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PERCEIVED DISCRIMINATION AND DEPRESSIVE SYMPTOMATOLOGY
AMONG NATIVE AMERICAN OLDER ADULTS

By

RITA HAIDLE BILLOW

B.A., University of Montana, Missoula, Montana, 2005

Professional Paper

presented in partial fulfillment of the requirements
for the degree of

Master of Arts
Psychology, Clinical

The University of Montana
Missoula, MT

May 2008

Approved by:

Kimberly Wallace by gs
Chairperson

Dean, Graduate School

Date

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Approved by:

Dr. David A. Strobel, Dean
Graduate School

Kimberly Wallace, Ph.D., Chair
Psychology

Jennifer Waltz, Ph.D.
Psychology

Gyda Swaney, Ph.D.
Psychology

Cynthia Garthwait, MSW
Social Work

Perceived Discrimination and Depressive Symptomatology among Native American Elderly Adults

Author(s): Kimberly Wallace, Ph.D.

Recent studies have recognized discrimination as a stressor that is linked to psychological distress for those who experience such discrimination. The present study investigated the role of cultural identification as a mediator of the relationship between a global measure of perceived discrimination and depressive affect for a sample of older Native American adults. A group test has previously been applied in the empirical literature. The data were collected through surveys mailed to tribal-enrolled Native American adults aged 50 and older residing on a reservation in the Northwest. Multiple regression analysis was performed to test the moderating role of cultural identification. Analyses indicated that individuals who were more acculturated to western society from reported more symptoms of depressive affect. However, the present study found no statistically significant interaction effect between cultural identification and perceived discrimination, thus indicating that a strong affiliation with one's cultural group did not serve to protect and free the individuals from the negative impact of perceived discrimination. These results add to the literature concerning the factors that contribute to positive mental health outcomes in older populations.

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Perceived Discrimination and Depressive Symptomatology among Native American
Older Adults

Chairperson: Kimberly Wallace, Ph.D. *kw*

Recent studies have recognized discrimination as a stressor that is linked to psychological distress for those who experience such discrimination. The present study investigated the role of cultural identification as a moderator of the relationship between a global measure of perceived discrimination and depressive affect for a sample of older Native American adults, a group that has essentially been ignored in the empirical literature. The data were collected through surveys mailed to tribally-enrolled Native American adults aged 50 and older residing on a reservation in the Northwest. Multiple regression analysis was performed to test the moderating role of cultural identification. Analyses indicated that individuals who perceive more discrimination in their daily lives reported more symptoms of depressive affect. However, the present study found no statistically significant interaction effect between cultural identification and perceived discrimination, thus indicating that a strong identification with one's cultural group did not serve to protect one from the harmful effects of discrimination in this particular sample. These results add to our knowledge concerning the factors that contribute to poorer mental health outcomes in older Native American adults.

TABLE OF CONTENTS

ABSTRACT.....	ii
LISTS OF TABLES.....	iv
 CHAPTER	
I. INTRODUCTION.....	1
a. Conceptualizing Discrimination as a Stressor.....	3
b. Measuring Perceived Discrimination across Cultural/Ethnic Groups..	4
c. Native American Depressive Symptoms.....	6
d. Cultural Identification as a Buffer.....	8
II. METHOD.....	11
a. Participants.....	11
b. Measures.....	11
i. Perceived Discrimination	
ii. Center for Epidemiologic Studies-Depression Scale (CES-D)	
iii. Native American Cultural Behaviors and Attitude Scales.....	16
III. RESULTS.....	16
IV. DISCUSSION.....	19
V. LIMITATIONS AND FUTURE DIRECTIONS.....	25
APPENDIX.....	28
a. Perceived Discrimination Questionnaire	
b. Center for Epidemiologic Studies-Depression Scale (CES-D)	
c. Native American Cultural Behaviors and Attitudes Scales	
TABLES.....	38
TABLE 1–Intercorrelations and Descriptive Statistics for Measured Variables..	38
TABLE 2– Hierarchical Multiple Regression Analyses Testing Moderating Effects of Cultural Identification in the Relationship of Perceived Discrimination to Depressive Symptomatology.....	39
REFERENCES.....	30

LIST OF TABLES

Table	Page
1. Intercorrelations and Descriptive Statistics for Measured Variables.....	38
2. Hierarchical Multiple Regression Analyses Testing Moderating Effects of Cultural Identification in the Relationship of Perceived Discrimination to Depressive Symptomatology.....	39

CHAPTER 1

Perceived Discrimination and Depressive Symptomatology among Native American Older Adults

The investigation of prejudice and discrimination within the social sciences has largely focused on determining the factors associated with prejudicial attitudes and discriminatory behaviors directed toward the socially disadvantaged minority from the perspective of the socially advantaged majority. Consequently, there is extensive research describing the personal characteristics, social structures and trends, as well as the processes associated with the development and maintenance of prejudiced beliefs and discriminatory behaviors (Branscombe, Schmitt, & Harvey, 1999; Corning, 2002; for review, see Duckitt, 1992). Recently, however, researchers have turned their attention to the investigation of the experience of discrimination from the recipient's perspective, as a number of studies have begun to focus on the relationship between discrimination and mental health outcomes (Cassidy, Howe, Warden, & O'Connor, 2004; Jackson, Brown, Williams, Torres, Sellers, & Brown, 1996; Kessler, Mickelson, & Williams, 1999; Krieger, 1999; Sellers & Shelton, 2003).

Research in this area suggests that the relationship between perceiving discrimination and psychological well-being may be quite complex (for review, see Williams, Neighbors, & Jackson, 2003). For instance, some studies have proposed that perceptions of discrimination may lead to persistent, harmful emotional reactions and psychological distress. Consistent with this proposition, Noh and Kaspar (2003) found a statistically significant association between self-reported discrimination and depression in a sample of Korean immigrants residing in Canada. Likewise, Finch and his colleagues

(2000) found a direct relationship between perceived discrimination and depressive affect even after controlling for acculturative stress and native/resident status in a sample of adults of Mexican origin residing in California (Finch, Kolody, & Vega, 2000).

