Examining Correlations of Historical Trauma and Ethnic Identity with Symptoms of Depression in American Indian/Alaska Native College Students

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Abstract: *The purpose of this study was to gain an understanding of how historical trauma and one's degree of ethnic identity relate to symptoms of depression, due to controversy in the literature about such variables. Participants in this study self-identified as American Indian/Alaska Native (AI/AN), were over the age of 18, and were currently enrolled or had been previously enrolled at a university. Participants completed a survey online via Qualtrics to gather information about their ethnic identity, frequency of historical loss thinking, and symptoms of depression. Survey data was analyzed using multiple regressions, correlation analyses, mediation analyses, and follow-up t-tests. Historical loss thinking was found to be very prevalent among this sample, and this was found to contribute significantly to depressive symptoms in AI/AN college students. Various aspects of ethnic identity may contribute to an increase or decrease in historical loss thinking and subsequent depressive symptoms, and this has significant implications for clinicians working with AI/AN college students.*

INTRODUCTION

The literature addressing historical trauma and ethnic identity in American Indian and Alaska Native (AI/AN) peoples contains contradicting ideas. Both concepts are difficult to define due to their complexity, subjectivity, and multidimensional nature, and are thus difficult to measure across a group of people. A review of the literature indicates many ways of measuring and conceptualizing either concept, which likely contributes to the contradictions.

Historical Trauma

Historical trauma is generally understood as the accumulation of trauma from historic events passed down through generations of Native peoples (Whitbeck et al., 2004). Maria Yellow Horse Brave Heart pioneered the discussion of historical trauma, conceptualizing it as "…collective and compounding emotional and psychic wounding over time, both over the life span and across generations" (1996). This trauma has stemmed from the actions of White colonizers who aimed to assimilate AI/AN peoples into White culture or eradicate them from the population. This included mass killings of AI/AN peoples, assimilation policies that led to land dispossession and the removal of AI/AN children to boarding schools, and the criminalizing of religion and languages (Kirmayer et al., 2014). Many also experienced deaths from diseases introduced by the settlers, as well as violence at the hands of the settlers (Swanson & Saus, n.d.). Kirmayer et al. (2014) describe the diseases and violence that led to the deaths of millions of AI/AN peoples as cultural genocide. The intergenerational transmission of trauma hindered the intergenerational transmission of culture, still affecting AI/AN peoples today. Kirmayer et al. (2014) suggest trauma can be transmitted at various levels, including epigenetically, interpersonally, within families, in the community, and nationally. Intergenerational trauma is evident in structural, systemic factors such as the forced assimilation to Western modes of agriculture and subsistence, the loss of tribal agency and sovereignty, the allocation of land and resources, and economic inequalities.

Historical trauma is thought to contribute to mental health disparities in AI/ANs by increasing stress responses to events (John-Henderson & Ginty, 2020). Ehlers et al. (2022) found that participants who had higher rates of historical loss thinking experienced more psychological

distress that was associated with suicidal behaviors. AI/AN peoples have been found to have rates of suicidal ideation, suicide attempts, and suicide deaths that are 50% higher than that of Whites, due to higher rates of depression, anxiety, substance use, perceived discrimination, and acculturation stress (Wexler et al., 2015). Suicidality often correlates with rates of depression; one study found that depression was present in 66% of AI/AN peoples who committed suicide (Roh et al., 2015). Suicidality and depression can be tied to historical trauma by way of intergenerational transmission of trauma, as well as structural and systemic inequities present in the United States today, such as the lack of mental health resources (Wexler et al., 2015). A lack of culturally competent mental health resources can be a risk factor for suicidality, creating a cycle within AI/AN communities (Shaw et al., 2019).

Historical trauma is also linked to educational disparities due to the history of educational trauma via the boarding school era, as well as the ongoing educational trauma via content such as racist or incorrect history lessons. According to Flynn et al. (2014), AI/AN peoples who attend higher education at predominantly White institutions must go through a unique acculturation process. AI/AN peoples often experience acculturative stress when facing this challenge, which is described as psychocultural stress due to the cultural differences of the person and the environment they are entering, leading to loss of identity and mental health issues.

Ethnic Identity and Historical Trauma

Cultural identity is a difficult and complex concept to measure. Ethnic identity is typically defined as how an individual understands and relates to their membership in a social, ethnic group (Jaramillo, 2015; Kenyon & Carter, 2011). Biculturalism is a relevant concept when discussing AI/AN ethnic identity, and refers to one's identifying with two cultures, although the extent generally differs from person to person (LaFromboise et al., 1993).

