

Perceived Discrimination and Early Substance Abuse among American Indian Children*

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This study investigated internalizing and externalizing symptoms as potential mediators of the relationship between perceived discrimination and early substance abuse among 195 American Indian 5 through 8 graders from three reservations that share a common culture (e.g., language, spiritual beliefs, and traditional practices) in the upper Midwest. The findings indicated that, although perceived discrimination contributed significantly to internalizing symptoms among the adolescents, internalizing symptoms were unrelated to early substance abuse. Rather, the effects of perceived discrimination on early substance abuse were mediated by adolescent anger and delinquent behaviors. The results are discussed in terms of the consequences of perceived discrimination on the development of American Indian early adolescents.

There is an abundance of research indicating that discrimination harms adults. It is associated with global measures of psychological distress (Williams et al. 1997), depressive symptoms (Finch, Kolodny, and Vega 2000; Kessler, Mickelson, and Williams 1999; Ren, Amick and Williams 1999), low self-esteem (Dion 1975; Pak, Dion, and Dion 1991), and anxiety symptoms (Kessler et al. 1999). Discrimination also affects physical health. For example, it acts as a chronic stressor that has been linked to high blood pressure (Krieger and Sidney 1996) and perceptions of general health (Ren et al. 1999). Race and social class are strongly associated with high mortality rates among minorities (Otten et al. 1990) and

minority access to medical care (Krieger, Rowley, and Herman 1993).

Although there is a growing literature on health and mental health effects of discrimination among adults, we know relatively little about its effects on early development. Experiencing discrimination may be particularly salient during early adolescence when children are establishing ethnic identities and interpreting the meaning of being a member of a minority group. Perceived discrimination may interfere with establishing identities by introducing confusion regarding self-worth (e.g., internalization of the hatred and disrespect they see around them) or by contributing to angry, externalizing reactions which may result in self-destructive behaviors such as delinquency and substance abuse. This report is an investigation of the ways perceived discrimination contributes to early onset substance abuse among 5th through 8th grade American Indian children from three reserva-

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tions located in the upper Midwest. After finding strong direct effects of perceived discrimination on early onset substance abuse, we examined potential mediating effects of internalizing and externalizing symptoms on the relationship between perceived discrimination and early onset substance abuse to better understand the specific mechanisms at work.

Discrimination as a Source of Stress

Discrimination is considered an important source of health-related stress for adults. Kessler and colleagues (1999) have pointed out that, although the negative mental health effects of discrimination are known, it has not been often considered as a potential stressor. Their findings indicate that discrimination is a more powerful source of stress than previously believed. It ranks in power with major negative life events such as death of loved one, divorce, and job loss (Kessler et al. 1999:227). Moreover, they suggest that, if their results are upheld, "the conjunction of high prevalence and strong impact would mean that discrimination is among the most important of all the stressful experiences that have been implicated as causes of mental health problems" (Kessler, et al. 1999:224).

Evidence is growing that discrimination based stress functions similarly to that of other psychological stressors (Dion, Dion, and Pak 1992; Thompson 1996; Williams, Spencer, and Jackson 1999). Perceived discrimination has been associated with changes in physical reactivity in laboratory settings (Anderson 1989; Jones et al. 1996). Epidemiologic studies link perceived discrimination to high blood pressure (Krieger and Sidney 1996). Numerous studies have reported an association between perceived discrimination and psychological distress (Kessler et al. 1999).

Developmental Effects of Discrimination

If discrimination is such an important source of stress for adults, it may be a particularly insidious risk factor for the development of children exposed to it. Early adolescence is the time when children are forming their ethnic identities (Phinney 1989). It is also a time when children are most concerned about being similar to one another and "fitting in"

(Brownstone and Willis 1971). This need for conformity peaks during early adolescence (i.e., 11–13 years) (Constanzio and Shaw 1966; Gavin and Furman 1989). Overt rejection from the majority culture at this point in the developmental process is likely to have serious emotional and behavioral consequences. Without proper coping mechanisms in place (Phinney and Chavira 1989), early adolescents are likely to respond to discrimination by withdrawal and internalizing symptoms or with angry, externalizing behaviors (Williams-Morris 1996).

Most of what we know regarding early consequences of discrimination comes from research with minority groups other than American Indians. Phinney and colleagues' (1989) work pertaining to African American children indicates that as adolescents begin to form their ethnic identities, they will be exposed to and become increasingly aware of discrimination. Successfully coping with discrimination involves the formation of active coping strategies (Phinney and Chavira 1995). According to Williams-Morris (1996), as children become aware of their racial identities, they begin to process information associated with these identities. This information, based on interpersonal interactions and societal norms, elicits a response based on personal resources (e.g., social class, social support). The response may be adaptive or maladaptive. Maladaptive responses include internalizing symptoms (e.g., depressive symptoms, low self-esteem) based on the internalization of the hatred and attacks on the adolescents' self-worth, or externalizing symptoms where the child may respond with anger, aggression, and delinquent behaviors. For example, among Hispanic adolescents, acculturation stress (which includes discrimination as one dimension) has been linked with alcohol and marijuana use (Vega and Gil 1999).

Among American Indian children and adolescents, discrimination has been linked to internalizing symptoms such as depressive symptoms (Johnson 1994), low self-esteem, and feelings of inadequacy (Locust 1988). There also are numerous studies that tie feelings of alienation and discrimination by the majority culture to academic troubles and school drop out (Bowker 1992; Ledlow 1992; Lin 1987; Sanders 1987; Van Hamme 1996). The relationship between discrimination and externalizing behaviors among American

Indian children and adolescents is less clear. Most of the work pertaining to externalizing behaviors has focused on broader measures of cultural identity (Oetting and Beauvais 1990/1991) and direct effects of cultural identity on negative behaviors have yet to established (see Beauvais 1998 for review).

Coping with Discrimination

Like all psychosocial stressors, the effects of perceived discrimination are not uniformly distributed. The effects of discrimination may vary by ethnic group and social location. As with many cultural indicators, coping styles may vary from one ethnic group to another based on cultural values and social location. For example, American Indian children are taught to be respectful, not boastful, and to not put themselves forward in social situations. They are less apt to overtly assert "ethnic pride" than young people from other cultures. Also, American Indian children may be less socialized to expect and to cope with discrimination than their African American counterparts (Phinney, and Chivira 1995). American Indian youth who have grown up on reservations or close to reservations are accustomed to a supportive community environment. Many have spent at least some of their primary school years in tribal schools. They may be unprepared to be an "out group" when they enroll in public schools.

We also believe the coping mechanisms of discrimination based stress may be culturally specific and may even function differently by subculture within ethnic groups. For example, urban American Indians may respond differently to perceived discrimination than rural reservation American Indians. There also may be differences among the more than 500 federally recognized and 365 state recognized American Indian nations (Manson and Trimble 1982). These separate cultures vary significantly from one another in values, spiritual beliefs, kinship patterns, economics, and levels of acculturation.