Moreover, this link between discrimination and negative mental health outcomes appears to be especially true for individuals who perceive more chronic, everyday expressions of discrimination as opposed to a single, acute event (Clark, Anderson, Clark, & Williams, 1999; Williams, Yu, Jackson, & Anderson, 1997).

In contrast, other research has indicated that the relationship between perceived discrimination and mental health outcomes is not this straightforward (see Plant & Sachse-Ericsson, 2004). For example, Fischer and Shaw (1999) found no direct relationship between individuals' perceptions of racial discrimination and mental health outcomes. Surprisingly, however, their results indicated that for African Americans who reported relatively high levels of self-esteem, perceptions of racial discrimination were significantly associated with poorer overall mental health. Similarly, Corning (2002) suggested that the discrimination-distress relationship may not become apparent until moderator effects are examined. In fact, Corning (2002) found no relationship between perceived gender discrimination and markers of psychological distress (i.e., depression, anxiety, somatization) in her analyses of main effects. However, an investigation of the moderating effects for personal self-esteem revealed that for women who reported higher levels of personal self-esteem, the relationship between discrimination and psychological distress decreased, whereas those women who reported lower levels of personal self-esteem had increased levels of psychological distress.

In an attempt to better understand the link between discrimination and mental health, the present study focused on one mental health correlate, depressive affect, and its relation with perceived discrimination in a sample of Native American older adults residing on a reservation in the Northwest region of the United States. Specifically, the relationship between depressive symptoms and individuals' accounts of the frequency with which they experience discrimination in their daily lives was explored. Furthermore, the present study examined the extent to which dimensions of cultural identification buffer the relationship between perceived discrimination and depressive affect.

Conceptualizing Discrimination as a Stressor

Many researchers have proposed conceptualizing discrimination in the context of stress theory as a way to elucidate the relationship between discrimination and mental health outcomes (e.g., Clark et al., 1999; Harrell, 2000; Kessler et al., 1999; Meyer, 2003; Whitbeck, McMorris, Hoyt, Stubben, & LaFromboise, 2002; Williams et al., 2003). In such a formulation, discrimination is viewed as an event that taxes the individual's coping resources, thus having the potential to induce physical or psychological distress (Dohrenwend, 2000). Moreover, researchers investigating this discrimination stress-distress relationship have recognized that conditions within the social environment, as well as discriminatory events specific to the individual, must be explored (Allison, 1998). For example, Essed (1991) used the term *everyday racism*, which she described as the "interweaving of racism in the fabric of the social system" (p. 37) to communicate the notion that racism is not only a part of the social practice in many societies, but typically goes unquestioned because of its ambiguity. Of course, race is not the only category of stigma in our society. As such, Meyer (2003) promoted the idea of *minority stress* to

indicate the differential experiences of members belonging to socially disadvantaged groups. In this conceptualization, Meyer (2003) recognized that the stress associated with a marginalized status was additive to the generic stressors experienced by other people. Moreover, these unique stressors are typically enduring, socially based, and thus a part of the everyday experience of the minority person. In fact, empirical evidence supports this idea that chronic, everyday discrimination is more predictive of mental health outcomes than a single, blatant act of discrimination (Clark et al., 1999; Williams et al., 1997).

Measuring Perceived Discrimination across Cultural/Ethnic Groups

There is a considerable body of research indicating that the experience of discrimination is part of everyday life for many members of minority groups. For example, a nationwide survey conducted by Kessler and colleagues (1999) revealed that 60% of the African American participants in their sample reported exposure to day-to-day discrimination (e.g., being treated with less courtesy than others). D'Augelli and Hershberger (1993) found that over 40% of African American college students in their study of African American undergraduates on predominately White campuses reported occasionally hearing disparaging racial remarks, whereas close to 60% reported that they had been the target of racial insults at least once or twice. In Landrine and Klonoff's (1996) study of African American university students, staff, and faculty, 98% of the sample reported personally having experienced a racist event in the past year and 100% had experienced such an event in their lifetime.

Although experiences of racial discrimination directed at African Americans appear to be ubiquitous, there has been little consistency in the methodology employed to investigate such experiences (Krieger, 1999; Williams et al., 2003). For example, Krieger

(1999) summarized the findings and methods of 20 studies investigating self-reported experiences of discrimination and found that there was substantial variation in the way the researchers conceptualized exposure to discriminatory events as well as how they identified the experience of discrimination (e.g., recent versus lifetime; global versus specific; major event versus everyday experiences). Moreover, Brown (2001) observed that the prevalence of perceived discrimination largely depends on the measure employed. For instance, the results from a study he conducted in the Detroit metropolitan area indicated that discrimination was 1.34 times more likely to be reported when an explicit measure of discrimination (e.g., due to race) was used. However, the same study revealed that perceiving unfair treatment, and attributing it to race or ethnicity was more predictive of depression than an explicit measure of perceived discrimination. Research in this area is further complicated by the concern that self-reported perceptions of discrimination may not be accurate. However, Sellers and Shelton (2003) counter that “it is the target’s subjective experience of the hassle that is most likely to impact the target’s psychological well being” (p. 1090). The present study will employ a measure of self-reported discrimination that focuses on experiences of unfair treatment that are fairly minor but common (Williams et al., 1997).

