so that all participants' concerns can be appropriately expressed. The best questions are clear, concise, genuine, non-threatening, and open-ended. By non-threatening, it is meant that the questioning does not become interrogating. Traditional American Indians may respond defensively when subjected to extended one way questioning. The great Sioux doctor Wabasha said, "Do not trouble another with many questions about himself; he will tell you what he wishes you to know" (Seton & Seton, 1966, p. 64). Eagle facilitators attempt to be sensitive in their questioning, especially when probing into deep feelings.

In order for in-depth discussions to occur, facilitators must avoid a didactic educational relationship with their group members. Instead, facilitators' questions should help participants describe and elaborate on their interactions, thoughts, and feelings. Later, facilitators may begin to probe with open-ended existential questions.

Profound self-exploration often occurs during "The Medicine Wheel Activity." It begins with participants arranging themselves in a circle and the facilitator placing objects in the center. Participants offer verbal descriptors concerning the objects. Participants may describe a hammer as: a construction tool, brown and silver, a destroyer, my father's work, a swollen finger, power, or a curved object. After each object is described, the participants are asked to classify the descriptions and asked about what might be the sources of the different perspectives. Next, participants are told about the meaning of the different directions according to Storm's (1972, pp. 1-30) explication of the Cheyenne medicine wheel (East: the eagle, spirituality, ability to see the overall meaning or "the big picture;" South: the mouse, mental, ability to pay attention to detail; West: the bear, power, ability to be assertive; and North: the buffalo, generosity, ability to find fulfillment through giving. Every person comes into this world with propensities associated with one of the directions. After this explication of the Cheyenne Medicine Wheel, participants are asked to move to the direction they feel best describes them. Sample questions include: "What are the strengths and weaknesses of expressing yourself primarily from the point of view of a single direction? How can individuals in a given group appreciate each other's propensities and work together productively? What qualities might you work on in yourself to become a more balanced person?"

Silence

The role of silence is a very important part of the processing. A Cherokee proverb says, "Listen or your tongue will make you deaf" (Hifler, 1992, p. 50). Silence allows Eagle participants to reflect and make their

most thoughtful and heartfelt remarks. Initially, some of the Eagle group facilitators felt uncomfortable with the silence that sometimes followed their questions. They would quickly rephrase their questions or rush to answer their own question. These anxious gestures limit the profundity of discussions. Processing improves as group leaders become better at practicing silence following each question and each response. Luther Standing Bear's description of traditional conversation is a good guide. "Conversation was never begun at once, nor in a hurried manner. No one was quick with a question, no matter how important, and no one pressed for an answer. A pause giving time for thought was the truly courteous way of beginning and conducting a conversation... a space of silence before talking was done in regard to the rule that, thought comes before speech" (Curtis, 1994, pp. 58-59).

Studies have reported that extended wait time during processing in classrooms has improved topic related questioning from students (Samiroden, 1983) and academic achievement (Pond, 1987). Experiences in Project Eagle suggest that extended wait time during exchanges contributes to increased emotional and cognitive expressiveness. The use of silence/wait time taps into highly revered traditional American Indian forms of communication. These forms of communication are adhered to in tribal religious ceremonies and in the every day communications of many tribal people.

"Putting yourself into Someone Else's Moccasins" is an activity that emphasizes silence. Parents and their children are put in pairs. First, the parents are given instruction sheets that give examples of how to interrupt, rudely disagree, and change the subject during a conversation. The children are not allowed to know what is on the sheets. The children are told to lead a conversation about their favorite sport for two minutes. The parents foil the conversation as they follow the instructions on the sheet given them. After the interaction, the children are asked to identify the unproductive communication behaviors of their parents. Next, children are given a list of non-verbal behaviors that inhibit conversation. The children exhibit these behaviors in a two-minute conversation in which their parents talk about their favorite places to visit. Parents then identify their children's non-productive behaviors. Discussion follows concerning behaviors, questions, and comments that empower others to express their thoughts and feelings.

