

# Concurrent and Longitudinal Effects of Ethnic Identity and Experiences of Discrimination on Psychosocial Adjustment of Navajo Adolescents

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In this study, we examined concurrent and longitudinal relations among Navajo adolescents' ethnic identity, experiences of discrimination, and psychosocial outcomes (i.e., self-esteem, substance use, and social functioning). At Time 1, 137 Navajo adolescents (67 male, 70 female), primarily in Grades 9 and 10, completed a written survey assessing ethnic identity, discrimination experiences, and a range of internalizing and externalizing behaviors. Two years later, 92 participants completed the same survey again. Ethnic and cultural identification was assessed via the Multiethnic Ethnic Identity Measure (MEIM; Phinney, 1992) and the Orthogonal Cultural Identification Scale (OCIS; Oetting & Beauvais, 1990). At Time 1, MEIM Affirmation and Belonging, MEIM Exploration, and OCIS White American identification all demonstrated strong, positive associations with adaptive functioning for male and female adolescents, whereas discrimination experiences were linked to lower self-esteem and social functioning for male adolescents. By Time 2, fewer significant concurrent associations between ethnic identity and psychosocial functioning scores remained, and discrimination experiences emerged as the most consistent correlate of poorer psychosocial functioning for male adolescents. Controlling for Time 1 psychosocial functioning, relatively few direct effects of ethnic and cultural identification variables predicted psychosocial functioning longitudinally, but discrimination experiences demonstrated strong and consistent longitudinal links with boys' substance use. Finally, interaction effects assessing the moderating influence of ethnic and cultural identification on negative links between discrimination and psychosocial functioning suggested that embeddedness in and connection to Navajo culture and, in some cases, connection to White American culture, served as a buffer to the negative effects of discrimination experiences.

*Keywords:* ethnic identity, adolescence, discrimination, American Indian

Limited empirical data exists in which researchers examined factors related to both resiliency and risk in American Indian populations (LaFromboise, Hoyt, Oliver, & Whitbeck, 2006; Rieckmann, Wadsworth, & Deyhle, 2004). Research with American Indian youth has traditionally been focused on myriad risk factors that exist. However, it is vital that researchers develop an understanding of factors associated with resiliency, as problem prevention is dependent on these factors (Stiffman et al., 2007). If a better understanding of the protective factors with American Indian adolescents is found, programs could then be developed to strengthen these factors, thus decreasing negative outcomes. One factor that may serve as a source of resiliency in some American Indian youth is the development of a strong sense of ethnic identification.

## Ethnic Identity Development

For ethnic minority adolescents, exploring and developing identity can be complicated as they consider their ethnic identity in a

larger culture filled with both social and economic disparities based on race (Lutz & Sternberg, 1999). For American Indian youth, the process of identity development may be hindered by the history of dominant culture efforts to eradicate traditional American Indian culture, forcing assimilation through policies such as relocation programs and mandatory boarding school education. These policies were often traumatic for American Indian children and adolescents, depriving them of appropriate models for parenting and the transmission of cultural values and traditions. Martinez and Dukes (1997) found the lowest ethnic identity scores in American Indian adolescents, compared with African American, Hispanic, and Asian adolescents, which they hypothesized may be a contributing factor to the increased mental health concerns experienced by American Indian adolescents. At the same time, youth with an increased sense of ethnic identity living on reservations experience many protective benefits through their community, culture, and traditions (LaFromboise et al., 2006).

## Measuring Ethnic Identity

One difficulty for ethnic identity researchers is that there is not one prominent definition or measure of ethnic identity (Cokley, 2007; Moran, Fleming, Somervell, & Manson, 1999). Ethnic identity has been defined as knowledge of or pride in one's ethnic group or as feelings of belonging to that ethnic group (Zimmerman, Ramirez, Washienko, Walter, & Dyer, 1998). In the current study, Phinney's (1992) Multigroup Ethnic Identity Measure

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(MEIM) and Oetting and Beauvais's (1990) Orthogonal Cultural Identity Scale (OCIS) were used to assess involvement and identification with both majority and ethnic culture.

Phinney (1992) developed the MEIM to provide a measure of ethnic identification that highlights some of the common developmental processes that occur across ethnic groups. As such, the MEIM does not provide specific cultural information about American Indian populations but provides general information about ethnic identity comparable across groups (Cokley, 2007). Phinney's model is based on Erikson's (1968) work on adolescent identity development and ego identity. Erikson's identity theory was operationalized by Marcia (1980) for the purpose of identity assessment. Marcia proposed two orthogonal dimensions in conceptualizing identity. The first dimension represents the extent to which the individual has explored various options and possibilities for identity. With regard to ethnic identity, exploration might involve learning about one's ethnic history, becoming involved in traditional cultural activities, or joining groups and establishing relationships with members of one's own ethnic group. The other dimension of identity, commitment, assesses the degree to which the individual has adopted or endorses aspects of a specific identity. Commitment to ethnic identity might be represented by ethnic pride or political involvement in civil rights or related issues.

Oetting and Beauvais (1990) developed the OCIS to address their concerns about unidimensional methods of assessing cultural identification. The strength of their orthogonal model, according to Oetting and Beauvais (1990), is that

Identification with any culture is essentially independent of identification with any other culture. Instead of two cultures being placed at opposite ends of a single dimension or single line . . . the orthogonal identification model indicates that any pattern and combination of cultural identification can exist and that any movement or change is possible. (p. 662)

Previous models had viewed acculturation as a single continuum between cultures, with the minority individual in transition between the two (Choney, Berryhill-Paapke, & Robbins, 1995). Other popular identity models (e.g., Cross, 1995) also detailed a transition away from one (White majority) culture toward another (individual's ethnic group culture). After ethnic identity has been achieved, a more bicultural life can be pursued. A transitional model would have difficulty identifying youth that are truly part of both cultures. For example, an American Indian adolescent raised in a traditional manner, who still attended school and spoke English, would have already been enculturated (the process by which one learns ethnic and cultural heritage of one's own ethnic group), therefore a transition would not be needed. The OCIS considers the adolescent's identification in both ethnic and majority culture and identifies such an individual as high on both American Indian identification and majority culture identification. Additionally, although many other models of ethnic identity development were conceptualized and refined based on the experiences of predominantly African American samples, the OCIS was originally developed for use with American Indian adolescents and has been used extensively with American Indian samples representing many different tribes and communities.

## Experiences of Discrimination

Ethnic minority individuals' experiences of discrimination are frequent and pervasive in the United States. In a large-scale national survey, only 8.8% of African Americans and 17.4% of other American minorities denied experiencing daily discrimination, compared with 44.4% of non-Hispanic Whites (Kessler, Mickelson, & Williams, 1999). Specific to American Indian youth, non-native teachers perceived American Indian children from samples across the United States to have higher levels of externalizing disorders (Fisher, Storck, & Bacon, 1999) and higher levels of depression and conduct disorder (Beiser, Sack, Manson, Redshirt, & Dion, 1998) than White students. Nonnative teachers also overestimated poverty and deprivation of American Indian students, while underestimating the education levels of their parents living on the Navajo Indian reservation (Shields, 1999). These experiences of prejudice and discrimination are an aversive factor in the developmental process for ethnic minority adolescents and may serve as a prominent risk factor.

## Resiliency and Risk: Ethnic Identity and Discrimination Experiences

### Ethnic Identity as a Resiliency Factor

Ethnic or cultural identity is a complex and multidimensional construct, and as such, there are a number of mechanisms by which ethnic identification might be linked to psychosocial health, depending on the way ethnic identity is conceptualized and measured. For example, Rowley, Sellers, Chavous, and Smith (1998), in reference to African American racial identity development, discussed the notion of racial self-esteem, positing that a positive and affirming stance toward one's minority ethnic group can serve as a buffer against the negative perceptions of broader society. Additionally, Rowley and colleagues referred to the insulation hypothesis, which argues that ethnic minorities who are embedded in their cultures and communities are also protected from the experiences of invalidation or discrimination in larger society. A sense of engagement in community and competence in traditional practices can also facilitate general self-efficacy and offer a buffering effect. Finally, a large literature on bicultural competence suggests that ethnic minority individuals who are able to successfully navigate White American culture while maintaining connection to their traditional culture experience better outcomes (e.g., LaFromboise, Albright, & Harris, 2010). However, identification with White American culture is not without risk, when the stress of balancing traditional and dominant society cultures is considered (Torres, 2010). Varying theoretical perspectives argue for a sophisticated and multifaceted assessment of ethnic and cultural identification if relations with psychosocial health are to be understood clearly.

Martinez and Dukes (1997) found a higher level of ethnic identification (i.e., achieved status on the MEIM, Phinney, 1992) associated with increased self confidence and purpose in life in a sample of 12,386 White, Hispanic, Black, Asian and American Indian adolescents. Similarly, a relation between ethnic identity and increased levels of self-esteem has been reported for Navajo (Jones & Galliher, 2007), Lakota/Dakota, and Sioux (Pittinger, 1998) youth and Northern Plains, Southwest, and Pueblo Ameri-

can Indian adolescents across time (Whitesell, Mitchell, Kaufman, & Spicer, 2006; Whitesell, Mitchell, & Spicer, 2009). However, others have not been able to document this finding in American Indian (Martinez & Dukes, 1997) and Lumbe Indian (Newman, 2005) adolescents.

Similarly, research outcomes evaluating the relation between ethnic identity and externalizing behaviors is mixed. Some researchers have noted a greater adherence to antidrug norms and/or lowered substance use for Navajo (Jones & Galliher, 2007) and urban American Indian (Kulis, Napoli, & Marsiglia, 2002) adolescents with higher levels of ethnic identity. However, Oetting and Beauvais (1990) have linked increased Anglo identification with decreased drug use in a sample of American Indian adolescents while noting no relation between American Indian identification and risk or protective benefit. As such, additional research evaluating the relation between ethnic identification and externalizing behaviors, namely substance use, is warranted.