Studies investigating the mental health outcomes of members from marginalized groups have revealed a significant relationship between self-reports of everyday discrimination and mental health problems (Barnes, Mendes De Leon, Wilson, Bienias, Bennett, & Evans, 2004; Kessler et. al., 1999; Williams et al, 1997). For example, in their longitudinal study investigating the mental health correlates of perceived discrimination, as well as the potential buffering effects of racial identity, Sellers and Shelton (2003)

found that individuals who reported experiencing more occurrences of discrimination also reported more symptoms of depression and anxiety. Similarly, Mossakowski (2003) established that ever having experienced an acute incident of racial/ethnic discrimination in one's lifetime was significantly associated with depressive symptoms in a sample of Filipino Americans. However, when chronic, everyday discrimination was investigated, the relationship between experiencing an acute incident of discrimination and negative mental health outcomes became nonsignificant. The findings in this study, which indicate that persistent, unfair treatment predicts mental health outcomes better than an acute incident of discrimination, are consistent with the current literature (e.g., Kessler et al., 1999; Williams et al., 1997). However, with a few exceptions (e.g., Finch et al., 2000; Mossakowski, 2003; Noh & Kaspar, 2003), the available research examining racial/ethnic discrimination has been based largely on African Americans, and as a result, little is known about the discrimination-distress relationship among members of other minority racial/ethnic groups.

Native American Depressive Symptoms

Investigators studying depression trends among various age groups in the broader American population have found depression to be lowest among the middle aged (40-59 year olds), reaching its lowest level around the age of 45, and highest among the oldest old (60+ year olds), reaching a peak level in those who are 80 years old and older (Mirowsky & Ross, 1992). However, the small number of minority participants included in these studies limits these findings (Curyto, Chapleski, Lichtenberg, Hodges, Kaczynski, & Sobeck, 1998). A neglected group in the mental health literature is the Native American elderly. Although there have been very few large-scale empirical

studies addressing mental health among older Native American adults specifically, it has been speculated that depression, in general, is among the most prevalent psychological problems reported in Native American communities (Lichtenberg, Chapleski, & Youngblade, 1997; Vega & Rumbaut, 1991). In fact, Manson and colleagues estimated that depression rates within Native American communities might be four to six times greater than those observed in the general population (Manson, Shore, & Bloom, 1985). A few empirical studies investigating the prevalence of depression in Native American adults of various ages have observed similar trends (Curyto et al., 1998; Lichtenberg et al., 1997; Whitbeck et al., 2002). For example, using the *Center for Epidemiologic Studies-Depression Scale's* (Radloff, 1977; CES-D) traditional cut-off score of 16, Curyto and colleagues (1998) found that over 18 percent of their sample of Michigan-based Native American elderly endorsed depressive symptomatology. Moreover, these researchers found that living in an urban location and having less education were significant predictors of depression in their sample (Curyto et al., 1998).

A more recent investigation by Whitbeck and colleagues (2002) examined the relationship between discrimination and depressive symptoms, as well as the stress-buffering effects of engaging in traditional Native American practices in a sample of upper Midwest Native American adults. Twenty-three percent of their sample scored above the traditional cut-off score of 16 on the CES-D. However, the relationship between discrimination and psychological distress occurred primarily in those adults who reported below average levels of participation in traditional activities. Furthermore, these researchers found that participation in traditional activities served as a buffer against the deleterious impact of discrimination (Whitbeck et al., 2002). So, while the evidence

appears to support the idea that depressive affect is prevalent in Native American communities, most of the existing research did not investigate depressive affect in older Native Americans, specifically. The present study endeavors to add to the mental health literature by explicitly investigating depressive symptomatology in Native American adults aged 50 and older.

One of the problems encountered by researchers attempting to investigate the specific factors that are associated with the elevated rates of depression among the Native American population is that there is a tremendous amount of diversity within the Native American culture, making it necessary to study Native American nations independently of each other (Allen, 1998). For example, there are over 510 federally recognized Native American sovereign nations and Alaska Native villages, with over 200 indigenous languages spoken (Dillard & Manson, 2000). Differences are evident in customs, family structures, religions, and social relationships across Native American nations. Failure to distinguish different Native American nations in mental health research disregards the historical and cultural differences among these groups (Norton & Manson, 1996; Whitbeck, Hoyt, Stubben, & LaFromboise, 2001; Whitbeck et al., 2002). The present study hopes to add to the existing knowledge regarding this population by examining the unique correlates of depressive symptoms among older Native American adults residing on a reservation in the Northwest.

Cultural Identification as a Buffer

As noted previously, perceiving oneself to be a target of prejudice and discrimination can have a substantial, negative impact upon the individual (e.g., Finch et al., 2000; Kessler et al., 1999; Noh & Kaspar, 2003). Consequently, people will use a

variety of strategies to lessen the extent of their own victimization in an effort to protect valued aspects of the self. One such strategy according to social identity theory is increased identification with one's cultural/ethnic group (Turner, Brown, & Tajfel, 1979). This is especially true for members from stigmatized groups whose chances of individual mobility are reduced due to some immutable characteristic such as race (Branscombe & Ellemers, 1998). In fact, research has consistently shown that ethnic and racial minorities with a strong sense of ingroup identification are more apt to maintain a positive sense of well-being and high self-esteem, and to be resilient in the face of life stressors (Branscombe et al., 1999; Fisher & Shaw, 1999; Mossakowski, 2003; Yoo & Lee, 2005). However, minority group members who feel rejected by the majority culture and who also feel a lack of identification with their ingroup are more likely to experience significant levels of psychological distress (Branscombe & Ellemers, 1998). As previously noted, Whitbeck and colleagues (2002) found that participation in traditional activities in their sample of Native American adults reduced the relation between discrimination and mental health. Based on this literature, the present study seeks to assess whether cultural identification buffers individuals from the negative consequences of perceived discrimination in a sample of older Native American adults residing on a reservation in the Northwest.

