In this study, ethnic identity, stereotype threat, and perceived discrimination were examined in relationship to academic achievement and hopelessness in a sample of 129 Native American adolescents aged 14–19. Regression analyses with self-reported data indicated two major findings. Ethnic identity interacted with stereotype threat to predict academic achievement, where participants with high ethnic identity and low stereotype threat scores reported higher grade point averages. Ethnic identity also interacted with perceived discrimination to predict hopelessness, where participants with low ethnic identity and high perceived discrimination scores were higher in hopelessness. Findings are discussed in light of the joint role that ethnic identity and perceived bias have in relationship to developmental outcomes in Native American adolescents.

Native American adolescents exhibit stark disparities in academic achievement and psychological well-being compared with other groups. The high school dropout rate of Native Americans is twice that of European Americans and only half as many complete a college degree (DeVoe & Darling-Churchill, 2008). Native Americans have high rates of depression (National Center for Health Statistics, 2007), with almost half of Native American adolescents from the Northern Plains having reported suicidal ideation or an attempt (Brockie, 2012).

As these statistics indicate, it is imperative for researchers to develop a better understanding of the factors that facilitate academic and psychological well-being in Native American adolescents. Yet, studies on Native Americans are scarce. Scholars have posited that cultural constructs, such as ethnic identity, perceived discrimination, and stereotype threat contribute toward academic and psychological outcomes (Coker et al., 2009; Phinney & Ong, 2007; Steele, 1997).

Ethnic Identity
Ethnic identity has been defined as one’s knowledge of membership in a social group and the personal meaning associated with that membership (Tajfel, 1981). Bryant and LaFromboise (2005) found no relationship between cultural identity and perceived school environment, and Middlebrook (2010) also did not observe a relationship between ethnic identity and academic achievement. However, Jones and Galliher (2007) reported that ethnic identity was associated with school identification in males, but was not associated with achievement in females. In another study, ethnic identity was positively related to academic achievement for females only (Schweigman, Soto, Wright, & Unger, 2011).

Mixed findings also exist on the relationship between ethnic identity and psychological outcomes among Native American adolescents. In some studies, ethnic identity has evidenced a positive relationship with self-esteem, ego strength, self-efficacy, and positive affect (Galliher, Jones, & Dahl, 2011; Gfellner & Armstrong, 2013), whereas other studies have indicated that ethnic identity was not related to depression nor to psychosomatic symptoms (Kenyon & Carter, 2011; Jones & Galliher, 2007). In a 2011 meta-analysis, Smith and Silva found that ethnic identity had a stronger
relationship (albeit still small) to self-esteem and personal well-being than to personal distress and mental health symptoms.

Stereotype Threat and Perceived Discrimination
Stereotype threat is the risk of confirming negatively held beliefs about one’s social group (Steele, 1997), whereas perceived discrimination has been defined as unfair, differential treatment on the basis of race or ethnicity (Coker et al., 2009). Research has shown the negative relation of stereotype threat and academic outcomes in adolescent minority groups (for a review, see Davis & Simmons, 2009). Mousseau (2013) conducted an intervention study with Native American adolescents and reported that stereotype threat did not have a deleterious impact on math scores. In another study, Native American adolescents with higher perceived discrimination were less likely to be resilient, where resilience was defined as the presence of academic achievement and educational plans and the absence of substance use and externalizing behaviors (LaFromboise, Hoyt, Oliver, & Whitbeck, 2006). However, Middlebrook (2010) reported that perceived discrimination was not related to self-reported grade point average nor to school belonging.

Perceived discrimination has been largely associated with negative psychological outcomes in Native American adolescents. Perceived discrimination has been related to lower self-esteem, more depressive symptoms, and suicidal thoughts and attempts (Brockie, 2012; Galliher et al., 2011). Native Americans experience reminders of past discrimination that adversely affect their psychological well-being (Brave Heart, Chase, Elkins, & Altschul, 2011; Chandler, 2013).

Interactions among Ethnic Identity, Stereotype Threat, and Perceived Discrimination
Ethnic identity, stereotype threat, and perceived discrimination have been shown to interact in predicting academic and psychological outcomes among Native American adolescents. Hamill, Scott, Deering, and Pepper (2009) found that cultural identity moderated the relationship between depression and behavioral affect, such that depression was lower in participants who had both lower behavioral affect and higher cultural identity. Romero, Edwards, Fryberg, and Orduña (2014) reported that adolescents with high ethnic affirmation and high discrimination stress had higher self-esteem and lower depression compared to adolescents with low ethnic affirmation and high discrimination stress. Further, adolescents who were categorized as ethnic identity achieved had higher self-esteem under high discrimination stress compared with their counterparts. Yet, Mousseau (2013) found that American Indian identity did not moderate the effect of stereotype threat on affective responses or math scores. Lastly, Galliher et al. (2011) found that ethnic identity did not moderate the relationship between discrimination and substance use.