The aforementioned studies operationalized the ethnic identity construct in a variety of ways, which complicates the state of the literature. In the current study, we assessed ethnic and cultural identification broadly, capturing engagement in both traditional culture and White American culture, as well as investment in and affirmation of traditional culture. Use of a multidimensional assessment of ethnic and cultural identification in a single study may provide additional clarity to the literature. In addition, in past studies, researchers have typically highlighted links between ethnic identity and broadly defined internalizing or externalizing symptoms, as previously reviewed. No studies have been located that have examined the relation between ethnic identification and more general social functioning. This represents a gap in the literature. A strong sense of connection to or knowledge about traditional culture is theoretically linked to better functioning within the culture, more effective social role fulfillment, and better connections with family and community. Thus, an additional purpose of the current study was to expand previous research by examining relations between ethnic identity and a range of both internalizing and externalizing psychosocial adjustment indices, including self-esteem, substance use, and social functioning in a Navajo adolescent sample.

### Discrimination as a Risk Factor

Discrimination is a combination of prejudicial attitudes that leads to negative behavior, avoidance, or aggression toward another group of people (Devine, 1995). Both common sense and empirical data suggest that the experience of discrimination is a contributing factor to negative behavioral and mental health outcomes in minority populations. Research by Kessler and colleagues (1999) showed that the pervasive experiences of discrimination are much greater for minority individuals than for the racial majority in the United States and that discrimination experiences impact mental health. Williams, Neighbors, and Jackson (2003) noted the majority of the 32 studies they reviewed supported a relation between discrimination experiences and negative internalizing and externalizing mental health outcomes, with hypothesized relations generally supported between discrimination and general distress levels, depressive symptoms, anxiety, substance use, anger, psychosis, happiness, life satisfaction, and mastery.

Similar findings have been demonstrated in samples of American Indian adolescents. In their sample of 220 Midwestern American Indian 5th–8th graders, Whitbeck et al. (2001) found experiences of discrimination contributed significantly to increased withdrawn, anxious/depressed, and somatic internalizing symptoms, but found that these symptoms were not related to substance use. The authors found the relation between discrimination experiences and substance use was moderated by adolescent anger and delinquency. Similarly, LaFromboise et al. (2006) found perceived discrimination associated with decreased resilience in their sample of 212 Midwestern American Indian adolescents. Similar findings have been demonstrated in American Indian adult samples (e.g., Whitbeck, McMorris, Hoyt, Stubben, & LaFromboise, 2002). As Kessler and colleagues (1999) concluded, “given its high prevalence, wide distribution and strong associations with mental health, perceived discrimination needs to be treated much more seriously than in the past in future studies of stress and mental health” (p. 208). As such, one of the goals of the current study was to examine the relation between adolescent perceptions of discrimination and psychosocial outcomes (e.g., self-esteem, social functioning and substance use) in a Navajo sample.

### Ethnic Identity as a Moderator of Associations Between Discrimination and Psychosocial Adjustment

It is hypothesized that the protective qualities of a strong sense of identity moderate, or serve as a buffer against, the negative effects of experiencing discrimination (Major & Sawyer, 2009). With the negative outcomes associated with discrimination experiences established across multiple ethnic minority samples (e.g., Byers, 2006; Caldwell, Kohn-Wood, Schmeelk-Cone, Chavous, & Zimmerman, 2004; Romero & Roberts, 1998; Sellers & Shelton, 2003), few studies have expanded this line of research by examining the moderating or buffer effects of ethnic identity variables on either internalizing and externalizing symptoms, and no studies have examined interacting effects of ethnic identity variables and discrimination on more broadly defined adaptive social functioning.

Researchers studying racial or ethnic socialization (e.g., Hughes et al., 2006), primarily focusing on African American developmental processes describe a process by which parents work with their children to develop an understanding of race in order to help their children develop a more coherent sense of themselves as ethnic minorities and to cope with discrimination and inequity in the broader society. Cultural socialization, one dimension of racial/ethnic socialization, includes parenting practices used to foster both learning about one’s cultural traditions and having a sense of ethnic pride. Hughes and colleagues (2006) suggested cultural socialization might foster adolescent resilience in the face of discrimination, noting cultural socialization has been associated with an increased sense of ethnic identity and decreased internalizing and externalizing problems. Following this argument, we hypothesized that ethnic identity, an outcome of cultural socialization, might act as a buffer and source of resilience for ethnic minority adolescents in the face of discrimination.

Using an adult American Indian sample ( $N = 287$ ), Whitbeck et al. (2002) examined cultural involvement as a measure of ethnic identity that they predicted would mitigate the links between discrimination experiences and depressive symptoms. As hypothesized,

esized, Whitbeck and colleagues (2002) found a positive relation between perceived discrimination and depression, a negative relation between involvement in tribal practices and depression, and an interaction effect that suggested tribal involvement served as a buffer in the relation between discrimination experiences and depressive symptoms. In contrast, however, Whitbeck, Chen, Hoyt, and Adams (2004) assessed links among discrimination, historical loss, enculturation, and alcohol abuse among adult participants. Although enculturation, the extent to which individuals are embedded in their traditional cultures, served as a direct resiliency factor, it did not appear to moderate the negative links between discrimination experiences and substance abuse.

No studies were identified that examined changes over the course of adolescence in relations among ethnic identity, discrimination, and psychosocial adjustment. However, there is some evidence of a reciprocal relation between ethnic identity development and discrimination experiences. Romero and Roberts (1998) examined ethnic identity and perceptions of discrimination in different racial minority adolescent groups through the lens of social identity theory. They hypothesized that a stronger sense of ethnic identity, or ingroup affirmation, would be related to a more negative view of the outgroup, or the White majority. Romero and Roberts reported that the Exploration subscale of the MEIM did predict higher levels of perceived discrimination, as well as more negative views of outgroups. Sellers and Shelton (2003) found a similar pattern, in that higher levels of racial centrality were related to higher perceived discrimination. These studies were cross-sectional in nature and used samples of ethnic minority populations other than American Indians. However, the patterns of results support examining links among ethnic identity, discrimination, and functioning over time.

Gender differences further complicate this body of literature. In a sample of African American young adults, Caldwell et al. (2004) found race centrality (i.e., the degree that one describes or defines his or her identity in relation to race) acted as a more effective buffer against the negative effects of discrimination for men than for women. Sellers and Shelton (2003) found male African American college students perceived more discrimination than did female African American college students.

In sum, further research is warranted that investigates ethnic identity and discrimination experiences in the lives of American Indian female and male adolescents. As adolescence is considered a prime developmental stage for identity development tasks, longitudinal studies targeting teenage participants seem particularly relevant to this set of research questions. The goal of the current study was to examine the direct and interacting effects of perceived discrimination and ethnic or cultural identity on self-esteem, substance use, and social role fulfillment in a Navajo adolescent sample, both concurrently and across time. In order to provide clarity to the developing body of literature assessing ethnic/cultural identification and discrimination experiences, we assessed identification very broadly allowing us to evaluate the buffering effects of subjective feelings of connection to traditional culture, as well involvement and embeddedness in traditional culture (enculturation). Finally, previous studies have not addressed interacting effects of White American identification (acculturation) and discrimination, so we contribute to the literature through exploratory analysis of those relations.

We hypothesized that a strong sense of ethnic identity, measured broadly by capturing subjective experiences of affirmation, exploration, and embeddedness in traditional culture, would be related to increased self-esteem and social functioning and to decreased substance use. Conversely, we predicted heightened perceptions of discrimination would be associated with poorer outcomes on each of these psychosocial variables. Finally, we hypothesized that ethnic identification variables would mitigate the impact of perceived discrimination on psychosocial outcomes, serving as a protective buffer against negative outcomes, as found by Whitbeck and colleagues (2002) in their adult American Indian sample. Gender differences were considered to further provide much needed clarification to this body of research.

This study addressed these developmental issues in a sample of Navajo adolescents living on or near the Navajo Nation in the southwestern United States. It is recognized that a great deal of variability exists among the more than 560 federally recognized American Indian tribes, and no one tribe can represent the American Indian experience. However, the Navajo Nation is the largest American Indian reservation, with a very sophisticated research review and approval process that facilitates community investment in, oversight of, and dissemination of results of research with its citizens. As such, the Navajo Nation represents an ideal context for beginning to answer questions about important developmental processes in a way that can contribute meaningfully to tribal citizens' well-being. Results of studies such as this one can guide hypotheses to be tested in other American Indian communities, ultimately assessing generalizability of findings to other American Indian youth.

## Method

### Participants

Participants were 137 Navajo high school students (67 male and 70 female) from a small town near the Navajo reservation, located in the southwestern United States; roughly 70% of the student body is Navajo, with a large proportion of the Navajo students residing on the reservation. Freshmen and sophomore students were especially encouraged to participate in this study to facilitate availability for a follow-up study. Participation was voluntary at both time points, pending written approval from parents of students that were under 18 years. All student participants were fluent in English. However, many Navajo families speak Navajo as their primary language in the home, and some Navajo elders do not speak English. It is unknown how many student participants spoke Navajo as their first language or spoke Navajo as the primary language in the home.

Participant age ranged from 14 years to 19 years at Time 1 ( $M = 15.24$ ;  $SD = 0.99$ ). The majority of the students were in the 9th grade (62%), with 28.5% in 10th grade, 5.1% in 11th grade, 2.9% in 12th grade, and 2 students not reporting a grade. Of the participants, 61.3% reported being Navajo, 22.6% reported their ethnicity to be Navajo and another American Indian group, and 14.6% reported Navajo and another race (e.g., White, Mexican American, or African American). Two students did not report race. The community that the participants lived in was reported as follows: 27.7% did not live on the reservation, 49.6% resided in established reservation towns, and 19% lived on the reservation outside of

town areas; 3.6% did not report a community type. At Time 1, students reported that 63% of fathers and 64% of mothers had earned a high school degree or less. Eighteen percent of fathers and 23% of mothers were reported to have completed some college or technical school. Students reported that 20% of fathers and 13% of mothers held college or professional degrees. No other information regarding socioeconomic status was collected.