Ethnic minorities may attempt to cope with perceived discrimination in various ways. Parrillo (1985) has suggested four: defiance, deviance, avoidance, and acceptance. Defiance is characterized by outspoken challenges to the discriminatory behaviors. Withdrawal or avoidance pertains to the refusal to acknowl-

edge or deal with discriminatory practices. Deviance, for Parrillo, refers to civil disobedience. Acceptance refers to the minority group accepting and acquiescing to majority group norms. American Indian values of respect, modesty, and not putting ones' self forward may make active defiance very difficult, particularly for children and adolescents. Even though the adolescent may feel defiant, expressing it directly may be very difficult. Defiance and anger may be expressed indirectly through acting out angry feelings and engaging in deviant behaviors. Acceptance of the majority norms may result in self-hatred and depressive feelings. Similarly, avoidance may mean internalizing emotional effects of perceived discrimination and withdrawing emotionally and physically from threatening situations.

In our view, the coping styles really come down to two choices: internalizing and externalizing. The child may respond to discrimination stress with internalizing symptoms such as avoidance, withdrawal, depression, and somaticization. Or he or she may respond with externalizing symptoms such as anger, defiance, and deviant behaviors.

Hypotheses

Although Whitbeck and colleagues (under review) report a strong association between perceived discrimination and substance abuse among American Indian adolescents, the nature of the relationship is unclear. The effect of perceived discrimination on substance abuse may be a consequence of internalizing symptoms (e.g., depressive symptoms, withdrawal, and anxiety). Or, it may result in anger which, in turn, contributes to externalizing behaviors such as delinquency and early substance use. Coping mechanisms may also vary by child characteristics (e.g., gender, age). Younger children who lack the physical resources and confidence to assert themselves may react with feelings of helplessness, withdrawal, self-blame, and depression. Similarly, girls may be more apt to respond to stressors with depressive symptoms and other internalizing symptoms than are boys (Downey et al. 1994).

To understand the mechanisms through which discrimination leads to early onset substance abuse, we proposed two possible medi-

ating models. First, we hypothesized that discrimination results in internalizing symptoms that, in turn, lead to early use of alcohol and drugs. This hypothesis was based on research findings that suggest American Indian children who experience alienation from the majority culture withdraw via school rejection, dropping out, (Bowker 1992; Eberhard 1989) depression (Johnson 1994; Jilek 1981), and even suicide (Bechtold 1994). Girls and younger children may be more susceptible to internalizing symptoms than boys or older children based on perceived power differentials and gender role socialization.

Our second hypothesis was that discrimination stress elicits an angry response among American Indian early adolescents which increases the likelihood of delinquent behaviors and substance abuse. Rejection by the majority at a time when there is a need to be included may result in associations with non-conventional, potentially deviant peers (e.g., Moffitt 1997; Patterson 1982) and a downward spiral characterized by deviant behaviors, academic problems, and substance abuse. This loss of interest in conventional behaviors may reflect anger at exclusion, and may be more typical of boys and older adolescents due to socialized gender roles and asserting one's independence from the in-group. Both anger and delinquent behaviors were predicted to increase the likelihood of early substance use and to mediate the effects of perceived discrimination on early onset substance use.

METHOD

Sample

The research team was invited to work on the three reservations, and tribal resolutions were obtained prior to application for funding. Advisory boards on each reservation provided oversight and approved all questionnaires and procedures. Final approvals from tribal governments were obtained before interviews began. Written reports such as this one were read and approved by advisory boards prior to being submitted for publication. Among the agreements made with the participating tribes was the condition of tribal anonymity. Years of researcher exploitation have created suspicion and caution among American Indian nations concerning reservation problems and issues

(Deloria 1969; 1991). In some cases, irresponsible research has resulted in negative community images that had serious economic consequences (e.g., Foulks 1989). All of the reservations were located in the upper Midwest and, with some very minor regional variations, shared a common language, common spiritual beliefs, and common traditional practices.

Almost all project interviewers were tribal members trained by the research team. The few exceptions (two or three people) were well known to the people (spouses or relatives of tribal members) and approved by the relevant tribal advisory board. All permanent reservation staff members were tribal enrollees.

This report is based on interviews with 220 children (120 boys and 100 girls) who participated in a baseline survey for a prevention study conducted on three American Indian reservations located in the upper Midwest. In the analysis, 25 cases were lost to listwise deletion of variables to yield a final sample of 195 children. To be eligible to participate in the study the children had to be enrolled tribal members and in the 5th through the 8th grades. Each of the participating tribes provided a listing of all enrolled families with a child in the eligible age range. All families living on or within 50 miles of the reservations were invited to participate in the study. At least one parent and the selected target child had to participate in the interview to be counted as a completion.

We used recruitment methods recommended by tribal elders that were based on cultural values and traditions involving asking for help. The recruitment process was approved by tribal advisory boards. In this culture, tobacco is sacred and is offered as a gesture of respect and the seriousness of a request when one is asking for help. By accepting tobacco, the person is entering into a contract to provide assistance. A person is free to refuse the tobacco if he or she feels unable or unwilling to provide the help requested. After an explanation of the research project parents were asked to help with the future of tribal children and families by participating in the project. They were respectfully offered tobacco and given a small gift of wild rice just for listening to our request. Tobacco is widely used in this culture and its use introduced no bias in the recruitment process.

Using the elders' suggestions, 83.5 percent of the eligible families completed the baseline

survey. Non-respondent families included 10 percent who refused to participate and six percent who could not be located for recruitment prior to the beginning of the study. Refusal rates did not vary significantly by reservation or by residence of family (on- vs. off-reservation). The non-contacts were primarily from the more rural and remote areas of the reservations.

Almost all of the children's families lived on or near the reservations or in adjacent rural communities (eight families lived in urban areas). While there is some geographical distance between the reservations (approximately 150 miles between study sites), the sample should be considered relatively homogeneous in context. The reservations are quite similar. They are located in rural areas with immediate proximity to rural areas and small towns of under 20,000 people. There is little to distinguish the reservations from one another, particularly with respect to interactions with people from the majority culture. Although each reservation has a tribal or reservation-based school, the teachers are predominantly European American. Each of the reservations has at least one casino that brings in a diverse group of outsiders. However, these are relatively recent developments and the economic impact on the average tribal member has been slight.

The adolescents' ages ranged from 9 years to 16 years. The average age of the boys was 12.2 years; the average age for girls was 12.1 years. The sample was well distributed across grade level with about one-fourth of the children in each grade. Over one-third (38%) of the children lived in single-parent households. One third of the children (31% boys; 34% girls) had never lived with their biological fathers; 32 percent had lived with their biological father at some point in their lives but not at present; and 34 percent currently live in a household with their biological fathers.

Although, each reservation operated resort casinos they varied in geographic isolation and economic development. Regardless of overt economic development, the majority of the responding parents were not well-off. One-fourth (25%) of the dual-parent households had incomes of \$35,000 or more compared to only 7 percent of single-parent households. 33 percent of dual-parent households and 19 percent of single-parent households had incomes of between \$20,000 and \$35,000. Eighteen

percent of dual-parent households and 21 percent of single-parent households had incomes of between \$15,000 and \$20,000. 14 percent of dual-parent families had incomes of between \$10,000 and \$15,000, as did 23 percent of single-parent households. Almost one-third (30%) of the single-parent households were getting by on less than \$10,000 per year, as were 10 percent of dual-parent households. Forty-three percent of the dual-parent and 37 percent of the single-parent households received food stamps. 40 percent of the dual-parent and 39 percent of the single-parent households received family assistance of some type.