Some studies have examined the interactions between ethnic identification and historical trauma, and their effects on AI/AN peoples. However, different authors suggest differing results on whether thinking about these historical losses, as well as one's degree of ethnic identification, has a negative effect on one's mental health. Many researchers believe that having a strong collective identity with other AI/AN peoples and having the knowledge of historical trauma narratives can be a source of resilience (Mohatt et al., 2014; Swanson & Saus, n.d.). For example, West et al., (2012) found a sense of belonging within a community, or a strong degree of cultural identification, can serve as a protective factor against many mental health difficulties. A sense of

community, including knowledge of traditions, background, history, and feelings of belonging and attachment within a community is of high importance in AI/AN communities (Kenyon & Carter, 2011). Engaging in cultural practices, as well as a having high degree of social support and connectedness, has been found to be protective against mental health difficulties, including suicidal ideation (Bogic et al., 2024). Bombay et al. (2014) suggest knowledge of historical trauma and its consequences may improve relationships among Native peoples, by providing recognition of and explanation for current conditions. Many researchers believe that healing must occur at the community level rather than just the individual level (Bookman & Smith, 2024).

Tucker et al. (2016), however, found that Native peoples with a high degree of cultural identification engage in more historical loss thinking and, therefore, experience more symptoms of depression. Ehlers et al. (2013) found AI/AN peoples with a high degree of cultural identification do think more frequently of historical losses, but this thinking has only minimal influence on their emotional experiences of the trauma. Gameon & Skewes (2021) suggest a high degree of ethnic identity may be protective when thoughts of historical losses contribute to lower levels of distress, though ethnic identity may not be as impactful when distress is high.

This project examines these contradicting ideas by measuring rates of historical loss thinking and ethnic identification, as well as symptoms of depression, in Native college students. The literature suggests historical trauma affects peoples today through intergenerational transmission, including higher rates of anxiety, depression, and substance use (Roh et al., 2015; Wexler et al., 2015; John-Henderson & Ginty, 2020; Gameon et al., 2021; Ehlers et al., 2022). It is crucial to understand if ethnic identification serves as a protective factor for historical loss thinking, or if it exacerbates historical loss thinking and symptoms of depression. This understanding can increase cultural competence and inform clinicians on how to best treat Native peoples presenting with symptoms of depression. The incorporation of this knowledge into a clinical setting can lead to better mental health treatment for AI/AN peoples.

Current Study

Purpose

The purpose of this study was to gain an understanding of how historical trauma and one's degree of ethnic identity relate to symptoms of depression, as well as how historical trauma and ethnic identity relate to each other. This data can be used to inform clinicians as well as

programming and support services to reflect a deeper understanding and acknowledgement of the legacies of historical trauma.

This study also extends research on historical trauma and ethnic identity by studying an intertribal group of people, when previous studies (Ehlers et al., 2013) have focused on AI/AN peoples from the same community. Studying historical trauma and ethnic identity from an intertribal standpoint can lead to an increase in external validity and allow the research to benefit more people.

Hypotheses

It was hypothesized that AI/AN peoples with higher rates of ethnic identification and a greater sense of community will have higher rates of historical loss thinking due to an increase in knowledge and understanding of traumatic histories. It was also hypothesized that increasing one's sense of community and rates of ethnic identification will lead to a reduction of depressive symptoms, despite the higher rates of historical loss thinking (West et al., 2012; Bombay, Matheson, & Anisman, 2014; Ehlers et al., 2013).

METHODS

Design

This study utilized a cross-sectional methodology to obtain a snapshot of the relationship among the variables of historical trauma, ethnic identity, and symptoms of depression in a sample of AI/AN college students. After recruitment, the participants completed a survey, providing mainly quantitative data with some qualitative components. SPSS was used for data analysis.

Sample

Subjects for this study were recruited primarily from one university in the Midwest, though a small portion of data was gathered from another Midwest university. Data collection occurred during the Fall semester of 2023. Students were recruited through utilizing a participant pool of students called the SONA research system, as well as flyers and word-of-mouth. AI/AN students also received emails asking for voluntary participation via the universities' student listservs. This email outlined the requirements for being included in the study, a short description of what the participants would be asked to contribute, and the benefits and risks of taking part. In order to be eligible for participation, the participants had to be currently or previously enrolled at a university,

over the age of eighteen, and must self-identify as AI/AN. Those not meeting the eligibility criteria were excluded from this study. Students were compensated for participation with the opportunity to win one of eight $25 VISA Gift Cards, and psychology students could choose compensation by way of class credit. This study was reviewed and approved by the university's Institutional Review Board (Project # IRB0005593).

Measures

Demographics

Participants completed an initial demographics questionnaire assessing age, gender identity, ethnicity, tribal affiliation, cumulative GPA, years of education completed, and institutional support. They were also asked if they lived off, on, or near a reservation prior to attending the university, as well as their prior housing status. They were asked about boarding school history in their families and if this history has a negative effect.

American Indian Biculturalism Inventory-Northern Plains (AIBI-NP)

Participants completed the AIBI-NP, which was developed by McDonald et al. (2015). The AIBI-NP is a 27-item self-administered questionnaire with a four-point Likert scale designed for an individual to choose the degree to which they agree with a statement. This scale assesses worldviews, beliefs, and participation in cultural practices associated with American Indian culture and with White culture.