In summary, empirical research has shown that the relationship between discrimination and mental health outcomes may be very complex. For instance, some studies have proposed that perceptions of discrimination lead to sustained negative emotions and psychological reactions and that these experiences negatively affect mental health (e.g., Clark et al., 1999). Other studies have not only suggested that there may be

no direct relationship between perceptions of discrimination and mental health, but that members from stigmatized groups may in fact have levels of psychological well-being as high as or higher than members of nonstigmatized groups (e.g., Corning, 2002; Crocker & Major, 1989). The assumption in the latter finding is that perhaps a strong identification with one's group can serve as a psychological buffer against perceived prejudice and discrimination (Branscombe & Ellemers, 1998). Furthermore, Native Americans have been excluded from much of this research, which is problematic considering that it has been suggested by some researchers (e.g., Manson et al., 1985; Vega & Rumbaut, 1991) that estimates of depression and other negative mental health outcomes in Native American communities are significantly higher than those found in the broader population. Given that perceptions of discrimination have been linked to poorer mental health outcomes in other minority populations, it is important to investigate discrimination as one of the factors that may be associated with the higher estimates of negative mental health outcomes in Native American populations (Whitbeck et al., 2002). Based on the current research, the present study hypothesized a main effect for perceived discrimination. In other words, those individuals who perceive more discrimination in their daily lives will report more symptoms of depressive affect. Moreover, an interaction effect was predicted in that cultural identification will moderate the extent to which perceptions of discrimination are related to mental health outcomes in a sample of older Native American adults residing on a reservation in the Northwest.

CHAPTER 2

Method

Participants

The data for this study were collected through surveys mailed to 500 tribally-enrolled Native American adults aged 50 and older from a reservation in the Northwest region of the United States.¹ The survey was part of a larger study that examined resilience in a sample of Native American older adults. The mailing list was provided by a local tribal agency, and to ensure the confidentiality of the mailing list, the list was not released. Prepared survey packets were provided to this local agency and they mailed them from their locality. A modified systematic random sampling procedure was employed for selecting 500 names from a total of 624 enrolled members that were aged 50 and older. The response rate in the present study was 32% for a final sample size of 160 (92 females and 68 males). The mean age of the sample was 68.4 years ($SD = 6.4$, range = 56-89 years). Approximately 41.5% of the sample earned an annual income of less than \$15,000, whereas 58.5% earned an annual income of \$15,000 or more. In terms of marital status, 48.4% of the sample was married and 51.6% of the sample was not married (e.g., single, divorced, or widowed).

Measures

Perceived discrimination. Participants' perceived experiences with discrimination were assessed using a nine-item measure that focuses on experiences of maltreatment that

¹ The reservation in the present study consists of a land base of approximately 1,244,000 acres and is designated as a rural area (Office of Management and Budget, 2004). The Allotment Act of 1887 and the subsequent Homestead Act (1910) resulted in the tribes becoming the minority landowners on their own reservation (Montana Office of Public Instruction, 2007). As of 2000, the population comprised 26% Native Americans, 69% Caucasians, with the other 5% representing individuals of mixed/other racial heritage (U. S. Census of the Bureau, 2000).

are relatively minor but common (Barnes et al., 2004; Williams et al., 1997). The scale was designed to uniformly assess experiences of maltreatment across groups defined by different characteristics (e.g., race, gender, age, etc.), without reference to racism, discrimination, or prejudice. Respondents were asked to indicate how often they experienced events related to unfair treatment or personal rejection (see Appendix for items). Sample items include, "People act as if they are afraid of you," "You received poorer service in restaurants or stores," and "You are called names or insulted." The frequency of each experience is rated on a 4-point scale (4=*often*, 3=*sometimes*, 2=*rarely*, and 1=*never*), with higher scores denoting a greater frequency of perceived discrimination. Previous studies suggest high internal consistency, with Cronbach's coefficient alpha ranging from .88 to .93 (Kessler et al., 1999; Williams et al., 1997). The Cronbach's alpha for the present study was .86.

Depressive symptomatology. Participants' levels of depressive symptomatology were measured using the *Center for Epidemiologic Studies-Depression Scale* (CES-D; Radloff, 1977; see Appendix for list of specific items). The CES-D assesses level of depressive symptoms within the past week and consists of 20 items rated on a 4-point scale (1 = *rarely or none of the time* to 4 = *most or all of the time*). Possible scores range from 20 to 80. Higher scores indicate higher levels of depressive symptoms. Sample items include, "I felt depressed," "I did not like eating; my appetite was poor," and "I could not get going." The Cronbach's alpha was .89 for the present study.

There has been some debate pertaining to the appropriateness of using the CES-D in assessing depressive symptoms in Native American samples (Allen, 1998; Manson et al., 1985). A number of researchers comparing the factor structure of the CES-D when

used with Native Americans and European Americans have found that the factor structure of the CES-D is different for the two groups. For instance, some researchers have reported a three-factor model that combined affect and somatic dimensions rather than the four-factor solution proposed by Radloff (1977; for review, see Chapleski, Lamphere, Kaczynski, Lichtenberg, & Dwyer, 1997). However, other researchers (e.g., Whitbeck et al., 2002), using confirmatory factor analysis on the CES-D items, found that a four-factor solution emerged that was similar to the four dimensions suggested by Radloff (1977).

The 20 items of the CES-D were subjected to principal components analysis (PCA) using *SPSS 15.0*. Prior to performing PCA, the suitability for factor analysis was assessed. Although there is little agreement among authors concerning how large a sample size should be for it to be suitable for factor analysis, Tabachnick and Fidell (2007) recommend at least 300 cases; however, they do concede that a smaller sample size (e.g., 150 cases) should be sufficient if solutions have several high loading marker variables (above .80). The caveat is that in small samples the correlation coefficients among the variables are less reliable, and tend to vary from sample to sample. In the present analysis, examination of the correlation matrix revealed the presence of many coefficients of .3 and above. The Kaiser-Meyer-Okin value was .88, exceeding the recommended value of .6, and the Barlett's Test of Sphericity (Tabachnick & Fidell, 2007, p. 614) achieved statistical significance, supporting the factorability of the correlation matrix. Principal components analysis revealed the presence of five components with eigenvalues exceeding 1, explaining 38.1%, 11.1%, 6.9%, 5.1%, and 5.0% of the variance respectively. An inspection of the screeplot revealed a noticeable

break after the third component. However, the results of Parallel Analysis showed only two components with eigenvalues exceeding the corresponding criterion values for a randomly generated data matrix of the same size (20 variables x 156 respondents).

