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REMEMBERING TOGETHER:  
THE RELATIONSHIPS BETWEEN HISTORICAL LOSS, SOCIAL SUPPORT,  
DEPRESSION, AND RESILIENCE

By

MATTHEW MARTIN CROXTON

Bachelors of Science, Arizona State University, Tempe, AZ, 2008

Thesis

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Sandy Ross, Dean of The Graduate School  
Graduate School

Gyda Swaney, Chair  
Psychology

Duncan Campbell  
Psychology

Annie Belcourt  
Pharmacy Practice/Community and Public Health Sciences Departments

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Remembering together: The relationships of historical loss, social support, depression, and resilience

Chairperson: Gyda Swaney

Colonization, genocide, boarding schools, and relocation programs have created complex psychological issues for Native American people. Although these events are rooted in the past, the resulting political, social, and economic situations continue to play a role in influencing the mental health of Native Americans. There are considerations to be given to social support as a protective factor that provides resiliency for Native Americans. Historical trauma (as measured by the Historical Loss Scale, HLS), social support (as measured by the Multidimensional Scale of Perceived Social Support, MSPSS), depression (as measured by the Center for Epidemiological Studies Depression Scale, CES-D) and resilience (as measured by the Positive Affect factor of the Center for Epidemiological Studies Depression Scale, CES-D) were investigated to determine their relationships. Hierarchical multiple regressions were used to examine historical loss and social support as predictors of depressive symptoms and resilience. The participants were 160 Native American older adults and elderly from a Northern Plains Reservation in the United States. The results indicated that participants think about historical losses frequently, feel socially supported, are generally not depressed, and are feeling positive frequently. The data also revealed the relationship between Historical Loss and depression to be approaching significance, suggesting that with more power, a significant relationship could be found. When examining depression as an outcome of historical loss and social support, only MSPSS predicted CES-D scores,  $F(6,109) = 5.09, p < .001, \text{adjusted } R^2 = .18$ . When examining positive affect as an outcome of historical loss and social support, only MSPSS scores predicted positive affect scores,  $F(3,119) = 3.26, p < .05, \text{adjusted } R^2 = .16$ . Social support emerged as a protective factor against depression and as a source of resilience. Although the data did not show a relationship between historical loss and social support, the data suggests that social practices related to historical loss decrease symptoms of depression and also increase positive affect. The participants are thinking about losses on average between “monthly” and “yearly or only at special times.” However, almost half of the participants ( $n = 77, 48.1\%$ ) thought about at least one element of historical loss “daily,” or “several times a day.” Participants appear to be effectively coping with these thoughts, as indicated by CES-D mean scores of 11.03, and Positive Affect factor mean scores of 3.78. Risk factors for the development of depression appear to include thinking about historical loss frequently, and lower levels social support. Future research could continue to explore how specific cultural practices, values, and attributes enable these older adults and elderly Native Americans to cope with historical loss and remain positive.

## Dedication

Díí naaltsoos binishishnishígíí éí Diné bee bich'í' ahééh nisin dooleeł, nihizázi dóó nihichóoni', znihaastóí dóó nihizáanii, índa éí díítl'ée' dóó hayoolkáál biyijí' bi'didoochíílgíí bá dooleeł. Hózhǫ́ǫ́go náás náánéidáál dooleeł.

I dedicate this thesis to the Navajo People, those who have come before, those are here now, and those who are to come. May you walk in Beauty.

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# **Remembering Together: The Relationships between Historical Loss, Social Support, Depression, and Resilience**

## **Introduction**

The current context of the mental health of Native Americans must be contextualized by a brief historical examination. The influence of European colonization has had a powerful and traumatic effect on Native Americans (Braveheart-Jordan & DeBruyn, 1995). The historical influences of past events and losses have reverberated through time and into modern Native American life. Additionally, the same historical processes that have driven such events as colonization have not disappeared but have persisted and become ingrained in US and Native American societies. For example, from 1879 to 1975, Native Americans were forced into boarding schools where physical and sexual abuse resulted in psychological distress and a process that interrupted the transmission of cultural knowledge (Brave Heart-Jordan, 1996; Horesji, Heavy Runner Craig, & Pablo, 1992).

Europeans began an age of exploration to find resources and learn more about the world. Upon arrival at “The New World” they mistakenly called the people they found “Indians,” believing that they were in India (Brown, 1970) yet this misnomer has persisted to this day. In the beginning of colonization there was some understanding and cooperation between the two peoples; however, eventually Native Americans came to learn that the Europeans were not here to visit, but to create permanent settlements and colonies. Aragon (2006) stated that colonization contributed to the destruction of Native American traditional life-ways. These life-ways were essential to the well being of Native Americans. When Europeans began to expand their population and land usage, tension between the groups increased dramatically. There was

competition for resources that were ultimately taken from Native Americans. The effect on the Indigenous people of North America was both profound and extensive. Eventually the land was sold or taken and Native Americans were displaced, enslaved, or killed.

The colonizers' religious intolerance also had significant impacts the indigenous people. Kirmayer, Simpson, and Cargo (2003) related that outlawing Native American religious practices (i.e., the 1883 Religious Crimes Code) inhibited the ability of Native Americans to make sense of their suffering. Daily activities related to social organization, subsistence, and coping in spiritual ways were affected. These activities had long served to bring the tribal community together and promote resilience. With the elimination of these tribal activities, communities had a reduced capacity for healing, social support, and strategies for resilience.

While there are many commonalities among Native Americans, it should be noted that as a group, Native Americans are very diverse. More specifically, there are over 560 federally recognized tribes within the US (Bureau of Indian Affairs, 2013) and there are a rich variety of languages, values, traditions, oral histories, and ceremonies. There are also vast socio-economic and political differences between tribes. Many different ways exist for Native Americans to practice and express their specific traditional ways.

To describe the Native Americans and Alaska Natives, there are 5.2 million Native Americans and Alaska Natives in the US (Norris, Vines, & Hoefell, 2012). The median age of Native American and Alaska Natives is 28.5 years, with 11.6% of the population above the age of 55 years. Within the total population of Native Americans, 5.2% were male and above the age of 55 years, and 6.4% were female and above the age of 55 years (Indian Health Service, 2003). Native Americans have a life expectancy of 71.1 years, which is lower than the 75.8-year life

expectancy of the general population in the United States (Andersen, Belcourt, & Langwell, 2005).

Between Western culture and Native American cultures, there are cultural differences in how aging is perceived. There is a simple example of the age bias in individualistic cultures. A person from the majority culture might say, "I am (number) years old," with some hesitation to disclose age, because youth is valued by the majority culture. In contrast, when telling his or her age, a Navajo person would say with pride "I have (number) of winters." This statement reveals the Navajo relationship to the natural world, having made it through a harsh winter and survived. Native American cultures value their elderly, although not all those who are elderly are Elders. More specifically, being elderly is associated with chronological age and being an Elder is associated with a certain status in the community, based on things related to age, cultural knowledge, participation and role in the community. Elders are seen as leaders, speakers of the language, keepers of traditional culture and spiritual ways, as well as wise (Smyer & Clark, 2011).

The current research project explores the experience of Native American older adults with historical loss. The examination of history will provide a starting point.

### **Historical Trauma**

Many scholars have written about historical trauma and Native American history, including Brown (1970), Zinn (1992, 2003), Brave Heart (1998, 1999, 2003), Brave Heart and DeBruyn (1998), Brave Heart-Jordan (1996), Braveheart-Jordan and DeBruyn (1995), and Evans-Campbell (2008). They all recount a history of Native Americans from the time of colonization as having been marked with trauma. Braveheart-Jordan and DeBruyn (1995) initially described the concept of historical trauma as being multi-generational and extending beyond a single

individual's life span. Later, Weaver and Brave Heart (1999) defined historical trauma as the "cumulative wounding across generations as well as during one's current life span" (p. 22). In subsequent definitions Brave Heart (1999) has included a cataclysmic history of genocide in the definition. Almost all of Native American tribes experienced historical trauma. Examples of traumatic events include: The Trail of Tears (Wilkins, 1986), the Navajo's Long Walk (Iverson, 2006), the Navajo Livestock Reduction Act of the 1930's (Wilkins, 2003), and Wounded Knee (McGregor, 1987). These events have scarred the collective consciousness of Native Americans, and for many this source of pain is not distant.

Letgers (1988) and Thornton (1987) have studied the removal and subjugation of Native Americans, and argue that Native Americans have experienced a holocaust. Although the traumatic genocide of Native Americans is historical, Whitbeck, Adams, Hoyt and Chen (2004) state the losses have not only occurred in the past, but argue the losses are continuous and ongoing. Evans-Campbell (2008) also argues that historical trauma in Native Americans consists of events that are perceived as being continuous.

History and time also play a role in behavior. Kirmayer, Simpson and Cargo (2003) argue that the events of the past can be transmitted from generation to generation. Additionally, Bowen (1985) theorized the emotional systems of parents could be passed on to children through a multigenerational transmission process. Maladaptive features of parents can be passed on to children through family relationships and the environment that is shared and created within the family. Bowen argued the behavioral changes that occur as a result of trauma are passed on through modeled behaviors of the parents of offspring. In relation to traumatic events, Duran and Duran (1995) argue that unresolved traumas influence family systems and result in learning environments that teach dysfunctional behavior.

Heijmans et al. (2008) studied The Dutch Hunger Winter of 1944-1945 and the effect famine had on pregnant mothers and the children they were carrying. The famine affected the physiology of those mothers and their in utero children who had endured the winter by altering the expression of both the mothers' and childrens' genes. Rodriguez, Gaunt, and Day (2007) observed a higher prevalence of diabetes, heart disease and schizophrenia in these children when they were assessed 40 years later. In contrast, the offspring of these same mothers who were born prior to the famine did not experience the same health risks. It appears that poor conditions (such as famine) while a fetus is in development are related to health risks after their birth and into maturity; furthermore, the health of subsequent generations appears to also be affected (Harper, 2005).