Measures

The *age of adolescents* was measured as a continuous variable. The range was 9 to 16 years. As previously noted, the average age of the target adolescents was 12.1 years. *Gender* was coded as a dummy variable (0 = female, 1 = male). Nearly equal numbers of boys and girls (54% male, 46% female) were in the sample.

The measure of *household per capita income* was created through a two-step process. First, our ordinal measure of household income was recoded to midpoints of 10 categories ranging from 1 = below \$5000 to 10 = \$75,000 or more. Second we divided the recoded income variable by the number of people living in the household to produce a per capita amount. To reduce skewness, the natural logarithm of this measure was computed, and analyses were based on the logged version of the measure. Each of these three measures is included as a single indicator construct (i.e., assumed to be measured without error) in the structural equation models.

Perceived discrimination was assessed as a latent construct made up of three factors derived from factor analysis of a ten-item discrimination scale. Response categories for the ten-item scale ranged from 1 = never to 3 = always. Cronbach's alpha for the full scale was .80. Global discrimination was a five item measure consisting of general experiences such as being ignored because of ethnicity, being excluded from activities, verbal insults, threats of harm and hearing racial slurs. Authority discrimination was made up of three items that included being treated disrespectfully by a store clerk, hassled by police because of

ethnicity, or having adults suspect them of doing something wrong because they were American Indian. School discrimination consisted of two items concerning whether the adolescents' teachers had acted surprised when they did well or expected them not to do well because of their ethnicity.

Substance abuse was also assessed as a latent construct made up of three dimensions representing behaviors that are both normally and legally sanctioned for children and adolescents. Early onset of substance abusing behaviors, whether or not including activities that would be legal for adults, is an important indicator of problem behavior among the targeted age group. Alcohol problems was assessed by an index of the number of problems experienced in the past year by adolescents due to their alcohol use. The index items included problems with family, at school, drinking enough to experience hangover, becoming depressed or sad when drinking, and having to drink more to get drunk. The response categories were 0 = no, 1 = yes. Alcohol abuse was measured with three items concerning drinking patterns. Adolescents were asked whether they drank, got drunk, or binged. Response categories were 0 = no, 1 = lifetime, 2 = past year, 3 = past month. Substance use was assessed by a count of the number of substances the adolescent reported using the past six months. The measure ranged from 0–11 substances and included tobacco, alcohol, marijuana, inhalants, depressants, stimulants, and hallucinogens.

Internalizing symptoms was measured with the internalization subscales from the Youth Self-Report (Achenbach, 1991). Cronbach's alpha for the internalization subscales was .86. A latent construct was developed consisting of the three subscales: withdrawn (seven items), somatic complaints (nine items), and anxious/depressed (15 items). Response categories for all of the Youth Self-Report items are 1 = not true, 2 = somewhat true, and 3 = very true.

Anger was assessed as a latent construct made up of three individual items: "I get angry," "I am quick tempered," and "I get mad." Response categories ranged from 1 = most the time to 3 = none of the time.

Delinquent behavior was measured as a latent construct with two delinquency scales: Elliott's delinquency checklist (Elliott and Ageton 1980) and the delinquent behavior sub-

scale from the Youth Self-Report (Achenbach, 1990). Elliott's delinquency checklist is a 16-item checklist in which the adolescent indicated how often they had participated in delinquent behaviors such as running away, taking something worth more than \$50, or being placed in detention or jail. Response categories ranged from 1 (never) to 5 (very often). Cronbach's alpha for the measure was .91. For the Youth Self-Report delinquency subscale, response categories ranged from 1 (not true) to 3 (very true). Cronbach's alpha for the Youth Self-Report subscale was .78.

As is typical with surveys targeting younger respondents, there was a moderate level of item non-response. Within scales, where we had sufficient numbers of responses, the complete scale score was imputed from available data. For example, on the Youth Self-Report subscales, a value was imputed if at least half of the items in the subscale had valid responses. After computation of these imputations, a listwise deletion of missing cases still resulted in dropping 25 cases from the analysis. It would have been possible to use other imputation methods (e.g., imputing the mean sample score, regression based estimation), however, with such a small sample, we feared the potential for biasing the results. The only variable that was significantly related to the listwise deletion was age. Younger children were more likely to have been excluded because of missing data. This represents well-established linkages between cognitive development and questionnaire responses. Because we did not find significant differences for other variables in the model, we do not believe that excluding these cases introduces bias in the data analysis and interpretation.

RESULTS

Prevalence of Perceived Discrimination

Even though the respondents were in 5th through 8th grades, they had already experienced significant discrimination. Almost one-half (49%) the adolescents reported that they had been insulted because of being an American Indian (Table 1). About one-fourth (23%) had felt disrespected in a place of business due to ethnicity. 49 percent had heard a racial slur yelled at them. 14 percent had been threatened physically. More than one-half

TABLE 1. Frequency table of perceived discrimination among American Indian Adolescents

	Male % N = 103	Female % N = 92	Total % N = 195
Insulted because of being American Indian	44	54	49
Disrespected in business because of being American Indian*	23	40	31
Being hassled by police because of being American Indian	11	5	8
Being excluded by other kids because of being American Indian	20	28	24
Being suspected because of being American Indian	25	28	27
Someone yelled racial slur/insult at you	49	52	51
Been threatened physically because you're American Indian	14	15	15
Teachers surprised you do well as American Indian	54	54	54
Other kids being unfair because you're American Indian	31	38	34
Teachers don't expect you do well because you are American Indian	25	33	28

* $p < .05$

reported that their teachers seemed surprised when they did well in school (54%); 25 percent felt their teachers did not expect them to do well on their schoolwork. One-fifth, (20%) felt the other children excluded them due to ethnicity and 31 percent felt that the other children treated them unfairly due to their being American Indian. Girls and boys responded very similarly to the discrimination items. The only statistically significant gender difference was that girls were more likely than boys to report that they had been disrespected in a place of business.

Bivariate Correlations

At the bivariate level, age was positively related to measures of delinquency and alcohol use (Table 2). As the adolescents grew older they were more likely to engage in problem behaviors. Gender was related only to two of the Youth Self-Report internalization scales. Girls were more likely than boys to report somatic symptoms and symptoms of anxiety and depression. Global discrimination was positively associated with all three of the items making up the latent construct for anger. It also was positively related to two of the Youth Self-Report subscales that make up the internalization latent construct (somatic and anxious/depressed), both delinquency scales, and all three of the substance abuse measures. Authority discrimination was positively associated with all three of the measures for the anger construct, one of the Youth Self-Report internalization subscales (anxious/depressed), and all of the delinquency and substance abuse measures. School discrimination was positively associated with two of the Youth Self-Report internalization subscales (somatic and anx-

ious/depressed) and both delinquency measures. The three substance abuse measures were strongly positively associated with the delinquency scales. Use of drugs in the past six months was positively related to the somatic and anxious/depressed subscales of the Youth Self-Report. All three of the substance abuse measures were positively related to losing one's temper. The alcohol problems measure was positively associated with all of the anger items, and the alcohol abuse scale was positively related with two of the anger items (losing one's temper and getting mad easily). Substance use in the past six months was positively related to the loss of temper item.