Two years after initial data collection, 92 participants completed the survey again. Roughly half of the Time 2 participants (55.4%) were female. Ages ranged from 16 years to 21 years ( $M = 17.13$ ). Of Time 2 participants, 62% were in 11th grade, 24% were in 12th grade, 7.6% had graduated or were attending college, 6.5% were in 10th grade, and 1 student had dropped out. At Time 2, 71.7% lived on the reservation, in the nearby reservation town or more rural areas, whereas 28.3% of the participants lived off the reservation. Most students reported that they never have been married (97%), and 5% reported having children at Time 2.

Independent samples  $t$  tests compared participants who participated at Time 2 to those who were lost to follow-up on the demographic and primary study variables of ethnic identity belonging, ethnic identity exploration, American Indian cultural identification, majority cultural identification, discrimination experiences, self-esteem, social functioning, substance use, age, grade in school, and parental marital status. Few statistically significant differences were observed, although those who did participate at Time 2 reported higher Time 1 levels of social functioning,  $t(133) = 2.152$ ,  $p = .033$ ,  $d = .38$ , and MEIM Belonging,  $t(135)$ ,  $p = .005$ ,  $d = .50$ , with moderate effect sizes for both differences.

## Measures

**Demographic information.** The demographic information questionnaire assessed Navajo heritage (i.e., Navajo, Navajo and another American Indian tribe, Navajo and another race), age, gender, grade point average, geographic location (on/off reservation), and household structure.

**Discrimination experiences (Yoder, 2001).** The 10-item discrimination scale assessed frequency of perceptions of discrimination as a result of being an American Indian. Participants report experiences of being insulted or excluded by peers (three items), encounters with teachers who do not expect them to excel (two items), being treated disrespectfully by business owners (one item), harassment from police (one item), being suspected of wrongdoing by an adult (one item), having a racial slur yelled at them (one item), and being physically harmed (one item). Items are answered with 1 = *never*, 2 = *rarely*, 3 = *sometimes*, and 4 = *frequently*. For this study, items were reworded so that they identify respondents as specifically Navajo, rather than generically as American Indian. A total score was calculated as the mean across all items. In previous research with American Indian adolescents, Yoder (2001) reported a Cronbach's alpha of .78 and observed significant relations among discrimination scores and depressive symptoms, hopelessness, substance use, and suicidal ideation. In the current study, Cronbach's alphas of .84 and .88, respectively, were obtained for participants at Time 1 and Time 2.

**Revised MEIM (Phinney, 1992).** The seven-item Affirmation and Belonging subscale of the MEIM assesses commitment to one's ethnic identity. The five-item Exploration subscale measures

the extent to which participants have expended effort to learn about their ethnic heritage. All items have a 4-point Likert-type scale (1 = *strongly disagree*; 4 = *strongly agree*). Averaging scores across items for each scale yields scale scores for Affirmation and Belonging and Exploration. Roberts et al. (1999) found internal consistency to be acceptable (Cronbach's alpha for 11 different ethnic groups ranged from .81 to .89). For this sample, Time 1 alphas were .80 for Affirmation and Belonging and .63 for Exploration. Time 2 alphas are .92 for Affirmation and Belonging and .71 for exploration.

**OCIS (Oetting & Beauvais, 1990).** The OCIS contains six items regarding identification with multiple cultures. Each item is rated on a Likert-type scale from 1 to 4. Sample items include "Does your family live by or follow a White American or Anglo way of life? An American Indian way of life? A Mexican American way of life?" with respondents rating their affiliation with each of the three cultures. An average identification score for each culture is calculated across the six items. Oetting and Beauvais reported reliability above .80. For this sample, Time 1 Cronbach's alphas were .90 for American Indian culture and .91 for White culture. Time 2 alphas were .91 for American Indian culture and .92 for White cultural identification. Mexican American culture was not relevant to the current study and this subscale was not used.

**Rosenberg Self-Esteem Scale.** The 10-item Rosenberg Self-Esteem Scale is a global measure of self-esteem designed to be used with adolescents. A Likert-type scale from 1 to 4 is used; negatively worded items are reverse scored so that higher scores indicate higher self-esteem. Scale scores are calculated as the mean across items. Rosenberg (1965) reported test-retest reliability of .85 and demonstrated good validity. Hagborg (1993) reported that the Rosenberg Self-Esteem Scale is a widely used measure with acceptable reliability and validity. This scale yielded Cronbach's alphas for this sample of .81 at Time 1 and .83 at Time 2.

**Child and Adolescent Social and Adaptive Functioning Scale (CASAFS; Price, Spence, Sheffield, & Donovan, 2002).** The 24-item CASAFS was developed to measure general social adaptive functioning in adolescents. The CASAFS yields four intercorrelated six-item scales (school performance, peer relationships, family relationships, and home duties/self-care) and a global total social functioning scale calculated as the mean across all items. Items are rated on a 4-point Likert-type scale (1 = *never* to 4 = *always*). Family relationship items have a fifth category ("does not apply to me") when the adolescent does not have a mother, siblings, and so forth, about whom to report. As the original CASAFS was developed in Australia, minor wording changes were necessary to make the measure consistent with contemporary United States English (e.g., "marks" was changed to "grades"). The usefulness of the CASAFS was demonstrated by a significant negative correlation ( $r = -.34$ ) with the Beck Depression Inventory (Price et al.), and test-retest reliability was .81. The global social functioning scale was used, yielding a Time 1 alpha of .79 and Time 2 alpha of .85.

**Substance use.** Substance use frequency was assessed with a 5-point scale, with 1 indicating *no use* and 5 indicating *more than 15 times in the past month*. Five questions assessed the frequency of use of alcohol, marijuana, hallucinogens, stimulants, and inhalants. Total frequency scores were calculated as the sum of the five items, with a potential range from 5 (*no drug use*) to 25 (*frequent*

use of all five substance categories). This scale yielded an alpha for this sample of .69 for Time 1 and .81 for Time 2.

### Procedure

Approval for this project was provided by the participating school district governing board and by the Navajo Nation Human Research Review Board, and this article was approved with no changes or recommendations from the board. At Time 1, freshman and sophomore students were notified of this study in classes that contained the majority of students in these grades. All students were notified of the study via signs posted in the school and daily school announcements. Written parent consent was obtained via a letter sent home with the student indicating that he or she would be interested in participating. Interested students were given consent forms during class, or they contacted the school counselor outside of class time. If parents did not wish their students to participate in the study, they were instructed not to sign the form. At times agreed on by the teacher, students were sent to the school library to complete the survey, which was administered by the second author and generally took 45 min. As incentives, all students that returned their consent form signed by their parents or indicated that their parents did not want them to participate were given a candy bar. All students who returned a signed consent form and completed the survey were given a gift certificate to the local movie theater.

Two years after Time 1 data collection, all students who were still enrolled in the high school received follow-up survey packets at school. School staff members, who were also community members, knew the location of many participants who were no longer enrolled in the school. School staff facilitated sending packets to many participants who were no longer enrolled in school, either by mail or through a relative that was more easily contacted. High

school students returned their completed packets directly to the second author. Participants received a \$10 incentive upon return of the packet. Of the students who received their packets by mail, three students returned completed packets in a self-addressed, stamped envelope provided for them with the survey and consent form. Participants who returned their surveys by mail were sent the \$10 incentive by return mail.

### Results

Means and standard deviations for male and female participants at Time 1 and Time 2 for all study variables are reported in Table 1. Two multivariate analyses of variance (MANOVAs) were calculated to assess for gender differences across all study variables (MEIM Belonging and Exploration, OCIS American Indian and White American, Discrimination, Self-esteem, Social Functioning, and Substance Use) at Time 1 and Time 2, respectively. The omnibus MANOVA was significant at Time 1,  $F(8, 124) = 2.55, p = .013, \eta^2 = .14$ . Follow-up univariate analyses indicated that female adolescents reported significantly higher levels of ethnic identity belonging,  $F(1, 131) = 5.64, p = .019, \eta^2 = .04$ , exploration,  $F(1, 131) = 8.82, p = .004, \eta^2 = .06$ , and social functioning,  $F(1, 131) = 6.96, p = .009, \eta^2 = .05$ . At Time 2, the omnibus MANOVA was also significant,  $F(8, 81) = 2.25, p = .032, \eta^2 = .18$ . Female adolescents reported having fewer experiences of discrimination,  $F(1, 88) = 4.34, p = .040, \eta^2 = .05$ , and higher levels of social functioning,  $F(1, 88) = 4.10, p = .046, \eta^2 = .05$ .

### Concurrent Links Among Ethnic Identity, Experiences of Discrimination, and Psychosocial Functioning

To address the primary research questions regarding the moderating effects of different aspects of ethnic and cultural identifi-

Table 1  
Means (*M*) and Standard Deviations (*SD*) for Ethnic Identity Measures and Psychosocial Outcome Measures for Male Adolescents and Female Adolescents at Time 1 and Time 2

Measure	Gender	Time 1		Time 2		Possible range
		<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	
MEIM Belonging scale	Male	3.24 <sup>a</sup>	0.51	3.23	0.57	1–4
	Female	3.43	0.45	3.42	0.56	
MEIM Exploration scale	Male	2.76 <sup>a</sup>	0.45	2.82	0.59	1–4
	Female	3.01	0.49	2.84	0.57	
Experiences of discrimination	Male <sup>b</sup>	1.67	0.57	1.78 <sup>a</sup>	0.70	1–4
	Female	1.56	0.48	1.52	0.48	
OCIS Majority Culture scale	Male	2.54	0.82	2.81	0.70	1–4
	Female <sup>b</sup>	2.56	0.86	3.08	0.85	
OCIS American Indian scale	Male	3.25	0.56	3.11	0.75	1–4
	Female	3.13	0.76	3.17	0.72	
RSES (self-esteem)	Male	3.07	0.50	3.10	0.49	1–4
	Female	3.14	0.49	3.14	0.50	
CASAFS (social functioning)	Male	71.88 <sup>a</sup>	9.45	71.83 <sup>a</sup>	9.74	24–96
	Female	76.00	8.13	75.69	8.37	
Drug use frequency	Male <sup>b</sup>	6.13	1.98	7.76	3.75	5–25
	Female	5.99	1.73	6.54	2.61	

Note. Time 1: Male adolescents  $N = 65$ , Female adolescents  $N = 68$ . Time 2: Male adolescents  $N = 41$ , Female adolescents  $N = 49$ . OCIS = Orthogonal Cultural Identification Scale; MEIM = Multiethnic Ethnic Identity Measure; RSES = Rosenberg Self-Esteem Scale; CASAFS = Child and Adolescent Social and Adaptive Functioning Scale.