Yehuda et al. (2007) delineated the physiological and behavioral effects of trauma on parents and their children. They maintain that the transmission involves both the physiological changes and behavioral changes that accompany trauma. Yehuda et al. argue the physiological changes that occur after experiencing trauma can be passed on while offspring are in utero (the study of this process is called epigenetics). The work of Bowen (1985) and Yehuda et al. (2007) asserted that outcomes of past events can be transmitted across generations. This pattern can be seen with historical trauma, both through the physiology of epigenetic transmission, and through parents modeling their emotions, namely, anger, avoidance, depression, and anxiety (Whitbeck, Adams, Hoyt, & Chen, 2004).

Sotero (2006) believes that historical trauma has significantly contributed to health disparities experienced by Native Americans. She believes the enduring process of historical trauma is related to several factors including the deliberate and systematic nature of the trauma, the continuous nature of the traumatic events, the universal experience of the trauma within the

population, and the injurious physical, social, psychological and economic damage that spans generations.

Related to the process of historical trauma is the resulting effect on the psychological well being of Native Americans. Brave Heart and DeBruyn (1998) defined a result of the losses created by the chronic trauma as historical unresolved grief that occurs across generations, which has been caused by “massive losses of lives, land, and culture from European contact and colonization” (p 60).

**Historical Loss.** By the middle of the 1800’s, disease, war, and genocide had nearly eradicated the Native American population (Thornton, 1987). Almost 98% of Native American lands had been taken, and systematic oppression had resulted in the criminalization of cultural and spiritual practices. This trauma has been recognized and defined as an historical yet continuous process that had created thoughts and feelings of loss for Native Americans. There was a clear need to examine how historical trauma affected Native Americans.

Whitbeck, Adams, Hoyt, and Chen (2004) conducted two focus groups with Tribal Elders from two reservations and asked them about the losses associated with historical trauma. The Elders identified loss of land, language, spiritual ways, culture, self-respect, and trust as historical loss. For example, one Elder remarked, “They stole our land, they stole a lot of land, and they killed a lot of people” (Whitbeck, Adams, et al., 2004, p. 123). According to the survey results, Native Americans are reminded regularly of losses stemming from past traumatic events. This study provides empirical evidence that historical events have current and tangible effects.

The results from the focus groups were used to create the Historical Loss Scale (HLS) which measures the frequency of thoughts related to losses of land, language, spiritual ways, culture, and other losses associated with historical trauma (Whitbeck, Adams, et al., 2004). See

Appendix A. All items on the scale loaded onto a single factor: perceived losses. Items on the HLS inquire about historical losses and current losses. In addition, items inquire about how often an individual thinks about the losses and the frequencies range from “never” to “several times a day.” Evans-Campbell (2008) believes the explanatory ability of the concept of historical loss captures the Native American experience, but also maintains that the concept of historical loss is still relatively unrecognized.

**Historical Loss and Depression.** Brave Heart (1996, 1999, 2003) theorized that there is a response to historical trauma; namely, the historical trauma response that can include substance abuse, thoughts about suicide, suicidal behaviors, depression, anxiety, low self-esteem, anger, and difficulty recognizing and expressing emotions. Whitbeck, Adams, et al., (2004) developed a way to measure these feelings through the Historical Loss Associated Symptoms Scale. In 2009, Whitbeck, Walls, Johnson, Morrisseau, and McDougall conducted an additional study that examined historical loss in adolescents. They found that there was a moderate association ( $r = .30$ ) between thoughts of historical loss and depressive symptoms as measured by the Center for Epidemiological Studies Depression Scale (CES-D).

Whitbeck, Adams, et al., in 2004 found that thoughts about historical loss as measured by the Historical Loss Scale, were related to emotional distress. Tribal Elders identified emotions and feelings related to loss of language, hopelessness for recovery of language, erosion of community and family ties, broken treaties, and drug and alcohol use. The distress as measured by Historical Loss Associated Symptoms Scale split into two factors: a) anxiety/depression, and b) anger/avoidance. Limitations of the study included that they were unable to assess the severity of these symptoms as they express themselves every day in the lives of Native Americans. It was also unknown to what degree this could be generalized to Native Americans in other tribes.

Given the history and the current context of Native Americans, there is an important question that deserves examination: Why have so many Native Americans survived and even thrived?

### **Resilience**

Seligman and Csikszentmihalyi (2000) argued that a psychological perspective focused on the treatment of pathology is a flawed model and void of any positive aspects of individual functioning, attributes, and wellness. A perspective that focuses on dysfunction lacks characteristics such as wisdom and courage, which can be developed as a consequence of negative experiences. A focus on pathology, negative emotions, and negative experiences does not allow psychologists to understand and properly examine how individuals overcome adversity. One way individuals overcome adversity is through resilience.

Lerner et al. (2012), Masten (2001), and Grandbois and Sanders (2009) defined resilience as the process of an individual who is maintaining his or her well-being in an environment that challenges successful adaptation. Native Americans have been situated in such hostile environments, and have been given opportunities to develop resilience. Kleinman (2004) suggests that when assessing depression in minority groups, cultural resilience should be examined.

**Resilience in Native Americans.** In order for Native Americans to live in the face of adversity and to survive as a people, many have developed resilient coping strategies. Native Americans have practiced their traditional ways, attended healing ceremonies, attended church, and participated in their Tribal communities. Lerner et al. (2012) argued that individuals interacting with their environment create resilience, and this process is enabled by such factors as social support, character, and connection. In turn, the individuals can make contributions back



into the resources of one's self, family, and community. This creates a relationship between the individual and the environment resulting in an increased capacity for building resilience. This perspective is also embedded within traditional Native American beliefs that express the connectedness of all things and that resilience is enabled by all of Creation (Grandbois & Sanders, 2009).

Some scholars have argued that resilience is inherent to Native American culture. HeavyRunner and Morris (1997) theorized that resilience among Native Americans is related to traditional core values, beliefs, and behaviors. The idea that all beings and things are connected provides a framework in which individuals can create supportive relationships and create resilience. "Knowledge of living on the land, community, connectedness, and historical consciousness all provide sources of resilience" (Kirmayer, Simpson, & Cargo, 2003; p 21). Native Americans' ability to practice religious ceremonies has enabled them to make sense of their suffering. Chapleski, Kaczynski, Gerbi, and Lichtenberg (2004) suggested that traditional ceremonies and beliefs could have the effect of decreasing depressive symptoms and act as a buffer against stressful life events and poor health. Aragon (2006) argues that the ability for Native Americans to process their distress within the context of traditional beliefs and values using traditional means, allows Native Americans to understand their distress through the lens of their own culture, which provides a source of resilience. Denham (2008) argued that the historical trauma response, as identified by Brave Heart (1996, 1999, 2003) that includes depression/anxiety and anger/avoidance (Whitbeck, Adams, et al., 2004) is only one possible set of responses. Individuals can also respond with resiliency that includes optimism, strength, and positive coping (Denham, 2008; Grant, Fretts, Croxton, Douglas, & Hopkins, 2011).

**Social Support.** Researchers have both theorized and provided empirical evidence that resilience is a function of healthy coping. Wallace and Swaney (2007a, 2007b) maintained that social support is evidence of effective coping and resilient behavior. Cohen (2004) defined social support as the resources of a social network that provide materials that help an individual handle stress. As theorized by Cohen and Wills (1985) social support can work as a process in two separate ways. First, it can act to provide individuals with a sense of identity and safety within a social context. Second, social support can work as a buffer if an individual encounters a potentially stressful event. The stress response is reduced because the individual has access to resources through his or her social support network. These resources are used to cope with the stressful event. Social support may also allow an individual who has experienced a stressful event to inhibit a maladjusted response or exhibit a well-adjusted response.

Family is a social element that provides support to individuals. Regarding social support among the elderly, Hanson and Sauer (1985) state that a core component of social support in the elderly is family support. More specifically, elderly parent-child interactions are seen as the most important and most common means of social support. They asserted the largest amount of help is given between children and parents, more so than any other family relation. Additionally, They observed that as older people age, they are less likely to accept help if they themselves cannot provide help. They also reported ethnic minorities tended to have a greater frequency of elderly parent-child interactions than Whites. Shore (1985) maintained that family is relied on more heavily than friends, and that extended family is a source of social support to the elderly. Social activities that have involved extended family have served to provide a source of emotional support, and extended family also provides a protective function, integrating family members into the social support network and providing sources of assistance when needed, such as during

illness or disaster. Hess and Soldo (1985) state that husbands and wives experienced better health, and felt better, although the benefits of living a longer life due to marriage are felt more by men. This could be related to the stable and close presence of emotional and economic support, and available care.

Peters and Kaiser (1985) described that relationship to the community, as was found within friends and neighbors, was a necessary element of mental health. Relationships with the community provided enjoyment, assistance, emotional support, and intimacy, but in ways that differed from the family. Friendships among the elderly were also likely to be long, with some friendships having lasted a lifetime.

Social support has been linked to physical health. Uchino, Cacioppo, and Kiecolt-Glaser (1996) reviewed 81 studies examining social support and found social support to be related to health; more specifically, they found social support benefitted the cardiovascular, endocrine, and immune systems. DeLongis, Folkman, and Lazarus (1988) found that low self-esteem in combination with low social support was a risk factor for physical illness and mood disturbance for individuals experiencing an increase in stress. Lin and Ensel (1989) examined physical well-being, psychological stress, and individuals' relationships to environmental stressors and resources. They found that social support buffered both social stressors and psychological stress in relation to physical well-being.

Social support has also been shown to be beneficial among the elderly. Cutrona, Russell, and Rose (1986) examined social support and health in the elderly and found social support was a significant predictor of physical health. They also found that high levels of social support reduced the negative effects of stress on mental health. Access to resources such as guidance

helped reduced the effect of stressful events on the areas of life satisfaction, loneliness, and depression.