The Present Study
We addressed the following research questions in the current study. First, is ethnic identity related to academic achievement and hopelessness? We hypothesized a positive association with academic achievement and a negative association with hopelessness, given prior studies (Schweigman et al., 2011). Second, does stereotype threat and perceived discrimination relate to academic achievement and hopelessness? We expected that stereotype threat would be inversely associated with academic achievement and hopelessness. As stereotype threat is academically based, we did not make a hypothesis concerning its relationship with hopelessness. Regarding perceived discrimination, we expected a negative relationship with academic achievement and a positive relationship with hopelessness, given prior research (Galliher et al., 2011). Third, does ethnic identity moderate the relationship between stereotype threat or perceived discrimination and academic achievement or hopelessness? Based on limited research (Romero et al., 2014), we hypothesized that higher ethnic identity and higher stereotype threat or higher perceived discrimination would be associated with higher academic achievement and that higher ethnic identity and higher perceived discrimination would be associated with lower hopelessness.

METHOD
Participants
The sample came from a school that is the only high school in a rural district on a reservation in a Mountain state. The school had a few hundred students, all of whom were economically disadvantaged. Participants were members of one tribal group. Although district officials were willing to participate in the study, their participation was conditioned upon not identifying the school,
district, or tribe. The current study included 129 individuals who self-identified as Native American. Ages ranged from 14 to 19 (M_{age} = 16.38, SD_{age} = 1.15) and grades from 9th to 12th. Almost 50% of the sample was female (n = 64).

Measures

**Ethnic identity.** Ethnic identity was measured with the Multigroup Ethnic Identity Measure-Revised (MEIM-R; Phinney & Ong, 2007). The MEIM-R includes six items with response options from 1 (strongly disagree) to 4 (strongly agree). A sample item is “I have spent time trying to find out more about my ethnic group, such as its history, traditions, and customs.” Items were averaged to generate an overall ethnic identity score, with higher values indicating a stronger ethnic identity. Internal consistency estimates indicated that the scores were reliable in this sample (α = .88), which is consistent with prior research (Webber, McKinley, & Hattie, 2013).

**Stereotype threat.** Stereotype threat was assessed with three Likert-type items (Marx, Stapel, & Muller, 2005). Response options ranged from 1 (strongly disagree) to 7 (strongly agree). A sample item is “I worry that my ability to perform well on math tests is affected by my ethnicity.” Items were averaged together to create an overall score, with higher values indicating more stereotype threat. Reliability estimates were acceptable (α = .81) and consistent with prior research (Gaines et al., 2012).

**Perceived discrimination.** The Perceived Discrimination Measure (Whitbeck, Hoyt, McMorris, Chen, & Stubben, 2001) consisted of 10 Likert-type scale items with response options ranging from 1 (never) to 5 (often). A sample item is “How often have other kids treated you unfairly because of your racial or ethnic group?” All 10 item scores were averaged together to yield an overall perceived discrimination score for each participant, with higher scores indicating more perceived discrimination. Internal consistency estimates indicated the scores were reliable (α = .91), and the measure has been used in prior research with Native Americans (Whitbeck et al., 2001).

**Academic achievement.** Adolescent self-reported grade point average was used to assess academic achievement. Adolescent participants have been shown to be reliable in reporting on

Hopelessness. Seventeen Likert-type items were used to measure hopelessness (Kazdin, Rodgers, & Colbous, 1986), such as “I might as well give up because I can’t make things better for myself.” Response options ranged from 1 (strongly disagree) to 5 (strongly agree). An overall score was generated that averaged responses across items. Internal consistency estimates indicated that the scores were reliable (α = .84), and this is consistent with prior research (Kazdin et al., 1986).

Control variable. Maternal education was used as a control variable, to account for the well-established relationship between socioeconomic status and academic achievement (Chapman, Laird, Ifill, & Kewal Ramani, 2011). Average maternal education was 2.65 (SD_{SES} = 1.31), based on a scale from 1 (no high school diploma or G.E.D) to 6 (doctoral degree).