To aid in the interpretation of these two components, Varimax rotation was performed. The rotated solution showed both components having a number of strong loadings, with all but three variables loading on only one component. The two-component solution explained a total of 49.1% of the variance, with Component 1 contributing 34.14% and Component 2 contributing 14.99%. Although an interpretation of the two components is inconsistent with the original four-component model (i.e., depressed affect, positive affect, somatic signs, and interpersonal distress) proposed by Radloff (1977), some researchers using this measure with Native American populations have found a similar discrepancy. As such, the results of this analysis indicated a fairly strong loading of the depressed affect and somatic signs items into one component, and the positive affect items into a second component. Because of the high internal consistency of the CES-D, the standard practice in social science research is to use the total scale score for analysis (Radloff & Teri, 1986); however, due to the discrepant findings of this analysis with the empirical literature, the depressive affect/somatic signs component was investigated in the Multiple Regression to determine if it changes the overall pattern of the outcome.²

Cultural identification. The 23-item Behavior Scale from the *Native American Cultural Behaviors and Attitude Scales* (Finley, 1999) was used to assess acculturation because participation in traditional culture tends to generate more reliable scores of

²Running the Multiple Regression with the depressive affect/somatic signs factor did not improve the overall fit of the model, therefore, the four-factor model was used because it is consistent with the theoretical conception of the CES-D scale.

cultural identification than participation in non-traditional culture (Finley, 1999; Whitbeck et al., 2002; see Appendix for list of specific items).³ Respondents were asked to indicate the degree to which statements related to traditional behavior were true (1=*never true* to 5=*always true*). Sample items include, "I speak a tribal language," "I attend Indian celebrations," and "I know how to tell my tribe's creation story." High scores reflect high levels of cultural identification. In previous research, scores from this scale were found to have an overall internal consistency of .77 (Finley, 1999). The Cronbach's alpha for the present study was .74.

³ On this particular measure, there are 11-items that specifically ask about participation in traditional culture. These items, which make up the *Participation in Indian Culture* factor, were analyzed separately, and yielded a Cronbach's alpha of .84. Using this factor separately did not change the overall pattern of the Multiple Regression; therefore, the complete 23-item measure was used.

CHAPTER 3

Results

Descriptive statistics and intercorrelations for the measured variables are presented in Table 1. As predicted, there was a significant positive relationship between perceived discrimination and depressive symptomatology ($r = .46, p < .01$), such that individuals who perceived more discrimination in their daily lives reported more symptoms of depressive affect. Interestingly, there was also a significant positive relationship between cultural identification and perceived discrimination ($r = .23, p < .01$), indicating that individuals who scored higher on the measure of cultural identification tended to perceive more occurrences of discrimination.⁴

The extent to which there were systematic differences in the outcome variable as a function of other demographics (e.g., age, gender, socioeconomic status) was investigated. There was no significant correlation between age and depressive symptomatology ($r = .10, p = .23$). An independent-samples t-test was conducted to compare the depressive symptomatology scores for males and females. This test indicated that there was a significant difference in the CES-D scores for males, $M = 29.62, SD = 7.59$, and females, $M = 33.48, SD = 10.79$; $t(153) = -2.62, p < .05$. The magnitude of the differences in the means was relatively small ($\eta^2 = .04$), with females reporting more symptoms of depressive affect. Separate independent-samples t-tests were also used to explore the impact of income and marital status on depressive symptomatology.⁵

⁴ Although this seems paradoxical, the current literature suggests that ethnic minorities who are highly identified with their ethnic group tend to make attributions of discrimination more readily than their less ethnically-identified counterparts (Operario & Fiske, 2001; Shelton & Sellers, 2000).

⁵ A one-way between-groups analysis of variance was also conducted to explore the impact of education on depressive symptomatology, however, this test revealed no significant differences between groups at the $p < .05$ level in CES-D scores for the eight groups [$F(7, 156) = 1.95, p = .07$].

Participants were divided into two groups according to their level of income (Group 1: less than \$14,999; Group 2: \$15,000 and above). An independent-samples t-test indicated that there was a significant difference in the CES-D scores for those making less than \$14,999, $M=35.35$, $SD=10.61$, and those make above \$15,000, $M=28.63$, $SD=7.25$; $t(98)=4.92$, $p < .001$. The magnitude of the differences in the means was quite large (eta squared = .14), with those individuals making less than \$14,999 reporting more depressive symptomatology. Similarly, an independent-samples t-test was conducted to explore the impact of marital status on depressive symptomatology. Participants were divided into two groups (Group 1: married; Group 2: not married). This analysis revealed a statistically significant difference in the CES-D scores for those who are married, $M=29.46$, $SD=8.41$, versus those who are not married, $M=34.40$, $SD=10.36$; $t(147)=-3.25$, $p < .01$. The magnitude of the differences in the means was moderate (eta squared = .07), with those individuals who were not married endorsing more symptoms of depressive affect.⁶

Hierarchical multiple regression analysis was employed to test the hypothesis that cultural identification moderates the relationship between perceived discrimination and depressive symptomatology. The analysis was performed using SPSS REGRESSION and SPSS EXPLORE for evaluation of assumptions.⁷ The results for the regression analysis are summarized in Table 2. For this analysis, the predictor variables were first centered and then entered into the regression equation. Centering the predictor variables essentially puts the variables into deviation units by subtracting their sample means to

⁶ Gender, income level, and marital status will be controlled for in the Multiple Regression.