Social support has also been studied among ethnic and racial minorities. Plant and Sachs-Ericsson (2004) studied depression in ethnic and racial minorities and Whites. Specifically, they examined the relationship between depressive symptoms, social support and the ability to meet basic needs, such as getting food or clothing. Ethnic and racial minorities had an increased risk for depression that was related to a reduced ability to meet their basic needs. Problems meeting basic needs were also associated with a lower level of social support. However, ethnic and racial minorities were also more likely to have a higher quality of interpersonal functioning, which was related to lower levels of depressive symptoms and lower rates of major depression. The authors of this study suggested that the quality of social support was related to aspects of collectivistic cultures that may foster stronger social support networks.

**Social Support in Native Americans.** Social support within Native Americans can be linked to culture. Native Americans have place value on relationships and family. Native Americans in general have a communal culture (S. Hobfoll, Jackson, I. Hobfoll, Pierce, & Young, 2002); they emphasize the whole rather than the parts – the community over the individual. According to Triandis (1995) collectivism is defined as a “social pattern consisting of closely linked individuals who see themselves as parts of one or more collectives (family, co-workers, tribe, nation); are primarily motivated by the norms of, and duties imposed by, those collectives; are willing to give priority to the goals of these collectives over their own personal goals; and emphasize their connectedness to member of these collectives” (p. 2). This value can be related more effectively through specific examples. It is a traditional Navajo practice to

introduce one's self by family clans first, and then identifying one's individual name; the social identity precedes individual identity.

Social support has been examined as a protective factor for Native Americans. Kirmayer, Boothroyd, Tanner, Adelson, and Robinson (2000) studied psychological distress and protective factors in the First Nations Cree of James Bay. The participants were 15 years and older, and included 545 males and 591 females. Protective factors that emerged from interviews were "a good relationship with the community" and "spending time in the bush." Kirmayer and colleagues found that participants identified "spending time in the bush" as a traditional activity that provided them with supportive social and spiritual elements, and an opportunity to foster their relationship with the natural world.

In contrast to what might be expected of social support in Native communities, one study revealed the effects of low social support on a specific reservation. When comparing caretakers who lived on and off reservation, Ludtke, McDonald, and Vallestad (2003) found that among family members of reservation Native American caregivers, social support was lower in comparison to the general population of the state. They hypothesized that this was due to the number of unmarried, divorced, and widowed caregivers on the reservation who did not have family support. More specifically, the most common reason that others did not provide care was there was no other immediate family to provide support.

**Resilience and Social Support in Native Americans.** Cultural tradition and collectivism enables Native Americans to remain connected to their peoples' histories. There are elements that prove to be supportive, such as traditional healing ceremonies, and retaining cultural knowledge and identity. Whitbeck, Chen, and colleagues (2004) suggested an individual can become both sensitized to historical loss and protected from reminders of loss by traditional

culture. Other elements can be risk factors, such as family discord, alcoholism, financial stress, and negative life events (Whitbeck, McMorris, Hoyt, Stubben, & LaFromboise, 2002). Social mechanisms that collectivism fosters can also act as risk factors; for example, individuals may be shunned if the individual's cultural and spiritual responsibilities are perceived as not being fulfilled (Rieckman, Wadsworth, & Deyhle, 2004). However, D'Orlando (2012) studied empathy and resilience in Native American elderly, and did not find that stress created by empathy for others reduced the empathic individual's capacity to be socially supportive, or resilient.

Several researchers have identified the strengths of traditional culture and cultural resilience. Grandbois and Sanders (2012) found that resilience played a key role in how Native American Elders coped with the dehumanizing effects of stereotypes. Miller and Schoenfeld (1971) found that Navajo who were involved in traditional activities were less likely to commit suicide. They also found those who were more traditional were likely to be older, although age and being traditional could not be separated out as individual factors. Garrouette, Goldberg, Beals, Herrell, and Manson (2003) found that Native Americans with a stronger tribal belief system were less likely to commit suicide. In these studies, resiliency among Native Americans has been related to tribal culture. Aragon (2006) believes that some Native Americans have been disconnected from their heritage and the strengths it can provide. Although Native Americans experienced a great sense of loss, there are disconnected individuals who have reconnected and discovered that strength. Thus, historical trauma may result in a resilient response; however, depression is also a possible outcome.

### **Depression**

Beck's theory of depression (Beck & Clark, 1988) argued that depression results from a bias towards negative thoughts involving loss and deprivation. Native Americans have certainly

experienced loss and deprivation, which may serve as a risk factor for depression. As described by the DSM-5 (APA, 2013) depressive symptoms include: a) depressed mood, b) loss of interest in pleasurable activities, c) weight loss or change in appetite, d) insomnia or hypersomnia, e) psychomotor agitation or retardation, f) fatigue or loss of energy, g) feelings of worthlessness or excessive or inappropriate guilt, h) diminished ability to think or concentrate, i) recurrent thoughts of death, suicidal ideation, a suicide attempt, or a plan for committing suicide.

The US Department of Health and Human Services (2001) released *Mental Health: Culture, Race, and Ethnicity (A Supplement to Mental Health: A Report of the Surgeon General)*. According to the report, Native Americans are the most impoverished ethnic minority within the United States, with a quarter of the population living in poverty, and a strongly supported finding that lower socioeconomic status is connected to poor physical and mental health. Native Americans in general suffer from greater psychological distress than the general US population, with Native American youth and adults experiencing an increased rate of mental health problems. Rural and isolated reservation communities have limited access to health care because there are relatively fewer mental health care providers within those communities. In addition, there are also differences in rates of those who have health insurance. Twenty percent of Native Americans do not have health insurance, compared to 14% in Whites. More research is needed to examine the nature and the extent of how Native Americans use mental health care services. Also, many Native Americans also use traditional healing. Treatment planning and prevention programs are important, although appropriateness and outcomes of services has not yet been examined.

Socioeconomic status has been connected to psychological distress (McLeod & Kessler, 1990). Native American reservations have higher rates of unemployment and poverty in

comparison to the general population (Ogunwole, 2006). The lowest employment percentage between tribes was found with Navajo males employed at 57% and Navajo females employed at 50%. Overall, the poverty rate for Native Americans and Alaska Natives is double that of the general population (Ogunwole, 2006). One quarter of Native Americans live in poverty (US Department of Health and Human Services, 2001). McLeod and Kessler (1990) argued that undesirable life events and psychological distress are connected to lower socio-economic status. Not surprisingly, Native Americans are expected to have higher rates of depression as a consequence of their low socioeconomic status.

**Depression in Native Americans.** The rate of depression among Native Americans has been studied with differing results; however, all conclusions are concerning. Beals, Novins, Whitesell, Spicer, Mitchell, Manson, and the AI SUPERPPF Team (2005) found the most common psychological problems within two Native American reservations were alcohol dependence, posttraumatic stress disorder, and major depressive episode. According to the results of the study, Native Americans had comparable, and at times greater mental health care needs than the general US population. An earlier study conducted by Manson, Shore, and Bloom (1985) reported that the most common psychological problems experienced by Native American adults were depressive symptoms, and estimated the rate of depression within some Native American communities to be four to six times the rate of the national average. In a similar study examining psychological distress, Goldwasser and Badger (1989) examined distress in Navajo who were visiting an Indian Health Service clinic. They found that 20% of the study participants were experiencing significant distress, as defined by the General Health Questionnaire. Wilson, Civic, and Glass (1995) found that nine of the 106 participants in their study met criteria for a major depressive disorder based on criteria from the DSM-III-R (APA, 1987). However, they



believed that depression was underreported by participants and under recognized by Indian Health Service physicians. The conclusions of these studies are all concerning.

Rates of depression among Native Americans have been examined. Dinges, Atlis, and Ragan (2000) conducted a meta-analysis of studies measuring depression among Native Americans. The study found that the endorsement of depression in Native American adults ranged from 32% to 45%. While it is difficult to generalize these findings to the rest of Native American communities, the findings strongly suggest that depressive symptoms are a serious psychological concern in Indian Country.

Health disparities are also present among Native Americans and Alaska Natives. Compared to the general population, Native Americans and Alaska Natives die at significantly higher rates from alcohol induced causes, diabetes, tuberculosis, motor vehicle crashes, unintentional injuries, homicide, and suicide (IHS, 2006).

Suicide may be an outcome of depression. Cohen (2008) argues that the connection of depression and suicide in Indian Country is strong and that high suicide rates should be considered as an indication of high rates of depression. Native American and Alaska Natives die at higher rates than other Americans from suicide – 82% higher (Indian Health Service, 2011). Within the United States, the group at highest risk is young Native American and Alaska Native males, with one out of 3,125 individuals completing suicide (Miniño, Heron, Murphy, & Kochanek, 2007). Within the Canadian population, suicide rates of Aboriginal youths are three to six times that of the general population (Kirmayer, Simpson, & Cargo, 2003). They found that First Nations young men's roles have been altered due to the loss of traditional roles and the roles have been reduced because they do not have opportunities to develop their potential. Miller and Schoenfeld (1971) studied suicide among the Navajo and found that suicide was a form of

interpersonal aggression and socio-economic status was a critical component. Finally, as described earlier, Brave Heart (2003) has suggested that suicidal behaviors are a response to historical trauma.

Symptoms of depression may look different across cultures. Kleinman (1977) argued that the features of depression exhibit significant differences that are cultural in nature. He argued that cultural variance included somatization and intellectualization of symptoms. According to the U.S. Department of Health and Human Services (2001) the manifestation and reporting of distress are different in Native Americans and “major depressive disorder” does not match any kind of illness as conceived by Native Americans. Some Native American languages do not have a word for depression, although there are such examples of illness including “worry sickness” and “heart broken” (Manson, Shore, & Bloom, 1985). As there are more than 200 languages spoken by the federally recognized tribes in the US, the idea begins to take hold that cultural equivalents of “depression” among Native Americans may be very diverse.