Discrimination and Early Onset Substance Abuse

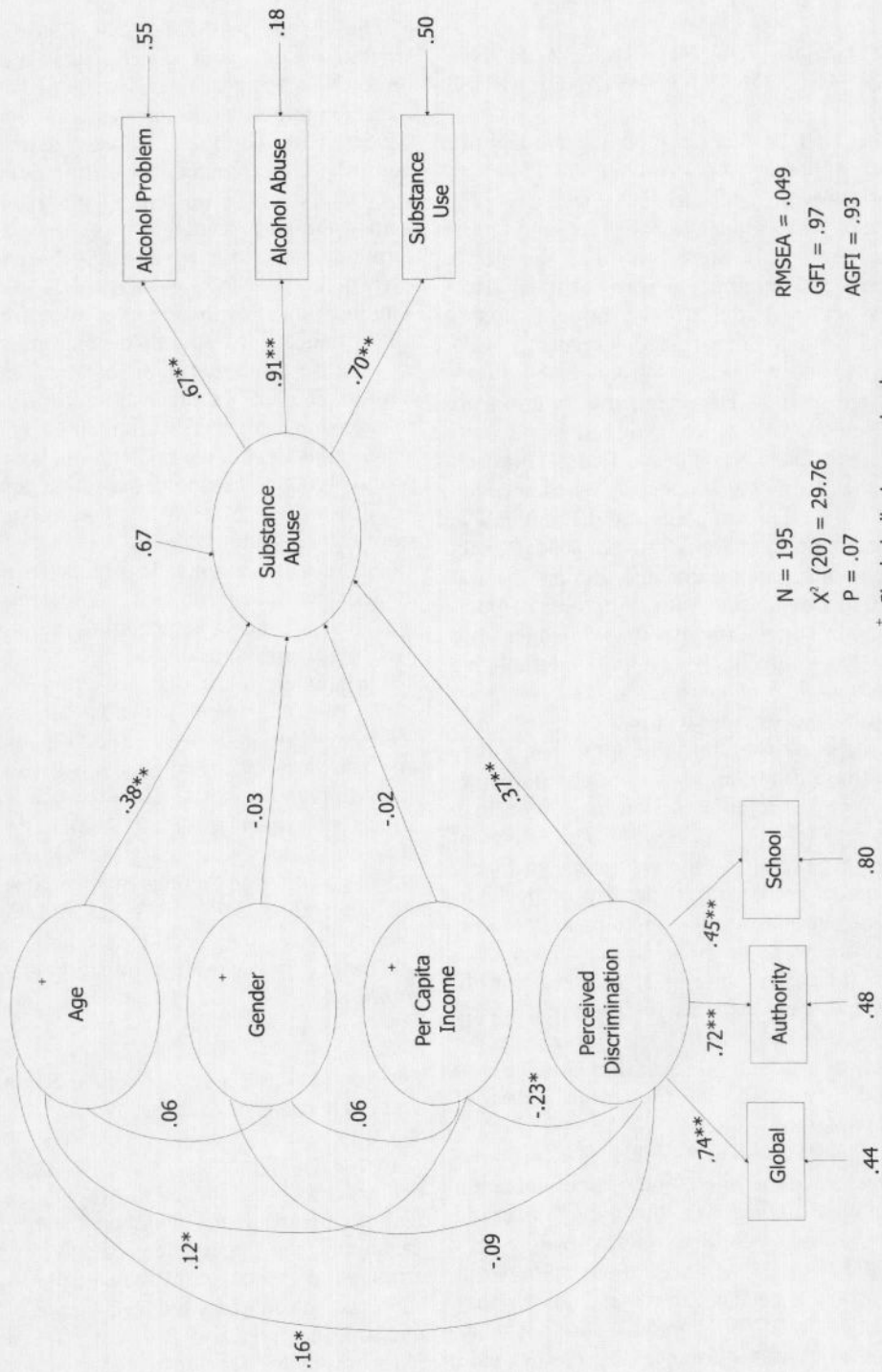
Structural equation modeling (Joreskog and Sorbom 1993) was used to investigate potential mediators of the relationship between discrimination and substance abuse. A baseline model (Figure 1) consisting only of the discrimination and substance abuse latent construct was first run to establish the relationship between the two constructs.

The baseline model controlled for age, gender, and family per capita income. There was a strong positive relationship between discrimination and substance abuse ($\beta = .37, p < .01$). Age was also strongly, positively associated with substance abuse ($\beta = .38, p < .01$). Gender and family per capita income were included in the model and had no statistically significant effects. The baseline model fit the data very well. The chi-square was nonsignificant (chi-square = 29.76, $df = 20, p < .07$). The Goodness of Fit Index was .97, and the

TABLE 2. Bivariate Correlation Matrix (N = 195)

	Age	Gender Male = 1	Income	Global	Authority	School	Anger	Temper	Mad	Withdraw	Somatic	Anxious/ Depressed	YSR Subscale Delinquency	Delinquent Checklist	Alcohol Problem	Alcohol Abuse	Substance Abuse
Age	—																
Gender Male = 1	.06	—															
Income	.12	.06	—														
Global	.11	-.07	-.18*	—													
Authority	.11	-.07	-.14	.54**	—												
School	.07	-.05	-.15*	.35**	.32**	—											
Anger	.06	.01	.04	.21**	.17*	.09	—										
Temper	.10	-.13	-.04	.24**	.20**	-.05	.30**	—									
Mad	.16*	-.02	-.07	.21**	.15*	.11	.39**	.35**	—								
Withdrawn	-.07	-.09	-.06	.10	.09	.06	.22*	.17*	.10	—							
Somatic	-.09	-.25**	-.08	.23**	.14	.22**	.20**	.19**	.14	.44**	—						
Anxious/ Depressed	-.09	-.24**	-.01	.27**	.15*	.22**	.33**	.19**	.19**	.56**	.61**	—					
YSR Subscale Delinquency	.34**	-.06	-.12	.30**	.26**	.14*	.24**	.30**	.29**	.39**	.32**	.42**	—				
Delinquent Checklist	.19**	.08	-.01	.30**	.23**	.15*	.14*	.26**	.23**	.27**	.25**	.29**	.71**	—			
Alcohol Problem	.17*	-.07	-.03	.18*	.22**	.10	.14*	.20**	.16*	.04	.07	.09	.35**	.42**	—		
Alcohol Abuse	.42**	-.01	-.08	.26**	.34**	.09	.12	.27**	.25**	.04	.01	.08	.55**	.52**	.61**	—	
Substance Abuse	.31**	-.08	.06	.29**	.22**	.12	.10	.20**	.11	.09	.16*	.27**	.55**	.63**	.52**	.63**	—
Mean	12.16	.53	8.35	1.37	1.23	1.47	2.12	1.86	2.13	3.33	3.99	5.06	4.09	.37	.25	.71	1.91
STD	1.42	.50	.72	.37	.32	.48	.45	.76	.50	2.23	2.83	3.96	3.02	.49	.81	.93	2.3

FIGURE 1. Baseline Model



N = 195
 $\chi^2 (20) = 29.76$
P = .07
RMSEA = .049
GFI = .97
AGFI = .93

+ Single indicator construct
* Significant at .05, ** Significant at .01

Adjusted Goodness of Fit Index was .93. The root mean square of approximation was .44.