<sup>a</sup> Gender difference significant with  $\alpha = .05$ . <sup>b</sup> Repeated measures  $t$  test significant with  $\alpha = .05$ .

cation on the associations between discrimination experiences and psychosocial functioning (i.e., self-esteem, social functioning, and substance use), classic guidelines recommended by Baron and Kenny (1986) were followed. Moderation effects are assessed by examining the interaction between the independent variable (i.e., discrimination experiences) and the moderator (i.e., the ethnic identity variable). A significant interaction suggests that the effect of discrimination is different at different levels of the moderator. Separately for male adolescents and female adolescents, a series of hierarchical regression equations were calculated for each dependent variable (self-esteem, social functioning, and substance use) and for each time point. Specifically, at Time 1 four separate regression equations were calculated for male adolescents and female adolescents for each dependent variable. In each model, discrimination experiences and one of the four ethnic/cultural identity variables (MEIM Belonging, MEIM Exploration, OCIS American Indian, or OCIS White American) were entered in the first step of the regression model. In the second step of each model, an interaction term, calculated as the product of the discrimination variable and the ethnic identity variable, was entered in to the model. All variables were centered prior to calculating the inter-

action terms, and centered variables were used in all regression equations. Tables 2 and 3 present all regression results for male adolescents and female adolescents for Time 1. Tables 4 and 5 present all regression results for Time 2 for male adolescents and female adolescents.

**Concurrent associations at Time 1.** At Time 1, several aspects of ethnic identification were related to greater resilience for both male adolescents and female adolescents. The Belonging and Affirmation scale of the MEIM emerged as a strong correlate of positive functioning for both male adolescents and female adolescents, related to higher self-esteem and lower substance use for male adolescents (see Table 2) and to higher self-esteem and social functioning for female adolescents (see Table 3). MEIM Exploration also demonstrated protective associations, related to higher self-esteem and social functioning for male adolescents (see Table 2) and better social functioning for female adolescents (see Table 3). Finally, there were positive direct effects for the White American subscale of the OCIS, linked to higher self-esteem and social functioning for male adolescents (see Table 2) and to higher self-esteem for female adolescents (see Table 3). However, there were also negative direct effects for discrimination experiences for

Table 2  
*Hierarchical Regressions Assessing Moderating Effects of Ethnic Identity Variables at Time 1 for Male Adolescents*

Outcome	Predictors	Adj. $R^2$	$F$ change	$p$	$\beta$	$t$	$p$
Self-esteem (RSES)	MEIM Belonging	.139	6.23	.003	.324	2.73	.008
	Discrimination				-.182	-1.54	.129
	Interaction	.158	2.43	.124	.210	1.56	.124
	MEIM Exploration	.095	4.43	.016	.239	2.03	.047
	Discrimination				-.259	-2.19	.032
	Interaction	.108	1.87	.177	.183	1.37	.177
	OCIS Am. Ind.	.043	2.47	.092	-.081	-0.67	.505
	Discrimination				-.262	-2.16	.035
	Interaction	.167	10.36	.002	.394	3.22	.002
	OCIS Wh. Am.	.188	8.51	.001	.387	3.42	.001
	Discrimination				-.311	-2.76	.008
	Interaction	.175	0.01	.922	.012	0.10	.922
Social functioning (CASAFS)	MEIM Belonging	.082	3.87	.026	.21	1.73	.090
	Discrimination				-.22	-1.79	.078
	Interaction	.076	0.58	.449	.104	0.76	.449
	MEIM Exploration	.086	4.20	.019	.336	2.89	.005
	Discrimination				-.039	-0.34	.737
	Interaction	.078	0.42	.519	.077	0.65	.519
	OCIS Am. Ind.	.047	2.58	.084	-.093	-0.76	.451
	Discrimination				-.272	-2.21	.031
	Interaction	.063	2.05	.157	.180	1.43	.157
	OCIS Wh. Am.	.103	4.67	.013	.252	2.11	.039
	Discrimination				-.295	-2.47	.016
	Interaction	.095	0.43	.513	-.085	-0.66	.513
Substance use	MEIM Belonging	.088	4.12	.021	-.337	-2.77	.007
	Discrimination				.012	0.10	.923
	Interaction	.078	0.33	.565	-.082	-0.58	.565
	MEIM Exploration	.013	1.42	.250	-.187	-1.52	.135
	Discrimination				.091	0.74	.461
	Interaction	.014	1.09	.301	-.147	-1.04	.301
	OCIS Am. Ind.	.020	1.65	.200	-.201	-1.65	.103
	Discrimination				.077	0.63	.531
	Interaction	.004	0.02	.890	.019	0.14	.890
	OCIS Wh. Am.	-.022	0.31	.735	-.040	-0.32	.752
	Discrimination				.096	0.76	.452
	Interaction	-.038	0.02	.903	-.017	-0.12	.903

Note.  $N = 67$ . OCIS = Orthogonal Cultural Identification Scale; MEIM = Multiethnic Ethnic Identity Measure; RSES = Rosenberg Self-Esteem Scale; CASAFS = Child and Adolescent Social and Adaptive Functioning Scale; Adj. = adjusted; Am. Ind. = American Indian; Wh. Am. = White American.

Table 3  
*Hierarchical Regressions Assessing Moderating Effects of Ethnic Identity Variables at Time 1 for Female Adolescents*

Outcome	Predictors	Adj. $R^2$	$F$ change	$p$	$\beta$	$t$	$p$	
Self-esteem (RSES)	MEIM Belonging	.242	11.86	<.001	.516	4.82	<.001	
	Discrimination				.015	0.14	.886	
	Step 2 Interaction	.282	4.66	.035	.224	2.16	.035	
	Step 1	MEIM Exploration	-.009	0.70	.499	.126	1.03	.305
		Discrimination				-.079	-0.64	.522
	Step 2 Interaction	.000	1.57	.215	.155	1.25	.215	
	Step 1	OCIS Am. Ind.	-.024	0.22	.808	-.043	-0.30	.765
		Discrimination				-.076	-.062	.539
	Step 2 Interaction	-.020	1.24	.270	-.159	-1.11	.270	
	Step 1	OCIS Wh. Am.	.039	2.36	.102	.253	2.093	.040
		Discrimination				-.027	-0.23	.822
	Step 2 Interaction	.052	1.93	.170	.164	1.39	.170	
Social functioning (CASAFS)	MEIM Belonging	.159	7.41	.001	.458	4.09	<.001	
	Discrimination				.054	0.46	.637	
	Step 2 Interaction	.183	2.95	.090	.190	1.72	.090	
	Step 1	MEIM Exploration	.086	4.20	.019	.336	2.89	.005
		Discrimination				-.039	-0.34	.737
	Step 2 Interaction	.078	0.42	.519	.077	0.65	.519	
	Step 1	OCIS Am. Ind.	-.024	0.21	.811	.078	0.63	.531
		Discrimination				-.030	-0.24	.811
	Step 2 Interaction	-.027	0.78	.380	.126	0.89	.380	
	Step 1	OCIS Wh. Am.	-.029	0.03	.968	.025	0.20	.841
		Discrimination				-.015	-0.12	.907
	Step 2 Interaction	-.043	0.12	.734	.042	0.34	.734	
Substance use	MEIM Belonging	.014	1.48	.235	-.151	-1.23	.225	
	Discrimination				.121	0.99	.327	
	Step 2 Interaction	-.001	0.01	.904	-.015	-0.12	.904	
	Step 1	MEIM Exploration	-.001	0.95	.391	-.076	-0.62	.537
		Discrimination				.152	1.24	.218
	Step 2 Interaction	-.006	0.71	.404	.105	0.84	.404	
	Step 1	OCIS Am. Ind.	.003	1.09	.342	.106	0.86	.395
		Discrimination				.131	0.06	.291
	Step 2 Interaction	-.009	0.23	.632	-.069	-0.48	.632	
	Step 1	OCIS Wh. Am.	-.003	0.89	.418	.072	0.58	.566
		Discrimination				.160	1.28	.204
	Step 2 Interaction	-.019	0.02	.887	.018	0.14	.887	

Note.  $N = 70$ . OCIS = Orthogonal Cultural Identification Scale; MEIM = Multiethnic Ethnic Identity Measure; RSES = Rosenberg Self-Esteem Scale; CASAFS = Child and Adolescent Social and Adaptive Functioning Scale; Adj. = adjusted; Am. Ind. = American Indian; Wh. Am. = White American.

male adolescents at Time 1. Male adolescents who experienced more discrimination reported lower self-esteem and social functioning (see Table 2).

Two significant interactions emerged representing moderation of the effect of discrimination by ethnic identification variables. For male adolescents, the significant interaction between the American Indian scale of the OCIS and discrimination in predicting self-esteem is represented in Figure 1. When American Indian identification was low, a strong negative relation emerged between discrimination and self-esteem. However, when American Indian identification was high, there was no relation between discrimination and self-esteem, suggesting that strong identification with Navajo culture (i.e., a sense of success in and knowledge of Navajo culture) served as a buffer against the negative effects of discrimination. Also presented in Figure 1 is a significant interaction between MEIM Affirmation and Belonging and discrimination in predicting female adolescents' self-esteem. Although the positive effect of MEIM Belonging is evident in the figure, with greater belonging related to higher self-esteem, the figure also presents an increasingly positive relation between discrimination experiences

and self-esteem as girls' sense of affirmation and belonging to Navajo culture increases.

**Concurrent links at Time 2.** At Time 2, there were fewer significant associations between ethnic identity variables and positive psychosocial functioning for both male adolescents and female adolescents. For female adolescents, higher MEIM Belonging scores were still related to higher self-esteem, and higher MEIM Exploration scores were still linked to better social functioning (see Table 5). However, only the positive associations between MEIM Exploration and outcomes (self-esteem and social functioning) were retained at Time 2 for male adolescents. Instead, a strong and consistent negative association between discrimination experiences and every measure of psychosocial functioning dominated the Time 2 results for boys (see Table 4).