The conception of depression, as well as its diagnosis and treatment vary across cultures. Topper reported in 1987 that Navajo conceive of illness as a result of an imbalance. When Rieckmann, Wadsworth, and Deyhle (2004) studied depression among Navajo adolescents and learned that depression may result from neglecting responsibilities to spiritual beings, family and community. Traditional diagnosis through different methods can then be pursued, with herbal treatment or ceremonies to bring the individual out of illness and back in to balance.

Among the elderly, the most common mental illness is depression (Funnell, 2010). Funnell examined the appearance of depression in elderly and found that isolation and loneliness were two contributing factors. Social support proved to be a protective factor against depression. Bereavement was also a factor of depression in the elderly, but only if bereavement lasted longer

than two months. Low socioeconomic status and being in a caring role for those with chronic disabilities were risk factors related to developing depression. Older adults were more likely to commit suicide than younger adults. Funnel defined specific risk factors for the development of depression among the elderly.

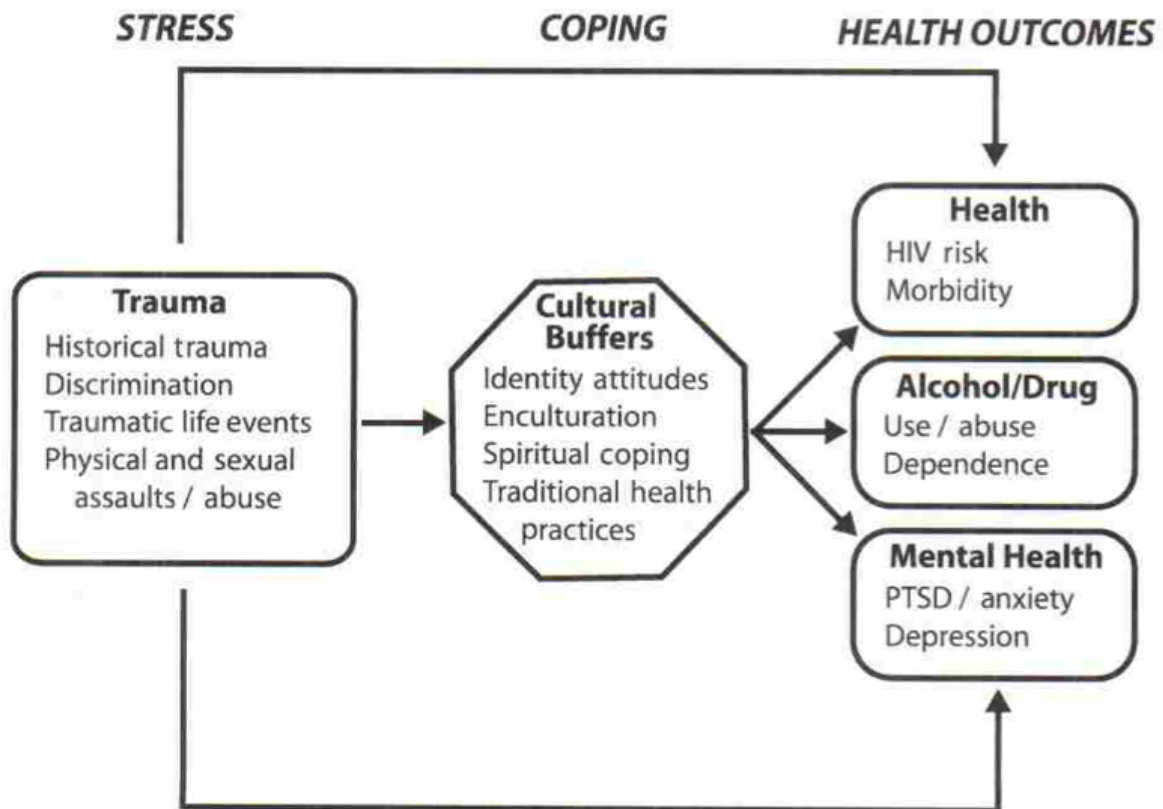
**Depression in Native American older adults.** Chapleski, Kaczynski, Gerbi, and Lichtenberg (2004) studied depression in Native American Elders and found that the short-term effects of stressful events and experiencing difficulty with daily tasks created a strain on their mental health. They also examined predictors of depression in this population, and found that current depression was predicted by prior depression, stressful life events, and poor physical health. An interesting note was that residents in rural areas were less likely to report depressive symptoms than those who lived in urban areas. This could be due to the lack of resources found in some rural reservations areas. Given the increased rates of depression in Native American samples as indicated by several studies and the effects of aging on depression, depression is clearly a pressing concern among Native American older adults and elderly.

**Depression and Social Support.** In research examining social support in the major culture, Brown and Harris (1978) found that social ties of friends and relatives that offered women emotional support and practical support were associated with a slightly reduced risk of depression. Furthermore, women were more likely to develop depression in the context of a provoking agent (such as the death of a family member) if they had a lack of intimacy with a friend or relative. Gladstone, Parker, Malhi, and Wilhelm (2007) found that within people experiencing depression, low social support was related to maintaining depression. In contrast, George, Blazer, Hughes and Fowler (1989) found that social support was related to recovery from major depression. This study supports the concept of social support providing resilience. In

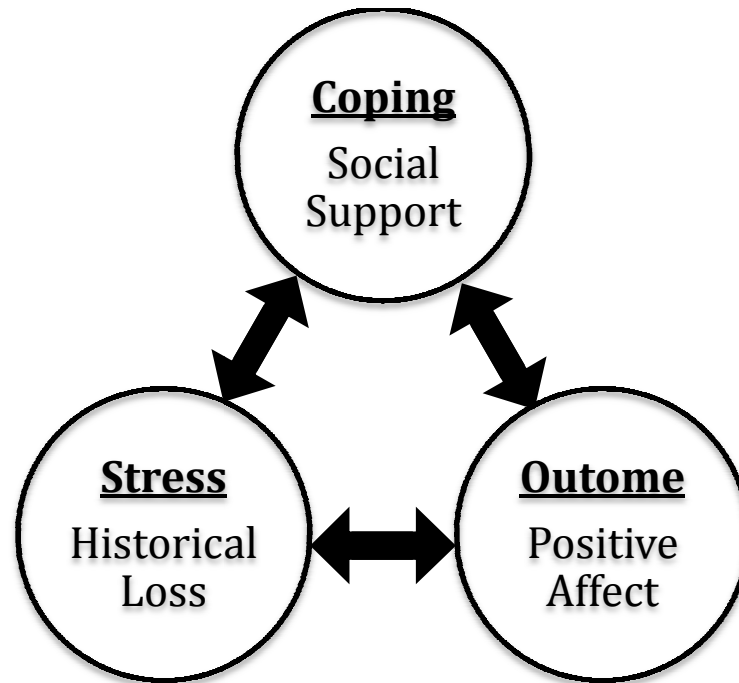
a study by Fiore, Coppel, Becker, and Cox (1986), depressive symptoms were measured among adults between the ages of 45 to 85 years old, who were caregivers to spouses with Alzheimer's disease. The study found that depression was significantly related to "satisfaction with support," a measure of perceived satisfaction of social support.

In research examining social support in Native Americans, Whitbeck, McMorris, Hoyt, Stubben, and LaFromboise (2002) predicted that perceived social support would correlate to reduced depressive symptoms in a sample of Native American adults. They found that perceived social support and participating in traditional activities served as protective factors against depression. Chong and Lopez (2005) examined social support in Native American women in substance abuse treatment. They found that while in treatment, social support was associated with improved functioning, fewer symptoms of depression and anxiety. These studies provide evidence that social support provides protection that against psychological distress.

The relationship of historical loss, social support, and depression in Native American older adults and elderly is conceptualized as part of Walters and Simoni's (2002) Indigenist Stress Coping Model. The model was developed to depict Native American women's health within the larger historical context of colonization and demonstrates the relationships between stress, coping, and health outcomes. Individual elements that make up the model include the stress factor of historical trauma, resilience derived from spiritual coping and traditional health practices, and health outcomes involving depression.



*Figure 1.* The Indigenist Stress Coping Model (Walters & Simoni, 2002). This model groups factors related to stress, coping and health outcomes in relation to Native American women's health. Although the stress and health outcome elements contain historical trauma (which historical loss measures) and depression, social support is not explicitly labeled as a buffer in the original model. However, for the purposes of this study on resilience, social support will be integrated into a model as a method of coping.



*Figure 2.* The derived model used for this study

### **Hypotheses**

Based on previous research, the present study will examine the relationship between the following factors: historical loss, social support, depression, and positive affect. Based on the work of Baron and Kenny (1986), the moderating ability of social support will be examined as it effects symptoms of depression and resilience (positive affect) as the result of historical loss. The following hypotheses are proposed:

Hypothesis 1: Participants who think less about historical loss, as measured by the Historical Loss Scale (HLS) will perceive themselves to have higher social support as measured by the Multidimensional Scale of Perceived Social Support (MSPSS). Stated more simply, higher scores on the HLS will be associated with higher scores on the MSPSS.

Hypothesis 2: Participants who think less about historical loss, as measured by the Historical Loss Scale (HLS) will have lower depression scores, as measured by the CES-D associated with lower scores on the Positive Affect factor.

Hypothesis 3a: Participants with higher social support scores, as measured by the Multidimensional Scale of Perceived Social Support (MSPSS) will have lower depression scores, as measured by the CES-D. Higher scores on the MSPSS will be associated with lower scores on the CES-D.

Hypothesis 3b: Participants with higher social support scores, as measured by the Multidimensional Scale of Perceived Social Support (MSPSS) will have higher resilience, as measured by the Positive Affect factor. Higher scores on the MSPSS will be associated with lower scores on the Positive Affect Factor.

Hypothesis 4a: Social support will act as a moderator between the relationship of historical loss and depression. Higher scores on the Multidimensional Scale of Perceived Social Support combined with lower scores on the HLS will be associated with lower scores on the CES-D.