DISCRIMINATION, INTERNALIZATION, AND EARLY ONSET SUBSTANCE ABUSE

The first mediating model examined the effects of perceived discrimination on internalizing symptoms and early substance abuse. As in the baseline model, age, gender, and family per capita income were controlled (Figure 2). Perceived discrimination was positively associated with internalization symptoms among the 5th through 8th grade adolescents ($\beta = .36, p < .01$) and with early substance abuse ($\beta = .35, p < .01$). However, the relationship between internalization symptoms and early substance abuse was nonsignificant. Our basic hypothesis was not supported. When accounting for the effects of perceived discrimination, internalizing symptoms did not lead to substance abuse among this age group. Age was negatively associated with symptoms of internalization ($\beta = .16, p < .01$). Younger children were more likely to report internalizing symptoms than older children. Age was positively related to substance use ($\beta = .39, p < .01$); the older the child, the more likely they were abusing substances. Girls were more likely to report symptoms of internalization than were boys ($\beta = -.22, p < .01$). The effects of family per capita income were nonsignificant. The model explained 20 percent of the variance of internalization symptoms and 32 percent of the variance for substance abuse.

The internalization model fit the data well. The chi-square was nonsignificant (chi-square = 52.79, $df = 41, p < .10$). The Goodness of Fit Index was .96, and the Adjusted Goodness of Fit Index was .92. The root mean square of approximation was .038.

In summary, although perceived discrimination increased the likelihood of internalization symptoms among 5th through 8th grade American Indian children, internalizing symptoms did not mediate the relationship between early onset substance abuse and discrimination. Internalization symptoms were not related to early onset substance abuse. Girls and younger children were more at risk for internalizing symptoms than were boys and older children. The older children were more at risk for substance abuse.

Discrimination, Anger, and Early Onset Substance Abuse

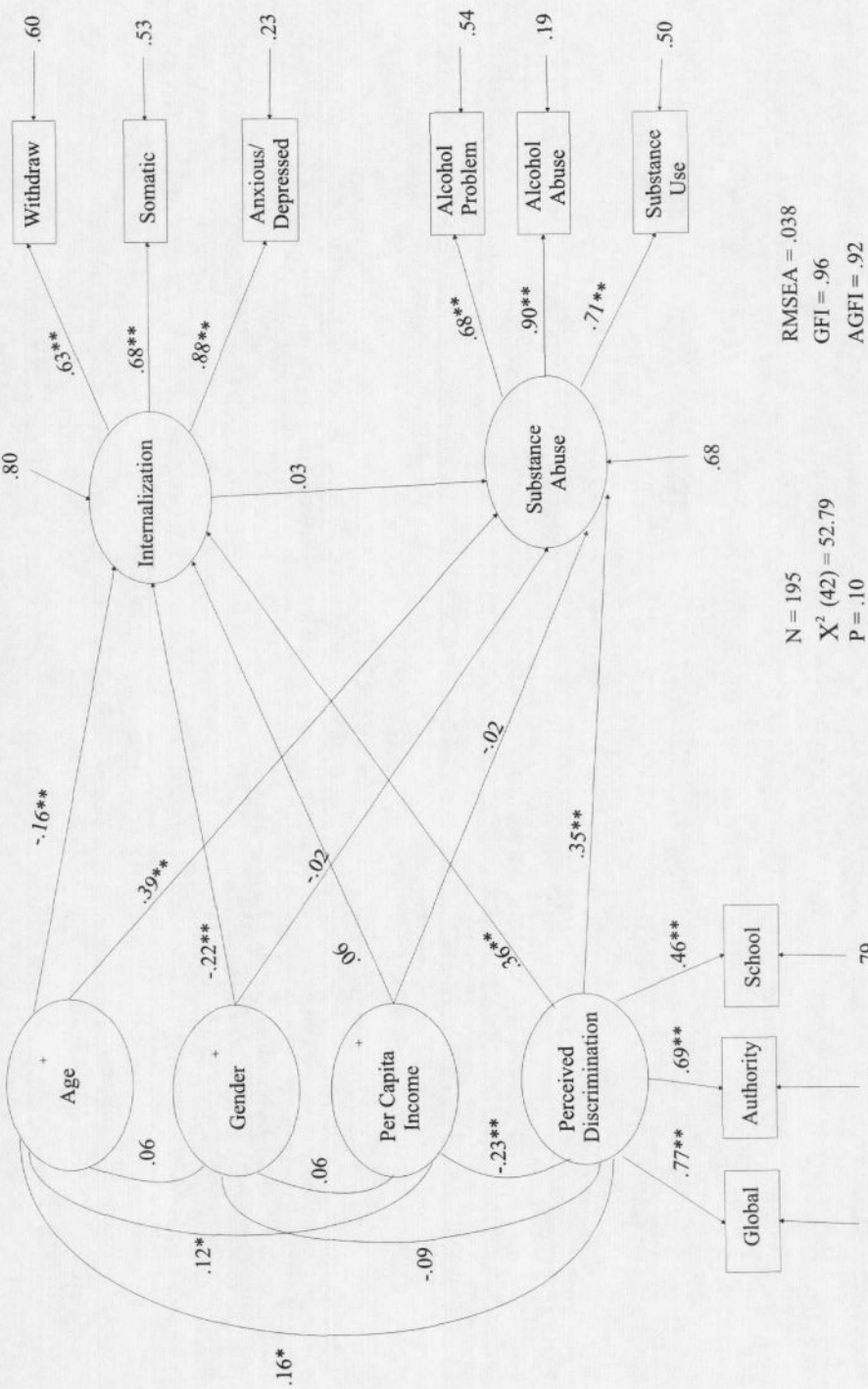
The second mediating model investigated whether the effects of perceived discrimination on early substance abuse were mediated by anger (Figure 3). As in the earlier models, age, gender, and family per capita income were controlled. Perceived discrimination was strongly, positively related to feelings of anger among the adolescents ($\beta = .41, p < .01$). In turn, angry feelings were positively related to early onset substance abuse ($\beta = .21, p < .01$). The magnitude of the effect of discrimination on substance abuse slightly decreased ($\beta = .27, p < .01$) with the addition of anger into the baseline model, but anger did not mediate the relationship between discrimination and substance abuse. As in the earlier models, age was positively associated with substance abuse ($\beta = .36, p < .01$). None of the control variables were significantly related to feelings of anger among the adolescents. The model explained 26 percent of the variance of adolescents' feelings of anger and 32 percent of the variance for early onset substance abuse.

The model fit the data well (chi-square = 55.96, $df = 42, p < .07$). The Goodness of Fit Index was .96, and the Adjusted Goodness of Fit Index was .92. The root mean square of approximation was .04. Although some of the effects of perceived discrimination on early onset substance use among the 5th through 8th graders go through feelings of anger, its effects are not truly mediated (Baron and Kenney, 1986). There remained a substantial direct relationship between discrimination and early substance use.