Multigroup Ethnic Identity Measure- Revised (MEIM-R)

Participants received the MEIM-R (Phinney, 2007), an 8-item questionnaire with six Likert-scaled questions and two open-ended questions. The first six questions ask the individuals to choose how much they strongly agree or strongly disagree with each statement, while the last two questions ask for a write-in response. The MEIM-R is meant to assess a sense of membership and belonging in any group. The MEIM-R has been utilized in past research with AI/AN adolescents to examine ethnic identity and the connection to well-being (Brown et al., 2019; Hunter et al., 2022; Angelino et al., 2024).

Historical Losses Scale

Participants received the Historical Losses Scale (Whitbeck et al., 2004), a 12-item questionnaire with a six-point Likert scale ranging from "never" to "several times a day". This

scale is meant to assess perceived losses and the frequency of thinking about these losses in relation to historical trauma experienced by AI/AN peoples.

Historical Loss Associated Symptoms Scale

Participants received the Historical Loss Associated Symptoms Scale immediately following the Historical Losses Scale. This scale was developed for use in conjunction with the Historical Losses Scale, referring back to it with the statement, "Now I would like to ask you about how you feel when you think about these losses" (Whitbeck et al., 2004). The Historical Loss Associated Symptoms Scale is a 12-item questionnaire with a six-point Likert scale ranging from "never" to "always." This scale is meant to identify the emotional responses to thoughts and reminders of historical losses.

Patient Health Questionnaire-9 (PHQ-9)

Participants received the PHQ-9, developed by Kroenke & Spitzer (2002). The PHQ-9 is a 9-item self-administered questionnaire with a four-point Likert scale ranging from "not at all" to "nearly every day." This scale is meant to assess major depressive symptoms based on DSM-IV criteria. The PHQ-9 has been found to have adequate reliability for use in multiethnic populations (Shaff et al., 2024) as well as AI/AN populations specifically (Harry & Waring, 2019).

Beck's Depression Inventory (BDI-II)

Participants received the BDI-II, developed by Beck et al. (1996). The BDI-II is a 21-item self-administered questionnaire with a four-point Likert scale ranging from 0 to 3. This scale is meant to measure the severity of depression based on DSM-IV criteria. The validity of the BDI-II has been found to be adequate for use in AI/AN populations (Gray et al., 2019; Gray et al., 2023).

Procedure

Participants were able to access the survey online via Qualtrics. All participants were required to provide consent via Qualtrics prior to participation in this study. Anyone who did not consent was unable to complete the survey. Participants were compensated and provided with a list of mental health resources following participation in this study.

Analysis

SPSS was used to perform multiple regressions. Ethnic identification and historical trauma were used as independent variables and depressive symptoms were the dependent variable. All

continuous variables were centered and used to test the interaction between ethnic identification and historical trauma, and the effects of this interaction on depressive symptoms. A One-Way Analysis of Variance (ANOVA) was conducted on the ethnic identification and historical trauma variables to test if there were independent variable differences among the college students. Follow-up tests were conducted on significant variables. While regional data were analyzed, no tribal-specific data were analyzed.

RESULTS

Sample

Participants included 100 (78 females, 16 males, 2 identifying as two-spirit, 1 identifying as queer, and 3 did not report a gender identity) self-identified AI/AN college students. Ages ranged from 18 to 51 with a mean of 26.40 years. Collectively, participants reported 33 different tribal affiliations.

Frequencies and Descriptives

Historical loss thinking was highly prevalent in this sample, as evidenced by descriptive statistics on the frequency of historical loss thinking (see Table 1). Between 40% and 50% of the sample endorsed thinking weekly or more about the following losses: loss of family ties due to boarding schools (47.4%), loss of families due to government relocation (49.5%), loss of respect for elders (49.5%), loss of land (55.7%), loss of self-respect due to poor treatment by the government (56.8%), loss of respect for traditional ways (56.8%), and loss of trust in whites (56.8%). Over 60% of the sample endorsed thinking weekly or more about the following losses: loss of language (68.4%), loss of traditions (68.4%), and loss of people from early death (68.4%). The thoughts of historical loss most prevalent in this sample were the loss of culture (73.7%) and the loss of people from alcoholism (75.8%), both occurring weekly or more.

Related to thoughts of historical loss thinking, 65% of the sample were raised on or near a reservation (see Table 2). When queried about having a family member who attended a boarding school, 55% responded “yes,” while 20% responded “maybe.”

Utilizing the BDI-II to determine levels of depression across the sample, 54% of participants were found to meet scoring criteria for mild to severe depression (see Table 3).