Hypothesis 4b: Social support will act as a moderator between the relationship of historical loss and resilience. Higher scores on the Multidimensional Scale of Perceived Social Support combined with lower scores on the HLS will be associated with lower scores on the Positive Affect factor.

## Method

### Participants

**Demographics.** The data for this study were archival. Drs. Wallace and Swaney collected the data through surveys that were mailed to 500 individuals selected from a tribe from a reservation in the northwest United States. Community confidentiality has been reserved (Norton and Manson, 1996). A total of 624 enrolled tribal members were available for participation. Participants were asked their gender, marital status, age, level of education, average annual household income, and whether or not they lived alone. Participants were also asked if they were tribally enrolled, what their tribal affiliation was, and their number of years living on a reservation. See Appendix D (coding scheme also listed). A total of 160 participants (32% response rate) completed the survey instrument, including 68 males (42.5%) and 92 females (57.5%). Participants ranged in age from 56 to 89 years old ( $M = 68.4$ ,  $SD = 8.38$ ). Most of the participants were married ( $n = 76$ , 47.5%), and equal amounts were divorced ( $n = 32$ , 20.0%) or single ( $n = 32$ , 2%). Two participants ( $n = 2$ , 1.3%) indicated they were separated. Regarding highest level of attained education, 4 participants (2.5%) completed grade school, 13 participants (8.1%) reported completing middle school, 34 participants (21.3%) completed high school, 16 participants (10.0%) reported obtaining a G.E.D., 25 participants (15.6%) reported receiving a “vocational education,” 40 participants (25.0%) reported completing “some college classes,” 20 participants (12.5%) had a college degree, and 8 participants (5.0%) reported having a “post college professional degree.” Almost half of the participants ( $n = 63$ , 39.4%) had an average annual household income of \$14,999 or less. Twenty-seven participants ( $n = 27$ , 16.9%) had an average annual household income of \$15,000 to \$24,999, 32 participants ( $n = 32$ , 20.0%) had an average annual household income of \$25,000 to \$40,000, and 30 participants ( $n = 30$ , 18.8%) had an average annual household income of over \$40,000.



## Measures

Wallace and Swaney (2006, 2007a, 2007b) determined that previous research alone was insufficient in identifying culturally appropriate inventories to measure coping and resilience among Native Americans. Mellor (2004) identified four different coping strategies among Aboriginal Australians facing racism, with seeking social support identified as one strategy. Following the example of Mellor (2004), Wallace and Swaney (2006) used Native and non-Native research assistants, pilot data, and qualitative interviews to guide survey instrument selection to measure social support in Native Americans. Based on these elements, the Multidimensional Scale of Perceived Social Support (MSPSS; Zimet, Dahlem, Zimet, & Farley, 1988; see Appendix B) was chosen as a measure.

**Historical Loss Scale (HLS).** Frequencies of thoughts of historical loss were assessed using the Historical Loss Scale (Whitbeck, Adams, Hoyt, & Chen, 2004). This self-report inventory of 12 items measures perceived losses such as those relating to land, language, spiritual ways, culture, self-respect and trust. An example of a question on the HLS is “Loss of our land.” Participant instructions were: “Below are statements that list different types of losses. Please indicate how frequently these losses come to mind for you.” A 6-point frequency scale was used to assess how frequently these various losses come to mind for participants, ranging from 1 = *Several times a day* to 6 = *Never*. Possible total scores ranged from a minimum of 12 to a maximum 72 with a possible range of 12 to 72; lower scores indicated more frequent thoughts of historical loss. Whitbeck et al. (2004) conducted a factor analysis that revealed only one factor: perceived loss. See Appendix A.

The HLS was coded using the scoring defined by Whitbeck et al. (2004) with a lower score indicating a higher frequency of thoughts of historical loss. The mean score is 50.45, ( $SD =$

13.23). Cronbach's alpha for the HLS scale on this sample is .94 ( $\alpha = .94$ ) which is slightly better than that found by Whitbeck et al. (2004) which had an alpha of .90. HLS scores indicate that on average, participants thought about historical losses between "monthly" and "yearly or only at special times." However, almost half of the participants ( $n = 77, 48.1\%$ ) of participants thought about at least one element of historical loss "daily," or "several times a day." Only one participant ( $n = 1, .6\%$ ) "never" thought about historical loss as measured by the HLS.

**Multidimensional Scale of Perceived Social Support (MSPSS).** Perceived social support was measured with the Multidimensional Scale of Perceived Social Support (MSPSS; Zimet, Dahlem, Zimet, & Farley, 1988). This self-report inventory measures perceived social support with 12 questions regarding relationships to family, friends, and a significant other. An example of an item is "There is a special person who is around when I am in need." Participant instructions were: "Below are statements about your personal experience. For each statement, indicate the extent of your agreement by checking the appropriate box." A 7-point Likert scale was used to score the items, with individual item scores ranging from 1 = *Very strongly disagree* to 7 = *Very strongly agree*. Possible total scores range from a minimum of 12 to a maximum of 84; higher scores indicate more perceived social support. The three subscales of the MSPSS are: Significant Other, Family, and Friends. See Appendix B.

Participants' scores on the MSPSS ranged from 28 to 84, out of a possible range of 12 to 84. The mean score was 66.95, ( $SD = 11.71$ ). Cronbach's alpha for the total MSPSS scale in this sample was .94. Zimet et al. (1988) had an alpha of .88. Cronbach's alpha on this sample was .90 for the Significant Other subscale, .90 for the Family subscale, and .87 for the Friends subscale. MSPSS scores indicated that participants on average "agreed" or "strongly agreed" with statements of being socially supported.

**Center for Epidemiological Studies Depression Scale (CES-D).** Radloff (1977) created the CES-D from components of various well-validated scales that measured depressive symptoms. The CES-D is regularly used in research. The scale consists of four factors that are: Depressed Affect, Positive Affect, Somatic and Retarded Activity, and Interpersonal. See Appendix C. A cut off score is used indicate a clinically significant level of depressive symptoms. Radloff (1977) began with a somewhat arbitrary cutoff score of 16, although Manson et al. (1990) argued that a cut-off score of 16 may not always be accurate in all populations and that some flexibility with the cut-off is recommended. They suggested a cut-off score of 28 for their study of depression in Native Americans, which is an adjusted cut-off that gives optimal sensitivity and specificity for their specific sample.

There has also been research using the CES-D with Native American older adults. Curyto, Chapleski, Lichtenberg, Hodges, Kaczynski, and Sobeck (1998) examined the CES-D with this population, and also examined predictors of depression. They found the scale to have good internal consistency, with Chronbach's alpha at .85. Eighteen percent of their participants scored above the traditional cut-off of 16. Predictors of depression included living in an urban area, and fewer years of formal education. Roberts, Andrews, Lewinsohn, and Hops (1990) found that when the CES-D was applied to measure depression in Native American adolescents, Chronbach's alpha ranged from .80 to .90, suggesting the scale is a reliable measure for assessing depressive symptoms with Native American adolescents.

There has also been research that has examined how the four factors of the CES-D appear in Native American samples. Manson, Ackerson, Dick, Baron, and Fleming (1990) conducted a study to examine use of the CES-D with Native American adolescents and found that a 3-factor model had superior fit, as opposed to the scale's full four factors. The three factors identified

were: a) Positive Affect, b) Somatic and Retarded Activity, and c) an expanded Depressed Affect factor. Chapleski, Lamphere, Kaczynski, Lichtenberg, and Dwyer conducted a confirmatory factor analysis in 1997 that examined the use of the scale in a sample of Native Americans 55 years old and over. The authors found the full 4-factor model had a superior goodness of fit. Whitbeck, McMorris, Hoyt, Stubben, and LaFromboise (2002) also found the full 4-factor model to have the highest goodness of fit in Native American adults. Interestingly, Billow (2008) in a study of Native American older adults found a 2-factor model with: a) Depressed Affect and Somatic Signs, and b) Positive Affect items. Somervell et al. (1993) examined the use of the CES-D in a population of Native Americans with a mean age of 42.5 years and found that somatic symptoms and emotional distress were not easily separated. A 3-factor model was found, with the Somatic and Affective factors being combined into a single factor.

Radloff and Teri (2008) suggest that when assessing for depression with older adults, a close examination of somatic symptoms is required due to the associated increase in health problems with aging in older adults and elderly. They also found that the CES-D was a valid scale for measuring depressive symptoms among the elderly.

Wallace and Swaney (2006) reviewed the literature, and found the most common measure used to assess depressive symptoms in Native Americans was the Center for Epidemiological Studies Depression Scale (CES-D; Radloff, 1977). Participants' symptoms of depression were assessed using this scale. This self-report inventory measures depressive symptoms experienced within the last week. An example of an item is "I felt sad." An example of a reverse scored item is "I was happy." Participant instructions were: "Check the box for each statement that best describes how often you felt or behaved this way during the past week." The scale is composed of 20 items that have a 4-point response scale ranging from 0 = *Rarely or none*

of the time (*less than one day*) to 3 = *Most or all of the time (5 to 7 days)*. The responses scale is opposite for the reverse scored items. Total possible scores range from a minimum of 0 to a maximum of 60; higher scores indicate more endorsed symptoms of depression. Although a cutoff score of 16 or greater indicates the presence of clinically significant depressive symptoms, a higher cut-off score may be more appropriate for this sample (Manson et al., 1990). Although a specific cut-off was not selected for CES-D scores because a specific cut-off was not used to make analytical decisions, the number of participants beneath the two defined cut-offs of 16 (Radloff, 1977) and 28 (Manson et al., 1990) are listed.

Carlson et al. (2011) explored the psychometric properties of these reverse-scored items within a sample of ethnically diverse older adults. The authors found the reverse-scored items were less psychometrically reliable than the non-reverse scored items. The authors went on to suggest statistical methods, such as item imputation to correct for these psychometric properties. For the current study, an analysis of the Positive Affect factor will be included in the hopes that a valid but brief measurement of resilience will be possible. Examination of the Positive Affect factor and the MSPSS scores together should provide a means to compare and contrast specific aspects of support and functioning, as they relate to resilience.