Again, two significant interaction effects represented some moderation of the effects of discrimination by ethnic identification variables. For male adolescents, Figure 2 presents a significant interaction between OCIS White American Identification and discrimination in predicting the frequency of substance use, such that the positive relation between discrimination experiences and sub-



Table 4  
*Hierarchical Regressions Assessing Moderating Effects of Ethnic Identity Variables at Time 2 for Male Adolescents*

Outcome	Predictors	Adj. $R^2$	F change	$p$	$\beta$	$t$	$p$
Self-esteem (RSES)	MEIM Belonging	.176	5.27	.010	.244	1.70	.098
	Discrimination				-.379	-2.63	.012
	Step 1						
	Interaction	.171	0.80	.378	.152	0.89	.378
	Step 2						
	MEIM Exploration	.170	5.09	.011	.235	1.60	.117
	Discrimination				-.441	-3.01	.005
	Step 1						
	Interaction	.181	1.52	.226	.223	1.23	.226
	Step 2						
	OCIS Am. Ind.	.114	3.58	.038	-.021	-.143	.887
	Discrimination				-.399	-2.67	.011
Step 1							
Interaction	.183	4.211	.047	.338	2.05	.047	
Step 2							
OCIS Wh. Am.	.120	3.72	.034	.077	0.51	.612	
Discrimination				-.412	-2.73	.010	
Step 1							
Interaction	.096	0.02	.894	-.021	-0.14	.894	
Step 2							
Social functioning (CASAFS)	MEIM Belonging	.207	6.24	.005	.451	3.19	.003
Discrimination					-.179	-1.27	.213
Step 1							
Interaction	.222	1.71	.199	.216	1.31	.199	
Step 2							
MEIM Exploration	.299	9.52	<.001	.547	4.06	<.001	
Discrimination					-.313	-2.32	.026
Step 1							
Interaction	.300	1.06	.310	.172	1.03	.310	
Step 2							
OCIS Am. Ind.	.041	1.85	.171	.210	1.35	.185	
Discrimination					-.192	-1.23	.225
Step 1							
Interaction	.079	2.57	.118	.280	1.60	.118	
Step 2							
OCIS Wh. Am.	.004	1.09	.348	-.096	-0.60	.555	
Discrimination					-.194	-1.21	.235
Step 1							
Interaction	.000	0.85	.361	.170	0.92	.361	
Step 2							
Substance use	MEIM Belonging	.335	11.09	<.001	.021	0.16	.873
Discrimination					.608	4.71	<.001
Step 1							
Interaction	.318	0.02	.905	-.019	-0.12	.905	
Step 2							
MEIM Exploration	.336	11.13	<.001	-.037	-0.28	.778	
Discrimination					.613	4.68	<.001
Step 1							
Interaction	.321	0.16	.692	.066	0.40	.692	
Step 2							
OCIS Am. Ind.	.335	11.09	<.001	.022	0.17	.866	
Discrimination					.609	4.70	<.001
Step 1							
Interaction	.320	0.12	.730	-.052	-0.35	.730	
Step 2							
OCIS Wh. Am.	.386	13.57	<.001	-.225	-1.78	.083	
Discrimination					.650	5.15	<.001
Step 1							
Interaction	.451	5.70	.022	-.324	-2.39	.022	
Step 2							

Note.  $N = 41$ . OCIS = Orthogonal Cultural Identification Scale; MEIM = Multiethnic Ethnic Identity Measure; RSES = Rosenberg Self-Esteem Scale; CASAFS = Child and Adolescent Social and Adaptive Functioning Scale; Adj. = adjusted; Am. Ind. = American Indian; Wh. Am. = White American.

stance use is exacerbated at the lowest levels of White American identification. For boys with higher OCIS White American scores, the relation between discrimination experiences and substance use is quite weak. For female adolescents, a significant interaction between MEIM Exploration and discrimination experiences is also represented in Figure 2. Interestingly, there is generally a negative relation between discrimination experiences and substance use for female adolescents, and this negative relation is especially pronounced among those with the lowest scores on MEIM Exploration.

### Relations Among Ethnic Identity and Experiences of Discrimination Over Time

Table 6 presents correlations among ethnic identity and discrimination scores from Time 1 and Time 2 for both male adolescents and female adolescents. Correlations between Time 1 MEIM and OCIS American Indian scores were significant and strong for male adolescents but were less consistently significant for female adolescents. However, discrimination experiences and the Majority Culture scale of the OCIS were very weakly correlated with most other measures over time.

### Relations Among Ethnic Identity, Discrimination, and Functioning Across Time

A series of dependent samples  $t$  tests were conducted to assess for differences between Time 1 and Time 2 on all study variables for both male adolescents and female adolescents. Male adolescents reported significant increases in experiences of discrimination,  $t(39) = 2.88$ ,  $p = .006$ ,  $d = 0.45$ , and substance use frequency,  $t(40) = 3.23$ ,  $p = .003$ ,  $d = 0.52$ . The only significant change over the course of the 2 years for female adolescents was an increase in majority cultural identification,  $t(49) = 3.80$ ,  $p < .001$ ,  $d = 0.54$ .

A series of hierarchical regression equations tested moderation questions longitudinally as well. For these analyses, substance use, self-esteem, and social functioning scores at Time 2 were predicted from Time 1 discrimination and ethnic identification variables. Time 1 scores for the relevant dependent variable were entered in the first step, followed by the Time 1 centered discrimination and the relevant ethnic identification variable in the second step. Finally, the interaction between discrimination and the relevant ethnic identification variable was entered in the third step. Tables 7 and 8 present all regression results.

Table 5  
*Hierarchical Regressions Assessing Moderating Effects of Ethnic Identity Variables at Time 2 for Female Adolescents*

Outcome	Predictors	Adj. $R^2$	$F$ change	$p$	$\beta$	$t$	$p$
Self-esteem (RSES)	MEIM Belonging	.123	4.45	.017	.403	2.95	.005
	Discrimination				-.144	-1.05	.299
	Step 1						
	Interaction	.143	2.09	.155	-.251	-1.45	.155
	Step 2						
	MEIM Exploration	.024	1.61	.210	.251	1.75	.088
	Discrimination				-.110	-0.77	.448
	Step 1						
	Interaction	.019	0.73	.397	-.417	-0.85	.397
	Step 2						
Social functioning (CASAFS)	OCIS Am. Ind.	-.021	0.49	.615	-.131	-.90	.372
	Discrimination				-.046	0.01	.990
	Step 1						
	Interaction	-.003	1.84	.182	-.246	-.136	.182
	Step 2						
	OCIS Wh. Am.	-.018	0.58	.567	.143	0.99	.328
	Discrimination				-.054	-.037	.710
	Step 1						
	Interaction	.039	3.78	.058	.303	1.94	.058
	Step 2						
Substance use	MEIM Belonging	.051	2.29	.113	.227	1.58	.121
	Discrimination				-.251	-1.75	.088
	Step 1						
	Interaction	.072	2.04	.160	-.260	-1.43	.160
	Step 2						
	MEIM Exploration	.137	4.81	.013	.372	2.71	.009
	Discrimination				-.283	-2.06	.045
	Step 1						
	Interaction	.168	2.69	.108	-.259	-1.64	.108
	Step 2						
Substance use	OCIS Am. Ind.	.016	1.39	.260	.126	0.88	.386
	Discrimination				-.216	-1.50	.140
	Step 1						
	Interaction	.000	0.28	.600	-.096	-0.53	.600
	Step 2						
	OCIS Wh. Am.	.017	1.40	.255	-.128	-0.90	.375
	Discrimination				-.208	-1.45	.153
	Step 1						
	Interaction	.013	0.82	.369	.145	0.91	.369
	Step 2						
Substance use	MEIM Belonging	.021	1.52	.228	-.227	-1.57	.123
	Discrimination				-.061	-0.42	.676
	Step 1						
	Interaction	.073	3.66	.062	.345	1.91	.062
	Step 2						
	MEIM Exploration	.030	1.75	.185	-.245	-1.70	.095
	Discrimination				-.059	-0.41	.684
	Step 1						
	Interaction	.093	4.31	.044	.343	2.08	.044
	Step 2						
Substance use	OCIS Am. Ind.	-.028	0.32	.727	-.043	-0.30	.768
	Discrimination				-.103	-0.71	.482
	Step 1						
	Interaction	-.015	1.60	.212	.231	1.27	.212
	Step 2						
	OCIS Wh. Am.	-.007	0.83	.444	.150	1.04	.302
	Discrimination				-.102	0.71	.481
	Step 1						
	Interaction	.044	3.52	.067	-.292	-1.88	.067
	Step 2						

Note.  $N = 50$ . OCIS = Orthogonal Cultural Identification Scale; MEIM = Multiethnic Ethnic Identity Measure; RSES = Rosenberg Self-Esteem Scale; CASAFS = Child and Adolescent Social and Adaptive Functioning Scale; Adj. = adjusted; Am. Ind. = American Indian; Wh. Am. = White American.

Generally, few significant direct longitudinal effects of ethnic identification variables emerged, above and beyond the variability accounted for by Time 1 psychosocial functioning scores. For male adolescents, a positive longitudinal direct effect of MEIM Belonging emerged, such that higher belonging at Time 1 was related to better social functioning at Time 2. However, a strong and consistent direct effect of discrimination also emerged in predicting higher substance use over time.

Three significant interaction effects suggested moderation effects. For male adolescents, two significant interactions are depicted in Figure 3. First, scores on the OCIS American Indian scale interacted to predict social functioning over time. At the lowest levels of American Indian identification, a negative relation was observed between discrimination and social functioning over time. However, at the highest levels of American Indian identification, a positive relation emerged between discrimination and social functioning, suggesting a counterintuitive longitudinal effect of discrimination for those who report the highest level of engagement and involvement in American Indian culture. Second, a significant interaction emerged between OCIS White American identification

and discrimination in predicting substance use frequency over time. Figure 3 demonstrates a strong positive relation between discrimination experiences and substance use for those with the highest levels of White American identification and, basically, no relation between discrimination scores and substance use for those at the lowest levels of White American identification. Finally, one significant interaction was observed across time for female adolescents. OCIS White American scores and discrimination experiences interacted to predict self-esteem longitudinally. Figure 3 demonstrates that a positive relation between discrimination experiences and self-esteem emerged for girls at the highest level of White American identification, whereas a negative relation between discrimination and self-esteem was observed for girls at the lowest levels of White American identification.

