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## FACTORS ASSOCIATED WITH AMERICAN INDIAN TEENS' SELF-RATED HEALTH

Tassy Parker, Ph.D., R.N.

*Abstract: Factors related to American Indian (AI) high school students' self-rated health were examined. Self-rated health was measured as a single-item with a four-point response option ranging from poor to excellent health. Of the 574 participants, 19% reported "fair" or "poor" health, a percentage more than twice that for U.S. high school students in general. Gender (related to family finances), school achievement, social competence, and cannabis use were significantly associated with the AI teens' self-rated health. In comparative examination, factors associated with AI teens' health ratings were found to be similar and dissimilar to ratings of other teens in important ways.*

Self-rated health is the most commonly used health indicator in empirical sociological studies (Blaxter, 1989; Manderbacka, Lahelma, & Martikainen, 1998; Rowan, 1994) and has been a reliable predictor of adult health care utilization, cost, and mortality (Vingilis, Wade, & Seeley, 2002). Although the earliest published investigation of adolescents' self-rated health suggested that how adolescents learn to perceive, interpret, and report their health affects their future health ratings and their actual health behavior (Mechanic & Hansell, 1987), subsequent publications on the topic are relatively scarce. The scant literature that specifically targets the self-rated health of adolescents identifies several important considerations in their subjective health formulations: socioeconomic conditions (Goodman, 1999; Wade & Vingilis, 1999); overall sense of functioning (Vingilis et al., 2002), particularly social functioning and psychosocial characteristics (Mechanic & Hansell, 1987; Rosenthal & Smith, 1996) and psychological well-being (Goodman et al., 1997); child-parent relations (Vingilis, Wade, & Adlaf, 1998); academic achievement (Wade, Pevalin, & Vingilis, 2000); gender (Sweeting & West, 2003); and health-related behaviors (Krause & Jay, 1994).

Given the harsh conditions reported for many American Indians (AI) – namely, their poorer socioeconomic status (Allen & Mitchell, 1996; Goodluck & Willeto, 2000; Kaufman, Kwon, Klein, & Chapman, 1999; U.S. Census Bureau, 2000; U.S. Department of Health and Human Services, 1999) and greater risk of alcohol and mental health problems (Beals et al., 1997; Beauvais, 1996; Costello, Farmer, Angold, Burns, & Erkanli, 1997; Nelson & Manson, 2000) – it is not surprising that one study found AI youth to be “at risk” for poor self-rated health (Blum, Harmon, Harris, Bergeisen, & Resnick, 1992). Blum and colleagues concluded that “poor health is the general perception AI teens have when many aspects of their life are not going well” (p. 1643). This conclusion was based on results from the AI Adolescent Health Survey, a 15-state, cross-sectional survey of middle schools and high schools on reservations, with 13,377 AI respondents aged 12-18 years. Responding to the question, “How would you rate your health: ‘poor,’ ‘fair,’ ‘good,’ or ‘excellent?’” 22.2% of the students reported fair or poor health (Blum et al., 1992). Students who claimed a poor health perception were at least two times more likely to have attempted suicide, to have failed in school, to abuse drugs, to have a poor body image, and to have been physically or sexually abused than those students who rated their health as good. An overrepresentation of participants from one large tribe and students attending Bureau of Indian Affairs’ boarding schools precludes the generalization of findings to all other AI students, but it does illustrate the extent to which poor health appraisals are associated with health-compromising behaviors and psychosocial problems, at least for a large percentage of the study sample.

By way of comparison, 6.5% of a nationally representative sample of U.S. high school students rated their health as fair or poor (Goodman, 1999). Canadian adolescents also claimed more favorable health appraisals, with just 4.2% indicating less than good health ratings (Vingilis et al., 2002).<sup>1</sup> Thus, based on these studies at least, AI youth are more likely than their North American peers to report poor health.

### **A Model of Adolescent Self-rated Health**

In general, AI adolescents face similar broad health-related issues and concerns as do their non-Native peers (Fleming, Manson, & Bergeisen, 1996). To examine the similarities and differences between AI adolescents’ self-rated health and the health ratings of other adolescents, the model of self-rated health proposed by Vingilis et al. (1998) was utilized. Their model is based on a review of the small body of literature on adolescents’ self-rated health and the broader literature on youth health in general. It includes measures that can be broadly categorized as demographic (age, female), family (family finances, single-parent family, child-parent relations), academic (school achievement), behavioral (tobacco, alcohol, and cannabis use), and psychological (self-esteem).

The Vingilis et al. (1998) self-rated health model was tested with data from the 1993 Ontario Student Drug Use Survey (OSDUS). The OSDUS is a repeated cross-sectional survey conducted every two years since 1977 and is self-administered by students attending regular schools across Ontario. It included a probability sample of 3,574 students in grades 7, 9, 11, and 13. The Vingilis et al. study (1998) was replicated in one that used first-wave data from the U.S. National Longitudinal Study of Adolescent Health (Add Health, Wade et al., 2000). Data for the study were derived from the Add Health public-use data set of 6,072 randomly selected participants from an arbitrary set of U.S. high schools and their feeder schools (a total of 134 schools). Participants completed surveys in school which were supplemented by an in-home parent questionnaire. Ordinary least squares (OLS) multivariate regression was used to examine the effects of the independent variables on self-rated health in both the OSDUS and Add Health investigations. The variables were entered into the analysis in four blocks (models) as follows: demographic, family finances and single-parent family, child-parent relations and academic, and behavioral and psychological.

Findings from the OSDUS' final model included positive and significant direct relationships between students' self-rated health and self-esteem, child-parent relations, school achievement, and family finances. A negative and significant direct effect emerged for females (with males having better self-rated health) and tobacco use. Almost 17% of explained variance in the self-rated health measure was accounted for by the final model. Although measures differed somewhat between the studies, the Add Health data produced similar results in the percentage of explained variance (14.7%) in the self-rated health measure as well as in the pattern of statistically significant predictors. Published results from both the OSDUS and Add Health studies were used as referents for this study (the "comparison studies"). Examining relationships between AI students' self-rated health and factors similar to those used in the comparison studies, e.g., age, gender, family, school, substance use, psychosocial considerations, was one of two goals of the current study.

The second goal of the study was to examine how social competence is related to the AI students' self-rated health. In adolescence, social competence is a complex task that requires the development of a repertoire of skills related to positive communication and interpersonal understanding (Allen, Weissberg, & Hawkins, 1989). Furthermore, social competence facilitates the connection between adolescent and peers, and at the same time maintains ties with adults. It is known that adolescents with good social competence skills have lower rates of substance abuse, depression, delinquency, aggression, and other problem behaviors (Dalley, Bolocofsky, & Karlin, 1994; Scheier, Botvin, Diaz, & Griffin, 1999), and may be better prepared to achieve self-definition in more adaptive ways (Griffin, Epstein, Botvin, & Spoth, 2001). Social competence may also contribute to success in other areas of adolescent life such as school, sports activities, and

involvement with peers in age-relevant social activities that have been found to exert substantial influences on adolescents' self-rated health (Mechanic & Hansell, 1987; Rosenthal & Smith, 1996).

From a cultural perspective, the characteristics of social competence may be an especially important factor in the health appraisals of AI youth because social competence is compatible with many AI concepts of health such as the ability to exist in a harmonious relationship with all living things (Rhoades & Rhoades, 2000). Social competence may also contribute to the maintenance of community integrity and, therefore, may be viewed as a highly desirable characteristic for individuals living in traditional societies.

## Data and Methods

### Sample

Data for this secondary analysis were derived from the Voices of Indian Teens (VOICES) project, a study of the behavioral health of AI high school students.<sup>2</sup> Survey data were collected at seven high schools located in four western U.S. AI communities. Due to a particular interest in the health of AI youth residing in New Mexico, analyses in the present study are inclusive only of those students attending the four participating reservation-based high schools in that state. A total of 701 AI high school students were surveyed at the four schools. However, list-wise deletion of missing data across cases resulted in a final sample size of 574 students. Tests for mean differences revealed no statistically significant differences on key variables between students with complete data and those with missing data. Each paper-and-pencil survey was completed by the student in one 45-minute class period during the fall semester of the 1994-1995 school year. All necessary permissions were collected prior to the administration of the surveys. In order to protect the confidentiality of the tribes involved in the study, no further identifying information is reported.

### Measures

Items used to build the underlying constructs varied across the comparison and VOICES studies. The differences are noted in regard to each construct considered.

#### Dependent Variable

*Self-rated Health.* Self-rated health was assessed by a single question: "In general, would you say your health is," with a four-point response scale coded 1 = poor, 2 = fair, 3 = good, and 4 = excellent. The comparison studies used the same stimulus but offered a five-point response scale.

### **Independent variables**

**Age.** Age and self-rated health have often shown an inverse relationship in adult studies. It was not known whether age within a very small range, such as is found with high school samples, would show a similar relationship. In Mechanic and Hansell's (1987) study, no significant relationship emerged between grade (a proxy for age) and self-rated health, but another found age to have a statistically significant relationship with students' self-rated health (Wade et al., 2000). Age was measured in years in all three studies.

**Gender.** Sufficient evidence has indicated that gender is a significant predictor of adolescent health ratings, particularly for those adolescents of high-school age (Goodman et al., 1997; Mechanic & Hansell, 1987; Sweeting & West, 2003; Vingilis et al., 2002). Females consistently report more negative ratings than do males. Gender was coded 0 = male and 1 = female.

**Family Finances.** Family finances can affect youth self-rated health in a number of ways. In addition to its direct effects, it has been predictive of self-esteem (Avison et al., 1994), family relationships (Gore, Aseltine, & Colton, 1992), school achievement/attachment (Sampson & Laub, 1993), and health-compromising lifestyle behaviors such as tobacco and drug use (Feinstein, 1993; Milio, 1986). Here, the variable was measured by a single question that asked students to compare their families to others in their home community on a three-point scale coded: 1 = poorer than most to 3 = richer than most. In the OSDUS study students rated family finances on a five-point scale from well below average to well above average. The Add Health study used a supplemental parent questionnaire to assess family finances on an 11-point scale that represented \$10,000 income increments.

**Single-parent Family.** The negative effects of a single-parent home on objective youth health have been reported to be exerted through reduced income and greater stress exposure (e.g., Gore et al., 1992; Menaghan, 1999). Single-parent family was measured as a dummy variable coded 0 = two-parent (either biological or step) and 1 = one-parent. This measurement strategy was common to all three studies.

**Family Support.** The comparison studies utilized a measure of child-parent relations that asked questions about feeling close to parents, how much parents care, communication with parents, relationship satisfaction; and ability to talk with parents about problems. However, an equivalent measure could not be constructed from the variables available in the VOICES study. As an alternative method for examining family relations, a measure of family support is included. Several studies have found aspects of family support to be associated with fewer poor health symptoms in youth (e.g., Mechanic & Hansell, 1989; Menaghan, 1999). Family support was a two-item measure derived from a social support scale (Zimet, Dahlem, Zimet, & Farley, 1988) that asked students to rate their agreement (on a scale of 1 = disagree to 5 = agree) with statements that their families try to help them and that they can talk about their problems with their families. Cronbach's alpha for the measure was .75.

*School Achievement.* School achievement has shown a statistically significant and positive relationship with adolescent self-rated health (e.g., Mechanic & Hansell, 1987). In the current study, school achievement was measured by a single question that asked the students to compare themselves with classmates on how well they did in school. The five-point response scale was coded 1 = much below average to 5 = much above average. Measures used in the comparison studies included questions about performance in specific subjects and skipping class (Add Health) and about how well the student was doing in school, how well the student liked school, and the likelihood that the student would finish school (OSDUS).

*Tobacco, Alcohol, and Cannabis Use.* One qualitative study of self-rated health found that youth were more likely than older respondents to consider behaviors such as smoking tobacco and drinking alcohol in their health ratings (Krause & Jay, 1994). Tobacco use was measured by a single question that asked the students if they smoked cigarettes. Responses were coded 0 = not at all; 1 = once in a while, but not everyday; and 2 = every day. Alcohol use was assessed by a single question about the number of days in the past month that the students consumed alcohol (0 = student doesn't drink or 0 days to 31 days). Cannabis use was measured as the number of times used in the last month (0 = student doesn't use or 0 days to 31 days). In the comparison studies, substance use was measured as use in the past year (OSDUS) and frequency over past 30 days (Add Health).

*Self-esteem.* Global self-esteem has been associated with self-rated physical health (Mechanic & Hansell, 1987) and psychological well-being (Rosenberg, Schooler, Schoenbach, & Rosenberg, 1995). Self-esteem was a six-item measure constructed from the Rosenberg Self-esteem Scale (Rosenberg, 1965). The selected items included statements about students' feelings that they have many good qualities, feelings about being a failure, positive attitudes about self, feeling useless at times, feelings of self satisfaction, and feelings about being no good at all at times. The five-point response scale was coded 1 = disagree to 5 = agree; negative statements were reverse-coded. Cronbach's alpha was .76. Similar measures were used in the comparison studies.

*Social Competence.* Social competence was a three-item measure based on the work of Allen et al. (1989) and derived from a general competencies scale used in the VOICES study. Students were asked to assess the extent to which each of the following items described them: how good the student is at making other kids feel comfortable, telling jokes that make other kids laugh, and making friends with people. The four-item response scale was coded: 1 = rarely or never to 4 = almost always. Cronbach's alpha for the measure was .73.