⁷ A preliminary analysis indicated that the assumption of normality had been violated. A square root transformation was performed on the data to address this violation. The Multiple Regression analyses were run using these transformed data. Because the pattern of findings using these transformed data did not differ substantially from that found with the original data, the analyses are reported in the original metric.

produce revised sample means of zero. With continuous data, this provides a meaningful zero point, while also reducing the problem of multicollinearity among the variables in the regression equation (Cohen, Cohen, West, & Aiken, 2003). In Step 1, gender, income, and marital status were entered to control for their effects on the dependent variable. In Step 2, the centered terms (Aiken & West, 1991) for perceived discrimination and cultural identification were entered to test for main effects, and in Step 3, the interaction term (centered Perceived Discrimination X centered Cultural Identification) for these variables was entered. The overall model was significant, [$R^2 = .32$, $F(6, 123) = 9.54$, $p < .001$]. The unstandardized regression coefficients (B), standard errors (SE), standardized regression coefficients (β), R^2 , and ΔR^2 are presented in Table 2. As predicted, the present study found a main effect of perceived discrimination, $t(123) = 5.05$, $p < .001$. This effect was in the hypothesized direction. In other words, the size and direction of the relationship between perceived discrimination and depressive affect suggest that increased perceptions of discrimination are associated with more depressive symptomatology. As such, for every unit change in perceived discrimination, there is a .41 unit change in depressive symptomatology after controlling for the other variables in the model. However, the hypothesized interaction effect between cultural identification and perceived discrimination was not statistically significant, $t(123) = -.27$, $p = .785$.

CHAPTER 4

Discussion

As expected, perceived discrimination was a significant predictor of depressive symptomatology among the sample of Native American older adults in the present study. For instance, even after accounting for demographic variables known to influence depressive symptoms (e.g., gender, marital status, income), perceptions of discrimination explained an additional 16.2% of the variance in the outcome variable. Moreover, while some of the current literature (e.g., Branscombe et al., 1999; Fisher & Shaw, 1999; Mossakowski, 2003; Whitbeck et al., 2002; Yoo & Lee, 2005) suggests a protective role of cultural identification, the present study did not reveal such a finding. Thus, cultural identification did not moderate the relationship between perceived discrimination and depressive symptomatology as was originally hypothesized.

Several possibilities may explain why the present study failed to find the predicted moderator effect of cultural identification. One possibility and limitation of the present study is the challenge of assessing cultural identification. When investigating cultural identification in Native American populations, researchers have typically defined this construct as a continuum going from *traditional* to *assimilated* (Garrett & Pichette, 2000). However, as noted by Jackson and Chapleski (2000), the history of forced assimilation in the case of Native Americans “has resulted in the nearly universal adoption by Indian people of the essential features of mainstream American culture” (p. 233). As such, Jackson and Chapleski (2000) suggest that the use of mainstream culture to separate the more acculturated individuals from their less acculturated counterparts is not an appropriate practice. Instead, these authors propose that researchers investigate

how Native American individuals have managed to retain some of their traditional practices and beliefs “in addition to...rather than instead of” (p. 233) having adopted those of the mainstream American culture. Those that have maintained more of the traditional culture, regardless of how assimilated they appear in other aspects, would be considered more traditional in the conceptualization suggested by Jackson and Chapleski (2000).

Moreover, while current research supports the practice of assessing one’s participation in traditional activities (e.g., powwows, sweats, drumming, beading) as a means of measuring cultural identification in Native American populations, this may not be a suitable marker of cultural identity, especially for older individuals. While there is a strong assumption that older Native Americans are the primary carriers of traditional culture, the literature has revealed that these individuals often look quite assimilated. On the other hand, middle-aged and younger Native Americans often appear more traditional than their elders in many ways, particularly when participation in traditional events and activities are the criteria used to assess cultural identity. For instance, some researchers (e.g., Jackson & Chapleski, 2000) have found that while the younger Native American individuals were eager to engage in the more traditional spiritual practices (e.g., sweatlodge ceremonies, smudging), the older Native American individuals typically avoided such activities, preferring instead to worship *God* in mainstream Christian churches and to offer conventional Christian prayers on ceremonial occasions. There was a similar observation in the present study. For example, 38.3% of the participants in this study answered *never true*, while another 20.8% of the participants answered *seldom true* to the statement *I attend my tribe’s spiritual ceremonies*.

One thought that may account for this seemingly paradoxical reversal between older and middle-aged Native American individuals is that older Native American individuals came of age during an era that was marked by extreme discrimination, in general, as well as a time of aggressive assimilation policies on the part of the federal government.⁸ A key aspect of the federal government's assimilation policy was the establishment of boarding schools throughout the United States where Native American children were taught to speak English and acquire basic working skills. This experience not only removed the child from his or her family and tribe, but also essentially removed any remnant of the traditional culture from the Native American individual (Noriega, 1992). In fact, some researchers (e.g., Jackson & Chapleski, 2000) speculate that it is these sorts of historical experiences that account for the reluctance, and or lack of knowledge, on the part of elderly Native Americans to participate in traditional cultural activities. Although the present study did not ask specifically about the boarding school experiences of the participants, data from an ongoing qualitative study of Native American Resilience with this same population suggest that many of the individuals from this particular reservation were sent to government-, and church-sponsored boarding schools (Wallace & Swaney, 2007). Historical records corroborate these data, indicating that the majority of individuals from this age cohort (e.g., those born between 1920 and 1940) and geographical location were not spared the boarding school experience (Montana Office of Public Instruction, 2007). Moreover, based on some of the findings, this particular experience may have had an impact on the present study. For example,

⁸ For example, Native Americans were not granted U. S. citizenship (Citizenship Act) until 1924 and were not allowed to exercise their traditional religious practices until 1978, which is when the American Indian Religious Freedom Act was passed (for an historical overview see Garrett & Pichette, 2000).

approximately 70% of the participants only spoke English, compared to the 3.4% that indicated that they also spoke another language (presumably their tribal language). Additionally, only 12.8% of the participants surveyed knew how to tell their tribe's creation story. Likewise, less than 10% of the sample indicated that they always/often participate in drumming and singing, although this may be more a result of the fact that the participants in the present study are from an older age group.