Procedure

Data were collected in 2009. Self-report surveys were distributed to students in a high school. School officials administered the surveys to all students with parental consent and individual assent. Surveys contained a description of the study, parental consent, adolescent assent, and the study measures. Students who returned completed surveys were included in the study and were compensated $10.00.

RESULTS

Preliminary Analyses

Correlations among all study variables are shown in Table 1. The family-wide alpha for the correlations was .003, and only coefficients that achieved a medium effect size (r ≥ .30; Cohen, 1992) are interpreted as meaningful. Ethnic identity and perceived discrimination did not have meaningful bivariate relationships with either academic achievement or hopelessness. The only meaningful correlation was a positive association between stereotype threat and hopelessness (r = .34, p < .001).

Primary Analyses

We used multiple regression analyses to determine how ethnic identity, stereotype threat, perceived discrimination, and their interactions predicted aca-
demic achievement and hopelessness, respectively (see Table 2). In Model 1, results indicated that ethnic identity, stereotype threat, and their interaction predicted academic achievement, $F(5,120) = 2.11, p < .01$. This model explained 4% of the variance in academic achievement. Simple slopes analyses indicated the slope for low ethnic identity was not significant, $b = .06, t(126) = 0.82, p = .42$, whereas the slope for high ethnic identity was significant, $b = .14, t(126) = 2.05, p < .05$. Figure 1 shows that participants with high ethnic identity and low stereotype threat had higher academic achievement than their counterparts. Estimates were generated with plus or minus one standard deviation for high and low approximations, with remaining predictors set at the average. Squared semipartial correlations indicated that ethnic identity and the interaction between ethnic identity and stereotype threat were larger predictors of academic achievement than the other terms. The interaction between ethnic identity and perceived discrimination was not statistically significant.

In Model 2 (Table 2), we predicted hopelessness with ethnic identity, stereotype threat, perceived discrimination, and their interactions. This model explained 13% of the variance in hopelessness, $F(6,119) = 4.88, p < .001$. Simple slopes analyses indicated that the slope for low ethnic identity was significant, $b = .22, t(126) = 2.83, p < .01$, and the slope for high ethnic identity was not significant, $b = .02, t(126) = 0.25, p = .81$. The interaction is shown in Figure 2. Participants who reported low ethnic identity and high perceived discrimination also reported the most hopeles-

### TABLE 1
Descriptive Statistics and Correlations Among Study Variables

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>M</th>
<th>SD</th>
<th>Min</th>
<th>Max</th>
<th>Skewness</th>
<th>Kurtosis</th>
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<tr>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perceived discrimination</td>
<td>.18*</td>
<td>.18*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Academic achievement</td>
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<td>-.09</td>
<td>-.01</td>
<td>-.20*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hopelessness</td>
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<td>.34*</td>
<td>.23*</td>
<td>-.20*</td>
<td></td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>Maternal education</td>
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<td>-.01</td>
<td>.18*</td>
<td>-.06</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

* $p < .003$.

### TABLE 2
Predicting Academic Achievement and Hopelessness in Native American Adolescents

<table>
<thead>
<tr>
<th></th>
<th>$b$</th>
<th>SE</th>
<th>$\beta$</th>
<th>$sr^2$</th>
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</thead>
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<td></td>
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<tr>
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<td>0.59*</td>
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<tr>
<td>Stereotype threat</td>
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<td>.23</td>
<td>0.78</td>
<td>.03</td>
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<td>.13</td>
<td>0.00</td>
<td>.00</td>
</tr>
<tr>
<td>Ethnic identity $\times$ Stereotype threat</td>
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<td>.07</td>
<td>-0.93</td>
<td>.04</td>
</tr>
<tr>
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<td>.06</td>
<td>0.17</td>
<td>.03</td>
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<tr>
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<td>$F$</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adjusted $R^2$</td>
<td>0.04</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Model 2: Hopelessness</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Ethnic identity</td>
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<td>.17</td>
<td>0.48</td>
<td>.03</td>
</tr>
<tr>
<td>Stereotype threat</td>
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<td>.02</td>
<td>0.30</td>
<td>.09</td>
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<tr>
<td>Perceived discrimination</td>
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<td>.27</td>
<td>1.00</td>
<td>.04</td>
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<tr>
<td>Ethnic identity $\times$ Perceived discrimination</td>
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<td>.08</td>
<td>-1.04</td>
<td>.03</td>
</tr>
<tr>
<td>Maternal education</td>
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<td>.03</td>
<td>-0.04</td>
<td>.00</td>
</tr>
<tr>
<td>Intercept</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>$F$</td>
<td>4.88*</td>
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<tr>
<td>Adjusted $R^2$</td>
<td>0.13</td>
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<td></td>
</tr>
</tbody>
</table>

*Note. $sr^2$ = squared semipartial correlation coefficient.