## Analytic Strategy

Separate analyses were conducted to investigate the various characteristics of the sample, relationships among the variables, and to address study goals. Descriptive statistics were employed to identify the characteristics of the sample and a correlation matrix was designed to reveal zero-order bivariate relationships among the key measures. The same analytic strategy described in the comparison studies, hierarchical multivariate ordinary least squares (OLS) regression, was used to address the first goal of the current study. To address the second goal of the study a measure of social competence was introduced in a new model of the AI teens' self-rated health. The multivariate regression with backward elimination utilizing a statistical significance removal level of .05 was employed in order to build a final model with only those measures that have a statistically significant relationship with the teens' self-rated health. In order to examine what can be important gender differences in the AI teens' health ratings, interactions of gender and each of the other main effects were considered in the process of obtaining the final model.

## Results

As shown in Table 1, with a mean age of almost 16 years and equally divided by gender, the AI adolescents rated their health as good, on average. Consistent with the results reported by Blum et al. (1992), however, 19.1% of the AI teens rated their health as fair or poor. Most students indicated that their family financial resources were about the same as those of other families in their communities and a majority reported living in two-parent homes. Mean scores for family support, school achievement, self-esteem, and social competence show that these AI teens generally had positive perceptions about these aspects of their daily lives. As indicated by the standard deviations for the tobacco, alcohol, and cannabis variables, a fair amount of variation occurred in the use of those substances. (To smooth the distributions for alcohol and cannabis use, the natural log transformation was employed; descriptive statistics for the transformed variables are reported as footnotes to Table 1). Examination of the percentage distributions revealed that 53.1% used at least occasionally, 47.9% consumed alcohol at least one day in the past month, and 48.4% reported cannabis use at least in the past month.

Table 2 presents the zero-order relationships between self-rated health and all other variables used in the regression analyses. More positive self-rated health was reported by students who were male; had better family finances; higher levels of social support and school achievement; lower use of tobacco, alcohol, and cannabis; higher levels of self-esteem; and social competence. The strongest bivariate correlations were among the substance use measures.

**Table 1**  
**Descriptive Statistics (N=574)**

Measures <sup>a</sup>	Mean	SD
Self-rated health	3.08	.73
Age	15.98	1.37
Gender (F=1)	.50	.50
Family finances	2.09	.34
Single-parent family	.39	.49
Family support	3.53	1.23
School achievement	3.27	.78
Tobacco use	.68	.72
Alcohol use <sup>b</sup>	2.59	5.40
Cannabis use <sup>c</sup>	5.94	10.01
Self-esteem	3.38	.45
Social competence	2.71	.77

<sup>a</sup>Response scales for selected variables: self-rated health (4-point scale, 1-4); family finances (1=poorer; 3=richer); family support (5 point scale, 1-5); school achievement (5-point scale, 1-5); tobacco use (0=not at all, 2=every day); alcohol use (0=don't drink/0 days, 31=31 days); cannabis use (0=don't use/0 days, 31=31 days); self-esteem (5-point scale, 1-5); social competence (4-point scale, 1-4).

<sup>b</sup>Natural log of alcohol use, mean .72, SD .92.

<sup>c</sup>Natural log of cannabis use, mean 1.04, SD 1.27.

Table 3 shows results of the hierarchical analyses (the design used in the comparison studies) in which the independent variables were grouped and entered in blocks representing models 1-4. In model 1, the demographic variables accounted for less than 1% of the variance in the self-rated health measure. In model 2, family finances was statistically significant and explained an additional 2% of the variance (living in a one-parent versus a two-parent home had no relationship to self-rated health).

Models 3 and 4 added 7.1% of variance explained in the self-rated health measure. Model 3 shows that school achievement, but not family support, was significantly associated with self-rated health; the addition of these two variables to the model slightly weakened the relationship for family finances. In Model 4, the addition of the substance use (tobacco, alcohol, and cannabis) and self-esteem variables resulted in statistical significance for the relationship between being female and self-rated health; males rated their health more positively than did females. Of the measures introduced in Model 4, only cannabis use and self-esteem exhibited a statistically significant relationship with self-rated health. Cannabis use is negatively associated with self-rated health while self-esteem showed a positive association. The final adjusted R<sup>2</sup> indicates that only about 10% of the variability in self-rated health responses was accounted for by these variables.

Table 2  
Bivariate Correlations Matrix (N=574)

	1	2	3	4	5	6	7	8	9	10	11	12
1 Self-rated health	1.000											
2 Age	.074	1.000										
3 Gender (F=1)	-.075*	.221***	1.000									
4 Family finances	.154***	.045	-.002	1.000								
5 Single-parent family	.012	.117**	.023	-.047	1.000							
6 Family support	.098**	.066	.091*	.038	-.057	1.000						
7 School achievement	.235***	.021	.036	.260***	-.075*	.152***	1.000					
8 Tobacco use	-.152***	.010	-.169***	-.095*	.024	-.122**	-.158***	1.000				
9 Alcohol use	-.106**	.071*	-.146***	.032	.083*	-.154***	-.130**	.383***	1.000			
10 Cannabis use	-.176***	.060*	-.120**	-.042	.060	-.159***	-.163***	.453***	.479***	1.000		
11 Self-esteem	.148***	-.042	-.036	.089*	-.002	.175***	.138***	-.081*	-.113**	-.143***	1.000	
12 Social competence	.252***	.010	.076*	.115**	-.003	.273***	.142***	-.107***	-.031	-.042	.198***	1.000

\*  $p < .05$ , two-tailed. \*\*  $p < .01$ , two-tailed. \*\*\*  $p < .001$ , two-tailed.

**Table 3**  
**Summary of Hierarchical Regression Analysis for Variables Predicting AI**  
**Teens' Self-rated Health (N = 574)**

Measure	Model 1		Model 2		Model 3		Model 4	
	B	SE B						
Age	.032	.023	.028	.023	.021	.022	.027	.022
Gender (F=1)	-.089	.062	-.092	.062	-.163	.061	-.142*	.061
Family finances			.329***	.090	.212*	.091	.194*	.090
Single-parent family			.022	.062	.050	.061	.055	.060
Family Support					.042	.025	.020	.025
School Achievement					.191***	.040	.159***	.040
Tobacco use							-.071	.047
Alcohol use (ln)							-.013	.037
Cannabis use (ln)							-.060*	.028
Self-esteem							.143*	.068
Adj. R <sup>2</sup>		.006		.025		.069		.096

\*p < .05, two-tailed. \*\*p < .01, two-tailed. \*\*\*p < .001, two-tailed.

Table 4 presents the OLS regression results across studies and provides a unique opportunity to examine similarities and differences in factors affecting the self-rated health of AI teens compared to their (predominately) non-Native peers. In general, the pattern of statistical significance indicates agreement across studies such that being male and having the perception of higher levels of family finances, school achievement, and self-esteem were all significantly related to better self-rated health. Similarities across studies also were found in the non-significance of factors such as single-parent family and alcohol use.

Mixed results were evident regarding the importance of age. The VOICES and OSDUS samples found no association, but the Add Health sample had a significant association such that older students reported better self-rated health. Although measures between the VOICES and comparison studies were not precisely equivalent, the relationship of family support with self-rated health was similar in its non-significance to child-parent relations in the Add Health study, whereas, child-parent relations was a significant factor for the OSDUS.

Major differences between the VOICES results and the comparison studies were found for tobacco and cannabis use. Although tobacco use was negatively related to self-rated health across all three studies, it was only a statistically significant factor in the comparison studies. Conversely, cannabis use had a negative, non-significant association for the students' self-rated health in the comparison studies but was a statistically significant consideration in the current study. A comparison of the total amount of

**Table 4**  
**Comparison of Student Self-rated Health Models (standardized coefficients)**

Measure	OSDUS N=840 B	Add Health N=5,673 B <sup>a</sup>	VOICES N=574 B
Age	-.044	.055*	.051
Gender (F=1)	-.123***	-.058**	-.097*
Family finances	.101**	.058***	.089*
Single-parent family	.020	-.027	.037
Child-parent relations	.071*	.011	____.b
Family support	____.b	____.b	.034
School achievement	.143***	.115***	.169***
Tobacco use	-.140***	-.105***	-.070
Alcohol use	.037	.015	-.016
Cannabis use	-.034	-.007	-.104*
Self-esteem	.227***	.275**	.087*
Adj. R <sup>2</sup>	.167	.147	.096

a\*\*\* t > 4.15; \*\* t > 3.70; \* t > 3.30

<sup>b</sup>Measure not included in regression model.

\*p < .05 \*\*p < .01 \*\*\*p < .001

Note: Two-tailed tests were performed for the VOICES study; comparison studies did not name significant test.

explained variance (Adj. R<sup>2</sup>) in the self-rated health measure across studies indicates that the model held less explanatory utility for the VOICES data than for the comparison studies.

The final model of AI teens' self-rated health, which included a measure of social competence and an interaction term for gender and family finances, revealed several notable findings. First, the overall model increased the explained variance by 4% with fewer factors than shown in Table 4. Second, the self-esteem variable was reduced to statistical non-significance. Third, cannabis use increased in level of statistical significance and maintained a negative direction of relationship with self-rated health. Fourth, social competence and school achievement demonstrated the strongest, positive association with the self-rated health of these AI students. The fifth and final note is that with the finding of statistical significance ( $p = .043$ ) for the interaction term gender\* family finances, and its inclusion in the final model, a clearer picture emerges for the interpretation of the relationship between gender and self-rated health and family finances and self-rated health. The interaction between gender and family finances and the direction of its relationship to the dependent variable indicates that family financial status is

positively associated with self-rated health and that the association is gender specific such that AI females are more likely to have more negative health ratings than males when family finances are low.

## Discussion

Results of the comparative examination of teens' self-rated health suggest broad, mutually important health-related concerns across national and cultural borders while at the same time revealing distinct health concerns of the AI youth. In general, the current findings about the self-rated health of AI teens are cause for both concern and encouragement. The consistent finding (Blum et al., 1992) that about 20% of these AI teens rated their health as fair or poor is a major concern. Other findings suggest ways in which certain attributes or resources of these teens might be developed to improve their subjective health appraisals.

School achievement presents one such opportunity. The measure of school achievement retained its statistical significance across all models of the AI teens' self-rated health. This finding contributes to the growing number of empirically verified ways in which academic achievement is associated with adolescent health and, importantly, the robustness of academic achievement in the face of ethnic and cultural considerations: Efforts that facilitate AI teens' academic success may have an added effect of increasing positive health perception.

Given the reported high risk for tobacco and alcohol use among AI youth, the finding that the two substances were not significantly correlated with the students' health perceptions deserved further examination. The positive and moderate to strong correlations among the substance use variables suggests consistency with other findings of poly-substance use among AI teens (e.g., Beauvais, 1992; Novins & Mitchell, 1998). It is likely that the correlations among the substance use variables (Table 2) contributed to the regression findings of non-significance for all but cannabis use (Table 3) and that cannabis use may partially explain the relationship between tobacco use and self-rated health as well as between alcohol use and self-rated health. To confirm this hypothesis, two additional regression models were fitted. In model one, cannabis use was held out from Model 4, Table 3. Tobacco use became statistically significant ( $p = .022$ ), while the p-value for alcohol use was also reduced dramatically (from .732 to .246), though not reaching the .05 level of significance. In Model 2, cannabis use and tobacco use were held out from Model 4. Alcohol use then became statistically significant ( $p = .037$ ). The interpretation of the findings is that all three substances use is negatively related to self-rated health, but since they are correlated with each other and cannabis use seems to be able to provide more information than the other two in explaining the variability of the dependent variable, the effects of tobacco and alcohol use tend to disappear when cannabis use is included in the model. Thus, the substantive, if not

strictly speaking the statistical, importance of tobacco and alcohol use as contributors to the negative health ratings of AI youth should remain of concern for some AI communities.

With the introduction of social competence in Table 5, the initial statistical significance of self-esteem disappeared. A plausible and interesting cultural explanation that would require a separate study is that in traditional AI societies an individual tends to place greater value on attributes and attitudes that contribute to the collective good and that secure one's place within the social circle (social competence) rather than on attributes that enhance, gratify, or benefit the individual (self-esteem). Support for that explanation is found in one study that reported higher mean self-esteem scores for AI teens identifying more strongly with the White culture versus their AI culture and higher mean social competence scores for those AI teens identifying more strongly with their AI culture versus the White culture (Moran, Fleming, Somervell, & Manson, 1999). For the present discussion, social competence has a demonstrated highly significant relationship with the AI students' self-rated health and provides evidence for engaging AI students in social competence-building activities.

**Table 5**  
**AI Teens' Self-rated Health Model Including Social Competence and**  
**Gender\*Family Finances Interaction (N = 574)**

Predictor	B	SE B	B
Intercept	2.133	.261	---
Gender (F=1)	-.892	.361	-.610*
Family finances	.026	.113	.012
School achievement	.151	.039	.161***
Cannabis use	-.088	.023	-.153***
Social competence	.213	.038	.224***
Gender*Family finances	.346	.170	.505*
Adj. R <sup>2</sup>			.134

\* $p < .05$  \*\* $p < .01$  \*\*\* $p < .001$

Although the adolescent self-rated health literature shows consistency across studies that, compared with males, females report significantly more negative health ratings, Table 3 shows that for the AI teens, gender was not, independently, a significant correlate of their self-rated health. The results presented in Table 5 show a statistically significant interaction between gender and family finances, which provides important clarification for the relationships between both gender and family finances and the AI students' health ratings. Without that clarification it could be interpreted from the previous analysis (Table 3, Model 4) that AI females, for unspecified reason, tend to rate their health more negatively than AI males (which would support the small body of literature on adolescent self-rated health) and that family finances has a positive and significant relationship with the adolescents' self-rated health in general. Yet, the interaction suggests something different for the AI teens: namely, that the association between family finances and self-rated health is much more apparent for AI females in that at lower levels of family finances the females report more negative health ratings than do the males. Interactions between gender and other factors were not reported in the comparison studies so it is not known whether the current study findings are unique to AI adolescents nor could the current study provide an explanation for the finding of interaction. However, although Swedish adolescents and gender differences were not examined, one study found worry about family finances to be strongly related to the adolescents' perceived poor health (Hagquist, 1998). One speculation in line with that finding is that the household roles often assumed by AI girls at an early age may put them at increased risk for worry about family well-being that might be dependent, at least in part, on economic stability. Clearly, further study is needed in order to understand the complex relationships between the AI youth's health ratings by gender and family finances and to develop effective strategies that will target the relevant negative health perceptions.