The CES-D scale was coded using the scoring defined by Radloff (1977). Three participants appear to have answered the reverse-scored items as if they were non-reverse scored items. The research of Chapleski et al. (1997) also relates the possibility of participants responding in such a manner. These CES-D scores were removed from the analysis. The CES-D scores range from 0 to 41, out of a possible range of 0 to 60. The mean score was 11.03 ( $M = 11.03$ ,  $SD = 9.151$ ). The average of the CES-D scores was below the cut-off of 16 (Radloff, 1977) and also below the cut-off of 28 (Manson et al., 1990). For the full scale in this sample,

Cronbach's alpha was .89. Radloff (1977) had an alpha of .85. For the four factors that make up the scale, the Cronbach's alphas were: .76 for the Positive Affect factor, .83 for the Depressed Affect factor, .82 for the Somatic and Retarded Activity factor, and .72 for the Interpersonal Factor. The internal consistency of the non-reverse scored CES-D items (Depressed Affect, Somatic and Retarded Activity, and Interpersonal subscales) had a Cronbach's alpha of .92.

**Positive Affect factor.** As a brief measure of resilience, the CES-D Positive Affect factor was examined. The scores indicate that participants felt just as good as other people, felt hopeful, and felt happy for large majority of the week. Factor total ranged from 0 to 12, out of a possible range of 0 to 12. A lower score indicates more frequent positive affect. The mean score ( $M = 3.78$ ,  $SD = 3.31$ ) indicates that overall, participants report "I felt that I was just as good as other people," "I felt hopeful about the future," "I was happy," and "I enjoyed life" between "occasionally or a moderate amount of the time (3-4 days)" to "most or all of the time (5-7 days)."

A list of the Cronbach's alphas for this study's data is in Table 1, along with the names of the scales, their subscales, and associated ratings. George and Mallery (2003) describe the ranges of the alphas. The alpha levels of all the scales ranged from .72 or "good" to .94 or "excellent."

**Demographics.** Gender, marital status, level of education, and average annual household income were recorded. See Appendix D for coding.

*A list of the scales, their factors, and their reliabilities (Cronbach's alpha)*

Scale/Factor	Reliability ( $\alpha$ )	Value
HLS	.94	Excellent
MSPSS	.94	Excellent
Significant Other	.90	Good
Family	.90	Good
Friends	.87	Good
CES-D	.89	Good
Depressed Affect	.83	Good
Positive Affect	.76	Acceptable
Somatic and Retarded Activity	.82	Good
Interpersonal Factor	.72	Acceptable

*Note.* George & Mallery (2003) alpha levels > .90 = excellent, > .80 = good, > .7 = acceptable, > .6 = questionable, > .5 = poor, < .5 = unacceptable

## Results

### Scales

Means and Standard Deviations of gender, marital status, level of education, annual income, HLS, and MSPSS are presented in Table 2, and the actual and potential ranges are presented in Table 3.

Table 2

*Psychometric Properties of the Major Study Variables Means and Standard Deviations for Measured Variables*

Variable	n	<i>M</i>	<i>SD</i>
Gender	160	1.58	0.5
Marital Status	160	1.91	1.11
Level of Education	160	4.78	1.8
Annual Income	160	2.88	1.5
HLS	137	50.45	13.23
MSPSS	154	66.95	11.71
HLSxMSPSS	134	-3.12	151.54
CES-D*	133	2.99	1.46
Positive Affect factor	148	3.78	3.31

\*Results for the CES-D are reported in square root units

Table 3

The potential and actual ranges of the scales

Variable	Range	
	Potential	Actual
HLS	12-72	12-72
MSPSS	12-84	28-84
CES-D	0-60	0-41
Positive Affect factor	0-12	0-12



## Correlations

Correlations were computed to investigate the associations between gender, marital status, level of education, annual income, HLS, and MSPSS. Means and standard deviations are presented in Table 4. Inter-correlations, significance levels, and *N* amounts are presented in Table 4.

Table 4

### *Intercorrelations for Measured Variables*

Variable	1	2	3	4	5	6	7
1. Gender							
2. Marital Status	0.05						
3. Level of Education	-0.08	0.04					
4. Annual Income	-0.13	-0.32**	0.35**				
5. HLS	-0.09	-0.19*	0.08	0.17*			
6. MSPSS	0.02	-0.18*	0.15*	0.19**	-0.2		
7. HLSxMSPSS	0.61	-0.03	0.01	-0.03	0.05	-0.04	
8. CES-D	0.13	0.17	-0.26	-0.34	-0.15	-0.32**	-0.44
<hr/>							
N							
1. Gender							
2. Marital Status	160						
3. Level of Education	160	160					
4. Annual Income	160	160	160				
5. HLS	137	137	137	137			
6. MSPSS	154	154	154	137	134		
7. HLSxMSPSS	134	134	134	134	134	134	
8. CES-D	133	133	133	116	129	129	114

\* $p < .05$ , \*\* $p < .01$ , CES-D units are in square root units

As described in Table 4, there are both significant and non-significant correlations between the variables. Gender was not significantly correlated to any other variables. There were significant correlations for annual income and marital status. According to the data, individuals who were married were more likely to have a higher income than participants who were

widowed, divorced, single, or separated. Level of education and income was also significantly correlated, indicating that participants who had higher levels of education were likely to have greater annual incomes.

HLS and marital status was significantly correlated, indicating that participants who were married thought about historical loss less frequently than participants who were widowed, divorced, single, or separated. HLS is also significantly related to annual income, indicating that participants who had higher annual incomes thought about historical loss less frequently. It should be noted that the correlation between CES-D scores and HLS scores was approaching significance  $p = .06$ ,  $r = -0.15$ . The correlation, with a  $p$  value of just above the cut-off of  $.05$ , indicates that participants whose HLS scores were lower had had greater CES-D scores, or as frequency of thoughts about historical loss increased, symptoms of depression would be more frequent.

MSPSS scores were significantly related to marital status, indicating that those who were married thought less frequently about historical loss than participants who were widowed, divorced, single, or separated. The scores were significantly related to level of education, indicating that those with higher levels of education perceive themselves as being more socially supported. MSPSS scores were also significantly related to annual income, indicating that those with higher annual incomes perceived themselves as being more socially supported.

CES-D scores were significantly related to marital status, indicating that participants who were married were less likely to endorse symptoms of depression than participants who were widowed, divorced, single, or separated. CES-D scores were also related to level of education, indicating that participants with greater annual incomes were less likely to endorse symptoms of depression. CES-D scores were also related to annual income, indicating that participants with

higher incomes were less likely to endorse symptoms of depression. CES-D scores were also related to MSPSS scores, indicating that participants who perceived themselves as having higher levels of social support were less likely to endorse symptoms of depression.

### **Regressions**

**CES-D scores as the dependent variable.** The data were checked to ensure the assumption were met to calculate regressions. The individual scales were checked for normality by examining skewness. The HLS, MSPSS, and Positive Affect factor were shown to have skewness within tolerance and had skewness values within a range of  $-1/+1$  (Morgan, Leech, Gloeckner, and Barret, 2011) and were therefore normally distributed. The CES-D had a skewness value of 1.11. A non-linear transformation was completed by taking the square root of the scale totals. After this transformation, the scale had a skewness value of .01 which was within tolerance. The scales were checked for linearity and seen to meet the assumption.

To investigate how well HLS scores predicted CES-D scores of participants after controlling for gender, marital status, age, level of education, and average annual household income, a hierarchical linear regression was computed using the Enter method (Morgan, Leech, Gloeckner, & Barret, 2011), with pairwise deletion. The assumptions of linearity, normality, and uncorrelated errors were checked and met.

The full regression included two blocks of variables, defined as Model 1 and Model 2. The first block of entered variables for all regressions included gender, marital status, age, level of education, and average annual household income. The second block of variables included HLS scores, MSPSS scores, and the interaction term of HLSxMSPSS scores. The controlled variables (gender, marital status, age, level of education, and average annual household income) were entered as a group as Model 1, and they significantly predicted CES-D scores  $F(4, 109) =$

5.00,  $p < .01$ , adjusted  $R^2 = .12$ . The adjusted  $R^2$  takes into consideration the sample size. As indicated by the  $R^2$ , 12% of the variance in CES-D scores was predicted by knowing the participants' gender, marital status, age, level of education, and average annual household income.

In Model 2, HLS scores, MSPSS scores, and the interaction term were added to the prediction and they significantly improved the prediction,  $R^2$  change = .07,  $F(3,106) = 3.05$ ,  $p < .05$ , adjusted  $R^2 = .17$ . The entire group of variables significantly predicted CES-D scores,  $F(7, 106) = 4.33$ ,  $p < .01$ , adjusted  $R^2 = .17$ . The beta weights and significance values, presented in Table 4 indicates which variables contributed most to predicting CES-D scores, when gender, marital status, age, level of education, and average annual household income, HLS scores, MSPSS scores, and the HLSxMSPSS interaction term were entered together as predictors. Excluding the controlled variables, MSPSS scores ( $\beta = .30$ ,  $p < .05$ ) was the only variable that contributed significantly to predicting CES-D scores. HLS did not significantly contribute to predicting CES-D scores. See Table 5. The partial correlation of MSPSS with CES-D scores was  $-.27$ . This data support the hypothesis that higher MSPSS scores will be associated with lower CES-D scores.

The interaction term was not significant; an additional analysis was performed to examine the possibility that higher and lower levels of social support would moderate the effect of historical loss on depressive symptoms. The participants were split into two separate levels of social support, "lower" and "higher." The "lower" social support group was created by selecting the participants with scores ranked in the low third of the of the MSPSS scorers (in the range of 28 to 62). The "higher" social support group was created by using the selecting the participants with scores ranked in the high third of the of the MSPSS scores (the range of 75 to 84).