Lastly, participants are asked to think about their family histories. Children are asked to talk to their parents about what they know regarding their grandparents and great grandparents, and to make comparisons with their own lives. The parents are to utilize the productive listening characteristics that were just discussed. Participants are asked to reflect in silence for five minutes before beginning. Once the children are finished speaking to their listening parents, the roles are reversed. Approximately, seven minutes are allowed for each exchange. Processing questions that

follow include: "How was the silence helpful or not helpful in gathering your thoughts to speak? What did your partner do to empower you to speak your thoughts? How are the stories about your ancestors alive in you today?"

Cognitive Processing

When participants respond to questions with surface responses, facilitators sensitively probe for more thoughtful ideas and values. Sometimes participants are encouraged, through selective questioning, to consider how the knowledge they are gaining applies to the "outside world." For instance, "Teepee Productions" is an Eagle leadership activity that facilitates discussions about everyday situations. Facilitators hand out materials to make paper teepees in groups of four or five. Without preparation, groups are instructed to make as many teepees as possible in two minutes. One of the facilitators serves as a playfully harsh quality controller who, at the end of the two minutes, rejects poorly constructed teepees. During Phase II, groups are given two minutes to plan and organize before beginning another two minutes of construction. During Phase III, groups are handicapped at the last second by union strikes, break down of technology (scissors), or by employees coming to work late. Phase IV consists of groups given colored paper and markers in addition to their regular supplies and having five minutes to create one quality teepee as a group. In Phase V groups advertise their quality teepee for sale to the other participants. Discussions revolve around group interactions such as expressing how someone may not have contributed their share of the workload. Leadership and adaptation are recurrent themes in the processing of this activity. Another common discussion revolves around the conflict between many American Indian values and capitalism.

Affective Expressiveness

Shedding tears are common experiences for Eagle participants. Once emotions are expressed and discussed, Eagle participants usually say they appreciate the experience. Catharsis is highly valued by most people in groups. A Lieberman, Yalom, and Miles' (1973) study showed it to be ranked by participants as third among important events that occur during sessions (though aggressive negative ventilation was associated with negative outcome). Eagle facilitators try to help participants ventilate their feelings fully and offer validation. Emotion helps to make experiences worth remembering, contributes to motivation, and gives participants a more fully human experience that is absent from merely cognitive experiences

(Lieberman et al., 1973). In fact, many participants have commented on the similarity of emotional expression they experience during Eagle marathon sessions, sweats, and peyote meetings.

"Gifts of the Four Directions" is an activity, that allows parents and adolescents to express their feelings for each other. The facilitator gives participants paper plates, on which they draw four quadrants, spiritual, mental, emotional, and physical. Participants are to find pictures in magazines that represent their partner's strengths in each quadrant. Later, while positioned across the circle from each other, they are to address their partners directly and explain their collage. This is typically a very emotional time of exchange. During later processing participants often express they are appreciative and surprised by the comments their partners make.

Altruism

Yalom contends, "Many patients are immersed in a morbid self-absorption, which takes the form of obsessive introspection or a teeth grinding effort to actualize oneself" (1985, pp. 14-15). For traditional American Indians giving is central to what it means to be a human being. Mato-Kuwapi said, "If I have these and kept back the best no one would believe I was in earnest. I must give something that I really value to show that my whole being goes with the lesser gifts; therefore I promise to give my body" (Seton & Seton, 1966, p. 36). Chiefs of many tribes have been the "poorest" tribal members in terms of material goods because they gave everything they had to their people. In each of the Project Eagle phases giving is encouraged. Eagle community projects (to be discussed later) are contextualized as acts that can help to define who we are.