In contrast to the research on participation in cultural activities which indicates that middle-aged and younger Native American individuals seem to be significantly more traditional than their elders, some researchers have found that the circumstances tend to be reversed when assessing cultural identity based on other criteria, such as having an Indian name and fluency in an indigenous language. For example, Jackson and Chapleski (2000) noted in their investigation that having an Indian name was indicative of more traditional Native American families since by the end of the 19th century most families had started giving their children Christian names. The same logic applies to the second criterion of indigenous language fluency (Jackson & Chapleski, 2000). However, given the extensive diversity within the Native American population, care must be taken not to presume that these criteria are significant indicators of cultural identity for all Native American tribes.

In light of the discrepant findings in the cultural identification literature, especially when comparing younger cohorts to their older counterparts, it is reasonable to assume that perhaps the measure of cultural identification used in the present study was not an appropriate indicator of cultural identity for the sample studied. For instance, the present study focused on participation in traditional activities as the primary means of

assessing cultural identification. This is problematic for several reasons: (a) as mentioned previously, historical influences may give a distorted depiction of this population; (b) given that the present study investigated an older population, it is reasonable to assume that certain activities (e.g., traditional dancing, driving to powwows, beadwork) will decline with age because of physical limitations; (c) finally, research with other ethnic minorities have found that one does not have to participate in traditional activities to have a strong group identification (Fisher & Shaw, 1999; Sellers & Shelton, 2003).

Another point to consider is that while the present study found a significant relationship between perceived discrimination and depressive symptomatology, discrimination may not be a pervasive stressor in this particular population, which could also explain why cultural identification did not have a buffering impact on this relationship. For instance, several other studies have reported lower levels of perceptions of discrimination at older ages (Barnes et al., 2004; Kessler et al., 1999). In fact, post hoc analyses revealed that only 12.5% of the participants in the present study indicated that racial discrimination was an event that they had experienced in the past year. Of those who had experienced racial discrimination, approximately 21% indicated that they were strongly to extremely upset by the incident, whereas about 21% reported that they were not at all upset by the incident. The remaining 58% stated that they were mildly to moderately upset by racial discrimination.⁹ One possible explanation for these lower levels of perceived discrimination is that older people may be less mobile and have smaller social networks that include only those individuals they choose to be around, thus

⁹ These data were calculated from the number of individuals who indicated that they had experienced racial discrimination in the past year by marking the *racial discrimination* item on the *My Life Events* questionnaire. This questionnaire also asked participants to rate how *worried* or *upset* they were by the event on a scale of 1 to 5 (1=*not at all upset*, 5=*extremely upset*).

reducing the opportunity for discriminatory encounters. Another possibility is that with the changing social climate, there have been noted improvements in race relations and social policies, which perhaps makes occurrences of discrimination less evident to these individuals who, it is assumed, may have experienced more overt acts of discrimination at an earlier point in their lives (Barnes et al., 2004; Jackson & Chapleski, 2000).

Finally, there was a significant positive correlation between perceived discrimination and cultural identification, indicating that high scorers on the cultural identification measure perceived more occurrences of discrimination. Although this appears counterintuitive, research in African American populations has revealed a similar relationship (Operario & Fiske, 2001; Shelton & Sellers, 2000). One explanation is that individuals who are highly identified with their ethnic group are more likely to make attributions to discrimination because their beliefs about the ways in which the world works (e.g., that others will discriminate against members of their group) is consistent with their experiences of discrimination (Sellers & Shelton, 2003). However, as noted previously, the extant literature also suggests that a strong identification with one's group seems to protect individuals from the negative mental health consequences of perceived discrimination (Branscombe et al., 1999; Fisher & Shaw, 1999; Mossakowski, 2003; Yoo & Lee, 2005). Perhaps individuals with a strong cultural identification do not become distressed by discriminatory events because these events are not unexpected or novel. This, in fact, may be the case in the current study as indicated by the positive correlation between perceived discrimination and cultural identification.

CHAPTER 5

Limitations and Future Direction

While the results of the present study are informative for this particular sample of people, care must be taken when attempting to generalize the findings. For example, the results relate to only one Native American tribe, and as mentioned previously, there is a significant amount of diversity within the Native American population (Norton & Manson, 1996). Moreover, the discrimination measure used in the present study assessed unfair treatment without regard to a specific, potentially stigmatizing characteristic. Therefore, reported instances of discrimination may be less than what would have been reported had a more specific measure of discrimination been used (Brown, 1999). Similarly, the measure used in this study to assess depressive affect has produced variable results in other studies investigating depressive symptomatology in Native American adults (Chapleski et al., 1997). Another consideration worth mentioning is the challenging nature of interpreting questions of symptom timing and origin in cross-sectional research. For example, it is not known whether perceptions of discrimination influence negative mental health outcomes, or if people with depressive symptoms perceive more events as discriminatory (Kessler et al., 1999). It is important that future research investigating the nature of the relationship between discrimination and mental health outcomes consider the interpretive limitations of cross-sectional research, and employ more prospective designs.

Despite the above-mentioned limitations, the literature suggests that depression is an important mental health problem for many Native American communities and deserves urgent attention (Curyto et al., 1998; Lichtenberg et al., 1997; Whitbeck et al.,

2002). The current study added to our understanding of depression and its correlates by exploring the relationship between discrimination and depression among older Native American people. Knowing that discrimination puts an individual at risk for developing depressive symptomatology has important implications for future work in this area. For instance, the literature has indicated that discrimination can have a widespread, negative impact on stigmatized groups, including, but not limited to feelings of personal rejection and unfair treatment (Barnes et al., 2004). The present study found a significant relationship between perceived discrimination and depressive symptomatology in this particular population; therefore, work with older adults in this population should focus on fostering coping mechanisms for dealing with such negative experiences. Moreover, as Whitbeck and colleagues have noted (2002), there has been a lack of “systematic research pertaining to depression and depressive symptoms among American Indian adults” (p. 401). Thus, it is not known whether the factors that appear to be associated with depressive symptomatology in European Americans (e.g., income, gender, age) are also influential in the development of depressive affect among Native Americans. The present study added to the empirical literature by investigating the extent to which demographic variables influence depressive symptomatology in older Native American adults. In the present study, gender, income level and marital status were all found to be related to depressive affect in this particular sample.