*p < .01.
ness. Estimates for the interactions were generated with plus or minus one standard deviation value for high and low approximations, with remaining predictors set at the average. Squared semipartial correlations indicated that stereotype threat was a larger predictor of hopelessness than any other predictor, although the interaction between ethnic identity and stereotype threat was not significant.

**DISCUSSION**

Findings suggest that it is the joint process of identification with one’s ethnic group and the awareness of the prejudices associated with that group that are associated with academic and psychological outcomes. Specifically, Native American adolescents who reported both high ethnic identity and low stereotype threat scores had higher grade point averages than their counterparts. To our knowledge, there is only one study in the literature that has examined stereotype threat exclusively with Native Americans (Mousseau, 2013), and in that study the author reported that American Indian identity did not moderate the effect of stereotype threat on affective responses or math scores. Further, participants of the current study who reported both low ethnic identity and high perceived discrimination scores had greater hopelessness than their counterparts. This result is consistent with Galliher et al. (2011), who showed that male participants who reported both high levels of perceived discrimination and low levels of ethnic identity also had lower self-esteem, lower social functioning, and higher substance use.

For Native Americans, the exploration of ethnic identity may be a poignant process as it involves the consideration of historical atrocities. Chandler (2013) argued that Native Americans struggle to make meaning of their identity and place in the world. The awareness of adverse experiences to one’s ethnic group has been associated with depression and grief among Native American adolescents (Brave Heart et al., 2011). Conversely, belonging may facilitate coping with biases experienced by one’s group. Umana-Taylor et al. (2014) have discussed the development of a sense of “common fate” with an individual’s group during adolescence. This sense of belonging might negate the negative outcomes from understanding the adversity one’s group has experienced. Studies on these topics would be especially useful for the development of intervention programs that focus on Native Americans (Markstrom, 2010; Spicer et al., 2011).

A similar fruitful area of future research concerns the level of analysis. Most studies have focused on the individual level, although some scholars provide compelling evidence that contextual factors make meaningful contributions to Native American adolescents’ well-being. For example, Chandler, Lalonde, Sokol, Hallett, and Marcia (2003) extended the concept of identity by accounting for the social processes of colonization that negatively impact the cultural resources available to adolescents. Research has provided evidence that the availability of cultural resources varies and can protect indigenous adolescents from school dropout and suicide. For example, among indigenous Canadians, adolescent suicide rates were markedly lower in contexts where the native language was spoken (Hallett, Chandler, & Lalonde, 2007).
LIMITATIONS AND FUTURE DIRECTIONS

This study had some limitations. First, the sample was small and of low socioeconomic status, restricting generalizability. Second, there were issues with measurement. Although the MEIM-R (Phinney & Ong, 2007) is a frequently used instrument of ethnic identity, there is a debate about the most accurate way to both conceptualize and measure ethnic identity, including the degree to which it may be distinguished from racial identity (Umana-Taylor et al., 2014; Worrell, 2015). Further, our measure of perceived discrimination focused on individual discriminatory encounters with peers, teachers, store owners, and police. Verkuyten (1998) has suggested that minority adolescents are more likely to recognize discrimination when it is framed about their group rather than themselves.

Third, we included a single-item indicator of academic achievement. Employing standardized tests, educational expectations, or teacher reports would strengthen this area of research. Fourth, we also used a self-reported measure of stereotype threat, when the construct has been most often studied using experimental designs with identity priming. Finally, the research design used for this study was cross-sectional, which limits our understanding of the directionality between identity formation and bias awareness. Longitudinal research is needed to capture the process by which individuals come to identify with their ethnic groups and the understanding of the stereotypes associated with those groups.

CONCLUSION

Nonetheless, this self-report survey study provided evidence that among Native American adolescents ethnic identity and stereotype threat were associated with grade point averages, and ethnic identity and perceived discrimination were associated with hopelessness. Findings were interpreted in light of the combination of identity and perceived bias. Results have implications for programs aimed at promoting health. Prospective studies may delineate these constructs with attention toward contextual resources and heterogeneity across Native American groups.

REFERENCES


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