## Discussion

The goal in this study was to examine concurrent and longitudinal links among ethnic identity, discrimination, and psychosocial functioning, in an effort to understand both risk and resiliency

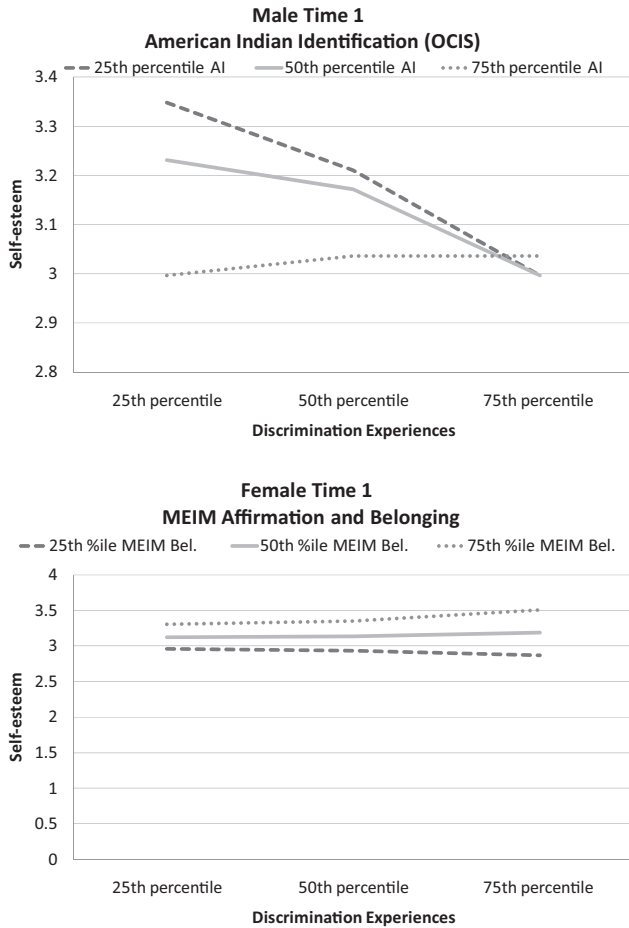


Figure 1. Interactions between discrimination experiences and ethnic identification at Time 1. OCIS = Orthogonal Cultural Identification Scale; MEIM = Multiethnic Ethnic Identity Measure; AI = American Indian; Bel. = belonging.

factors in Navajo adolescents. We discuss findings below and propose a cultural understanding of these relations, informed by both Navajo and broader American Indian perspectives.

**Development of Ethnic Identity and Discrimination Experiences Across Midadolescence**

Overall, mean scores of psychological and social functioning and ethnic identification suggest that most students in the current sample were functioning well and were connected to Navajo culture. However, tests of mean differences highlight two important trends. Although few sex differences were statistically significant, generally, young women in this sample reported higher ethnic identity and psychosocial functioning scores than did young men. Also, young men demonstrated increases over time in substance use frequency, whereas psychosocial functioning scores remained stable for girls. One reason for female adolescents' consistency in positive outcomes over time and overall more positive functioning may be rooted in matriarchal Navajo culture. Historically, the dominant lineage within the Navajo clan resides in the matriarch (Witherspoon, 1975), with both child rearing and

ownership of property held within the mother's clan. Presently, remnants of this cultural role continue to be a part of many female adolescents' lives. As a result, female adolescents may be culturally expected to direct and take charge, which is often empowering and may be linked to increased self-esteem (Deyle & Margonis, 1995). The role of a matriarch serves to not only connect female adolescents with the community but also increase their ability to navigate within the majority culture, as both leadership and assertiveness are valued qualities in both cultures.

Despite potential cultural implications, however, it is important to acknowledge that the more negative trajectory for male adolescents is consistent with majority population findings (Liu & Kaplan, 1999). Male adolescents engage in more delinquent activities than do female adolescents generally, and delinquency appears to increase from early to middle adolescence in the general population, before decreasing over the transition into young adulthood (Windle, 2000). Although trajectories of the development of delinquency over time may be similar between Navajo adolescents and those of the general population, one cannot overlook the unique experiences of American Indian adolescents. Acknowledg-

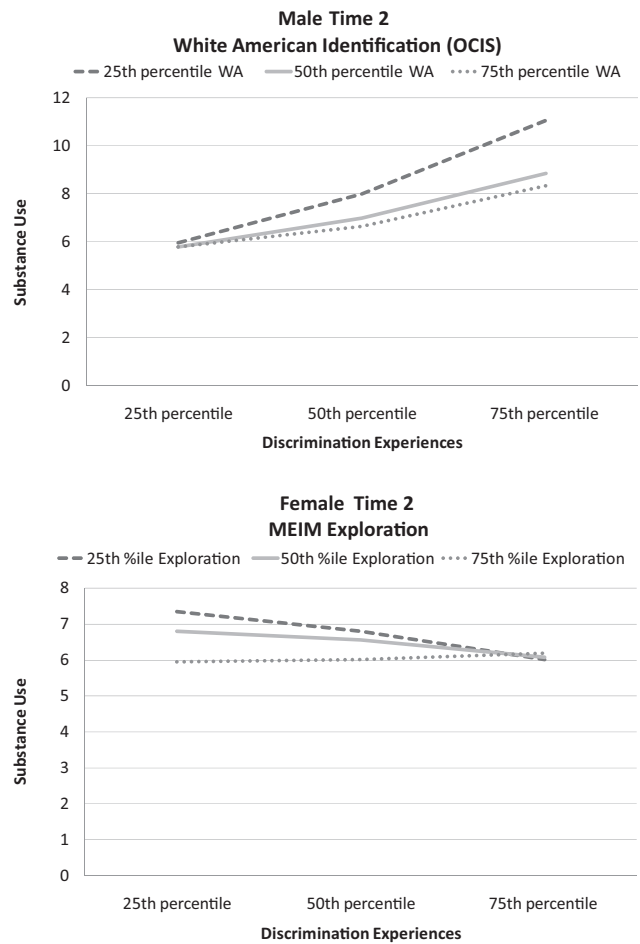


Figure 2. Interactions between discrimination experiences and ethnic identification at Time 2. OCIS = Orthogonal Cultural Identification Scale; MEIM = Multiethnic Ethnic Identity Measure; AI = American Indian; Bel. = belonging.

Table 6  
*Correlations Between Ethnic Identity and Experiences of Discrimination From Time 1 to Time 2*

Time 1	Time 2				
	Ethnic identity belonging	Ethnic identity exploration	American Indian cultural identification	Majority cultural identification	Experiences of discrimination
Male adolescents ( <i>N</i> = 41)					
Ethnic identity belonging	.728**	.551**	.549**	-.051	.082
Ethnic identity exploration	.522**	.476**	.396*	-.166	.194
American Indian cultural identification	.550**	.511**	.721**	-.241	.065
Majority cultural identification	-.213	-.195	-.447**	.277	.192
Experiences of discrimination	-.092	.077	-.161	.074	.677**
Female adolescents ( <i>N</i> = 49)					
Ethnic identity belonging	.494**	.418**	.177	-.059	.048
Ethnic identity exploration	.217	.396**	.207	-.127	.185
American Indian cultural identification	.399**	.329*	.495**	-.189	.019
Majority cultural identification	-.181	-.097	-.529**	.566**	.097
Experiences of discrimination	.049	.007	.150	-.064	.427**

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

ing the ways that the patriarchal mainstream U.S. culture has influenced Navajo daily life (e.g., a government system that very closely mirrors the broader U.S. government structure) and recognizing the challenges youth face to live biculturally, culturally based explanations and additional research on the unique struggles faced by Navajo male adolescents are warranted.

### Relations Between Ethnic Identity and Discrimination Experiences Over Time

Previous research with other minority populations (Romero & Roberts, 1998; Sellers & Shelton, 2003) has shown that higher levels of ethnic identity were related to higher levels of perceived experiences of discrimination. This has been conceptualized as a reciprocal relation in which, as awareness and importance of one's ethnic identity increases, a person will also become more aware of, or sensitive to acts of discrimination. In addition, a more recent study (Kaiser & Pratt-Hyatt, 2009) found that White participants in an experimental manipulation perceived strongly identified Black American and Latino targets more negatively than weakly identified targets, but strength of racial identification did not affect their ratings of White targets. Thus, it appears that strongly identified ethnic minorities may both perceive and receive greater negativity from Whites. In this sample of Navajo adolescents, however, ethnic identity and experiences of discrimination were not related to one another over time for either male adolescents or female adolescents. As previous research has been conducted largely with other minority populations, the extent to which these theoretical connections between discrimination and ethnic or cultural identification apply to American Indian populations remains questionable.

As might be expected, American Indian identification remained quite stable over the course of midadolescence, especially for male adolescents. Thus, results suggest that a sense of belonging to and efficacy in Navajo culture are established prior to the beginning of high school and are not vulnerable to influence by experiences of discrimination. Recall though that these data were collected in a

predominantly Navajo community with close ties to the reservation. Ethnic identity development trajectories in urban settings or for youth who are less embedded in traditional culture may look very different.

Finally, we note that OCIS White American identification showed little relation to the very subjective affirmation and exploration aspects of Navajo identification assessed by the MEIM over time, but was strongly negatively related to OCIS American Indian identification over time. The lack of relation between White identification and exploration and affirmation of Navajo culture is what would be expected if majority culture and traditional culture identification are independent processes, as theorized (Oetting & Beauvais, 1990). However, the strong negative relation between White identification and American Indian identification calls into question the notion of orthogonal identification. At least in this sample of Navajo adolescents living on or close to the reservation, feeling successful in and embedded in White American culture at the beginning of high school predicted less success and investment in Navajo culture by the end of high school. Interestingly, the opposite was not true. Those who were higher on American Indian identification at Time 1 did not report significantly less investment in White culture by Time 2. This suggests that there is a potential cost to adolescents who identify strongly with White American culture in early adolescence, at least with regard to their investment in traditional ways of life.