This study had several important limitations. The absence of physical health measures during adolescence (for example, body mass index) limits the understanding of self-rated health as a global measure of adolescent health and the contribution of physical health as an explanation for variability in the AI adolescents' health ratings. The school-based sample is a limitation since it did not include those teens too sick to be in school or those who had dropped out of school. Thus, the percentage of less than good health ratings may be underestimated in this AI teen cohort. Due to the cultural diversity of AI populations and the fact that the current study includes a small proportion of the tribes nationally, differences in factors related to the self-rated health of AI teens, as well as in the distribution percentages of the self-rated health measure, may be found in other studies. In addition, the cross-sectional nature of the data precludes defining casual links among the variables. For instance, it may be that the subjective appraisal of good health allows a teen to participate in activities and to engage in relationships that facilitate a positive sense of social competence. Despite its limitations, this investigation

contributes an important voice to the literature on adolescent health, a body of knowledge that often is silent about the health of AI youth.

### Conclusion

This report revealed similarities and differences in the subjective health ratings of AI teens compared to health ratings of other teens. The fact that almost one-fifth of the AI students rated their health as fair to poor, coupled with the relatively small amount of explained variance in the self-rated health measure, supports the need for further study in order to identify other major factors underlying the negative health ratings of AI youth. For the AI teens in the current study, factors related to their self-rated health included gender, specifically being female with low family financial status; school achievement; social competence; and cannabis use. Strategies that promote or reduce those factors may contribute to an improved sense of health for the AI teens.

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### Footnotes

<sup>1</sup>Both the U.S. and Canadian studies used a five-point response scale with their self-rated health question while the AI survey used a four-point scale. With a fifth response option, the percentage of fair-poor ratings for AI youth may be reduced. However, studies that measured self-rated health based on a five-point response scale showed that AI adults (Eberhardt et al., 2001) and early adolescents (Whitbeck, 2003) had higher percentages of fair-poor health ratings than what is reported for any other U.S. ethnic groups.

<sup>2</sup>Website links to a full description of VOICES study methods, survey, and scale development can be assessed at: <http://www.uchsc.edu/ai/ncaianmhr/pastrsch/vcsitprj.htm>

## COMPARING THREE MEASURES OF DEPRESSIVE SYMPTOMS AMONG AMERICAN INDIAN ADOLESCENTS

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*Abstract: This study examined the measurement of depressive symptoms among American Indian adolescents as assessed by the Center for Epidemiologic Studies Depression Scale (CES-D), Youth Self Report (YSR), and the Tri-Ethnic Center's for Prevention Research Depression Scale (TEDS). This analysis demonstrated that the TEDS had good internal consistency, demonstrated construct validity, and shared a commonality with the other two measures, but had limited predictive validity. The YSR had strong predictive validity but, like the CES-D, showed weakness in construct validity. Unexpectedly, the CES-D and YSR revealed enculturated youth were at risk of depressive symptoms. These findings do not generate unequivocal support for any one measure, but suggest that their strengths and potential shortcomings should be taken into account when assessing depressive symptoms among American Indian youth.*

Traditional measures of depressive symptoms were designed for use in the majority population. Too often cultural complexity has been overlooked, and these constructs have been applied casually to other groups. Assessment measures developed for use with European Americans generally have not taken into account that American Indians conceptualize depressive symptoms differently; consequently, they must be used with caution or modified for cross-cultural applications (Ackerson, Dick, Manson, & Baron, 1990; Manson, 1994; Manson, Shore, & Bloom, 1985). For example, words such as "depressed" and "anxious" are not present in some American Indians' and Alaskan Natives' languages. For Hopi Indians, feelings of guilt, shame, and sinfulness are dissimilar and carry different meanings than signified by

Western culture (Manson et al., 1985), whereas expressions of deep sadness and sorrow are discouraged among Navajo Indians (Miller & Schoenfeld, 1971). Cultural differences are magnified because American Indians (AIs) in the U.S. speak over 200 distinct languages (Fleming, 1992; LaFromboise, 1988).

Apart from the general inattention to cultural differences, the weight of the literature has examined depressive symptoms among AI adults. Manson and colleagues examined the factorial structure of the Center for Epidemiologic Studies Depression Scale (CES-D; Radloff, 1977, 1991) among AI adolescents and young adults (Beals, Manson, Keane, & Dick, 1991; Manson, Ackerson, Dick, Baron, & Fleming, 1990; Wiegman Dick, Beals, Keane, & Manson, 1994). The depressed affect and somatic complaint dimensions of the CES-D were more similar than different among AI adolescents and young people (Beals et al., 1991; Wiegman Dick et al., 1994). Cultural differences were also noted, as AI youth interpreted a somatic complaint item (i.e., everything you did was an effort) as an indicator of well-being (Wiegman Dick et al., 1994). To date, no study has compared well-established measures like the CES-D or the Youth Self Report depressive symptom scales (YSR; Achenbach, 1966, 1991) to the Tri-Ethnic Center's for Prevention Research Depression Scale (TEDS), a construct that was designed for use with minority youth. This study aims to fill these gaps in the literature by examining three measures of self-reported depressive symptoms among AI adolescents. It evaluated the psychometric properties, compared traditional correlates of depressive symptoms, and examined specific scale items of the CES-D, YSR, and TEDS to assess the commonalities and untangle the variations that exist among those measures. This paper extends the literature by examining the crucial role of instrumentation in measuring depressive symptoms among AI youth.

## Literature Review

### Tri-Ethnic Depression Scale (TEDS)

The TEDS was designed as a culturally sensitive instrument suitable for identifying depressive symptomology among samples of culturally diverse youth. Reports of empirical examinations of the properties of the TEDS were not found, although Oetting, Swaim, Edwards, & Beauvais (1989) used five of the scale items to assess depressive symptoms among AI adolescents who were residing on a reservation. The Cronbach *alpha* coefficient for this abridged version was .92. This measure was designed for its conciseness and simplicity, and does not impose mainstream bias through its competitive, conflictual worldview. In addition, it is sensitive to cultural differences in time orientation (Dauphinais & King, 1992; Manson et al., 1997). The importance of the frequency and duration of depressive symptoms should be

understood in cultural context. The TEDS allows respondents to measure subjectively the frequency of symptoms instead of specifying a numeric equivalent.

### **The Center for Epidemiologic Studies Depression Scale (CES-D)**

The CES-D was developed for use in the general population. It has been tested among high school and college students as well as junior high school youth, with the evidence suggesting that it is an acceptable and reliable measure (Radloff, 1991). In respect to junior high school students, some caution is warranted due to the inflation of CES-D scores (Radloff, 1991; Schoenbach, Kaplan, Grimson, & Wagner, 1982). Self-reports of junior high school students indicated a higher prevalence of depressive symptoms among Blacks and low-income families (Schoenbach et al., 1982). Other research failed to uncover significant grade, sex, or race differences (Felner, Rowlison, Raley, & Evans, 1988). Adolescent females who had a previous history of depressive symptoms reported more symptoms than their male counterparts; however, prior to the first episode, gender did not play a role (Lewinsohn et al., 1994). For younger girls, negative life events were positively related to increased levels of depressive symptoms (Siegel & Brown, 1988). The instrument has good internal consistency as well as concurrent and construct validity (Radloff, 1977). Reliability coefficients generally have ranged between .8 and .9 (Roberts, Andrews, Lewinsohn, & Hops, 1990). However, among AI elders, CES-D items pertaining to being a failure or feeling fearful (depressive affect), talking less than usual (somatic complaint), and feeling disliked or being treated in an unfriendly manner (interpersonal) had less relevance in "cooperative, group-oriented cultures" (Chapleski, Lamphere, Kaczynski, Lichtenberg, & Dwyer, 1997).

### **Youth Self-Report Internalizing Scale (YSR)**

The YSR has been used extensively to assess psychopathology as well as specific behavioral and emotional problems in children and adolescents (Achenbach, 1966, 1991; Achenbach & Brown, 1991). Studies have shown that the YSR Internalizing measure is well suited for youth in the general population (Laitinen-Krispijn, Van-der-Ende, & Verhulst, 1999). It also has been deemed appropriate for youth in residential, shelter, psychiatric (Handwerk, Lazelere, Soper, & Friman, 1999; Rey & Morris-Yates, 1992), and juvenile justice facilities (Atkins et al., 1999). The instrument has been employed in the African American population (Summerville, Kaslow, Abbate, & Cronan, 1994) and in cross-cultural studies (Achenbach et al., 1990; Verhulst, Prince, Vervuurt-Poot, & de Jong, 1989). There has been some suggestion that the YSR varies by gender and includes additional narrowband syndromes (Song, Singh, & Singer, 1994). The 1991 and pre-1991

Internalizing scales displayed remarkable similarity even though the withdrawn component was omitted from the earlier scale. Cronbach's *alpha* has been reported as .91 and test-retest reliability as .80 (Achenbach, 1991).

Focus groups were conducted with Dakotan/Lakotan parents who found the Child Behavior Checklist (CBCL)-the parent version of the YSR-to be culturally sensitive. However, participants questioned why the somatic complaints were included and interpreted being fearful or anxious as excitement rather than anxiety. Since AI children are encouraged to bond with family and friends and are discouraged from close relationships with mainstream "others," using the term "others" in the question stem was confusing to AI participants (Rosenberg Oosterheld & Haber, 1997).

### **Validity of Self-Report Data**

The aforementioned measures rely on self-report of internalizing symptoms. Children reported significantly higher rates of problem behavior than their parents did (Stanger & Lewis, 1993; Thomas, Forehand, Armistead, Wierson, & Fauber, 1990). La Greca (1990) has defended children's self-reports due to the subjective nature of internalizing problems. Other research has supported the validity of both children and adolescents' assessment of their symptoms of depression (Moretti, Fine, Haley, & Marriage, 1985).

### **Predictors of Depressive Symptoms**

Research findings have indicated that the timing of the first occurrence of symptoms of depression generally was in childhood, adolescence, or early adulthood (Robins & Regier, 1991). Kessler and Magee (1994) have confirmed that the early onset of depressive symptoms was a significant predictor of recurrence in adulthood. Studies have shown that girls' symptoms of depression dramatically increased with adolescence, as compared to boys' rates (Allgood-Merton, Lewinsohn, & Hops, 1990; Baron & Perron, 1986). For girls, two studies have found that the emergence of higher depressive symptom rates occurred at 13 or 14 years (Brooks-Gunn, 1991; Nolen-Hoeksema, Girgus, & Seligman, 1991).

Several researchers have pointed out that children whose parents divorce early were more likely to experience psychological dysfunction as well as depression and anxiety disorders (Harris, Brown, & Bifulco, 1990; McLeod, 1991; Tweed, Schoenbach, George, & Blazer, 1989). Economic resources proved to be the greatest difference between mother-only and two-parent families; only 50% of single mothers have incomes above the poverty line (Garfinkel & McLanahan, 1986). SES was one of the most reliable predictors of psychological well-being (Holzer et al., 1986). Lower SES was a risk factor associated with an initial occurrence of depressive symptoms (Murphy et al., 1991) as well as adolescent psychological distress (Kaplan,

Hong, & Weinhold, 1984). The economic conditions of the family were an indicator of the neighborhood context, the quality of schools, and the broader community (Menaghan, 1999).

Research findings have indicated that self-esteem acts as a protective mechanism to decrease depressive symptoms (Allgood-Merten, Lewinsohn, & Hops, 1990; Cheng & Lam, 1997; DuBois, Felner, Sherman, & Bull, 1994; Oetting et al., 1989). Oetting and colleagues (1989) found a modest negative correlation ( $r = -.26$ ) between depressive symptoms and self-esteem among 327 reservation AI youth. Since members of cultural and racial minorities have been overrepresented in the lower economic strata, stressful life events for minority groups have more deleterious effects (Slavin, Rainer, McCreary, & Gowda, 1991). Adolescents from impoverished backgrounds experienced more negative life events (Garrison, Schluchter, Schoenbach, & Kaplan, 1989; Gore, Aseltine, & Colton, 1992). Other findings suggested that experiencing multiple, concurrent stressors placed adolescents at increased risk (Petersen, Sarigiani, & Kennedy, 1991; Simmons, Burgesson, Carlton-Ford, & Blyth, 1987).

Perceived discrimination is an additional life stressor faced by minorities (Feagin, 1991); however, racism-related stress is not captured by traditional life event inventories (Williams, Yu, Jackson, & Anderson, 1997). Research findings indicated that perceived discrimination was correlated with depressive symptoms among both adults and adolescents (Essed, 1991; Feagin, 1991; Jackson, Williams, & Torres, 1997; Noh, Beiser, Hou, & Kaspar, 1998; Rumbaut, 1994; Whitbeck, Hoyt, McMorris, Chen, & Stubben, 2001). Wright, Hirlinger, and England (1998) add that feelings of institutional discrimination increased as adolescents grew older. AI youth who identified more with their culture experienced higher levels of discrimination (Whitbeck et al., 2001).