Table 1
Frequencies of Historical Loss Thinking, obtained from the Historical Losses Scale

	Frequency of losses (% of sample)					
Thoughts of Historical Losses	**Several times a day**	**Daily**	**Weekly**	**Monthly**	**Yearly**	**Never**
Loss of our land	6.3	18.9	30.5	27.4	14.7	2.1
Loss of our language	15.8	22.1	30.5	17.9	2.1	11.6
Losing our traditional spiritual ways	20	18.9	29.5	16.8	4.2	10.5
The loss of our family ties because of boarding schools	11.6	18.9	16.8	27.4	11.6	13.7
The loss of families from the reservation to government relocation	8.4	14.7	26.3	28.4	14.7	7.4
The loss of self-respect from poor treatment by government officials	16	16	25.5	27.7	7.4	7.4
The loss of trust in whites from broken treaties	9.5	17.9	29.5	12.6	13.7	16.8
Losing our culture	16.8	27.4	29.5	15.8	6.3	4.2
The losses from the effects of alcoholism on our people	18.9	30.5	26.3	17.9	-	6.3
Loss of respect by our children and grandchildren for elders	10.5	15.8	23.2	27.4	7.4	15.8
Loss of our people through early death	12.6	20	35.8	15.8	8.4	7.4
Loss of respect by our children for traditional ways	12.6	13.7	30.5	21.1	8.4	13.7

Table 2
Frequencies of demographic data related to thoughts of Historical Loss Thinking

	Yes	**No**	
Raised on or near a reservation?	65%	35%	
	Yes	**No**	**Maybe**
Did anyone in your close family attend a boarding school?	55%	25%	20%
	Yes, but it only comes up occasionally	**Yes, we talk about it frequently**	**Yes, it affects us every day**
Did this negatively affect your family?	36%	8%	13%

Table 3
Frequencies of symptoms of depression according to BDI-II scoring criteria

BDI-II Scoring Criteria	**Frequency (%) in sample**
No depression	46%
Mild depression	18%
Moderate depression	22%
Severe depression	14%

Pearson Correlations

Within the variables of ethnic identification, historical loss, and depression, each measure was examined to determine Pearson Correlation analyses. The variable of ethnic identification was broken down into the Multigroup Ethnic Identity Measure (MEIM-R), the American Indian Cultural Identification (AICI), and the European American Cultural Identification (EACI), as the MEIM-R and American Indian Biculturalism Inventory (AIBI) subscales are thought to function differently. The Historical Loss Scale (HLS) was utilized as the primary measure for historical trauma, as the Historical Loss Associated Symptoms Scale was thought to correlate too highly with the measures of depression.

When examining the Pearson Correlations for these variables, the PHQ-9 was not significantly correlated with the measures of ethnic identity and historical trauma. Because of this, the BDI-II was primarily used for the analyses in this study

Historical loss was found to be positively associated with symptoms of depression ($r=.369$, $p<.001$). The MEIM-R was found to be positively correlated with the BDI-II ($r=.208$, $p<.05$), and the HLS ($r=.488$, $p<.001$). The AICI was positively correlated with the BDI-II ($r=.274$, $p<.01$) and the HLS ($r=.512$, $p<.001$). The EACI was not significantly correlated with the BDI-II or the HLS, suggesting the indicators of European American cultural identification in the AIBI were not significantly correlated with depressive symptoms or thoughts of historical loss.

Mediation Analyses

Mediation analyses indicated ethnic identification had an indirect effect on symptoms of depression mediated through historical loss thinking. The MEIM-R, HLS, and BDI-II demonstrated a Sobel statistic of 2.89, $p=.004$ (see Figure 1). The observed p-value suggests that the association between the MEIM-R and BDI-II is significantly mediated by the HLS. The AICI, HLS, and BDI-II demonstrated a Sobel statistic of 2.54, $p=.01$, suggesting the association between the AICI and BDI-II is significantly mediated by the HLS (see Figure 2). The EACI, HLS, and BDI-II did not demonstrate a significant Sobel statistic, suggesting that HLS was not acting as a mediator amongst these measures (see Figure 3).

Sobel tests were also run to determine if the ethnic identity variable is acting as a mediator between historical trauma and depressive symptoms. With HLS acting as the independent variable, the various measures of ethnic identity acting as a mediator, and the BDI-II acting as a dependent

variable, none of the Sobel tests showed significance. This suggests the effect of historical trauma on depressive symptoms is not mediated by levels of ethnic identity.