The last activity of the two sessions is crucial in bringing closure to the twelve hours of activities. At the end of the first marathon session, a group leader facilitates the "Dream Catcher Ceremony." The facilitator begins by explaining that some traditional American Indians capture their dreams by first thinking through their day regressively and then praying for the cleansing power of a dream before falling to sleep. Then the facilitator regressively recounts the high points of the session, relating them to the specific Eagle activities engaged in. Having gone through every activity, he/she then states a dream or goal of his or hers, making sure the goal entails both a personal and altruistic aspiration. Still holding on to the yarn, the facilitator then casts the dream in the material form of a ball of red yarn (the color red is associated with medicine for many tribes) to someone he or she feels can offer verbal support. The catcher responds by stating qualities he/she has observed in the caster, which will enable him or her to achieve the dream. The process continues until the yarn, held by everyone, forms what looks something like a dream catcher. The facilitator briefly comments on the participants' relatedness and then offers a Navajo beauty blessing.

The culminating Eagle activity on the last day is a "Give Away." At the first Eagle session individual Eagle members are asked to begin making something that will be exchanged several months later at the Eagle Indian Give Away. During the last session, each set of partners stand in the center circle of the other Eagle participants. They are to speak directly to their partner (in second person) when offering them the gift. Once a participant has made his/her presentation and the partner has made some honorable gesture of acceptance, the roles are reversed. Like in many Indian ceremonies, the other participants remain silently respectful during the exchange. Then the partners turn toward their participant audiences who respond with "haw" (a respectful Kiowa gesture acknowledging that what has happened is good and honorable).

Parents/Guardians and Children and Values

Eagle parents (including "substitute" parents such as grandparents, aunts and uncles, and older siblings) almost unanimously agreed, during Eagle discussions, that modeling was the primary form of influence used to guide their children. The primary form of discipline mentioned was noninterference and allowing their children to learn from their own mistakes. A traditional grandmother said that nothing affected her grandson's behavior more than when she simply ignored him. Others expressed that talking about appropriate attitudes and outlooks during ceremonies was a way they attempted to influence young persons' lives. Unfortunately, many American Indian adolescents live far away from ceremonial grounds and do not have the historical structures they had in past generations to guide them in their search for personal values.

The "Talking Feather Activity" helps parents and adolescents to openly discuss values. Group members are divided into their Eagle partner pairs. They are told to write down what they feel are their family's favorite proverbs, slogans, words of advice, and admonitions. Next adolescents, while holding Talking Feathers, read and elaborate upon their family's slogans while their parents listen. Then the parents are given a Talking Feather and they respond to their children's remarks. The process is then reversed. After the total group gathers back into a circle, they process questions like: "How similar or different were the values named by partners? What values are shared by different families? How are values passed along effectively?"

Case Example

An anecdote typifies what happened in some of the relationships over the course of the program. A brilliant but alienated 10th grade boy and his father were having great difficulty communicating with each other. When

the students and parents were separated during an activity, the father expressed to the other parents that he was frustrated with his son. He was concerned that his son was absorbed in "unusual subjects" such as "science fiction, computers, and science projects." Why could he not play sports like his brother, he wondered? Other parents made him aware that some of their children also had interests similar to his son's and that they were supporting them in these interests.

Meanwhile the son was talking to other students about his interests and problems. He had spoken very little during the first four or five hours of the first marathon session but had laughed a lot and seemed to enjoy himself. Grouped only with other adolescents, he risked talking, though hesitantly. He said he had dropped out of a communications class because he was afraid of speaking to groups. Here with other gifted students he found that he had much in common, including computer programming and science fiction reading. Several mentioned that they had invented things. He casually mentioned that he knew how to make explosives and that he had killed a cat. The rest of the group probed and challenged him. One boy with whom he had become somewhat acquainted earlier confronted him about his "cruel act." The adolescent appeared disarmed and listened without becoming defensive. The friendly interaction potentially relieved his inner anguish. The challenges may have connected him more with social mores.