Regressions were then ran controlling for gender, marital status, age, level of education, and average annual household income. The resulting model for both lower and higher social support groups did not have HLS coefficients that reached significance.

Table 5

*Hierarchical Multiple Regression Analysis Summary for predicting CES-D scores given Gender, Marital Status, Level of Education, Average Annual Household Income, HLS, MSPSS, and HLSxMSPSS.*

Predictor	<i>B</i>	<i>SE B</i>	$\beta$	$R^2$	$\Delta R^2$	$\Delta F$
Model 1				0.16	0.16	5.00
Constant	3.73	0.65				
Gender	0.23	0.26	0.08			
Marital Status	0.13	0.12	0.10			
Level of Education	-0.14	0.08	-0.18			
Annual Income	-0.23	0.1	-0.24			
Model 2				0.21	0.07	3.05
Constant	6.21	1.08				
Gender	0.26	0.25	0.09			
Marital Status	0.06	0.12	0.04			
Level of Education	-0.11	0.08	-0.14			
Annual Income	-0.2	0.1	-0.21*			
HLS	-0.01	0.01	-0.09			
MSPSS	-0.03	0.01	-0.25**			
HLSxMSPSS	-0.001	0.001	-0.06			

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

**Positive Affect factor scores as the dependent variable.** To investigate how well HLS scores predict Positive Affect factor scores of participants after controlling for gender, marital status, age, level of education, and average annual household income, a hierarchical linear regression was computed using the Enter method (Morgan, Leech, Gloeckner, & Barret, 2011), with pairwise deletion. The assumptions of linearity, normality, and uncorrelated errors were checked and met.

The full regression included two blocks of variables, defined as Model 1 and Model 2. The first block of entered variables for all regressions included gender, marital status, age, level of education, and average annual household income. The second block of variables included HLS scores, MSPSS scores, and the interaction term of HLSxMSPSS scores. The controlled variables (gender, marital status, age, level of education, and average annual household income) were entered as a group as Model 1, and they significantly predicted Positive Affect factor scores  $F(4, 122) = 5.17, p < .01$ , adjusted  $R^2 = .12$ . The adjusted  $R^2$  takes into consideration the sample size. As indicated by the  $R^2$ , 12% of the variance in Positive Affect scores was predicted by knowing the participants' gender, marital status, age, level of education, and average annual household income.

In Model 2, HLS scores, MSPSS scores, and the interaction term were added to the prediction and they significantly improved the prediction,  $R^2$  change = .07,  $F(3, 119) = 3.26, p < .05$ , adjusted  $R^2 = .16$ . The entire group of variables significantly predicted Positive Affect scores,  $F(7, 119) = 4.51, p < .01$ , adjusted  $R^2 = .17$ . The beta weights and significance values, presented in Table 4 indicates which variables contributed most to predicting Positive Affect scores, when gender, marital status, age, level of education, and average annual household income, HLS scores, MSPSS scores, and the HLSxMSPSS interaction term were entered together as predictors. Excluding the controlled variables, MSPSS ( $\beta = .30, p < .05$ ) was the only variable that contributed significantly to predicting Positive Affect. HLS scores did not significantly contribute to predicting Positive Affect scores. See Table 6. The partial correlation for MSPSS scores and Positive Affect factor was  $-.23$ . This data support the hypothesis that higher MSPSS scores will be associated with lower Positive Affect factor scores.

The interaction term was not significant; an additional analysis was performed to examine the possibility that higher and lower levels of social support would moderate the effect of historical loss on positive affect. The participants were split into two separate levels of social support, “lower” and “higher.” The “lower” social support group was created by selecting the participants with scores ranked in the low third of the of the MSPSS scorers (in the range of 28 to 62). The “higher” social support group was created by using the selecting the participants with scores ranked in the high third of the of the MSPSS scores (the range of 75 to 84). Regressions were then ran controlling for gender, marital status, age, level of education, and average annual household income. The resulting model for both lower and higher social support groups did not have HLS coefficients that reached significance.

Table 6

*Hierarchical Multiple Regression Analysis Summary for predicting Positive Affect factor scores given Gender, Marital Status, Level of Education, Average Annual Household Income, HLS, and MSPSS.*

Predictor	<i>B</i>	<i>SE B</i>	$\beta$	$R^2$	$\Delta R^2$	$\Delta F$
Model 1				0.15	0.16	5.17
Constant	6.63	1.42				
Gender	-0.08	0.56	-0.01			
Marital Status	0.34	0.27	0.11			
Level of Education	-0.56	0.17	-0.30			
Annual Income	-0.25	0.21	-0.11			
Model 2				0.21	0.07	3.26
Constant	8.86	2.37				
Gender	0.08	0.55	0.01			
Marital Status	0.28	0.27	0.09			
Level of Education	-0.51	0.16	-0.28			
Annual Income	-0.23	0.21	-0.10*			
HLS	0.03	0.02	0.11			
MSPSS	-0.06	0.02	-0.21**			
HLSxMSPSS	-0.002	0.002	-0.10			

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



## Discussion

In this sample of 160 NA older adults and elderly, 39.4% ( $n = 62$ ) had an average annual household income of less than \$14,999 per year. In 2007, the Federal Register listed the poverty line as being defined by annual incomes of less than \$10,210 for a one-person household and \$13,690 for a 2-person household (Federal Register, 2007). These participants ranged in age from 56 to 89 years old, with a mean age of 68.4 years. These participants were born from 1918 to 1951. This cohort was born after the Religious Crimes Code (1883), the Indian General Allotment Act (1887), during the time Native Americans gained the right to vote, before they could legally practice their traditional ceremonies (AIRFA of 1978), were alive during the Indian Relocation Act (1956) and when Native American children were sent to boarding schools.

According to the Historical Loss Scale, almost half of the participants ( $n = 77$ , 48.1%) thought about at least one element of historical loss “daily,” or “several times a day,” indicating that historical loss has a presence among these participants. Only one participant ( $n = 1$ , 0.6%) “never” thought about any element of historical loss.

MSPSS scores indicate that participants on average “agreed” or “strongly agreed” with statements of being socially supported; these participants generally perceived themselves to be socially supported by family, friends, and a significant other.

The CES-D briefly examines depressive symptoms, and almost a quarter ( $n = 36$ , 22.5%) of the participants had a CES-D score above the cut-off score of 16 (Radloff, 1977), and 9 participants ( $n = 9$ , 5.6%) were at or above the cut-off of 28 defined by Manson et al. (1990). Clinical interviews would be necessary to diagnose these individuals with depression. The average CES-D score ( $M = 11.03$ ,  $SD = 9.15$ ) shows that overall the participants do not endorse a clinical

level of depressive symptoms. This could be due to the participants being part of a non-clinical, community sample.

An examination of the Positive Affect factor of the CES-D was used a brief measure of resilience, and participants had an averages score ( $M = 3.78$ ) out of a minimum score of 0 and maximum score of 12. A lower score indicates more frequent feelings of positive affect, and the participants average score reveals that participants felt they were “just as good as other people,” felt “hopeful about the future,” felt “happy,” and “enjoy[ed] life” from three days a week to all of the week. This brief examination of resilience reveals that participants report feeling positive fairly often.

The first hypothesis proposed that participants who thought less about historical loss, as measured by the HLS would perceive themselves as having higher social support as measured by the MSPSS. According to the correlational data, there was no significant relationship between scores on the HLS and MSPSS; historical loss and social support did not appear to be related. It is interesting to see there is no relationship between historical loss and social support. It appears that historical loss, including the loss of family ties, loss of families, losses from the effects of alcoholism, and losses through early death are not related to perceptions of being socially supported by friends, family, and a significant other. This relationship will be discussed further in an examination of the moderation.

The second hypothesis proposed that participants who thought less about historical loss, as measured by the HLS would have lower depression scores, as measured by the CES-D. According to the correlational data, the relationship was not statistically significant, but it was approaching significance. This indicates that historical loss has a presence among these participants, and that these thoughts were able to exert influence on the participants’ symptoms

of depression. Although additional examination is necessary, this relationship appears to support the work of Whitbeck et al. (2004). Perhaps if the sample size had been larger, or perhaps if different measures of historical loss and symptoms of depression were given, significance could have been reached.

There is more to be said about the relationship between historical loss and depression. Depression has been conceptualized as only one component of historical loss (Whitbeck et al. 2004). Whitbeck et al. (2004) devised the Historical Loss Associated Symptoms Scale (HLASS) to define the symptoms associated with thoughts about historical loss. It consists of two factors: anxiety/depression and anger/avoidance. When Croxton et al. (2012) examined the HLASS within the context of an intervention and as a dependent measure, anxiety/depression decreased over time even as participants thought about historical more often. This indicates that individuals have the capacity to think about historical loss, but not feel anxious or depressed in relation to those thoughts. Additionally, Brave Heart (1996) theorized that within the historical trauma response, depression is only a part of a cluster of symptoms. Along this line of thought, Denham (2008) argues that individuals can also respond with resilience when encountered with historical trauma. This sample may have cultural ways of coping with or thinking about historical loss that could reduce symptoms of depression. Acceptance could be one way of coping with loss. Acceptance is part of Acceptance and Commitment Therapy; ACT has been shown to reduce symptoms of depression with older adults (Karlin, Walser, Yesavage, Zhang, Trockel, & Taylor, 2013). Dialectical Behavior Therapy, which integrates acceptance, has also been shown to reduce symptom of depression with older adults (Lynch Morse, Mendelson, & Robins, 2003). Honoring and valuing the events of the past and the present are could reduce symptoms of depression. This group of Native American older adults and elderly has their own source of

resilience that may be held within the land as Kirmayer et al., (2000) suggest, traditional practices as Kirmayer, Simpson, & Cargo, (2003) suggest, and/or culture as Grandbois & Sanders, (2012) and Heavyrunner & Morris, (1997) suggest. Future research should investigate this further.