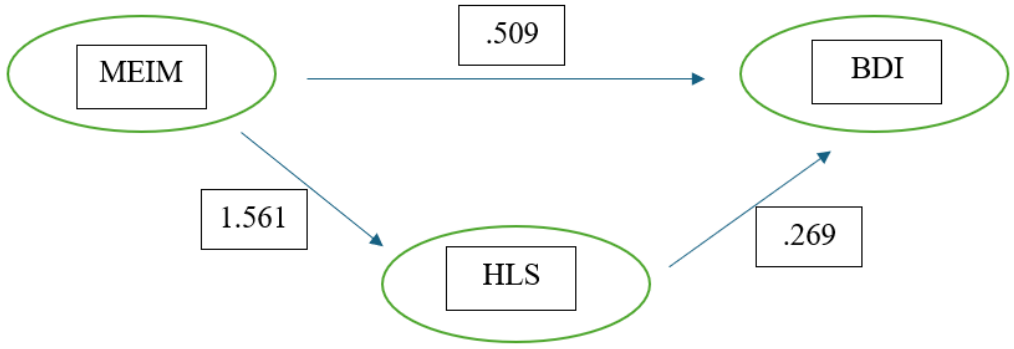

Figure 1. Mediation Analysis of the MEIM-R, HLS, and BDI-II

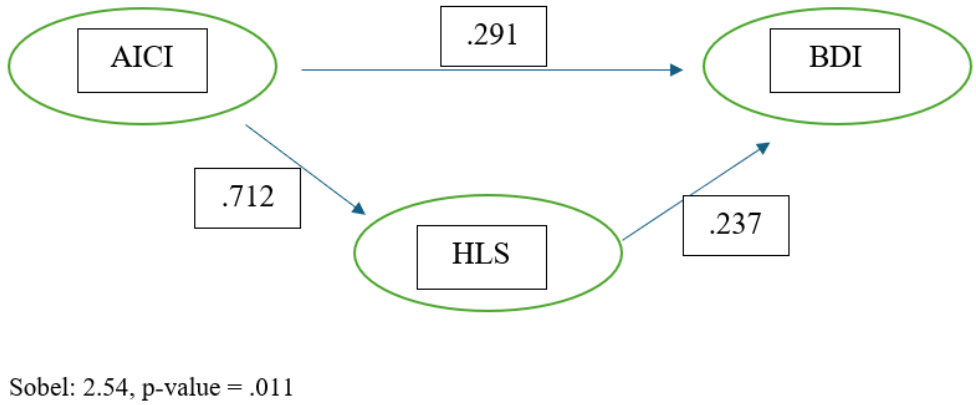

Figure 2. Mediation Analysis of the AICI, HLS, and BDI-II

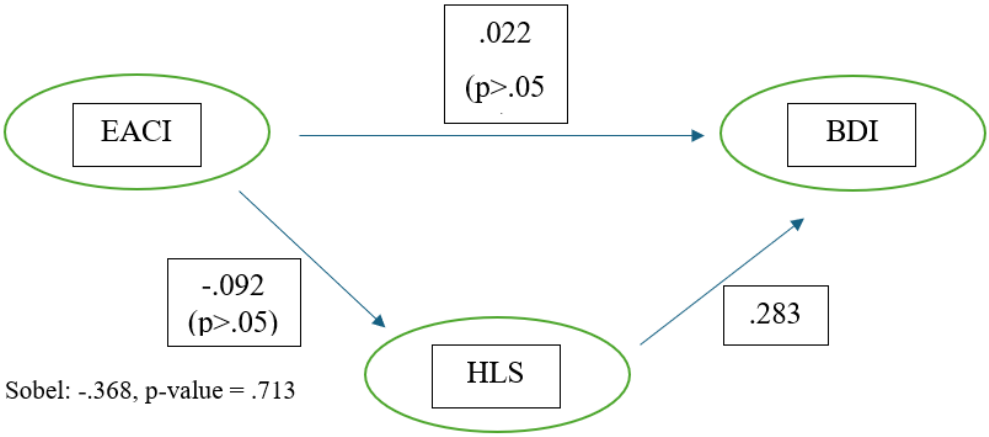

Figure 3. Mediation Analysis of the EACI, HLS, and BDI-II

Multiple Regression Models

Due to the HLS acting as a mediator, this was utilized as the second block in hierarchical multiple regression analyses, with the ethnic identity variable as block one, and the interaction of the two variables as block three. Three multiple regression models were run and examined.

Multiple Regression 1

The first regression model examined the MEIM-R, HLS, and BDI-II. All variables were positively correlated, but there were no substantial correlations ($r<.9$). HLS was found to correlate best with the outcome ($r = .369$, $p<.001$), so it is likely this variable will best predict depressive scores on the BDI-II. When examining the first block of this model, the MEIM-R accounted for 4.3% of the variation in depressive scores. However, when HLS is added, this value increased to 13.7%, suggesting the HLS accounts for an additional 9.4%. Adding the interaction variable only increased the value to 14.5%, suggesting that the interaction only accounts for an additional 0.8% of variation in depressive symptoms. The inclusion of HLS explained a larger amount of variation in depressive symptoms, but the inclusion of the interaction variable to this model did not account for a significant amount of variance in depressive symptoms.

Multiple Regression 2

The second regression model examined the AICI, HLS, and BDI-II. All variables were positively correlated, but there were no substantial correlations ($r < .9$). The HLS was found to correlate best with the outcome ($r= .369$, $p<.001$), so it is likely this variable will best predict depressive scores on the BDI-II. When examining the first block of this model, the AICI accounts for 6.5% of the variance in depressive scores. When the HLS is added, this value increased to 14.6%, suggesting the HLS accounts for an additional 7.1% of the variance. This suggests the AICI and HLS account for similar amounts of variance in depressive scores. Adding the interaction variable did not increase this value at all, suggesting the inclusion of the interaction variable did not account for any additional variance in the sample.