### Concurrent Relations Among Ethnic Identity, Discrimination, and Psychosocial Outcomes

Positive relations emerged at Time 1 between the Exploration and the Affirmation and Belonging scales of the MEIM and better psychosocial functioning for both male adolescents and female adolescents. This is consistent with hypotheses and supports the role of strong ethnic identification in positive youth adaptation. This was particularly true with regard to the resiliency factors of self-esteem and positive social functioning, although MEIM Af-

Table 7  
*Hierarchical Regressions Assessing Moderating Effects of Ethnic Identity Variables Longitudinally for Male Adolescents*

Outcome	Predictors	Adj. $R^2$	$F$ change	$p$	$\beta$	$t$	$p$	
Self-esteem (RSES)	Time 1 Self-esteem	.092	4.93	.032	.339	2.22	.032	
	Step 2	MEIM Belonging	.123	1.67	.202	.018	.122	.904
		Discrimination				-.275	-1.83	.076
	Step 3	Interaction	.114	0.65	.425	.137	0.81	.425
		Step 2	MEIM Exploration	.124	1.70	.198	-.037	-0.24
	Discrimination					-.270	-1.79	.083
	Step 3	Interaction	.126	1.10	.302	.160	1.05	.302
		Step 2	OCIS Am. Ind.	.147	2.24	.121	-.156	-1.03
	Discrimination					-.290	-1.95	.059
	Step 3	Interaction	.172	20.7	.160	.238	1.437	.160
		Step 2	OCIS Wh. Am.	.129	1.81	.178	-.087	-0.53
	Discrimination					-.266	-1.77	.085
Step 3	Interaction	.139	1.43	.241	-.198	-1.19	.241	
	Social functioning (CASAFS)	Time 1 Social Fun.	.131	6.89	.012	.392	2.65	.012
Step 2		MEIM Belonging	.222	3.23	.051	.353	2.49	.017
	Discrimination				-.089	-0.62	.538	
Step 3	Interaction	.243	1.99	.169	.222	1.41	.168	
	Step 2	MEIM Exploration	.120	0.77	.472	.174	1.15	.259
Discrimination					-.094	-0.61	.546	
Step 3	Interaction	.180	3.63	.065	.288	1.91	.065	
	Step 2	OCIS Am. Ind.	.090	0.14	.870	.042	0.26	.793
Discrimination					-.065	-0.41	.682	
Step 3	Interaction	.187	5.28	.028	.375	2.30	.028	
	Step 2	OCIS Wh. Am.	.171	1.90	.164	-.281	-1.89	.067
Discrimination					-.033	-0.22	.824	
Step 3	Interaction	.156	0.36	.551	-.099	-0.60	.551	
	Substance use	Time 1 Substance	.161	8.48	.006	.427	2.91	.006
Step 2		MEIM Belonging	.276	4.01	.027	.022	0.16	.876
	Discrimination				.385	2.82	.008	
Step 3	Interaction	.270	0.69	.411	.128	0.83	.411	
	Step 2	MEIM Exploration	.290	4.47	.018	.120	0.88	.386
Discrimination					.371	2.73	.010	
Step 3	Interaction	.279	0.43	.517	-.090	-0.66	.517	
	Step 2	OCIS Am. Ind.	.341	6.19	.005	.252	1.89	.066
Discrimination					.415	3.17	.003	
Step 3	Interaction	.322	0.01	.958	-.008	-0.05	.958	
	Step 2	OCIS Wh. Am.	.289	4.42	.019	.113	0.84	.409
Discrimination					.373	2.75	.009	
Step 3	Interaction	.347	4.21	.048	.299	2.052	.048	

Note.  $N = 41$ . OCIS = Orthogonal Cultural Identification Scale; MEIM = Multiethnic Ethnic Identity Measure; RSES = Rosenberg Self-Esteem Scale; CASAFS = Child and Adolescent Social and Adaptive Functioning Scale; Social Fun. = Social Functioning; Adj. = adjusted; Am. Ind. = American Indian; Wh. Am. = White American.

firmation and Belonging was also related to lower substance use for boys. In addition, White American identification scores from the OCIS were linked to better outcomes at Time 1 (self-esteem and social functioning for boys, and self-esteem for girls). This finding speaks to the notion of bicultural adaptation as an optimal outcome for minority youth, in general, and American Indian youth, specifically. The CASAFS measures social functioning broadly, asking youth about their success in their home and family roles, peer contexts, and school functioning. Thus, boys' bicultural adaptation might serve a strong protective role with regard to the many, complicated social roles that Navajo youth are expected to play across multiple social contexts.

At Time 2, nearing the end of high school for most participants, a smaller number of significant associations emerged between MEIM scores and psychosocial functioning (especially for boys), and no significant relations between White American identification and outcomes remained. The decreasing salience

of ethnic and cultural identification for youths' positive adjustment is disturbing. There was no decrease over time in the levels of ethnic identification for either male adolescents or female adolescents, so additional research is necessary to understand the transition in the meaning of ethnic identification over time. For male adolescents, the increase in levels of discrimination experiences over time appears to be a likely contributor to the change in patterns of association. Male adolescents reported higher levels of discrimination at Time 2, and discrimination experiences were strongly related to every psychosocial outcome variable at Time 2.

However, assessment of the interactions between the ethnic and cultural identification variables and discrimination experiences did reveal some moderating effects. At Time 1, the interaction between OCIS American Indian identification and discrimination experiences for young men's self-esteem is exactly consistent with hypotheses. At the lowest levels of American Indian identification,

Table 8  
*Hierarchical Regressions Assessing Moderating Effects of Ethnic Identity Variables Longitudinally for Females*

Outcome	Predictors	Adj. $R^2$	$F$ change	$p$	$\beta$	$t$	$p$	
Self-esteem (RSES)	Time 1 Self-esteem	.275	19.54	<.001	.538	4.42	<.001	
	Step 2	MEIM Belonging	.246	0.08	.921	.057	0.39	.700
		Discrimination				-.009	-0.07	.994
	Step 3	Interaction	.270	2.53	.119	.204	1.59	.119
	Step 2	MEIM Exploration	.250	0.23	.798	-.084	-0.66	.512
		Discrimination				-.004	-0.03	.977
	Step 3	Interaction	.234	0.04	.835	.027	0.21	.835
	Step 2	OCIS Am. Ind.	.252	0.28	.757	.093	0.74	.464
		Discrimination				-.035	-0.27	.785
	Step 3	Interaction	.241	0.30	.584	-.079	-0.55	.584
	Step 2	OCIS Wh. Am.	.246	0.10	.909	.056	0.42	.676
		Discrimination				-.003	0.01	.999
Step 3	Interaction	.301	4.62	.037	.260	2.15	.037	
Social functioning (CASAFS)	Time 1 Social Fun.	.152	9.59	.003	.412	3.10	.003	
	Step 2	MEIM Belonging	.180	1.823	.173	.098	0.66	.516
		Discrimination				-.216	-1.60	.117
	Step 3	Interaction	.162	0.01	.926	.013	0.09	.926
	Step 2	MEIM Exploration	.191	2.15	.129	-.145	-1.02	.315
		Discrimination				-.223	-1.69	.098
	Step 3	Interaction	.174	0.07	.798	-.035	-0.26	.798
	Step 2	OCIS Am. Ind.	.188	2.05	.140	.124	0.93	.359
		Discrimination				-.265	-1.97	.056
	Step 3	Interaction	.185	0.83	.368	.135	0.91	.368
	Step 2	OCIS Wh. Am.	.195	2.27	.115	-.150	-1.12	.267
		Discrimination				-.274	-2.03	.048
Step 3	Interaction	.182	0.29	.596	.070	0.53	.596	
Substance use Step 1	Time 1 Substance	-.005	0.78	.383	.127	0.88	.383	
	Step 2	MEIM Belonging	.024	1.70	.194	-.147	-1.02	.315
		Discrimination				.203	1.38	.175
	Step 3	Interaction	.028	1.37	.286	-.156	-1.08	.286
	Step 2	MEIM Exploration	.003	1.18	.316	-.033	-0.22	.830
		Discrimination				.231	1.53	.132
	Step 3	Interaction	-.012	0.34	.562	.089	0.59	.562
	Step 2	OCIS Am. Ind.	.034	1.93	.157	.177	1.21	.232
		Discrimination				.189	1.27	.209
	Step 3	Interaction	.012	0.03	.868	.027	0.17	.868
	Step 2	OCIS Wh. Am.	.008	1.30	.283	-.077	-0.52	.606
		Discrimination				.204	1.33	.189
Step 3	Interaction	.006	0.92	.343	-.139	-0.96	.343	

Note.  $N = 50$ . OCIS = Orthogonal Cultural Identification Scale; MEIM = Multiethnic Ethnic Identity Measure; RSES = Rosenberg Self-Esteem Scale; CASAFS = Child and Adolescent Social and Adaptive Functioning Scale; Social Fun. = Social Functioning; Adj. = adjusted; Am. Ind. = American Indian; Wh. Am. = White American.

a strong negative association was observed between discrimination and self-esteem. However, at the highest levels of American Indian identification, the negative relation disappears and Figure 1 depicts a very slightly positive relation between self-esteem and discrimination. For female adolescents as well, a slightly positive relation was observed between discrimination and self-esteem at the highest levels of MEIM Affirmation and Belonging. Major and Sawyer (2009) noted that members of stigmatized groups who attribute negative experiences and rejection to their stigmatized group status rather than to their own stable and internal characteristics experience a protective effect with regard to self-esteem. Navajo youth with the highest levels of connection to Navajo culture may interpret the discriminatory experiences they have through a lens of social injustice, thus buffering negative self-esteem effects.