When the parents and students reconvened, they engaged in "Strained Relations," an activity that requires partners to pull each other across a line while tugging a fragile string. The father and son repeatedly snapped the string, both too stubborn to allow the other to pull him across the line and consequently bring them together. They were given another string. As they stood toe to toe, the last partners to not have negotiated a compromise, they began to openly discuss their power struggles. Repressed anger erupted. Facilitators, seeing them becoming aggressive, attempted to help them return to stability by paraphrasing what they had said. They also asked caring persons in the group to comment on the situation. The two were challenged about what values and interests they each held which threatened to snap the fragile link that bound them. Both engaged in genuine dialogue with each other about what they wanted from each other and about respect for each other's freedoms. Later that day, they planned community projects together.

During the winter months, the two carried out more than one community project. The son found himself doing carpentry work with his father to help an elderly woman add a room onto her house. Then they collected food for the needy. The father too found himself giving in. He encouraged his son to attend a prestigious math and science academy.

By the spring, their relationship had changed dramatically. The father led Eagle students in a round dance, his son holding his hand. Then at the Give-Away, the boy told everyone how his father loved the land and

then displayed an enormous make-believe land deed of the state of Montana to give to his father. The father shed tears before giving his son his gift. He pulled out a beautiful Talking Feather he had secretly made for his son. He told his son that he had been guilty of not listening to him. From then on whenever his son had something he really had to say he would need only to hold the feather up for silence and listening ears.

Community Projects

Eagle community projects have been astounding. Here are just a few examples. An Arizona Eagle group collected cans and held raffles to raise money for trees, drew out a detailed plan concerning where and how they would be planted and executed the plan. A New Mexico group worked to create an Indian club at their high school, even enlisting a lawyer when they ran into obstacles. They were able to recruit 40 Indian club members. An Oklahoma group organized and supervised a large scale Choctaw fair, replete with story telling, a blowgun competition, and workshops in bead work, Choctaw language, pottery making, stick ball, and traditional dancing. They also made cornmeal and manhaha for attendees. Another Oklahoma group gathered 1,000,000 pennies for the homeless in their city. A South Dakota Eagle group became Eagle facilitators and conducted workshops for grade school students and their parents. Other Eagle projects included: conducting a workshop to raise awareness of child abuse in their community, initiating and participating in tutorial programs in their schools, and conducting a community cleanup and creating a welcome sign for their reservation.

Program Evaluation

Over the past two years, all American Indian adolescent participants who completed the original Project Eagle program have completed Eagle site-evaluations. They filled them out at the end of the second marathon session. The evaluation contained demographic questions and evaluative questions that consisted of ranking questions and open-ended questions. Sixty-eight site evaluation forms were collected. Eight participants participated in the first Eagle session but not the second, and consequently did not complete the site-evaluation forms. Most likely they did not attend because of travel problems and conflicts in schedules.

Demographic characteristics indicated that more females than males participated in the program. Thirty-nine females and 27 males participated. Participants reported that 61 mothers or female guardians and 26 fathers or male guardians acted as their Eagle partners. Only 9 grandparents participated, probably a result of the program advertisement that stated parental involvement was required. Age range for students was

from 13 to 19 years of age with most participants in the 15-16-17 year old age group.

Quantitative results of the site evaluations were based on responses to a five-point scale. Five was the highest score possible and one the lowest. The following consists of the questions and the total mean responses.

1. I would rate my interaction with my parent/guardian during Project Eagle as: 4.727
2. I would rate the Eagle activities as: 4.831
3. I felt I was respected as an individual: 4.878
4. I felt accepted in Project Eagle: 4.905
5. I became a more effective leader: 4.597
6. I felt the Eagle activities were related to American Indian culture: 4.800
7. Overall, I rate the Eagle sessions: 4.943

In response to open-ended questions the following information was gathered. Eagle participants reported that what they appreciated most about the Eagle session was that they:

1. Bonded me with my parent.
2. Allowed me to share my feelings.
3. Helped me to feel proud of being American Indian.
4. Improved my self-esteem.
5. Helped me to become a better leader.