Additionally, although the present study did not find the predicted buffering effect of cultural identification, this may be, in large part, an artifact of the measure. For example, other researchers (e.g., Jackson & Chapleski, 2002) have also encountered problems when assessing cultural identification in older Native American samples,

especially when using participation in traditional activities as the marker of cultural identification. In fact, the limited research in this area has found that older Native American adults often look quite assimilated on measures of cultural identification, whereas younger individuals appear more traditional (Jackson & Chapleski, 2002). Given this discrepancy, future research investigating cultural identification in older Native American adults needs to explore potential cohort effects (e.g., sociopolitical factors, physical limitations) that may influence the measurement of this construct. Thus, when working with an older minority population it may be more appropriate to assess one's attitude about his or her cultural identification rather than using participation in traditional activities as the criterion. Finally, although there are apparent measurement issues that need to be addressed in this area of research, data from an ongoing qualitative study of Native American Resilience conducted with this population suggest that participants in this study have been "guided and strengthened by their traditional Native American values, practices and beliefs" (Billow, Wallace, Swaney, & Blanchard-Fields, 2005). Therefore, it will be important for future research to continue to explore the various conditions, as well as the social processes under which cultural traits may operate as protective factors.

Appendix

Perceived Discrimination (Williams et al., 1997)
 You are treated with less courtesy than other people
 You are treated with less respect than other people
 You received poorer service in restaurants or stores
 People act as if they are better than you
 People act as if you are dishonest
 People act as if they are afraid of you
 You are called names or insulted
 You are threatened or harassed
 People act as if you are not smart

Response Categories

- 1 Never
- 2 Rarely
- 3 Sometimes
- 4 Often

Center for Epidemiologic Studies-Depression Scale (CES-D; Radloff, 1977)

I was bothered by things that usually do not bother me
 I did not feel like eating; my appetite was poor
 I felt that I could not shake off the blues even with the help from my family and friends
 I felt that I was just as good as other people**
 I had trouble keeping my mind on what I was doing
 I felt depressed
 I felt that everything I did was an effort
 I felt hopeful about the future**
 I thought that my life had been a failure
 I felt fearful
 My sleep was restless
 I was happy**
 I talked less than usual
 I felt lonely
 People were unfriendly
 I enjoyed life**
 I had crying spells
 I felt sad
 I felt that people disliked me
 I could not get "going"

Response Categories

- 1 Rarely or none of the time
- 2 Some or little of the time
- 3 Moderate amount of time
- 4 Most of the time

Note. (**) denotes items that comprise the *positive affect* factor; all other items comprise the *depressed affect/somatic signs* factor

Native American Cultural Behaviors Scale (Finley, 1999)

I speak a tribal language*
 My family speaks a tribal language*
 I only speak English
 My family only speaks English in our home
 I attend Indian celebrations*
 I know how to sing Indian songs*
 I dance at Indian celebrations*
 I attend non-Indian activities such as concerts, plays, etc.
 I participate in drumming and singing*
 I know how to tell my tribe's creation story*
 I attend my tribe's spiritual ceremonies*

Response Categories

- 1 Never true
- 2 Seldom true
- 3 Sometimes true
- 4 Often true
- 5 Always true

I listen to popular music on the radio, tapes, or CDs
 I go dancing at night clubs, etc.
 I eat fry bread or other Indian bread*
 I attend church
 I go hunting and fishing
 My friends are Indians*
 In school I received good grades
 I read a non-Indian newspaper
 Members of my family are married to non-Indians
 My neighbors are non-Indian
 My friends are non-Indian
 I do Indian artwork*

Note. (*) denotes those items that comprise the *Participation in Indian Culture* factor

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Variable	M	SD
1. Depressive Symptomatology	11.51	8.7
2. Perceived Discrimination	14.32	4.8
3. Psychological Well-Being	28.74	7.5

** Correlation is significant at the 0.01 level (2-tailed).

Table 1

Intercorrelations and Descriptive Statistics for Measured Variables

Variable	1	2	3	M	SD
1. Depressive Symptomatology	--			31.83	9.7
2. Perceived Discrimination	.46**	--		14.64	4.5
3. Cultural Identification	.16	.23**	--	80.36	10.6

** . Correlation is significant at the 0.01 level (2-tailed).

Table 2

Hierarchical Multiple Regression Analyses Testing Moderating Effects of Cultural Identification in the Relationship of Perceived Discrimination to Depressive Symptomatology

Variables	B	SE B	β	R ²	ΔR^2
Step 1					
Income	-5.99	1.84	-.31**	.16	.16
Gender	2.88	1.66	.15		
Marital status	1.35	1.86	.07		
Step 2					
Income	-4.65	1.69	-.24*	.32	.16
Gender	3.47	1.51	.18*		
Marital status	.59	1.70	.03		
cPD	.87	.17	.40**		
cCI	.04	.07	.05		
Step 3					
Income	-4.63	1.69	-.24*	.32	.00
Gender	3.50	1.52	.18*		
Marital status	.52	1.72	.03		
cPD	.88	.18	.41**		
cCI	.04	.07	.04		
cPD x cCI	-.004	.02	-.02		

Note. cPD = centered perceived discrimination; cCI = centered cultural identification.

* $p < .05$. ** $p < .001$