Discrimination, Anger, Delinquent Behaviors, and Early Onset Substance Abuse

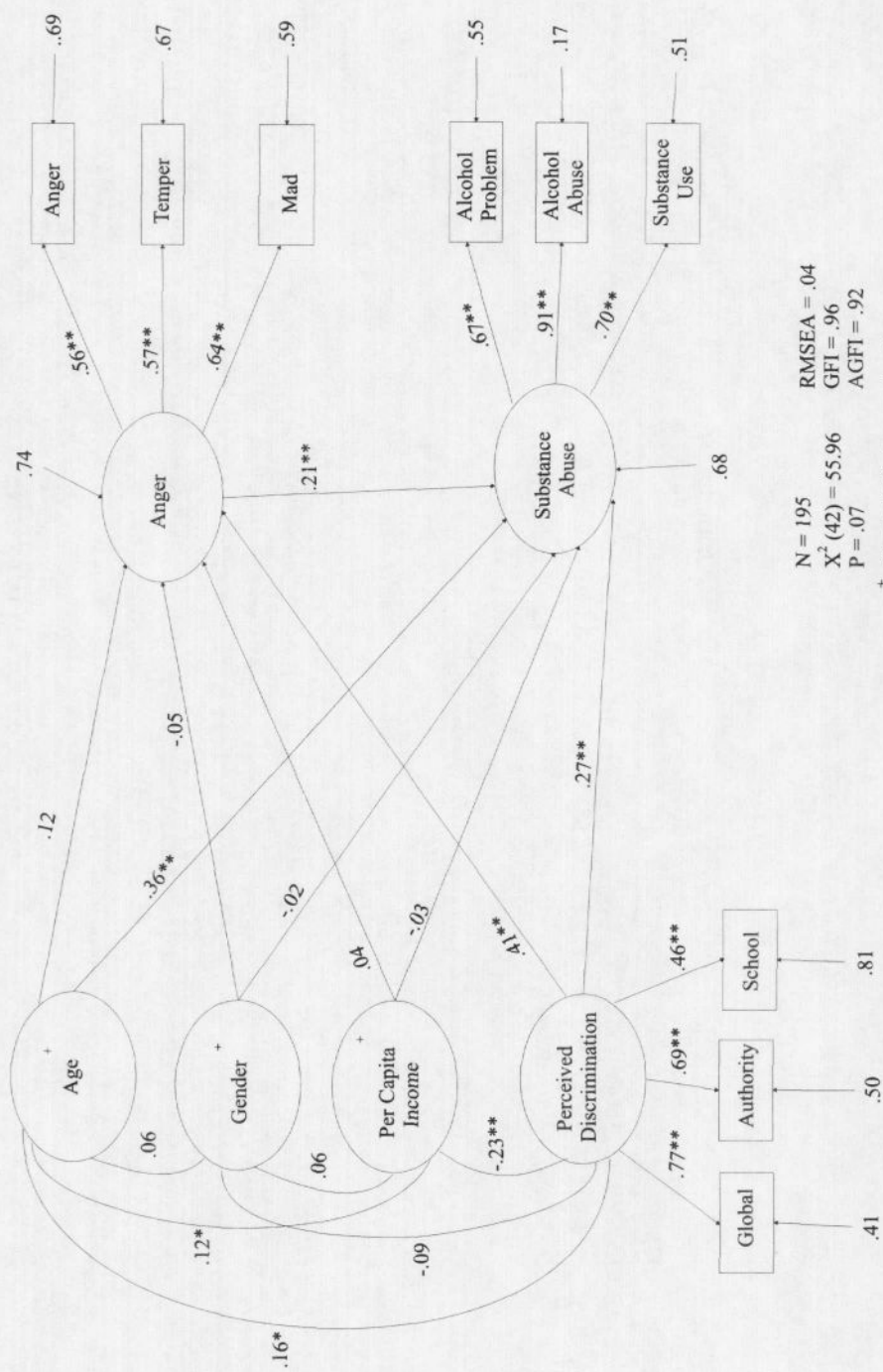
In the final model (Figure 4), delinquent behavior was introduced. With adolescents' feelings of anger and delinquent behavior in the model, the direct effect of perceived discrimination, though still statistically significant, was substantially reduced from $\beta = .37$ in the baseline model to $\beta = .15$ ($p < .05$), a reduction of 59 percent. Moreover, the reduction in the direct effects of perceived discrimination on early substance abuse was statistically significant (Clogg, Petkova, and Haritou 1995). The effect of anger on early substance

FIGURE 2. Internalization Model



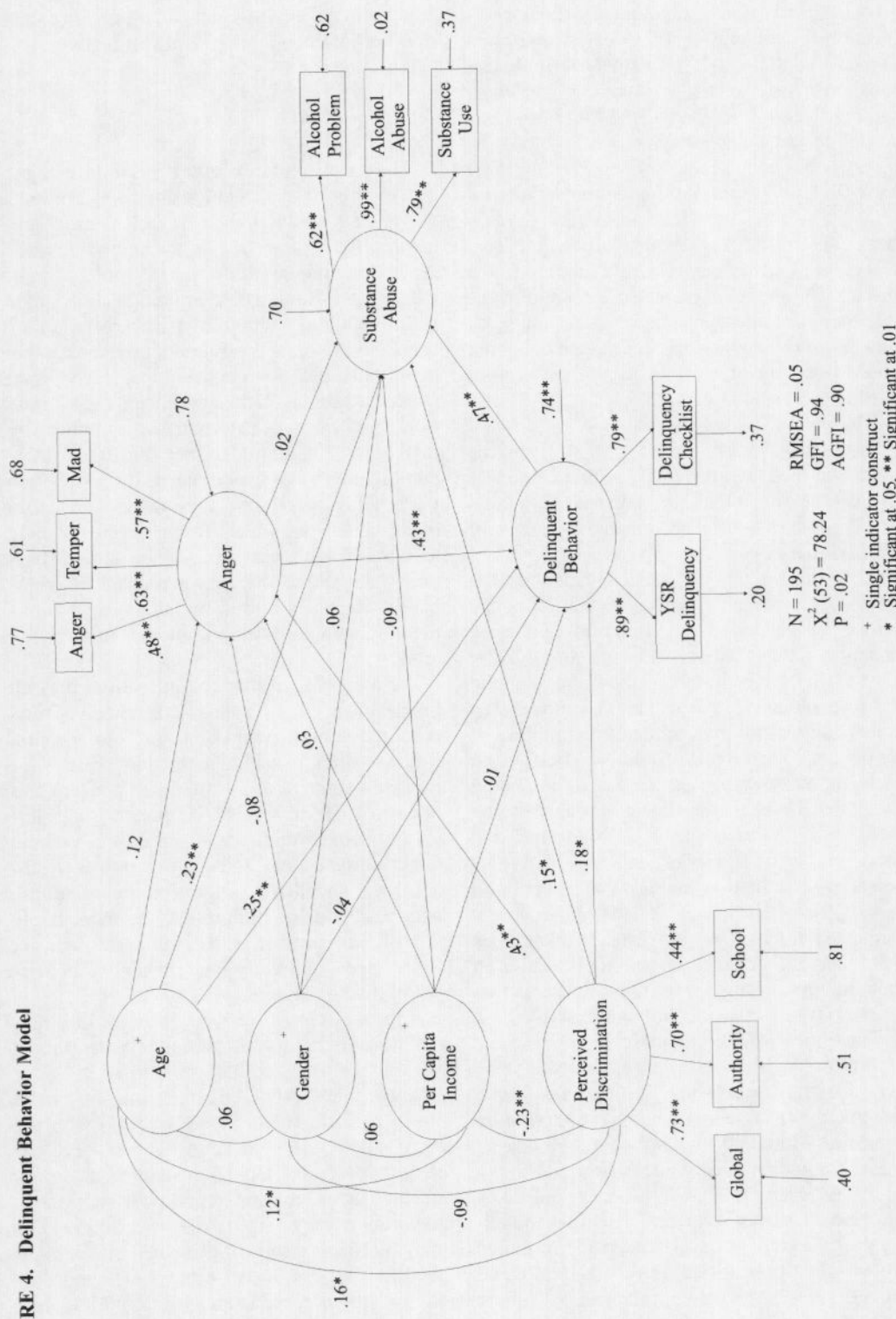
+ Single indicator construct
* Significant at .05, ** Significant at .01