### **The Role of Culture**

Investigators have argued that culture may act as a protective mechanism, enhancing psychological well-being (Harrell, 2000; Zimmerman, Ramirez, Washienko, Walter, & Dyer, 1994). In particular, enculturation is viewed as a possible source of resilience in the face of adversity. Adolescents are said to be enculturated if they have a strong cultural identity, sense of pride in their culture, and participate in traditional activities (Little Soldier, 1985; Zimmerman et al., 1994). It is important to recognize that these models suggest enculturation should operate primarily as a buffer for the effects of culturally-linked stressors (e.g., discrimination) on depressive symptoms, rather than showing any main effect. Indeed, one of the criteria for a scale to be culturally unbiased is for it to have no significant association with measures of enculturation once the influence of culturally-linked stressors has been controlled.

## Measurement

### Sample

The data for the current paper are based on interviews with 213 children (116 boys and 97 girls) and their parents who participated in a baseline survey for a prevention study. In 1998-1999, the study was conducted on three AI reservations located in the upper Midwest. The reservations were similarly situated in rural areas with high unemployment and poverty, but were somewhat different in size and economic base. Children who were enrolled tribal members in the 5<sup>th</sup>-8<sup>th</sup> grades were eligible for participation. The eligible families were recruited by on-site AI staff using a culturally-based recruitment protocol designed by the staff and tribal advisory boards. Interviewers had tribal affiliations (in a few cases interviewers were community members who were relatives of tribal members) and were supervised directly by on-site staff. All interviews were conducted in home visits by one or two interviewers. Advisory boards were established on each reservation and provided guidance throughout the research project.

### Measures

*Control Variables.* Missing values were handled within individual scales. Unless otherwise indicated, the mean value of answered items within a given scale was imputed when more than half of the items in a scale had legitimate values. Primary caretakers reported the following demographic variables. The mean *Age of adolescent* was 12.1 years; values ranged from 9 to 16 years, although 98% of the children were between the ages of 10 and 15 years. *Gender* was a dichotomous variable (0 = male; 1 = female); nearly half of the sample was female (46%). The family structure variable, *Male caretaker in household*, was coded "0" if the household consisted of a single female caretaker and "1" if a male was also present in the home. This variable does not refer exclusively to a biological father or stepfather of the child, because another male in the household (e.g., grandfather) may be involved in supervising the child. Men were present in over two-thirds of the households (67%). *Household income per capita* was constructed by recoding the ordinal measure of income to the midpoints and dividing by the total number of individuals in the household. Income ranged from a minimum of \$278 to a maximum of \$25,000 for each household member. The median household income reported was between \$15,000 and \$20,000.

*Predictor variables.* The self-esteem scale consisted of 11 items (mean imputed for 3% of cases if 9 items had legitimate values) from the Tri-Ethnic Center for Prevention Research at Colorado State University instrument. The scale assessed feelings of self-worth and likeability.

Response categories for individual items were 0 = none of the time, 1 = some of the time, and 2 = most of the time. Scale values ranged from 1.5 to 3.0 (mean = 2.6). Cronbach's *alpha* was 0.77.

The *Negative life events scale* was the sum of 13 items. Respondents specified if they were ill or injured, if they had moved, or if a new person had joined the household. They indicated whether they had broken up with or had a close friend move away, had failed a class, or were not accepted into an activity at school. Adolescents also reported a death of a friend, relative, or pet, and criminal victimization of family. Individual items within the scale were dichotomous (0 = no; 1 = yes); values ranged from 0 to 9 affirmative responses. The mean was imputed in 6% of cases if a least 7 items had legitimate values.

*Adolescent's enculturation* was a multiple-dimension standardized factor score of each youth's immersion in AI culture. The first dimension, the traditional activities measure, was assessed with a 2-item composite tapping involvement and participation in tribal pow-wows in the past year, knowledge and use of tribal language with 4 items, as well as 12 traditional activities. The second dimension, cultural identification, was the 6-item sum of Oetting and Beauvais' (1991) AI cultural identification measure. The items were summed and mean-imputed in 7.1% of cases if at least 4 items had legitimate values. The third dimension, traditional spirituality, was measured with a 3-item summed scale (e.g., participation, frequency, and importance) with 4.7% of cases requiring mean imputation. Of the three standardized dimensions of *adolescent's enculturation*, intercorrelations ranged from .41 to .49 and loaded onto a single factor in exploratory factor analysis.

The final predictor variable, *adolescent's perception of discrimination*, was the sum of 10 items, with the mean imputed in 4.2% of cases if at least 6 items had legitimate values. Adolescents reported how often they had been ignored, excluded, verbally insulted, or threatened with physical harm because of their ethnicity. Additional items assessed whether teachers had negative expectations of them, or whether store clerks discriminated against them because of their ethnic background. Response categories for individual items ranged from 1 = never to 3 = always. Adolescent reports ranged from 1 to 2.70. Cronbach's *alpha* for the scale was .80. To reduce skewness, a log transformation was applied.

*Measures of depressive symptoms.* Outcome measures were scored such that higher values indicated higher levels of depressive symptomology. First, the *TEDS* was the mean of 7 items, with mean imputed in 3% of cases, constructed from the Tri-Ethnic Center's for Prevention Research measure. Adolescents reported how often they felt sad, unhappy, depressed, lonely, lonesome, low, and bad (see Appendix A). Adolescents' responses ranged from 1 = none of the time to 3 = most of the time. Scale scores ranged from 1 to 3 (mean = 1.6). Cronbach's *alpha* was .86. Second, the *CES-D* depressive symptom scale was the sum of 7 items, with mean imputed in 7% of cases (Radloff, 1977, 1991) (see Appendix A). Response categories

ranged from 0 = 0 days to 4 = 5-7 days; scores ranged from 0 to 17 (mean = 3.5). Cronbach's *alpha* was .80. Third, the YSR depressive symptom scale was the sum of 6 items, with mean imputed in 1.5% of cases (Achenbach, 1991). The individual scale items are listed in Appendix A. Response categories ranged from 0 = not true to 2 = very true. Scale scores ranged from 0 to 9 (mean = 1.1). Cronbach's *alpha* was .68. To reduce skewness, a log transformation was applied to the YSR and CES-D.

## Results

### Intercorrelations of the Three Measures

The correlation matrix for the variables used in the study is presented in Table 1. The correlations among the three scales were compared to establish convergent validity. The CES-D and the YSR depressive symptom scales were selected because they are well-established instruments. As would be expected, the CES-D and the YSR displayed a robust positive relationship ( $r = .45$ ). A stronger correlation was found between the TEDS and CES-D ( $r = .59$ ), while the TEDS and YSR have a moderately strong relationship ( $r = .34$ ). In terms of discriminant validity, the TEDS correlates more highly with measures of depressive symptoms than with other traditional correlates.

It is evident from these correlations that there is overlap in the measurement of depressive symptoms as well as divergence. The stronger correlation between the TEDS and CES-D may be due to the commonality in assessing sadness, loneliness, and depression, while the variation may be accounted for by the CES-D's emphasis on mainstream expectations of personal success and emotional expression (e.g., crying) that may have a different connotation in traditional culture. The YSR's suicide orientation may be another contributing factor that explains the modest correlation with the TEDS.

### Reliability Coefficients and Exploratory Factor Analysis

Overall, the assessment of the internal consistency of the TEDS demonstrated that the TEDS had the highest Cronbach *alpha* value (.86). There was a slight reduction in *alpha* (.80) for the CES-D, and an appreciable decline for the YSR (*alpha* = .68). Exploratory factor analysis was employed on the 20 depressive symptoms to investigate the construct validity of the instruments, in lieu of confirmatory factor techniques due to the small sample size. All factor scores were obtained by principal components extraction and varimax rotation, with the Anderson-Rubin procedure used to produce z-score summary values of each resulting factor. This method produces factors uncorrelated with each other, with mean zero and standard deviation one.

**Table 1**  
**Correlation Matrix (N = 203)**

	1	2	3	4	5	6	7	8	9	10	11
1 TEDS Depression	—										
2 CES-D Depression	.59**	—									
3 YSR Depression	.34**	.45**	—								
4 Age	-.14*	-.15*	-.08	—							
5 Female = 1	.01	.07	.21**	-.03	—						
6 Male in household = 1	.05	.05	-.04	-.00	-.00	—					
7 Household income per capita	-.13	-.08	.04	.14*	-.06	.08	—				
8 Self-esteem	-.26**	-.13	-.20**	-.02	.01	-.03	.05	—			
9 Negative life events	.19**	.26**	.28**	-.01	.13	-.08	-.21**	-.04	—		
10 Enculturation	.12	.19**	.20**	-.03	.15*	-.16*	-.18*	.10	.25**	—	
11 Discrimination	.16*	.23**	.19**	.23**	.07	-.14*	-.14	-.07	.46**	.25**	—
M	1.61	.65	.45	12.11	.46	.67	3.63	2.57	3.88	-0.00	.37
SD	.43	.27	.18	1.44	.50	.47	.33	.29	2.14	1.01	.05

\*p < .05; \*\*p < .01

Five factors were produced. The TEDS loaded on one factor; factor loadings ranged from .66 to .76. For the CES-D, blues, fearful, failure, sad, cry, and depressed items generally loaded on a second factor; factor loadings ranged from .44 to .70. A third factor consisted of 6 loneliness and tearful expression items. The CES-D's cry (.51) and the TEDS's lonesome (.41) and lonely items (.39) cross-loaded. In addition, the CES-D's lonely (.60), and the YSR's lonely (.67) and cry (.74) items had robust loadings. The YSR suicidal items loaded on a fourth factor (.78; .82). YSR's not loved and worthless items loaded on a fifth factor (.70; .80) while CES-D's depressed affect cross-loaded (.43). This factor analysis indicates that the YSR and CES-D depressive symptom scales are not unidimensional constructs. In regard to suicidal thoughts, inferiority, and loved by others, the YSR shares little with the CES-D and TEDS. It is clear that the measures overlap the most on the loneliness/cry factor.

### Correlates of Depressive Symptoms

Among traditional correlates, the TEDS was positively associated with negative life events ( $r = .19$ ) and discrimination ( $r = .16$ ) and negatively correlated with self-esteem ( $r = -.26$ ) (Table 1). These correlations were significant and in the predicted direction. There was no significant correlation between the TEDS and gender, male caretaker in household, per capita household income, and enculturation. In regard to the CES-D, the correlations with negative life events ( $r = .26$ ) and discrimination ( $r = .23$ ) were significant and more robust. However, there was no association with self-esteem, but enculturation was significantly correlated with increased symptoms of depression ( $r = .19$ ). Similar to the TEDS, there were no significant correlations for gender, presence of a male, and per capita income. For the YSR, as with both the TEDS and CES-D, depressive symptoms were significantly and positively correlated with negative life events ( $r = .28$ ) and discrimination ( $r = .19$ ). Like the TEDS, it was negatively related to self-esteem ( $r = -.20$ ). The YSR measure was positively associated with enculturation ( $r = .20$ ). Again, having a male in the home and income were not associated with the YSR. However, girls reported more YSR depressive symptoms than boys ( $r = .21$ ).

### Multivariate Models

*TEDS model.* Variables were entered into the ordinary least squares regression model in five stages (Table 2). In the final model, age was a significant predictor. Counter-intuitively, younger adolescents experienced more symptoms of depression ( $\beta = -.17, p < .05$ ). The self-esteem scale was strongly negatively associated with depressive symptoms ( $\beta = -.26, p < .01$ ).

**Table 2**  
**Regression Models Predicting TEDS Depression (N = 204)**

Independent Variable	Model 1		Model 2		Model 3		Model 4		Model 5	
	B (SE)	$\beta$	B (SE)	$\beta$	B (SE)	$\beta$	B (SE)	$\beta$	B (SE)	$\beta$
Age	-.04 (.02)	-.13	-.04 (.02)	-.13	-.04* (.02)	-.14	-.04* (.02)	-.14	-.05* (.02)	-.17
Female	.00 (.06)	.00	.00 (.06)	.00	-.01 (.06)	-.02	-.03 (.06)	-.03	-.03 (.06)	-.03
Male in household = 1	.06 (.06)	.06	.05 (.06)	.05	.06 (.06)	.06	.07 (.06)	.08	.08 (.06)	.09
Household income per capita	-.16 (.10)	-.12	-.14 (.09)	-.10	-.09 (.09)	-.07	-.08 (.09)	-.06	-.06 (.09)	-.05
Self-esteem			-.38** (.10)	-.26	-.37** (.10)	-.25	-.39** (.10)	-.27	-.38** (.10)	-.26
Negative life events					.04* (.01)	.17	.03* (.01)	.15	.02 (.02)	.10
Adolescent enculturation							.04 (.03)	.10	.04 (.03)	.09
Adolescent discrimination									1.04 (.65)	.13
Intercept	2.60		3.54		3.21		3.21		2.91	
R <sup>2</sup>	.04		.11		.13		.14		.15	
Adjusted R <sup>2</sup>	.02		.08		.11		.11		.12	

\* $p < .05$ ; \*\* $p < .01$

With the addition of discrimination to the model, the effects of negative life events on depressive symptoms became nonsignificant. Contrary to expectations after controlling for other variables, discrimination did not increase depressive symptoms. Overall, the final model explained 12% of the variation in adolescents' depressive symptoms.