Multiple Regression 3

Although the EACI was not found to be significantly correlated with the HLS or the BDI-II, and the HLS was not found as a mediator between the EACI and the BDI-II, a multiple regression was run on these variables.

HLS correlates best with the outcome (r=.369, p<.001), suggesting this variable will best predict depressive symptoms. When examining the first block of the model, the EACI accounts for 0% of the variance in depressive symptoms. When HLS is added, this value increased to 13.6%, suggesting that the HLS accounts for 13.6% of the variance in depressive scores. Adding the interaction variable only increased the value to 13.8%, suggesting the interaction only accounts for an additional 0.2% of variation in depressive symptoms. The inclusion of the interaction variable did not account for a significant amount of variance in depressive symptoms.

Further Analyses

The data were further examined to determine additional variables that may be influencing the data. A regression analyzing the HLS on BDI-II scores amongst participants endorsing living on or near a reservation versus off the reservation was completed. This analysis found that for those who grew up on or near a reservation, historical loss thinking accounted for a significant 37.2% of variance in BDI-II scores. The variance found for off-reservation participants was not significant.

A t-test was performed to further examine the differences in historical loss thinking between those who lived on or near a reservation and those who did not. Levene's test was not significant, suggesting that the variances are roughly equal, and the assumption of homogeneity is tenable. On average, participants who lived on or near a reservation reported higher levels of historical loss thinking (M = 47.35, SE = 1.82) than participants who did not live on or near a reservation (M = 38.72, SE = 2.36). This difference was significant (t(95) = 2.81, p<.01) and represents a small effect size (r=.28)

A t-test was also performed to further examine differences in historical loss thinking based on participants from tribal nations in the Midwest and participants from tribal nations not in the Midwest. Levene's test is not significant, suggesting the variances are roughly equal, and the assumption of homogeneity is tenable. On average, participants from this area reported higher levels of historical loss thinking (M=46.6197, SE=1.62) than participants not from this region (M=46.6197, SE=3.44). This difference was not significant (t(88) = -1.533, p>.05) and does not represent a significant effect size. This suggests those from the Midwest region and those not from this region exhibited similar levels of historical loss thinking.

DISCUSSION

The current study examined the relationship between ethnic identification, historical trauma, and symptoms of depression in AI/AN college students. It was thought AI/AN peoples with higher rates of ethnic identification would have higher rates of historical loss thinking due to an increase in knowledge and understanding of one's history. It was also hypothesized increased ethnic identity would lead to a reduction of depressive symptoms.

Relationships Between Variables

The results of this study indicated historical loss thinking acted as a mediator between ethnic identification and depressive symptoms. This suggests an indirect effect of ethnic identification on depressive symptoms in AI/AN college students.

Interaction effects were further analyzed to clarify the mediating effect of historical loss symptoms. Overall, it is unlikely that ethnic identification and historical loss had a significant interaction effect among this sample. Within all three models, the HLS appears to be a better predictor of depressive symptoms than the ethnic identity variables. The interaction variables did not improve the regression models, nor did they have significant effects on depressive symptoms among this sample. This further supports the idea that historical loss symptoms mediate the effects of ethnic identification on depressive symptoms.

Ethnic Identity

In examining these regression models, it was found the AICI accounted for more variance in depressive symptoms than the MEIM-R. It is likely this difference in variance occurs due to the variation of ethnic identity predictors examined in the AIBI and the MEIM-R. The AIBI examines American Indian culture specifically, based on data from AI/AN peoples from the Northern Plains and their Caucasian counterparts (Gourneau, 2002). As the current study had a high percentage of AI/AN peoples from the Northern Plains region, it is likely the AIBI was better suited for the population and better reflects the ethnic identification of the current sample.

Due to the AIBI including questions about European American identity as well, the EACI was examined to determine the effects of one's level of European American identification on historical loss thinking and depressive symptoms. The results suggest the EACI accounted for 0% of the variance among depressive symptoms and had no significant correlation with historical loss symptoms. While higher rates of AI/AN ethnic identification led to higher rates of historical loss

thinking and subsequently more depressive symptoms, higher rates of European American identification did not affect historical loss thinking or depressive symptoms.

Historical Loss Thinking

Historical loss thinking was very prevalent in this sample. More than 70% of the sample indicated thinking about loss of culture and losses from alcoholism at least weekly or more. The least frequent thoughts of historical losses were tied to loss of family ties because of boarding schools and government relocation, as well as loss of respect for elders. Though these were the least frequent thoughts, almost 50% of the sample endorsed thinking of these losses weekly or more. A previous study by Tucker et al. (2016) found the most prevalent losses in their sample were endorsed at least monthly by only around 20% of participants. Comparing the current study to the study by Tucker et a. (2016), it appears historical losses were endorsed more frequently by participants at this university. These results suggest that historical loss thinking is still very prevalent among younger generations who have not experienced these traumas, such as boarding schools, firsthand. The difference in prevalence rates among these two studies raises the question of why historical loss thinking is so prevalent amongst this sample.