FIGURE 3. Anger Model



N = 195
X² (42) = 55.96
P = .07
RMSEA = .04
GFI = .96
AGFI = .92

+ Single indicator construct
* Significant at .05, ** Significant at .01



abuse became nonsignificant. Anger was positively related to delinquent behavior ($\beta = .43$, $p < .01$), and, in turn, delinquent behavior was strongly, positively related to early onset substance abuse ($\beta = .47$, $p < .01$). Discrimination was positively related to feelings of anger among the adolescents ($\beta = .43$, $p < .01$) and to delinquent behavior ($\beta = .18$, $p < .05$). As age of the adolescents increased they were more likely to report delinquent behavior ($\beta = .23$, $p < .01$) and substance abuse ($\beta = .25$, $p < .01$). There were no statistically significant effects for gender or per capita income in the model. The model explained 22 percent of the variance of adolescents' feelings of anger, 26 percent of the variance of delinquent behavior, and 30 percent of the variance of early onset substance abuse.

The chi-square was statistically significant (chi-square = 78.24, $df = 55$, $p < .02$), and the model fit the data adequately with a Goodness of Fit Index of .94 and an Adjusted Goodness of Fit Index of .90. The root mean square of approximation was .046.

The addition of delinquent behavior to the model resulted in the partial mediation of the effects of perceived discrimination on early onset substance abuse (Baron and Kenny 1986). The change in effect size from .37 in the baseline model to .15 in the final model was statistically significant and of a magnitude of 59 percent. The effects of adolescent anger on early onset substance abuse were completely mediated (i.e., became nonsignificant) by the introduction of delinquent behavior into the model. The final model indicates that perceived discrimination increases the likelihood of early onset substance use among American Indian adolescents in 5th through 8th grades by inducing angry feelings among the children that, in turn, lead to externalizing behaviors and the risk of early alcohol and drug use.

One concern with the analysis was whether or not any of the observed effects might be nested within reservation. With small sample size and the relatively large number of parameters to be estimated in some of the models, it was not practical to estimate each model separately by reservation (i.e., to stack and compare models using structural equation modeling procedures). However, to consider possible cross-reservation differences, we replicated models 1 through 4 using ordinary least square regression. To do so, we had to create composite factor score measures for the multiple indi-

cator constructs and then introduced dummy variables to contrast reservation sites. The results of the analysis indicated no significant main or interaction effects of reservation site.

DISCUSSION

The purpose of this report was to investigate the nature of the relationship between perceived discrimination and early onset substance abuse among 5th through 8th grade American Indian children. The findings indicated that, although discrimination contributed to internalizing symptoms particularly among female and younger adolescents, internalizing symptoms did not contribute to early onset substance abuse. Rather, perceived discrimination acted through externalizing symptoms to increase its likelihood. American Indian early adolescents who experienced discrimination were likely to respond with anger and delinquent behaviors, which, in turn, were strongly associated with early substance abuse. It is noteworthy, however, that perceived discrimination increased both internalizing and externalizing symptoms among the 5th through 8th graders.

We have argued that cultural values play an important role in responses to perceived discrimination and should be taken into account. Stress-reducing behaviors that work for African Americans (Williams, Spencer, and Jackson 1999) may be unacceptable or unavailable in some American Indian cultures where direct defiance and assertion of self over others is not socialized in the traditional culture. American Indian children may be more likely to withdraw in these situations and to act out their anger indirectly via deviant and self-destructive behaviors.

Recent findings by Kessler and colleagues (1999) indicate that discrimination has severe mental health consequences for adults. Our findings suggest that the effects may be particularly harmful for early adolescents who are more vulnerable than adults due to developmental level and lack of established coping mechanisms. Developmental tasks of early adolescence may amplify the stress of discrimination. This is a time of life when the children need to feel similar to others. Demands for conformity increase from early to mid-adolescence, followed by a decline in later adolescent years (Costanzo and Shaw 1966; Gavin and

Furman 1989). Early discrimination cruelly blocks the need for conformity and group acceptance. At this age, ethnic identities are just forming and effective coping mechanisms may not yet be in place (Phinney and Chavira 1995). Without strong defenses against discrimination, the children may respond by internalizing group rejection with feelings of self-hatred, low self-worth, and depressive symptoms (e.g., model 2). Rejected early adolescents may also respond to discrimination with anger and externalizing behaviors such as delinquency and substance abuse (Williams-Morris 1996).

Developmental risk for American Indian early adolescents may also be accentuated by cultural values of affiliation, respect, and sharing (Locust 1988). American Indian families and culture work to socialize strong norms of being part of the group, mutual acceptance, mutual respect, self-control in social situations, and responsibility to the group rather than to self. Given these values of affiliation and acceptance, rejection by peers may be especially potent for American Indian adolescents. As Locust (1988) has so poignantly put it, "Discrimination against persons because of their beliefs is the most insidious kind of injustice. Ridicule of one's spiritual beliefs or cultural teachings wounds the spirit, leaving anger and hurt that may be masked by proud silence" (P. 315). For some American Indians, lashing back verbally would only add to the humiliation because they would have betrayed their social values of dignity and self-control.

There has been considerable investigation of mental health and general health outcomes among American Indian and Alaska Native adolescents. Of greatest concern is the age of onset and early transition to regular substance use among American Indian adolescents. They are at greater risk for early substance abuse (Beauvais 1996), disproportionately at risk for suicide, accidents, and homicide (Blum et al. 1992), and at greater risk for school dropout (see Swisher and Hoisch 1992 for review). Our results suggest that perceived discrimination plays an important role in the demoralization of early adolescents and may be a central factor in altering early life course trajectories. The effects of early academic withdrawal, early substance use, and early externalizing behaviors may set in motion chains of events that may be difficult to overcome as they gain momentum into the high school years (Moffitt

1997), particularly in European American school systems that may expect negative behaviors and or ignore them.

Although our results regarding the mechanisms through which discrimination contributes to early substance use are intriguing, there are several important limitations that should be considered. For example, it is possible that some of the substance abusing behaviors could produce school or police responses that the youth might interpret as discriminatory actions on the part of authority figures. Longitudinal data would be required to test alternative causal ordering. Our data are cross-sectional and causal ordering should be viewed with the appropriate caution.