*CES-D model.* Table 3 presents the results of the same set of models for the CES-D scale. In the final model, older adolescents experienced less depression than their younger counterparts ( $\beta = -.20, p < .01$ ). Self-esteem did not increase reports of depressive symptoms. In contrast to the results for the TEDS measure, enculturation was associated with higher symptom scores on the CES-D ( $\beta = .15, p < .05$ ). Perceived discrimination was significantly related to adolescents' reports of depressive symptoms ( $\beta = .18, p < .05$ ). After controlling for discrimination, the negative life events scale was no longer significantly associated with increased levels of adolescents' symptoms of depression. Overall, the model explained 11% of the variation in the CES-D.

**Table 3**  
**Regression Models Predicting CES-D Depression (N= 204)**

Independent Variable	Model 1		Model 2		Model 3		Model 4		Model 5	
	B (SE)	$\beta$	B (SE)	$\beta$						
Age	-.03* (.01)	-.15	-.03* (.01)	-.15	-.03* (.01)	-.16	-.03* (.01)	-.16	-.04** (.01)	-.20
Female	.04 (.04)	.07	.04 (.04)	.07	.03 (.04)	.05	.02 (.04)	.03	.02 (.04)	.03
Male in household = 1	.03 (.04)	.05	.03 (.04)	.05	.04 (.04)	.06	.05 (.04)	.09	.06 (.04)	.10
Household income per capita	-.04 (.06)	-.05	-.03 (.06)	-.04	.01 (.06)	.01	.03 (.06)	.03	.04 (.06)	.04
Self-esteem			-.11 (.06)	-.12	-.10 (.06)	-.11	-.12 (.06)	-.13	-.11 (.06)	-.12
Negative life events					.03** (.01)	.24	.03** (.01)	.20	.02 (.01)	.13
Adolescent enculturation							.05* (.02)	.18	.04* (.02)	.15
Adolescent discrimination								.91* (.41)	.18	
Intercept	1.09		1.35		1.08		1.07		.81	
R <sup>2</sup>	.03		.05		.10		.13		.15	
Adjusted R <sup>2</sup>	.01		.02		.07		.10		.11	

\* $p < .05$ ; \*\* $p < .01$

*YSR Model.* Table 4 presents the results for the YSR measure of depressive symptoms. In the final model, girls were significantly more likely to report higher rates of depressive symptoms ( $\beta = .17, p < .05$ ) while income increased depressive symptoms ( $\beta = .16, p < .05$ ). Self-esteem was a significant predictor, decreasing depressive symptomology ( $\beta = .22, p < .01$ ). In contrast to the analyses from the other scales, negative life events was significantly related to depressive symptoms after controlling for other variables ( $\beta = .21, p < .01$ ). Similar to the CES-D, enculturation predicted adolescents' symptoms of depression ( $\beta = .15, p < .01$ ). Consistent with the TEDS, discrimination was not a significant predictor. This final model explained 16% of the variation in depressive symptoms.

**Table 4**  
**Regression Models Predicting YSR Depression (N = 202)**

Independent Variable	Model 1		Model 2		Model 3		Model 4		Model 5	
	B (SE)	$\beta$	B (SE)	$\beta$	B (SE)	$\beta$	B (SE)	$\beta$	B (SE)	$\beta$
Age	-.01 (.01)	-.09	-.01 (.01)	-.09	-.01 (.01)	-.10	-.01 (.01)	-.10	-.02 (.01)	-.12
Female	<b>.08**</b> (.03)	<b>.21</b>	<b>.08**</b> (.02)	<b>.21</b>	<b>.07**</b> (.02)	<b>.18</b>	<b>.06*</b> (.02)	<b>.17</b>	<b>.06*</b> (.02)	<b>.17</b>
Male in household = 1	-.02 (.03)	-.05	-.02 (.03)	-.06	-.02 (.03)	-.04	-.01 (.03)	-.02	-.01 (.03)	-.01
Household income per capita	.04 (.04)	.07	.05 (.04)	.08	<b>.08*</b> (.04)	<b>.14</b>	<b>.09*</b> (.04)	<b>.16</b>	<b>.09*</b> (.04)	<b>.16</b>
Self-esteem			<b>-.13**</b> (.04)	<b>-.21</b>	<b>-.12**</b> (.04)	<b>-.20</b>	<b>-.14**</b> (.04)	<b>-.22</b>	<b>-.13**</b> (.04)	<b>-.22</b>
Negative life events					<b>.02**</b> (.01)	<b>.27</b>	<b>.02**</b> (.01)	<b>.24</b>	<b>.02**</b> (.01)	<b>.21</b>
Adolescent enculturation							<b>.03*</b> (.01)	<b>.16</b>	<b>.03*</b> (.01)	<b>.15</b>
Adolescent discrimination									.26 (.27)	.08
Intercept	.41		.73		.53		.52		.45	
R <sup>2</sup>	.06		.10		.17		.19		.20	
Adjusted R <sup>2</sup>	.04		.08		.15		.16		.16	

\* $p < .05$ ; \*\* $p < .01$

### Conclusion

These analyses illustrate that there are both points of convergence among the measures and some marked differences. This study stresses the importance of instrumentation and the significance of culture in examining depressive symptoms among AI adolescents. These analyses reinforce the importance of critical methodological evaluation of measurement scales among cultural minorities. Cultural and social differences must be taken into account when assessing the appropriateness of measures. Symptoms of psychopathology and the meaning attached to them are not always equivalent across cultural contexts. An understanding of how AIs conceptualize their depressive symptoms is integral to constructing reliable and valid diagnostic instruments (Kleinman, 1980). This study took the first step in this direction, by evaluating depressive symptom scales among a sample of AI adolescents.

Overall, this study sought to evaluate the validity and the reliability of the TEDS. Its commonality with the YSR and CES-D depressive symptom scales is indicated by significant correlations. In addition, the TEDS' less robust, but significant, correlations with other relevant predictors supports the instrument's discriminant validity. We find evidence of a single factor underlying the TEDS measure, which reinforces its construct validity. It also shows high internal consistency.

On closer inspection, this analysis demonstrates that there are also differences among the three measures that are worth noting. Each of these instruments has respective strengths and weaknesses in this study of AI youth. Comparatively speaking, the YSR depressive symptom scale demonstrates better predictive validity. However, it wavers on aspects of construct validity and has the lowest reliability coefficient. The results suggest that it has three unique dimensions, even though it was designed to be a unidimensional construct. In terms of divergent validity, after stepping in the TEDS, all predictors except the enculturation measure remain significant. In terms of convergent validity, the YSR is more strongly associated with the TEDS depressive symptoms, but continues to predict traditional correlates of depressive symptoms as well. In a similar analysis predicting CES-D depressive symptoms, it shows a robust association with the TEDS but did not predict other theoretically meaningful constructs. In regard to construct validity, the CES-D did not have a single underlying dimension.

For the TEDS and CES-D, we found a significant negative association with age. This interesting finding seems to run counter to the general trend in the early adolescent years of higher levels of depressive symptoms increasing with age. One potential interpretation is that at younger ages AI youth internalize the feelings associated with the hardship of life on the reservation; but at older ages youth may begin to externalize in response to their situation. Gender was significant only for the YSR measure. Since the YSR is restricted to depressive symptoms, it is not related to higher female self-reports of selected somatic complaints. This is a highly replicable finding, but it seems timely to conduct research with other tribal nations to validate these findings among AI girls.

The YSR and TEDS both show a buffering effect of higher self-esteem; however, the CES-D did not. This suggests that the CES-D is unable to explain variability as well as do traditional correlates of depressive symptoms. For each of the outcomes, the effect of negative life events is positive and significant. After entering discrimination into the final TEDS and CES-D models, negative life events are not associated with depressive symptoms. Under most circumstances, after controlling for discrimination, negative life events would predict depressive symptoms. Unlike the TEDS and YSR, the CES-D was significantly related to discrimination. The CES-D results are consistent with other studies that have explored the substantive relationship between racial discrimination and psychological distress (Jackson, Brown, & Williams, 1996; Young & Takeuchi, 1998).

In regard to the protective aspects of enculturation, it has been found to reduce youths' engagement in delinquent activities such as alcohol and drug use and early sexuality. Furthermore, in a sample of 121 AI adolescents (7-18 years), enculturated youth with high levels of self-esteem were buffered from alcohol and drug use (Zimmerman et al., 1994). On the other hand, Navajo children who identified with their AI culture evidenced higher levels of academic achievement (Vadas, 1995). In addition, a positive cultural identity may contribute to a sense of efficacy and self-esteem that may increase academic success (Hornett, 1990).

Therefore, the authors were perplexed by the relationship between enculturation and both YSR and CES-D depressive symptoms. The CES-D and YSR estimates evidence a main effect of enculturation; these findings suggest that greater involvement in AI culture is predictive of higher levels of depressive symptoms. Enculturation was significantly associated with both measures after introducing the effects of discrimination. This suggests that they may tap some cultural dimensions even after controlling for correlates of culturally-based stressors. In contrast to the TEDS models, the CES-D and YSR models indicate that youth who are more enculturated are more likely to experience depressive symptoms. This relationship runs counter to the hypothesized relationship.

We may be able to reconcile these conflicting findings by noting that the protective effects of enculturation are present only at higher levels of cultural identification. The YSR and CES-D may be discriminating adolescents with lower levels of enculturation, which in turn may create identity confusion and increase depressive symptoms. In a study of AI adults who reported high levels of participation in traditional activities, tradition protected them from CES-D depressive symptoms even in the face of discrimination. For those reporting low or moderate levels of traditional participation, discrimination eroded the protective influence of cultural practices. This indicates that there may be a price for participation in traditional activities for some adults. When traditional practices result in higher discrimination, it increases the likelihood of depressive symptoms among those who are less embedded in traditional culture (Whitbeck, McMorris, Hoyt, Stubben, & LaFromboise, 2002).

Some of the limitations of this study must be addressed. They include the use of cross-sectional data, sampling technique, and single-reporter accounts. Care must be taken in drawing conclusions about the processes at work because the data do not allow one to evaluate these mechanisms over time. The sample was drawn from AI reservations in the Upper Midwest, which restricts the ability to generalize to other tribes. Readers also should be aware of the bias associated with self-report data; while some of the data on household composition and finances come from parents, the adolescents were the sole source of information about depressive symptoms.

This study makes clear that the predictors of depressive symptoms are dependent on the choice of instrument; this has a great impact on the inferences made about AI culture. On the surface, the measures appear quite similar and are moderately to highly intercorrelated. Each of these measures clearly taps some degree of depressive symptoms. However, important differences are noted. The potential shortcoming of the TEDS measure and the strength of the YSR appear to lie in predictive validity. The TEDS has more modest zero-order association with standard predictor measures, resulting in lower estimates in multivariate models. The CES-D has a similar but less pronounced weakness. The CES-D and YSR both failed to demonstrate a single-factor structure. The CES-D and the YSR measures have patterns indicating that enculturation is a risk factor for depressive symptoms. Further research needs to be carried out to determine if these instruments are discriminating youth with lower levels of enculturation that in turn may lead to internalization symptomology. These measures demonstrated strengths and potential weaknesses that should be taken into account when assessing depressive symptoms among AI youth. In sum, while these findings do not generate unequivocal support for any one of the depressive symptom measures, this study underscores the need to reevaluate existing measures of depressive symptomology and to develop depressive symptom instruments sensitive to cultural differences.

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## Appendix A: Scale Items

### Tri-Ethnic Depression Scale

1. I am unhappy
2. I feel sad
3. I am lonesome
4. I feel low
5. I am depressed
6. I am lonely
7. I feel bad

Response Categories: 1 None of the time, 2 Some of the time, 3 Most of the time

**CES-D Depressed Affect**

1. You felt depressed
2. You felt that you could not shake off the blues even with help from your family or friends
3. You thought your life had been a failure
4. You felt fearful
5. You felt lonely
6. You had crying spells
7. You felt sad

Response Categories: 0 Days, 1 - 2 Days, 3 - 4 Days, 5 - 7 Days

**Youth Self-Report Depression**

1. I feel lonely
2. I cry a lot
3. I deliberately try to hurt or kill myself
4. I feel that no one loves me
5. I feel worthless or inferior
6. I think about killing myself

Response categories: 0 Not True, 1 Somewhat True, 2 Very True

## ANTIDEPRESSANT MEDICATION USE AMONG FIRST NATIONS PEOPLES RESIDING WITHIN BRITISH COLUMBIA

Dennis Wardman, M.D. and Nadia Khan, M.D.

*Abstract: Very little is known about antidepressant medication use among First Nations people in Canada. This information would be useful to begin estimating the prevalence of conditions treated with this class of medications and planning appropriate programs.*

*Antidepressant medication claims for First Nations people residing within British Columbia were extracted from the Non-Insured Health Benefits pharmacy database. During 2001, 9.8% (95% CI = 9.81, 9.79) of the population filled a prescription for antidepressant pharmacotherapy, claimant mean age was 40.3 years and the female: male ratio was approximately 3:1. The most common medications were Paxil, Apo-Amitriptyline, Effexor, and Celexa. Use of this medication class is common and more research is needed in this area of study.*

Antidepressant medication is indicated in the treatment of a number of conditions, including depression, insomnia, chronic pain, generalized anxiety disorder, and panic disorder (Bajwa, Warfield, & Wootton, 2003; Chokroverty, 2003; Ciechanowski & Katon, 2003; Paulsen, 2003) but its rate of use is an understudied area. Examining use of drugs within this medication class can be helpful in estimating the magnitude of conditions treated with antidepressant medication.