While the high rates of historical loss thinking cannot be explained directly by the data obtained from this sample, inferences can be made based on the sample demographics. In this sample, 65% endorsed that they were raised on or near a reservation. Follow-up t-tests suggested that participants living on or near a reservation reported higher thoughts of historical loss thinking, and this thinking accounted for a significant amount of variance in depressive symptoms. On the other hand, participants not living near or on a reservation reported lower amounts of historical loss thinking, and this thinking did not account for a significant amount of variance in depressive symptoms. This suggests that growing up and living on or near a reservation has a significant impact on the depressive symptoms that one experiences. Being raised near or on a reservation may suggest feeling more connected to their home communities, more conversations about historical losses among family members and elders, and more frequent reminders of historical losses.

Similarly, when asked if anyone in their close family attended a boarding school, 55% of participants responded yes, and 20% responded maybe. The high number of participants who responded “maybe” is of note, as this may indicate uncertainties with one’s family history, which may contribute to difficulties and uncertainties with one’s ethnic identity. The high rates of

participants who positively endorsed a close family member attending a boarding school may contribute to the higher rates of historical loss thinking among this sample. When one has a family member who attended a boarding school, conversations about losses might be more prevalent among their family, and the emotional turmoil in the whole family may be evident. Often, when one attends a boarding school, they lose aspects of their culture, including language, and these aspects are then not passed down to future generations. Losing these aspects of one's culture, such as not knowing the language, may contribute to difficulties with ethnic identification, higher rates of historical loss thinking, and subsequent depressive symptoms.

Regional differences were examined to determine if the location of one's tribal home community made a difference in rates of historical loss thinking. These differences were not found to be significant, suggesting that participants from the Midwest region and those from farther away experience similar rates of historical loss thinking and subsequent depressive symptoms.

These frequent reminders of historical losses and the treatment of AI/AN peoples in the past and present are likely to contribute to higher rates of depressive symptoms. Throughout the regression models, thoughts of historical losses contributed to significant variance in depressive symptoms and were found to be positively correlated with depressive symptoms.

Depressive Symptoms

Both the PHQ-9 and the BDI-II data were collected and examined to determine prevalence of symptoms of depression among this sample. The PHQ-9 did not correlate significantly with the measures of ethnic identity or historical trauma in this sample. However, the BDI-II did correlate significantly with the MEIM-R and the AIBI, as well as the HLS. This suggests that the BDI-II may be better representative of depressive symptoms in AI/AN peoples than the PHQ-9. Further analyses were conducted to determine which items in the AIBI and the MEIM-R correlated with the items on the BDI-II and the PHQ-9. Zero items on the MEIM-R correlated with any items on the PHQ-9, suggesting that the general commonalities across ethnic groups measured by the MEIM-R do not correlate significantly with depressive symptoms on the PHQ-9. There were positive and negative correlations with items on the AIBI and the PHQ-9. This could be due to the items on the AIBI that represent White culture, such as "how strongly do you identify with White culture," and "how important is your European or White American heritage and history to you," rather than the items that represent AI/AN culture. While the PHQ-9 is thought to adequately

represent depressive symptoms in Whites, this may not be the best measure of depression for AI/AN populations.

Implications

Using the BDI-II to examine the frequency of depressive symptoms in the current sample resulted in 54% of the sample meeting the scoring criteria for depression, ranging from mild to severe. For comparison, Shannon et al. (2025) found that 15.8% of working age AI/AN adults reported depressive symptoms. A literature review by Ka'apu & Burnette (2019) suggested that rates of depression range from 10-30% in AI/AN populations, and Tucker et al. (2015) found that 37.4% of their sample of AI/AN college students indicated depressive symptoms. While the current study only used one measure of depression, this still provides valuable information about the frequency and experiences of depressive symptoms in AI/AN college students. Utilizing this information about depressive symptoms and historical loss thinking can be beneficial for clinicians working with AI/AN students in a mental health capacity. Often, when AI/AN peoples present with depressive symptoms in a clinical setting, historical trauma may not be acknowledged or even recognized. As historical trauma has been found to account for variance in depressive symptoms, it is necessary that this be a focus of therapeutic interventions. As losses from the effects of alcoholism on AI/AN people was endorsed the highest, this should be examined and focused on. Many AI/AN peoples have family members who have difficulties with alcoholism, and this may even span multiple generations. AI/AN clients themselves may present with difficulties with alcoholism, and the foundation of this and what it means for AI/AN peoples should be understood by the clinician.