The relative homogeneity of the sample also introduces some limitations. The lack of significant effects for our measure of socioeconomic status needs to be interpreted with caution given the low range of, and relatively little variation, in family per capita incomes. Although the multisite sample increases the confidence in generalizing the results to the specific culture engaged in the study, our findings are based on reports from one American Indian culture and may not be generalizable to other American Indian nations. Our sample contains very few children from urban areas ($N = 8$). It was predominantly made up of children from rural reservations and small rural communities adjacent to the reservations. Not only were the children from rural settings, there was also considerable homogeneity of economic conditions, opportunities, and exposure to majority culture. The results, therefore, may not be applicable to American Indian children in urban settings. Finally, our data did not address "within-group discrimination," therefore, we could not consider perceived discrimination the children experience from other American Indian children, for example, discrimination based on projected assimilation or traditionalism.

CONCLUSIONS

Recent work concerning the effects of discrimination indicates that it has important consequences on the mental and physical health of adults (Kessler et al. 1999; Ren et al. 1999). Our results suggest that perceived discrimination also has important developmental consequences for American Indian adolescents. If

the effects of discrimination have not been sufficiently accounted for in studies of adult well being (Kessler et al. 1999), this is even more the case with children and adolescents. The findings presented in this report indicate significant internalizing and externalizing consequences for American Indian 5th through 8th graders. Moreover, they suggest that early discrimination may be an important risk factor in early developmental trajectories among minority children. Perceived discrimination during early adolescence may interrupt developmental needs for group affiliation and conformity. This lack of a sense of "sameness" and acceptance by the majority group may result in self-hatred and internalizing symptoms or anger and externalizing behaviors such as delinquency and substance abuse. Early onset substance abuse and delinquent behaviors may seriously affect later life chances through their conse-

quences for academic failure, school dropout, family, and relationship problems. Such negative behavioral responses to discrimination may have cumulative consequences that limit later prosocial options (Moffitt 1997; Caspi and Bem 1990).

There has been significant speculation and research regarding developmental trajectories of American Indian children, particularly concerning school dropout and early substance use. Our findings suggest that early discrimination is a significant factor in the early demoralization of these young people. Social policy and prevention programs need to take discrimination into account and teach the children culturally acceptable, healthy ways of responding to it. Work with elders and leaders who are familiar with the cultural ways will help to identify the proper responses that will preserve the spirit and protect the child.

Appendix: Descriptions of Measures

Perceived Discrimination

Global Discrimination

1. How often have other kids said something bad or insulting to you because you are Native American?
2. How often have other kids ignored you or excluded you from some activities because you are Native American?
3. How often has someone yelled a racial slur or racial insult at you?
4. How often has someone threatened to harm you physically because you are Native American?
5. How often have other kids treated you unfairly because you are Native American?

Authority Discrimination

1. How often has a store owner, sales clerk, or person working at a place of business treated you in a disrespectful way because you are Native American?
2. How often have adults suspected you of doing something wrong because you are Native American?
3. How often have the police hassled you because you are Native American?

School Discrimination

1. How often have you encountered teachers who are surprised that you as a Native American person did something really well?
2. How often have you encountered teachers who didn't expect you to do well because you are Native American?

Substance Abuse

Alcohol Problems

1. Has your drinking caused you any problems with your family?
2. Do you drink enough to get a hangover?
3. Do you ever get sad or depressed when you are drinking?
4. Has your use of alcoholic beverages caused you any problems in school?
5. Do you find you have to drink more to get drunk?

Alcohol Abuse

1. Not counting any religious ceremonies, have you ever, even once, had a drink of any type of alcoholic beverage?
2. Have you ever gotten drunk?
3. During the past month, on how many days did you have five or more drinks at one time?
4. During the past 12 months, on how many days did you have five or more drinks on the same occasion?
5. Have you gotten drunk in the past year?

Substance use

For the following measures, the youth was asked, "Please indicate how often you have used each of the following substances during the last six months."

1. Cigarettes or chewing tobacco.
2. Beer.
3. Wine.
4. Hard liquor (like tequila, whiskey, gin, vodka).

Appendix: (Continued)

5. Prescription drugs.
6. Acid, LSD, mescaline, Peyote, or other hallucinogens.
7. Grass, pot, weed, or other names for Marijuana.
8. Downers, quaaludes, sopers, reds or other barbituates.
9. Librium, valium or other tranquilizers.
10. Speed, crystal, nose candy.
11. Crack, cocaine, powder.
12. Crank or other Methamphetamines.
13. Huffing or Inhalants like gasoline, solvents, or glue.

Internalizing Symptoms**Withdrawn**

1. I would rather be alone than with others.
2. I refuse to talk.
3. I am secretive or keep things to myself.
4. I am shy.
5. I don't have much energy.
6. I am unhappy, sad, or depressed.
7. I keep from getting involved with others.

Somatic

1. I feel dizzy.
2. I feel overtired.
3. I have aches or pains (not headaches).
4. I get headaches.
5. I have nausea, feel sick.
6. I have problems with my eyes.
7. I have rashes or other skin problems.
8. I get stomachaches or cramps.
9. I have vomiting, throwing up.

Anxiety/depression.

1. I feel lonely.
2. I cry a lot.
3. I deliberately try to hurt or kill myself.
4. I am afraid I might think or do something bad.
5. I feel that I have to be perfect.
6. I feel that no one loves me.
7. I feel that others are out to get me.
8. I feel worthless or inferior.
9. I am nervous or tense.
10. I am too fearful or anxious.
11. I feel too guilty.
12. I am self-conscious or easily embarrassed.
13. I am suspicious.
14. I think about killing myself.
15. I worry a lot.

Anger

1. I get angry.
2. I am quick tempered.
3. I get mad.

Delinquent Behavior**Delinquency checklist**

For the following measures, the youth was asked, "how often have you . . ."

1. Run away from home?
2. Taken something worth more than \$50 that didn't belong to you?
3. Carried a gun, knife, or other kind of weapon (other than for hunting, camping, or fishing)?
4. Taken something from a person by force (other than just "horsing around")?
5. Been placed in detention or jail?
6. Cut classes, or stayed away from school without permission?
7. Taken a car without the owner's permission, just to drive it around?
8. Had to go to court for something you've done?
9. Beat up on someone or fought someone physically if they provoked you (other than just playing around)?
10. Bought or received something that was stolen by somebody else?
11. Broken into a place and stolen something?

Appendix: (Continued)

12. Taken something from a store when a clerk wasn't looking?
13. Been placed on court probation?
14. Injured someone by shooting, cutting, hitting, or stabbing them just because you felt like it?
15. Snatched someone's purse or wallet from them without hurting them in order to take their money or credit cards?
16. Intentionally damaged or messed up something in a school or some other building?

Youth Self-Report delinquency subscale

1. I don't feel guilty after doing something I shouldn't.
2. I hang around with kids who get in trouble.
3. I lie or cheat
4. I would rather be with older kids than with kids my own age.
5. I run away from home.
6. I set fires.
7. I steal at home.
8. I steal from places other than home.
9. I swear or use dirty language.
10. I cut classes or skip school.

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