The Aboriginal people of Canada are comprised of several groups, including First Nations (FN), Metis (mix of French and Indian ancestry), non-status Indians, and the Inuit people. First Nations people suffer from chronic diseases at a higher rate than the rest of Canadians (British Columbia Provincial Health Officer, 2002) but little is known about the prevalence of chronic diseases treated with antidepressant medication. First Nations people, who are assigned an Indian Status number, are entitled to special rights,

including subsidy of antidepressant medication under the Non-Insured Health Benefits (NIHB) program of the First Nations and Inuit Health Branch. These rights originated with treaties signed between the Canadian federal government and FN people. Only FN and Inuit peoples are entitled to these "rights."

In the 1870s, the government of Canada and the Indians of the Canadian Prairies sought treaties to define their relationship and establish rights to land and other resources. Such agreements extinguished Native rights to land and provided compensation to Natives and a new means of livelihood. In order to formulate the treaties, a legal and political definition for "Indian" was needed. This established who was entitled to reserve lands and to the other compensations provided for in the agreements. The Native definition of Indian was based primarily on lifestyle rather than bloodline. For most Natives, simply living a traditional Aboriginal lifestyle made one an Indian, eligible for treaty terms.

The purpose of this study is to describe the prevalence of antidepressant medication use amongst FN people residing within British Columbia during 2001.

## Methodology

The NIHB pharmacy database is a provincial database that captures all prescription medication claims for only FN people residing within British Columbia and does not capture non-FN population pharmacy claims. First Nations people do not have drug coverage through provincial or other pharmacy plans in British Columbia. The NIHB pharmacy database, therefore, provides the best data on drug usage among Status Indians residing in British Columbia. Through the NIHB program, medications prescribed by physicians are subsidized fully by the Federal government, and in this way the NIHB database captures all prescriptions filled for Status Indians and is considered to be accurate. The NIHB database collects claimant information on gender and age, as well as number of prescriptions and specific drug claims. Other demographic information, including indication for prescription is not available within the database.

Claims for each antidepressant medication were extracted and then compiled to estimate total antidepressant medication use. See Table 1 for antidepressant medication claims extracted. In addition, claimant gender and age information was extracted. Data was analyzed using Intercooled STATA 7.0 (Texas Statacorp) software. The 1-year period prevalence for antidepressant medication use during 2001 was calculated with the numerator representing the total number of unique antidepressant medication claims and denominator representing the 2001 FN population figures. The 2001 FN population figures are based on the FN total births and deaths during 2001 and the 2000 population figure (First Nations and Northern Statistics Section,

**Table 1**  
**Antidepressant Medications Extracted from the Non-Insured Health**  
**Benefits Pharmacy Claims Administrative Database**

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Phenelzine Sulfate  
 Tranylcypromine Sulfate  
 Moclobemide  
 Amitriptyline Hydrochloride  
 Amoxapine  
 Desipramine Hydrochloride  
 Doxepine Hydrochloride  
 Imipramine hydrochloride  
 Maprotiline Hydrochloride  
 Nortriptyline Hydrochloride  
 Protriptyline Hydrochloride  
 Trimipramine Maleate  
 Citalopram Hydrobromide  
 Fluoxetine Hydrochloride  
 Fluvoxamine Maleate  
 Paroxetine Hydrochloride  
 Sertraline Hydrochloride  
 Venlafaxine Hydrochloride  
 Bupropion Hydrochloride  
 Nefazadone Hydrochloride  
 Trazadone Hydrochloride  
 L-Tryptophan

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Corporate Information Management Directorate, Information Management Branch, Department of Indian Affairs and Northern Development, 2002).

Indian Status numbers were utilized to identify pharmacy claimants and determine FN population figures. Confidence intervals were calculated using the following formula: 95% Confidence Intervals =  $p \pm 1.96^{1/2} [p(1-p)/n]$ , where  $p$  = prevalence of antidepressant medication use and  $n$  = number of FN persons residing within British Columbia.

## Results

There were 112,305 FN people residing in British Columbia in 2001 and 51% were female (First Nations and Northern Statistics Section, Corporate Information Management Directorate, Information Management Branch, Department of Indian Affairs and Northern Development, 2002). During 2001, 10,982 individuals (9.8% of the population, 95% Confidence Interval = 9.81, 9.79) filled an antidepressant medication prescription. The majority, 7,787 (70.1%), were female and the average age of claimants was 40.3 years (Standard Deviation of +/- 14.5 years).

The most frequently prescribed antidepressant medications were: Paxil (Paroxetine Hydrochloride), Apo-Amitriptyline, Effexor (Venlafaxine

Hydrochloride), and Celexa (Citalopram Hydrobromide). The number of antidepressant medication claimants for these are as follows, respectively: 9,828, 4,846, 3,921, and 3,784.

## Discussion

This study is the first to identify that antidepressant medication use was common among FN people in British Columbia during 2001. Furthermore, the majority of those filling prescriptions for antidepressant medication were women. This high prevalence of antidepressant medication use may be explained by a higher prevalence of disorders treated with antidepressant medications or that these disorders may be over-diagnosed in FN people. Care providers working with FN populations need to keep in mind how prevalent these conditions are and adjust their practice to meet client needs. Program planners and policy makers should plan accordingly based on these results.

Our study result of 9.8% may be greater than non-FN population antidepressant medication use, if one assumes conditions treated with antidepressant medication occur at a higher rate among FN populations. For example, among American Indians and Alaska Natives depression is thought to be disproportionately greater (Centers for Disease Control [CDC], 2003). Furthermore, FN patient expectations for "pill" treatments and physicians feeling inclined to offer some form of treatment given the well-known fact that rural and remote communities, as are many FN communities, often lack mental health services may also explain a higher antidepressant medication use. Conversely, FN antidepressant medication use may be lower than non-FN populations as treatment for depression is sought less by non-White patients (Bristow & Patten, 2002) and because barriers exist to mental health services for FN people (Barron, Oge, & Markovich, 1999; King, 1999). Perhaps antidepressant medication use is contradictory to the values and belief system of FN people.

In one sense our study results are limited, but do begin to indicate the prevalence of conditions treated with this class of medication. To further estimate the prevalence of these conditions within FN populations, community surveys and physician visit information should be utilized. Based on such information, our study results could help determine if adequate treatment is provided.

The female: male ratio identified in our study was 3:1 and could be due to a preponderance of females afflicted with conditions treated with antidepressant medications. Once again, with depression as an example, depression is more common among Native Indian females (Barron, Oge, & Markovich, 1999). Of note though, Bristow and Patten (2002) did not identify gender differences in treatment seeking rates for depression. Without comparison data and additional research on FN populations, it is difficult to interpret the 3:1 gender ratio.

The mean age of First Nations claimants was 40.3 years. This result could relate to the chronic nature of conditions treated with antidepressant medications and perhaps more disabling to an older patient. The mean age result may also be due to misdiagnosis at an earlier age and non-medication therapies are more likely to be recommended for or sought after by younger-aged patients. More research is needed to explore the mean age of antidepressant medication use, including onset of symptoms and age to access mental health services.

### Conclusion

Our study results are the first of their kind and identify that a significant proportion of the FN population used antidepressant medications within British Columbia during 2001. Our study results begin to estimate the prevalence of conditions treated with antidepressant medications but more research is needed, such as the use community surveys and physician visit data, to estimate the prevalence of these conditions. These study results are useful for healthcare providers and program planners, and indicate a need to plan mental health services accordingly to meet the demand within FN communities.

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# INTIMATE PARTNER VIOLENCE IN AMERICAN INDIAN AND/OR ALASKA NATIVE COMMUNITIES: A SOCIAL ECOLOGICAL FRAMEWORK OF DETERMINANTS AND INTERVENTIONS

John Oetzel, Ph.D. and Bonnie Duran Dr. PH.

*Abstract: This essay synthesizes the research on intimate partner violence (IPV) in American Indian and/or Alaska Native communities using a social ecological framework. The review of literature demonstrates that American Indian and/or Alaska Native women are at an elevated risk for IPV compared to non-American Indian women and thus this essay describes multi-level interventions that are culturally appropriate for American Indian and/or Alaska Native communities. The interventions address a variety of determinants including gender, age, socioeconomic status, alcohol, European colonization, and infrastructure.*

The annual economic victim-related costs of intimate partner violence (IPV) in the U.S. have been estimated at \$67 billion (Miller, Cohen, & Wiersema, 1996). These costs are associated with the severe and negative health and social consequences of violence to victims of IPV. These consequences include lower physical health (Brokaw et al., 2002; Hathaway et al., 2000; McNutt, Carlson, Persaud, & Postmus, 2002; Silverman, Raj, Mucci, & Hathaway, 2001), lower mental health (Hien & Bukszpan, 1999; Roberts, Williams, Lawrence, & Raphael, 1998; Woods, 2000), and lower employment status (Browne, Salomon, & Bassuk, 1999; Byrne, Resnick, Kilpatrick, Best, & Saunders, 1999). Additionally, there are significant effects on child witnesses to IPV (Carlson, 2000).

Although still understudied, an increasing number of studies about IPV in American Indian and/or Alaska Native (AI/AN) communities have appeared in the literature in recent years (e.g., Fairchild, Fairchild, & Stoner, 1998; Norton & Manson, 1995). These studies indicate that IPV is more prevalent in AI/ANs than other ethnic groups and that effectively addressing

IPV involves unique cultural aspects. However, this literature has not been integrated at this time (see Williams, 2002 for a compendium of literature on related topics). Further, the literature often fails to recognize the multidimensional nature of the determinants of IPV. Thus, the purpose of this essay is to complete a narrative literature review for research on the prevalence, determinants, and interventions for IPV in AI/AN communities. After reviewing the prevalence of IPV, the determinants and risks will be organized using the social ecological framework. The essay concludes with a discussion of how to integrate the various dimensions of the ecological model to better address IPV in AI/AN communities.

### **Prevalence of IPV**

Prevalence estimates of IPV are affected by several factors that are important for comparison across studies: Did the study include emotional as well as physical abuse? Did IPV occur in the past year or lifetime (i.e., the time frame)? Did the study include a clinical, shelter, or representative sample? (Carlson, 2000). Carlson explained that prevalence is elevated in studies that included emotional and physical abuse, referenced lifetime violence, and occurred in clinical or shelter settings. The review presents a variety of studies that illustrate prevalence and make relevant comparisons between non-American Indian and AI/ANs given the above factors.

Several studies report data from clinical/hospital samples and allow for a comparison of non-AI to AI/ANs. Bauer, Rodriguez, and Perez-Stable (2000) surveyed 734 primary care patients (31% White, 31% African American, and 36% Latina) in the San Francisco area about physical, sexual, and psychological abuse. They found that 15% of the women had experienced abuse in the past 12 months and 51% had experienced abuse in their lifetime. These findings are consistent with Wilt and Olson's (1996) review of a number of studies examining IPV in emergency rooms. In these studies, they found that IPV ranged from 4 to 30% of women seen in emergency rooms (ERs) for current IPV (i.e., for the current visit to the ER) and 11 to 54% for lifetime IPV. In comparison, Fairchild et al. (1998) surveyed 341 women at an Indian Health Service hospital on the Navajo Reservation about physical, sexual, and psychological violence. They found that 16.4% reported violence in the past 12 months, while 52.5% reported any type of violence in their lifetime (40.5% reported verbal, 41.9% reported physical, and 12.1% reported sexual).

Given that IPV rates are higher in clinical and emergency room settings (Carlson, 2000), it is also important to examine rates in population-based surveys. Wilt and Olson (1996) included a review of population-based studies for severe and lifetime domestic violence. They found a range of 0.3 to 5% of women experienced severe violence in the past year, while 8 to 22% of women experience any type of violence in the past year. Over their lifetime, 9 to 13% of women experienced severe abuse and 7 to 30% experienced any type of violence.

There are four studies of AI/AN women in the community. Lee, Sanders Thompson, and Mechanic (2002) displayed data from the National Violence Against Women Survey (Tjaden & Thoennes, 2000) and found that 61.4% of AI/AN women reported physical assault in their lifetime compared to 51.8% of women overall. Additionally, 34.1% of AI/AN women reported rape and 17.0% reported stalking compared to 18.2 and 8.2% of women overall respectively. However, the sample of AI/AN women was very small relative to the overall sample. Second, Norton and Manson (1995) surveyed 198 AI women from a reservation in the Rocky Mountain region. They found that 46% of the women experienced physical assault in their lifetime. Third, a study of a Southwestern AI community found that 31% of women reported any type of intimate violence in the past year, while 91% reported any type of intimate violence in their lifetime (Robin, Chester, & Rasmussen, 1998). Finally, a study of AIs living on or near seven Montana reservations found that 3% of women experienced physical violence and 18% experienced emotional abuse in the past year (Harwell, Moore, & Spence, 2003). The variation in these four studies can partially be accounted for by the nature of the questions asking about IPV. For example, Harwell et al. only utilized two broad questions about IPV, while Robin et al. used a modified version of the Conflict Tactics Scale (Straus, 1979) to capture a wide range of violent behaviors including emotional, physical, and indirect (e.g., witness of violence).

Finally, it is also important to compare the rates of homicide due to IPV in non- AI and AI/AN women. Arbuckle et al. (1996) completed a retrospective analysis of female homicides in New Mexico from 1990 to 1993. They found an overall homicide rate of 4.3 per 100,000 with 46% of those victims being killed by a male intimate partner. The rate of female homicide among American Indians (4.9 homicides per 100,000 people) was significantly higher than that of Hispanics (1.7) and Whites (1.8).