At Time 2, concurrent interaction effects emerged only for substance use frequency for both male adolescents and female

adolescents. Interestingly, for male adolescents, higher levels of OCIS White American identification was related to a weaker relation between discrimination experiences and substance use frequency. Previous research has not addressed the possibility that identification with majority culture might also serve as a buffer to the effects of discrimination. However, it is intuitive that a sense of competence and success in the dominant culture in which all youth must operate would be linked to protective outcomes. The pattern of interactions across various measures of psychosocial adjustment speaks once again to the notion of bicultural adaptation. For girls, the interaction between MEIM Exploration and discrimination experiences is less intuitive. The relation between discrimination experiences and substance use was negative for those with the lowest levels of ethnic exploration. The exploration process has been described as a somewhat turbulent experience (Marcia, 1980), and girls who have not yet begun to explore the meaning

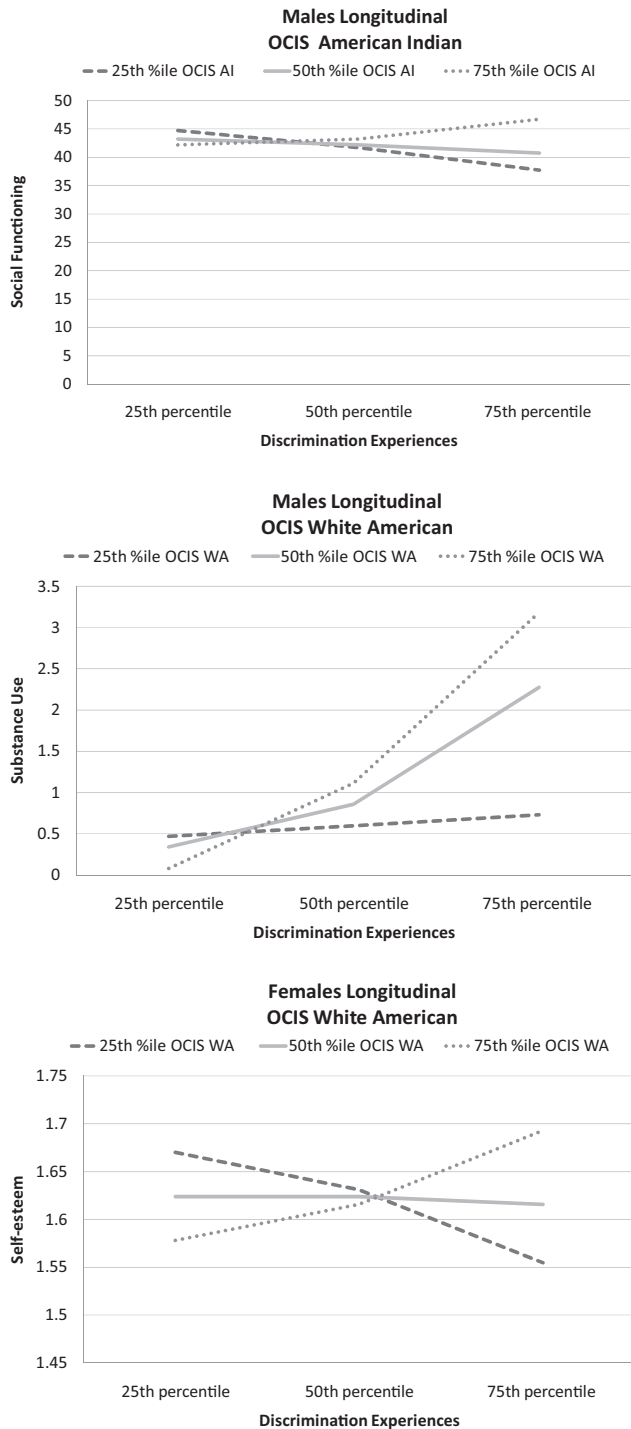


Figure 3. Longitudinal interactions between discrimination experiences and ethnic identification. OCIS = Orthogonal Cultural Identification Scale; MEIM = Multiethnic Ethnic Identity Measure; WA = White American; AI = American Indian; Bel. = belonging.

and importance of their traditional culture for themselves may have unique interpretations of discrimination experiences. In general though, this finding awaits replication with other samples of young women.

### Longitudinal Relations Among Ethnic Identity, Discrimination, and Psychosocial Outcomes

The assessment of the longitudinal effects of discrimination and the ethnic and cultural variables controlled for initial levels of the psychosocial functioning variables at Time 1. Generally, Time 1 functioning scores were the strongest predictors of Time 2 functioning, as would be expected. There were a few marked exceptions, however. Most notably, a very consistent, strong relation emerged for male adolescents between discrimination experiences at Time 1 and substance use frequency at Time 2. The longitudinal negative impact of discrimination has been documented previously among Midwestern American Indian adults (Whitbeck et al., 2004), but the striking gender differences in the patterns of association observed in this study have not been reported previously. Among these Navajo adolescents, young men appear to be particularly vulnerable to discrimination, with the links to internalizing outcomes (e.g., self-esteem) more evident in early adolescence and links to externalizing outcomes (e.g., substance use) more evident in later adolescence. This may represent a developmental trajectory, in that the lower levels of self-esteem and social role fulfillment observed in association with discrimination experiences in 9th and 10th grade make boys more vulnerable to negative peer influences and disengagement from prosocial socialization forces later in adolescence (Oetting, Donnermeyer, Trimble, & Beauvais, 1998). This suggestion of compounding or evolving negative effects of discrimination over time speaks to the need for early intervention aimed both at addressing social injustice in the lives of young Navajos and at increasing resilience and coping skills.

Again, there were some moderating effects of ethnic and cultural identification across time, demonstrated by significant interactions between cultural variables and discrimination experiences. The protective effect of American Indian identification was observed longitudinally in predicting social functioning for male adolescents. As observed concurrently with self-esteem scores at Time 1, male adolescents who reported the strongest identification with Navajo culture actually demonstrated a positive relation between discrimination experiences at Time 1 and social functioning at Time 2, speaking once again to the potential resiliency promoting effect of investment in traditional culture.

Interactions with the OCIS White identification scale emerged for both male adolescents and female adolescents, with higher levels of White identification linked to a positive relation between discrimination and self-esteem over time for female adolescents. Thus, the protective effect of a sense of competence and investment in majority culture was observed again. However, the pattern was reversed for male adolescents when longitudinal effects are considered. Although White identification appeared to be related to resiliency against substance use in the face of discrimination concurrently at Time 2, longitudinally higher levels of White identification were associated with a strong positive relation between discrimination and substance use. It is possible that young Navajo male adolescents may experience the conflict of desiring to be part of a majority culture that is not always welcoming to minorities. There is some suggestion that the cultural losses experienced by American Indian communities since colonization have particularly impacted male adolescents (Byers, 2006). White, Godfrey, and Iron Moccasin (2006) described the loss of the male role in American Indian communities as one of the most traumatic

losses, linked to many negative outcomes in Indian country. They studied this trend in Lakota culture in which one in five households has a male role model living at home; approximately half of these are biological fathers (White et al., 2006). Although the traditionally pastoral Navajo culture has certainly experienced colonization differently than the nomadic cultures of the Northern Plains, the extent to which Navajo male adolescents experience role confusion in contemporary society (both majority culture and traditional culture) and the role that discrimination plays in the sense of loss warrants further investigation. Negative effects of discrimination and conflict among majority, traditional, and blurred peer culture may all interact to challenge Navajo young men uniquely.

### Limitations, Summary, and Implications

We recognize limitations to the current study. First, generalizability is unknown. Although the majority of the participants resided on the reservation, their proximity to an off reservation town may alter their experience from those who live and attend school on the reservation. Despite broad similarities between tribes, such as interdependency in social structure, shared effects of intergenerational trauma, and some similar beliefs, tribes still differ in many significant ways, such as language, religion, and customs. Navajo culture is clearly different from some other tribal communities because of their matrilineal history; as such, replication is needed in other tribes to determine generalizability. Also, although we worked diligently to contact as many Time 1 participants as possible for follow up, our attrition rates were substantial, and there were some significant differences between those who were lost to follow-up and those who completed the study. With regard to longitudinal patterns, those adolescents with lower social functioning and ethnic identification scores may initially have unique developmental patterns and experiences, and we do not know how our longitudinal results might have been impacted had they been included. As such, future research specifically targeting the long term trajectories of adolescents who are at higher risk is necessary.

Second, as we used established broad measures of identity and culture, specific beliefs relating to traditional lives were not clarified. Assessing culture is an elusive task. Measures that are specific to traditional activities/beliefs of unique communities lack broad applicability, and broad ethnic identity development measures rely on the subjective interpretations of participants. Thus, we are left to speculate about the inherent meanings of high and low scores on each measure.

Finally, although this study showed clear gender differences in experiences and perspectives, we did not explore participants' views of the reasons for these differences. More focused study of the experiences, cultural views, and perceived roles that male and female Navajo adolescents hold would be useful for gender specific interventions.

In summary, although having a strong sense of ethnic identity is a protective factor for psychological and social outcomes, its protective properties may decrease over middle adolescence and are inconsistent across genders. Additionally, perceptions of discrimination serve as a major risk factor for Navajo adolescents, especially male adolescents. As many male adolescents perceive increasing discrimination from both peers and authority figures, intervention must come in the form of addressing social injustice

broadly. One likely context for intervention is the educational system, acknowledging the powerful impact that schools have on developmental processes. It is very likely that many educators have not examined their own cultural context and are unaware about how their own implicit beliefs may be reflected in their interactions with American Indian students. These implicit biases have been suggested to be commonly held by many who are part of the majority culture and are described by multiple multicultural researchers (Sue & Sue, 2003) through White identity development models. Sue and Sue (2003) advocated for training that will first address implicit beliefs and understanding of the majority culture. By so doing, implicit beliefs are made explicit and are then more controlled and not passed on unconsciously.

A tribal partnership with researchers focusing on establishing and promoting the role of Navajo men and women may be necessary to combat the negative influences brought about by intergenerational trauma. Defining how adolescents view traditional behavior and determining whether the definition involves drug and alcohol use for these adolescents may assist in delineating community level interventions that help adolescents change incorrect views of acceptable traditional behavior. Future partnerships could be developed between the Navajo community and the researchers to emphasize resiliency and counteract factors related to risk in American Indian adolescents.

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