Loss of culture was also a highly prevalent thought amongst this sample. As previously discussed, many AI/AN peoples have difficulties with ethnic identification due to a loss of culture, such as traditions and language not being passed down. Difficulties with ethnic identity may lead to more thoughts of loss of culture, which in turn may lead to higher rates of depressive symptoms. Items on the BDI-II were further analyzed to determine correlations between specific depressive symptoms and aspects of ethnic identity. Bogic et al. (2024) suggests connecting high risk AI/AN individuals with their cultural traditions as a component of therapy. AI/AN people may not respond well to evidence-based interventions, instead preferring traditional healing practices (Gone, 2023).

A strong sense of belonging to one's ethnic group and a strong understanding of one's membership in an ethnic group were negatively correlated with symptoms of depression. These

symptoms included thinking of past failures, self-criticalness, crying, feelings of worthlessness, and suicidal worries or thoughts. It is thought that working on increasing one's sense of belonging and their understanding of their belonging to their ethnic group may lead to a reduction in these depressive symptoms. Bookman-Zandler & Smith (2024) suggest a critical component of trauma recovery is community, and restoring identity with the community is necessary for healing. John-Henderson & Ginty (2020) found the relationship between historical trauma and psychological stress is moderated by social support, suggesting that social support may dampen stress responses. Feeling connected and supported by one's community has been found to be protective against suicidal ideation as well (Bogic et al., 2024).

Aspects of ethnic identity such as needing to search for an understanding of one's identity and seek out information to learn more were positively correlated with symptoms of depression such as sadness, feelings of guilt, and feelings of punishment. This further supports the idea that not feeling a strong sense of belonging to one's ethnic identity may lead to more thoughts of historical loss, such as loss of culture, and subsequently more symptoms of depression, such as guilt or punishment for not knowing the culture. Many researchers suggest having a strong ethnic identity and understanding of one's group membership may serve as a protective factor for AI/AN peoples (Bogic et al, 2024; Bookman & Smith, 2024; Gameon & Skewes, 2021; John-Henderson & Ginty, 2020; Mohatt et al., 2014; West et al., 2012; Kenyon & Carter, 2011). In therapy, clinicians can focus on increasing these aspects, such as finding groups to increase a sense of community, helping the client learn about their history, and helping them process their feelings about historical losses. Increasing one's ethnic identity may reduce certain thoughts of historical loss, such as loss of culture, and subsequently reduce one's depressive symptoms.

Limitations and Future Research

The interpretation and discussion of the results of this study should be understood within the framework of the study's limitations. This study was based on data gathered from the limited population of AI/AN college students at primarily one university, which influences the generalizability of this data to populations outside of AI/AN college students. Similarly, this study examined historical losses generalizable to most AI/AN populations, but did not examine historical loss specific to various tribal communities, such as particular wars or battles. Future research should seek to replicate study results in other age groups and other universities or tribal colleges and should obtain data on more specific losses. Furthermore, as this study used a cross-sectional

methodology, future research should use an experimental design to determine causal relationships among variables rather than just inferences. Future research should also gather longitudinal data to understand how ethnic identification fluctuates over time in relation to historical loss and symptoms of depression.

Another limitation of this study is the measures used. The measures of historical loss thinking only measure frequency of historical loss thinking and not intensity, which could provide much more information about historical loss thinking overall. Future research should gather qualitative information along with the measures developed by Whitbeck et al. (2004) to gain a better understanding of one's experience of historical trauma. Similarly, the AIBI-NP could provide a better understanding of ethnic identity if qualitative data was obtained along with the quantitative information. The AIBI-NP may also represent a limitation of this study, as this measure has not been utilized frequently in the literature, and there is not much data to support the use of this measure among AI/AN college students. Future research should utilize the AIBI-NP to determine if these results replicate and can determine a solid measure of ethnic identification in AI/AN peoples.

CONCLUSIONS

Historical loss thinking was found to be very prevalent among this sample of AI/AN college students. While it was initially thought that historical loss thinking may have a significant interaction with ethnic identification, multiple regression analyses did not support this idea. In general, it appears as though the inclusion of an interaction variable does not account for a significant amount of variance in depressive symptoms. Overall, the historical loss scale appeared to be a better predictor of depressive symptoms than whichever measure of ethnic identity was included in the model.

However, the AICI and the MEIM-R accounted for more variance in depressive symptoms than the EACI, suggesting that a higher AI/AN ethnic identity correlates more with symptoms of depression than a White identity. The historical trauma variable was found to serve as a mediator when included with the AICI and the MEIM-R, suggesting that while ethnic identity does have an effect on depressive symptoms, it is likely that this effect is explained by the mediating influence of historical loss thinking.

Overall, it appears as though historical loss thinking contributes significantly to depressive symptoms in AI/AN college students. Various aspects of ethnic identity may contribute to an increase or decrease in historical loss thinking and subsequent depressive symptoms. These results can have significant implications for clinicians working with AI/AN college students. It is thought that increasing certain aspects of one's ethnic identity, such as a strong sense of belonging and confidence in one's group membership, may lead to a reduction in depressive symptoms among AI/AN college students.

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CONFLICT OF INTEREST

The authors declare they have no known conflicts of interest.

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