In summary, AI/AN women are at greater risk for violence than are non-AI women. AI/AN women are almost three times more likely to be killed by an intimate partner than Hispanics and Whites and have twice the prevalence rate of rape. Further, in population-based surveys the lifetime prevalence of any type of IPV for AI/ANs ranges from 46 to 91% compared to a range of 7 to 51% for non-Native women (see Table 1 for a summary of any type of violence in clinical and population-based samples). The range in estimates of prevalence is attributed partially to the instrument used. The majority of studies utilize the Conflict Tactics Scale (Strauss, 1979), but certain studies with low and high estimates utilize instruments that capture a limited (Harwell et al., 2003) or wide (Robin et al., 1998) range of behaviors indicative of intimate partner violence respectively. Finally, the estimates for AI/ANs are based on limited research and thus it is important for future research to provide baseline information on the prevalence of physical and emotional abuse.

**Table 1**  
**Range of Prevalence of Any Type of IPV in Population-based and Clinical Samples**

Setting	AI/AN		Non-AI/AN	
	Past year	Lifetime	Past Year	Lifetime
Clinical	16.4%	52.5%	4-30%	11-51%
Population-Based	18-31%	46-91%	8-22%	7-51%

Note: Percentages illustrate ranges found in previous studies. Single percentage indicates only one study.

### Social Ecological Framework

This review draws on the social ecologic framework as a way to organize the literature. From a public health perspective, the *social ecological framework* provides guidance to factors at multiple analytic levels that may influence IPV vulnerability and coping (Bogard, 1999). The social ecological framework identifies proximal and distal factors related to IPV victimization at five levels (Bogard, 1999; Heise, 1998; Little & Kaufman Kantor, 2002). The first level, *intrapersonal or individual*, refers to the most immediate determinants of victimization. The second level, *interpersonal*, refers to the interactions between couples, families and other small groups. The third level, *institutional or organizational*, refers to factors having to do with the culture or practices of specific institutions such as local hospitals, clinics, and multi-national corporations. The fourth level, *community*, focuses on the current and historical relationships of members of a specific physical or psychological community. The final level, *policy*, emphasizes the governmental laws and statutes (federal, state, and tribal) about violence.

A foundational principle of the social ecological framework is that IPV causes and outcomes reflect interplay of factors at multiple levels. While an individual's vulnerability to IPV may be easily traced to causes at the individual and interpersonal levels, these more immediate causes may in turn be traced to factors operating at the higher levels of institutions, communities, and social policy. Hence, the contemporary IPV prevention field is rich with targets for change that include not only individual criminal justice and psychotherapeutic activities but also advocacy, organizational change efforts, policy development, economic supports, environmental change and multi-method programs (Bogard, 1999; Heise, 1998; Little & Kaufman Kantor, 2002). Within this framework, these five levels are used to organize the following two sections on the determinants and interventions of IPV in AI/AN communities.

## Determinants of IPV

### Individual Level

At the individual level, five determinants are associated with IPV: biological sex, age, social economic status (SES), substance use, and cultural identity. Biological sex is the primary risk factor for IPV in AI/ANs (and all ethnic groups). Women are 5 to 8 times more likely to experience IPV than men (Rennison, 2001; Rennison & Welchans, 2000; Schafer, Caetano, & Clark, 1998). Rennison and Welchans (2000) found that women were the victims of IPV at a rate of 7.7/1,000 women in 1997. In contrast, there were 1.5 male victims per 1,000 for the same year. Eighty-five percent of all IPV victims were women in 1997. Finally, male-to-female violence has more serious consequences in that it is more often repeated and is more likely to result in injury or death than female-to-male violence (Schafer et al., 1998).

Studies for women in the U.S. in general demonstrate that the age range at the highest risk is 16-24 (Rennison, 2001). Two studies on AI/AN women found similar results, but did not break down the age range as much as did national studies because of smaller sample sizes. Kunitz, Levy, McCloskey, and Gabriel (1998) found that AI/AN men and women who were below 50 were more likely to strike or have been struck by a partner than men and women aged 50 or above. Fairchild et al. (1998) found that AI women aged 40 or less were 5.6 times more likely to experience IPV than women aged more than 40.

SES as measured by employment, education, and income has found to be determinants of IPV. The general literature on IPV illustrates that being unemployed is a risk factor for sexual and physical abuse for women, while less education is also a risk factor for physical abuse (Black, Heyman, & Slep, 2001; Schumacher, Feldbau-Kohn, Slep, & Heyman, 2001). Additionally, lower income and education are risk factors for being a perpetrator of IPV. For AI women, Fairchild et al. (1998) found that women receiving government assistance were 2.3 times more likely to be a victim of IPV than women not receiving assistance. Lower income also reduces a woman's access to victim services for IPV, especially in rural areas where transportation and phones can be limited resources (McEachern, Van Winkle, & Steiner, 1998).

Alcohol is often used by either perpetrators or victims in cases of IPV. Chester, Robin, Koss, Lopez, and Goldman (1994) argued that the pattern of alcohol use in Indian Country has accompanied a sharp increase in IPV. Kunitz et al. (1998) found that alcohol dependence is an independent risk factor for both being a perpetrator and victim of IPV. Finally, Norton and Manson (1995) found that 94% of cases of women who entered treatment for IPV involved alcohol (husband, wife, or both). Further, in a community sample of AI women, Norton and Manson found that a significantly greater percentage of victims of IPV (64.8%) involved alcohol problems compared to AI women who did not experience IPV (39.2%).

In addition to these risk factors, individual protective factors have been postulated. Walters and Simoni (2002) identified cultural buffers as protective factors of negative health and social outcomes resulting from trauma including IPV. Specifically, they posited that cultural practices serve as coping mechanisms to mediate the impact of IPV on negative health and social outcomes such as those noted earlier in this essay. The cultural buffers include having a strong ethnic identity, enculturation (process of identifying with one's minority culture), spiritual coping, and immersion in traditional health practices (e.g., sweat lodge ceremonies and traditional healers). Walters and Simoni argued that women who maintain a traditional cultural identity and engage in traditional practices are better able to handle traumatic events.

### **Interpersonal/Family Level**

Two risk factors at the interpersonal level include gender roles and family bonds. Gender roles refer to the social constructs of men's and women's social roles that are historically shaped, culturally contextualized, and class specific (Hamby, 2000). Gender roles involves looking at how women's social roles and social situations differ from men's, how women are treated publicly and privately, how IPV affects women's lives in different ways from men, and how IPV affects the relationship between men and women. Gender roles is usually taken to be synonymous with women in part because women continue to be subordinate in all spheres of economic, social, political and family life globally (Saltzman, Green, Marks, & Thacker, 2000). Hamby (2000) explained that the primary cause of IPV in AI/AN women (and for all women) is the gendered nature of power and control. Specifically, the goal of male batterers is to maintain male dominance, which is reproduced through gender socialization. Further, Hamby (2000) argued that SES is not a direct factor for AI/AN women, but lower SES creates stress that can result in IPV if gender domination is also present. However, Anderson (1997) found support for both sociodemographic factors and gender domination in her analysis of data from the National Survey of Families and Households.

The strength and nature of family bonds is an additional interpersonal factor. Stephens (1999) identified a key barrier for battered mothers leaving abusers is that they feel they should stay for the sake of the children. Further, children often bond with an abuser, which makes it even more difficult for women to leave. As Little and Kaufman Kantor (2002) explained, "Many battered women, if faced with a choice between the current family situation and an unknown future, including questions of where she will live, how she will support herself, or how she will cope with her children, will choose not to leave the relationship" (p. 136).

### **Organizational Level**

At the organizational level two-factors contribute to the continued experience of IPV: lack of routine screening in health care settings and lack of infrastructure for addressing IPV. Lack of routine screening for IPV in health care settings results in an unintended consequence of continued IPV. Because of the confidentiality inherent in medical care, victims may feel more comfortable reporting their IPV experience than in other settings. Unfortunately, there is a breakdown in transmission of assistance (Little & Kaufman Kantor, 2002). Many health care providers are uncomfortable addressing IPV and do not feel that health care settings, including emergency rooms, are appropriate for such intervention (Ramsay, Richardson, Carter, Davidson, & Feder, 2002). However, Rosenberg and Fenley (1991) found that 43 to 85% of women (especially those who are IPV victims) believe that screening in health care settings is appropriate. Further, primary care identification and intervention efforts could reduce IPV incidence by 75% (Rosenberg & Fenley, 1991).

Many AI/AN communities are located in rural areas, which do not have adequate victim or legal services for victims of IPV. If the services are available, transportation is an issue. McEachern et al. (1998) described the conditions of three Navajo women experiencing IPV in the western part of the Navajo reservation. These women lived far away from any of the victim services and did not own a phone or a working car. Thus, they were isolated from all other people. There were also only five police officers patrolling 4,100 square miles of land and thus they could not rely on legal system support. The rural and isolated nature of many AI/AN women places unique constraints in responding to IPV and thus the absence of infrastructure likely results in repeated violence for victims.

### **Community Level**

A key community or societal risk factor, and one that is unique to AI/ANs, is colonization. While a few researchers argued that IPV existed in AI/AN communities before the arrival of European colonizers (e.g., Durst, 1991), most authors noted that IPV is a relatively new phenomenon (Chester et al., 1994; E. Duran, Duran, Woodis, & Woodis, 1998; McEachern et al., 1998). Hamby (2000) illustrated that even if IPV existed prior to colonization, it has escalated in the last 150 years. European colonizers introduced Western patriarchy, rapid transition from hunting/farming to cash-based economy, removal of children to boarding schools and foster homes at rates 5-20 times the national average, and relocations to less desirable areas (Chester et al., 1994; McEachern et al., 1998). These factors produced cataclysmic changes in spiritual, social, and economic structure and drastically changed traditional lifestyles, thus creating historical trauma (B. Duran, Duran, & Brave Heart, 1998; E. Duran et al., 1998). Historical trauma is "unresolved trauma and grief that continues to adversely affect the lives of survivors of such trauma" (E. Duran et al., 1998, p. 99). Historical trauma is passed from one

generation to the next such that events that happened many years ago still impact people today.

These changes and the resulting historical trauma altered the way that AI/AN men and women related (Brave Heart & DeBruyn, 1998; E. Duran et al., 1998). E. Duran et al. (1998) argued that these influences created antagonistic relationships between AI/AN men and women. For example, traditionally within Navajo culture, men and women shared equal rights and status. Navajo common law emphasizes reciprocal relationships between a husband and wife (McEachern et al., 1998). Further, the influences of European colonization robbed most AI/AN men of their traditional roles and they lost status and honor (E. Duran et al., 1998). To regain honor and control of their lives, some AI/AN men mirrored the European model of control and power over their intimate partners. Thus, women's subordination or gender inequality among AI/ANs is largely a consequence of European contact and colonialism (Chester et al., 1994; E. Duran et al., 1998; Hamby, 2000; McEachern et al., 1998).

### **Policy Level**

At the policy level, there is limited research identifying the direct relationships between laws and the occurrence of IPV. Rather, most of the determinants at this level are offered as the result of anecdotal evidence or speculation. Specifically, the consequence for perpetrating IPV is relatively minor and thus protection for victims is minimal. The monitoring of defendants (i.e., perpetrators) is minimal and in some cases violating protection orders results in a misdemeanor rather than a felony (Newmark, Rempel, Diffily, Kane, 2001). For example, two reports by the New Mexico Intimate Partner Death Team Review (Crandall, Worthington, & Wilson, 1999; Olson & Crandall, 1998) found that 19% of 73 women killed by intimate partners from 1993-1998 had an order of protection. Further, in 42% of these cases, the order of protection had been violated.

### **Intervention Strategies**

Mainstream interventions are an important part of the response system for AI/ANs. Groginsky and Freeman (1995) noted that AI/AN women have many of the same needs and should have the same referral for services that women from other ethnic groups receive. Further, Groginsky and Freeman argued one cannot assume an AI/AN woman will want traditional cultural services or AI/AN advocates just because she is AI/AN. However, it is important to note that the economic resources for many AI/AN women are limited and thus they cannot rely completely on mainstream services (Hamby, 2000). Furthermore, mainstream interventions were not uniquely designed for AI/ANs and thus they are not necessarily consistent with their cultural values. In this section, we focus on culturally specific interventions for addressing IPV.

### **Individual Level**

E. Duran et al. (1998) discussed the importance of repairing antagonistic relationships between AI/AN men and women with culturally sensitive therapy. They argued that traditional psychotherapy has the potential to reinforce antagonistic relationships and thus create epistemic violence. Epistemic violence occurs when the “production of meaning and knowledge fails to capture the truth of Native and tribal lives” (E. Duran et al., 1998, p. 97). For example, epistemic violence might occur when a well-meaning therapist only addresses individual-level factors for violence in a relationship, especially encouraging mainstream behaviors to address the problem. Epistemic violence is overcome when a therapist can (a) help a Native patient connect to the role history and colonization has contributed to the current social problems, (b) help re-connect the patient to traditional indigenous healing methods, and (c) help the patient reach out and see the commonality of his/her problems with others in the community and contribute to community through narratives of both wounding and healing.

E. Duran et al. (1998) advocated an approach called hybrid therapy. Staff is trained in Western and AI/AN treatment systems and Western-trained AI/AN and other psychotherapists work alongside traditional AI/AN healers. Non-native practitioners should be provided a network of traditional healers, but they can make their own networks by contacting traditional healers and/or tribal programs on their own to form hybrid teams. The bicultural approach is designed to acknowledge historical roots of trauma, moves the patient towards culturally-appropriate sanctions, and allows individuals to redefine themselves in culturally appropriate ways. Hybrid therapy is theoretically and culturally grounded in the historical relationships and experiences of AI/ANs, particularly related to historical trauma from colonization. There are three steps in the protocol: (a) assessment about overall mental health functioning, level of acculturation, spiritual functioning, and general health; (b) implementation of psychotherapy and traditional ceremonies as appropriate; and (c) evaluation and further recommendation for ongoing therapy and/or participation in traditional ceremonies as warranted (B. Duran et al., 1998; E. Duran et al., 1998). E. Duran et al. (1998) and B. Duran et al. (1998) described why hybrid therapy should work, but no direct empirical evidence is available. Thus, future research will need to investigate the benefits of hybrid therapy and whether it is more beneficial than mainstream psychotherapy.