To improve the Eagle sessions, some remarked that they preferred different locations for the Eagle sessions and that there should be more sessions (most were conducted in libraries in school settings). They said they chose to participate in Project Eagle for the opportunity to interact with a parent. A few also said that they wanted to learn about leadership. One third responded that no opportunities were offered in their schools to participate in American Indian programs. They reported that they would be most likely to apply what they learned in Project Eagle at school and home. They reported their participation in Project Eagle would positively affect their academic performance. They said their communication with their Eagle partner would be positively affected having participated in Project Eagle. They reported that their participation in Project Eagle helped to build greater self-confidence and helped them to feel more connected with their American Indian identity.

Conclusion

The site evaluations suggest that Project Eagle provided an environment where participants felt accepted and safe and consequently felt comfortable to explore themselves and their relationships with their parents. Project Eagle's success may be related to four Project Eagle emphases: symbols, play, parental involvement, and social responsibility. American Indians, and possibly all people, need symbols to probe the

depths of their beings. The sacred circle is referred to throughout the program. Many of the activities are reflections of ideas and yearnings that are embodied in symbols utilized in American Indian ceremonies to raise participants beyond the mundane to a realm of the sacred. Symbols act upon Eagle participants, pulling them into inner realms where they typically dare not go. The symbols and the activities echo tribal histories and traditions, which give American Indian people pride in their cultural identities. Second, Eagle activities are fun. People like to experience the ecstasy of life. Parents and adolescents returned to innocence as they played with each other. The play itself, even without the processing, helps adolescents to work on the ever-unfinished business of having fulfilling relationships with their parents. Coupled with mature reflection, play can result in more profound and healthy bonding. Third, parental involvement helps to focus adolescents. Parents initiate discussion about many integral issues and problems that might be avoided in strictly adolescent groups. Certainly energy is always expended in making sure parents do not dominate the group discussions, but Eagle facilitators are encouraged to use their remarks to open space for adolescents to talk. Fourth, the program emphasizes social responsibility. Eagle participants do not merely report that the program has influenced them, they also carry out community projects. They experience the power and joy that comes with giving.

Alternative Settings for Project Eagle

Project Eagle has been utilized in countless settings throughout the United States. The groups have included: American Indian First Offenders programs, Upward Bound, racially integrated gifted programs, programs for the mentally retarded, Alcohol Anonymous groups, Science and Computer programs, church youth groups, Indian Church retreats, Students into College, American Indians into Psychology, Alternative School Group Counseling, Life Skills, Job Corps, American Indian Nurses, American Indian business employees, Johnson O'Malley programs, and many others. Though Project Eagle is designed for American Indian groups, it has been utilized in multi-race and cultural, African-American, East Indian, and White groups. In most of the above groups, the Eagle format was altered to meet the unique needs of the particular group.

Considerations for Alternative Approaches

Different problems have emerged as we have strayed from our original organization. For instance, Project Eagle's format has at times been altered to one-hour sessions over the course of fifteen weeks. This approach can and has been very effective, but has at times been beset with problems. For example, it is difficult for families or even individuals to

attend all the sessions, due often to transportation problems and conflicts in schedules. Also, in most cases that we have observed, this segmented approach lacks the profundity of the marathon session approach. We suspect that the sustained duration of the marathon sessions probably has a way of breaking down resistances that can be built back up when there are weeklong breaks between hour-long sessions. Some organizations request that we conduct Eagle sessions without parents. It is our belief that without parent participation the growth achieved by adolescents is more likely to be undermined when participants return to their home environments. Also, sometimes we have conducted Eagle activities with younger participants. We quickly learned that the duration for group processing in these groups had to be shortened. Lastly, when using Eagle activities with non-Indian groups, the activities and processing should be altered in order to be relevant for the particular group's unique needs.

Future Research

Though Project Eagle aims for a holistic impact upon our participants, data gathered suggests that future research may focus on the program's impact on participants' self-esteem, self-concept, cultural connectedness, communication, conflict management, and family interactions. Pre and post measures could be utilized. Follow up data concerning the effects upon academic performance could also be useful.

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