### **Interpersonal Level**

Interventions at the interpersonal level include counseling both the victim and the perpetrator together (and possibly other family members). While there are examples of this intervention in mainstream psychotherapy (e.g., Dunford, 2000; O’Farrell, Van Hutton, & Murphy, 1999), there are no studies that focus specifically on AI/AN couples. One study reported the benefit of a traditional aboriginal healing ceremony, called the Healing Circle,

in a cognitive therapy group of three Ojibway and two non-aboriginal survivors of sexual abuse (Heilbron & Guttman, 2000). The ceremony contributed positively to the healing process. However, the benefit of family-level interventions for AI/AN couples is unknown.

### **Organizational Level**

Intervention at the organizational level includes two settings: domestic violence shelters/programs and traditional health care centers. Norton and Manson (1997) described a successful domestic violence program for urban AI women. The program had trouble with AI women stopping therapy after a few initial office visits. The program set up a more flexible program that included home visits to build trust in a familiar environment (and also alleviate transportation problems). After the success of home visits, the program began a weekly domestic violence group in an informal setting (a potluck dinner). Outcome data from this program was not available, but the anecdotal evidence of maintaining scheduled appointments and building trust provides a promising strategy for other domestic violence programs serving urban AI women.

Health care intervention is usually confined to the identification of IPV victims. Unfortunately, the identification rate of IPV in patients is poor in mainstream populations. For example, Martins, Holzapfel, and Baker (1992) found that physicians' files documented only 1% of possible cases in a population with an IPV prevalence of 30% (including physical and emotional violence). Ideally, health care providers would have a policy of routine screening to detect cases of IPV. Clark (2001) examined the screening rates of Indian Health Service facilities and found that facilities with policies and procedures for domestic violence were more likely to screen than facilities without policies. Additionally, having a domestic violence committee increased the likelihood of screening. These findings suggest the importance of having policies for screening for IPV and services to treat IPV in a culturally appropriate manner. Additionally, health care providers need training on how to screen and talk about IPV with patients since, from the patient perspective, shame, fear of criminal justice involvement, and fear of more violence also may prevent honest disclosure (Chester et al., 1994; B. Duran et al., 1998).

### **Community Level**

A critical first step for AI/AN communities is to have the infrastructure to address IPV. It is important that communities have mental health services (e.g., therapy and shelters) integrated into the health-care system (Chester et al., 1994; Groginsky & Freeman, 1995). These services especially need to emphasize confidentiality because many AI/AN communities tend to be small and "everyone knows everyone else."

However, the infrastructure is not sufficient in and of itself because infrastructure does not address historical trauma caused by colonization.

Researchers (B. Duran et al., 1998; Durst, 1991; McEachern et al., 1998) argued that the services provided to address IPV need to emphasize community-level responsibility and not simply individual responsibility. They argued that the community-level is most appropriate in AI/AN communities to not only respond to IPV, but also to prevent it from occurring in the first place. Durst (1991) studied two Alaska Native communities and their responses to IPV. He found that both communities increased active response toward IPV, but that active response included both privatization and communitarian. Privatization is the approach found in most social work approaches such as having a professional therapist privately and separately counsel the perpetrator and victim. Communitarian responses involved the larger community, for example, by involving the tribal leaders to go to the family and “counsel” them in the manner of an elder. Durst found that social work interventions that focused on the community at large have a positive impact on changing attitudes about IPV and thus encourage community-based action. Steps need to be taken to protect confidentiality of the family in order for the communitarian approach to be effective. For example, the tribal leaders would need to maintain privacy of the specific couple, but can involve the larger community in discussions about violence and how to prevent future violence.

McEachern et al. (1998) advocated a similar approach to addressing IPV. They argued for a Freirian approach to overcoming the oppression faced by AI/ANs as a result of colonization. Freire (1970) illustrated the importance of critical awareness and reflection through dialogue or “liberating education” for allowing people to escape the bounds of oppression. McEachern et al. argued that dialogue groups could help women come together and explore their lives. They were careful to note that we must trust women to have the answers to improve their situation. They also noted that men can be helped to understand how various forms of oppression have contributed to their place in life and help them move beyond violence in the household. McEachern et al. explained that the use of dialogue is appropriate because of its fit with cultural values (Navajo in particular), but also because it does not require outsiders to come in and try to “fix” the problem.

A third community-level approach involves the use of healing rituals for addressing historical trauma in general, which helps to prevent IPV (Brave Heart, 1999; B. Duran et al., 1998). B. Duran et al. (1998) described an approach used in the Lakota community that they feel have some application to other AI/AN communities. The Lakota intervention model included a memorial for the massacre at Wounded Knee and “catharsis, abreaction, group sharing, testimony, opportunities for expression of traditional culture and language, ritual, and communal mourning.” (p. 72). The purpose of the model was to help the community members facilitate mourning, tolerate effects that accompany the trauma, and validate/normalize the traumatic response. The authors also noted that all participants felt better about themselves after the intervention with 75% expressing high agreement that

the intervention helped them overcome feelings of cultural shame. However, direct evidence about the effect on violence is needed with future research.

A fourth community approach is the *Kanuhkwene* project (Hagen & House, 1995). The project was developed by Oneida women to address critical social issues including domestic violence. The women created an organization of women based on Oneida values of community and connection with the social and natural world. The project integrates mainstream and traditional social services and has restored some of the balance in gender roles. Although the evidence is anecdotal, the *Kanuhkwene* project demonstrates the possibilities for women creating a network of support for themselves to address important social issues in a culturally appropriate manner.

These four approaches are all culturally appropriate responses for responding to and preventing IPV. However, while all four may be appropriate for AI/ANs in general, each is contextually bound to a particular AI/AN community. Hamby (2000) argued that interventions for IPV have to be created specifically for each AI/AN community because each community has different gender roles resulting from patriarchy/matriarchy, matrilineal (line of descent or clan membership is passed through the mother), or matrilineal (living and social arrangements focused on the women's family of origin) relations. These three factors result in different authority, restrictiveness, and disparagement of women (Hamby, 2000). Thus, while there are some common features for AI/AN communities (e.g., colonization and historical trauma), it is important to not overgeneralize any intervention and to make sure it is appropriate for a given community before implementation.

### **Policy Level**

There are three types of legal measures that are designed to prevent further IPV: civil legal sanctions (i.e., protection orders), arrests, and domestic violence courts. These measures have mixed success in mainstream settings. For example, protection orders serve as a deterrent for some male perpetrators, but half reabuse and a few even kill their intimate partners (Fagan, 1996). Additionally, arresting perpetrators of IPV has the following results: (a) arrest is associated with less repeat offending; (b) the reduction in repeat offending associated with arrest is modest compared to other factors (e.g., batterers age and prior criminal record); (c) regardless of whether the batter was arrested, less than half of the suspects committed a subsequent offense; and (d) a minority of suspects continued to perpetrate IPV regardless of whether they were arrested (Maxwell, Garner, & Fagan, 2001). However, these findings have not been established specifically in AI/AN communities.

### **Conclusions: Integrating Levels of the Social Ecological Model**

The impact of mainstream interventions at any given level is small to moderate. The likely reason for this limited impact of any given intervention

is that it does not address determinants at multiple levels. For example, therapy for perpetrators appears to reduce IPV and may address some individual and perhaps couple-level determinants (e.g., substance abuse and control issues). However, the therapy likely does not adequately address historical trauma associated with colonization, or policies that have limited consequences for perpetrators. Additionally, providing adequate infrastructure for victim services does not address legal concerns if these agencies are not coordinated. Multi-level interventions for IPV have rarely been addressed in the literature, especially for AI/AN communities. In closing, we discuss one model of multi-level interventions for IPV in mainstream communities, and then summarize culturally appropriate and multi-level interventions for AI/AN communities.

The Services-Training-Officers-Prosecutors (STOP) Violence against Women Formula Grants program provides funding to stimulate the growth of programs serving women victims of violence. Federal funding for the STOP program between 1995 and 2000 totaled \$672.2 million and supported over 9,000 subgrants (Zweig & Burt, 2003). Zweig and Burt recently completed an evaluation of the STOP program and how it influenced women's services. The authors included both a community sample (1,509 women in 26 communities) and a victim service sample (500 women from nonprofit victim services and 390 from legal system agencies) to assess women's attitudes and behavior regarding IPV interventions. In general, they found that women reported benefiting from the services especially when victim services agencies worked in collaboration with the legal system and other relevant services. Women reported that coordinated agencies were more helpful and were more satisfied with the legal system. Further, arrests and convictions occurred more frequently when community agencies worked together. Thus, the STOP evaluation helps to illustrate that the multi-level interventions are more effective than interventions at any single level.

The STOP evaluation did not target AI/AN communities in particular and thus we are left to speculate what an effective multi-level intervention would look like for these communities. These interventions will need to be culturally appropriate and focus on universal as well as selected and indicated prevention. Universal prevention is broad efforts to educate, inform, and address the public in order to encourage non-violent behavior. Selected prevention involves intervening with the perpetrator before violence becomes an entrenched pattern, while indicated prevention focuses on interventions after violence occurs. The common thread in selected and indicated prevention is that IPV has already occurred. Unfortunately, most resources have been targeted to indicated prevention to the exclusion of universal prevention (Gundersen, 2002). We suggest that a multi-level intervention can address both universal and selected/indicated prevention.

Table 2 illustrates a social ecological approach to interventions to address IPV in AI/AN communities. We reiterate that specific interventions need to be tailored to each particular tribe in order to be culturally appropriate

**Table 2**  
**Social Ecological Framework for Prevention of IPV**

<b>Level</b>	<b>Primary</b>	<b>Secondary/Tertiary</b>
Individual		
Hybrid Therapy		X
Interpersonal/Family		
Communication Skills Training for Families	X	
Hybrid Family Therapy		X
Organizational		
Screening by Health Care Providers		X
Coordination of Agencies		X
Community		
Healing Rituals	X	X
Community Dialogues	X	
Policy		
Encourage policy makers to provide resources for infrastructure		X
Encourage policy changes regarding economic development	X	X

(Hamby, 2000). One way to approach tribal specificity is to engage in Community Based Participatory Research (CBPR) that ensures that local tribal members and their representatives will have a prominent voice in the research and intervention process (Chavez, Duran, Baker, Avila, & Wallerstein, 2003). At the individual level, prevention efforts focus on hybrid therapy and are predominantly selected/indicated (B. Duran et al., 1998; E. Duran et al., 1998). The therapy applies primarily to perpetrators, but also could be applied to victims of violence. The advantage of hybrid therapy is that it combines both mainstream and traditional approaches to address violence. This approach is inclusive rather than assuming all AI/ANs want to be treated with only mainstream or traditional healings.

At the interpersonal/family level, universal prevention can be addressed with communication skill training. One aspect that contributes to IPV is the lack of communication skills to address conflict when it arises. This intervention can focus on culturally appropriate conflict management skills for intimate partners. The type of training may also be appropriate as selected prevention if victims and perpetrators decide to remain in their relationship. The skill training should include a focus on communicating

emotions. Umberson, Anderson, Williams, and Chen (2003) found that violent men are less emotionally reactive (i.e., repressed emotions) to stress and relationship dynamics than nonviolent men. This skill training would likely be accessed at the organizational level via agencies such as shelters and community centers. Selected/indicated prevention can be addressed through family therapy that addresses complex factors associated with violence such as attachment, complicated bereavement, and multigenerational family issues. The family therapy will need to include culturally appropriate values and likely hybrid therapy can be applied at this level.

Selected/indicated prevention is the main focus at the organizational level. Assessments by health care providers are a critical component at this level. Indian Health Service, tribal, and private health care providers will need to have training in cultural competence in order to obtain accurate and complete information in interactions as well as develop useful screening instruments. After diagnosing IPV, health care providers will need to coordinate with victim service agencies to provide adequate treatment. Finally, victim services will need to integrate their efforts with the legal system to provide protection for victims.

At the community level, healing rituals provide the opportunity for universal and selected/indicated prevention. Healing rituals (Brave Heart, 1999, 2003; B. Duran et al., 1998) provide an opportunity to address historical trauma. While historical trauma can be addressed on an individual level, the public health benefit is greater at the community level. Additionally, community dialogues provide an opportunity for universal prevention (Durst, 1991; McEachern et al., 1998). These dialogues provide a proactive approach from the community members themselves to address their own problems.

Finally, at the policy-level great focus needs to be placed on increasing resources to address IPV. The coordination of agencies and provision of services is only possible if the tribe has adequate resources. On a more global level, policy changes are needed to stimulate economic development. Increasing employment opportunities will help reduce the stress in families that can be a determinant at the individual level (Little & Kaufman Kantor, 2002).

In conclusion, AI/AN women have a greater prevalence of IPV than do non-AI women. In order to adequately assess this health disparity, it will be necessary to utilize culturally appropriate multi-level interventions that adequately address determinants that occur at individual, interpersonal, organizational, community, and policy levels. While the social ecological framework makes intuitive sense, there are few multi-level interventions to address IPV and none in AI/AN communities. Further research is needed to better understand how interventions at different levels work together to reduce IPV (both universal and selected/indicated prevention). If we are to reduce IPV in AI/AN communities, we will have to overcome several barriers including the lack of funding for AI/AN communities and the lack of practitioners of Western psychotherapy and traditional AI/AN practices.

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