Hypothesis 3a proposed was that participants who had higher social support scores, as measured by the MSPSS would have lower depression scores, as measured by the CES-D. According to the regression data this hypothesis was supported, and the data indicated that participants with higher social support had fewer symptoms of depression. Previous studies have linked higher levels of social support to reduced symptoms of depression (Brown & Harris, 1978) and linked social support as an element enabling recovery from depression (George et al., 1989). Fiore, Copple, Becker, and Cox (1986) found symptoms of depression to be related to satisfaction with social support. Additionally, low social support has been linked to maintaining symptoms of depression (Gladstone et al., 2007). In this study, higher levels of social support are correlated with fewer symptoms of depression. This suggests these participants exhibit effective coping strategies and resilient behavior (Wallace & Swaney, 2007a, 2007b).

Hypothesis 3b proposed was that participants who had higher social support scores, as measured by the MSPSS would have lower Positive Affect scores, as measured by the Positive Affect factor of the CES-D. According to the regression data this hypothesis was supported, and the data indicated that participants with higher social support had more frequent feelings of feeling good. This suggests these participants exhibit effective coping strategies and resilient behavior (Wallace & Swaney, 2007a, 2007b). This is supported by the work of HeavyRunner & Morris (1997) that found resilience in Native Americans to be related to cooperation and group harmony – or social support.

An overall examination of the resulting model is important. There is a potential way in how the relationship between historical loss and social support could be seen as actually being seen as being two parts of one components of resilience. These older adults and elderly could be using their significant other, friends, and family as relationships to cope with historical loss. The participants could be using time spent with these individuals as spaces to talk about the past, and to remember their losses. Pivnick (2011) states that remembering collective traumatic events – memorializing them – enables the restoration of social bonds and cultural ideas. Pivnick also points out that remembering collective traumas helps individuals reduce their anxiety, give a sense of order, and increase self-efficacy through interacting with and remembering events with others. Rimé, Páez, Basabe, and Martínez (2010) explain that sharing thoughts and feelings related to a traumatic event are related to higher levels of emotion related to that event, and also increased social integration following the event. Participation in events that memorialize collective traumas can range from sharing between friends to community and tribal events. These processes offer validation, support, strengthen group identity, and are opportunities to make meaning out of suffering. Some of these processes are already embedded in traditional practices. Many tribes commemorate past traumatic events with annual gatherings that provide social support and healing. HeavyRunner and Morris found initial results from an study on resilience indicated that individuals “draw tremendous strength from family support systems, caring communities, strong identities, spirituality, and cultural values, world view, ceremonies, and traditions” (1997, p. 5).

There are some important implications for the well being of these communities regarding social support, depression, and resilience. It is evident that social support is a protective factor against depression, supports feeling good and resilience in older adults and elderly. The ability of

these communities to provide social support both at the individual level and group level to older adults and elderly should be maintained and facilitated. Individuals, families, social groups, and communities could be educated about the benefits of social support. Community centers, gathering places, social events, and interpersonal relationships are resources that can be used to build capacities for resilience. Individuals who are depressed and who also have low levels of social support could be brought into higher levels of social support through significant others, friends, and family. This may help to reduce their symptoms of depression. Individuals who are not depressed and have lower levels of social support should be monitored for developing symptoms of depression. Thinking about historical loss frequently also appears to be a risk factor for developing depression. Those who are depressed may need to be assessed for frequent thoughts about historical loss. Existing social practices that memorialize historical losses should continue to be supported.

Hypothesis 4a proposed was that social support would act as a moderator between the relationship of historical loss and depression. According to the hierarchical multiple regression, HLS scores were not predictive of CES-D scores given MSPSS scores; this hypothesis was not supported. The results indicate that when gender, marital status, and level of education are controlled for, with HLS and MSPSS scores as predictors, only MSPSS scores are able to predict CES-D scores.

Hypothesis 4b proposed was that social support would act as a moderator between the relationship of historical loss and positive affect. According to the hierarchical multiple regression, HLS scores were not predictive of Positive Affect factor scores given MSPSS scores; this hypothesis was not supported. The results indicate that when gender, marital status, and level

of education are controlled for, with HLS and MSPSS scores as predictors, only MSPSS scores were able to predict Positive Affect factor scores.

When looking at the model that was developed to conceptualize the relationship between historical loss, social support, symptoms of depression, and positive affect, only social support emerged as a predictive factor. The results indicate that higher levels of social support are related to less frequent symptoms of depression, and more frequent positive affect. The importance of social support as providing resilience has previously been shown (Brown & Harris, 1978; Chong & Lopez, 2005; George et al., 1989; Gladstone et al., 2007; Whitbeck et al., 2002). In relation to income and depression, it is interesting to note almost half of the participants ( $n = 63, 39.4\%$ ) had an average annual household income of \$14,999 and the participants often “feel just as good as others”, feel “hopeful about the future,” are “happy, and enjoy life” frequently.

## **Conclusion**

Although historical loss clearly has a presence among these participants, half of the participants are thinking about it daily. Although thinking about historical trauma is not related to social support, it could be related to symptoms of depression, which supports previous research. Findings suggest that support social support is a protective factor against symptoms of depression. Thinking about historical loss and social support should be examined when looking at depression as an outcome. Almost half of the participants in the study have a low income and almost participants think about historical loss on a regular basis, however participants are remarkably positive. Future research could explore how specific cultural practices, values, and attributes enables this group to cope with historical loss.

**Limitations**

The study is correlational and cross-sectional and based on this design, one challenge the current study faced is the inability to determine causation. For instance, I was unable to distinguish if the perception of historical loss negatively influences mental health, or if participants with depressive symptoms perceive historical loss to a greater degree. Also, I was unable to distinguish if a lack of social support caused depressive symptoms or if depressed individuals decreased their own social support. Future research could use longitudinal designs to help define how these factors interact across time.

This study was also conducted on a specific sample of Native American older adults and results may not generalize to other populations of Native Americans, as Native Americans as a group are very diverse, and tribes have their own unique histories, and cultures. However, the study results were useful in identifying the presence of historical trauma and symptoms of depression, as well as social support as providing resilience for these participants.



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## Appendix A

Historical Loss Scale (HLS)  
(Whitbeck, Adams, Hoyt & Chen 2004)

Below are statements that list different types of losses. Please indicate how frequently these losses come to mind for you.

Several times a day = 1  
Daily = 2  
Weekly = 3  
Monthly = 4  
Yearly or only at special times = 5  
Never = 6

1. The loss of our land
2. The loss of our language
3. The loss of our traditional spiritual ways
4. The loss of our family ties because of boarding schools
5. The loss of families from the reservation to government relocation
6. The loss of self respect from poor treatment by government officials
7. The loss of trust in whites from broken treaties
8. Losing our culture
9. The losses from the effects of alcoholism on our people
10. Loss of respect by our children and grandchildren for elders
11. Loss of our people through early death
12. Loss of respect by our children for traditional ways

## Appendix B

### Multidimensional Scale of Perceived Social Support (MSPSS)

Below are statements about your personal experience. For each statement, indicate the extent of your agreement by checking the appropriate box.

- Very Strongly Disagree = 1
- Strongly Disagree = 2
- Disagree = 3
- Agree Somewhat & Disagree Somewhat = 4
- Agree = 5
- Strongly Agree = 6
- Very Strongly Agree = 7

1. There is a special person who is around when I am in need.
2. There is a special person with whom I can share my joys and sorrows.
3. My family really tries to help me.
4. I get the emotional help and support I need from my family.
5. I have a special person who is a real source of comfort to me.
6. My friends really try to help me.
7. I can count on my friends when things go wrong.
8. I can talk about my problems with my family.
9. I have friends with whom I can share my joys and sorrows.
10. There is a special person in my life who cares about my feelings.
11. My family is willing to help me make decisions.
12. I can talk about my problems with my friends.

## Appendix C

Center for Epidemiological Studies Depression Scale (CES-D): A Self-Report Depression Scale  
for Research in the General Population (Radloff, 1977)

Check the box for each statement that best describes how often you felt or behaved this way during the past week.

Rarely or None of the Time (Less than 1 Day) = 0

Some or a Little of the Time (1-2 Days) = 1

Occasionally or a Moderate Amount of Time (3-4 Days) = 2

Most or All of the Time (5-7 Days) = 3

1. I was bothered by things that usually don't bother me.
2. I did not feel like eating; my appetite was poor.
3. I felt that I could not shake off the blues even with help from my family or friends.
4. I felt that I was just as good as other people.
5. I had trouble keeping my mind on what I was doing.
6. I felt depressed.
7. I felt that everything I did was an effort.
8. I felt hopeful about the future.\*
9. I thought my life had been a failure.
10. I felt fearful.
11. My sleep was restless.
12. I was happy.\*
13. I talked less than usual.
14. I felt lonely.
15. People were unfriendly.
16. I enjoyed life.\*
17. I had crying spells.
18. I felt sad.
19. I felt that people disliked me.
20. I could not get "going."

\*Items 4, 8, 12, and 16 compose the Positive Affect factor, and are reverse scored.

**Appendix D**

## Demographic Information [and coding]

## Gender:

- Male [1]
- Female [2]

## Marital Status:

- Married [1]
- Widowed [2]
- Divorced [3]
- Single [4]
- Separated [5]

## Date of Birth: (Month, Day, Year, Age)

## Level of Education:

- Grade School (grades 1-6) [1]
- Middle School (grades 7-9) [2]
- High School (grades 10-12) [3]
- GED [4]
- Vocational Education [5]
- Some College Classes [6]
- College Degree [7]
- Post College Professional Degree [8]
- Graduate, Medical or Law Degree [9]

## Average Annual Household Income:

- Less than \$7,500 [1]
- \$7,500 to \$14,999 [2]
- \$15,000 to \$24,999 [3]
- \$25,000 to \$40,000 [4]
- Over \$40,000 [5]

## Do You Live (check all that apply):

- Alone [1]
- With Spouse [2]
- With Child(ren) [3]
- With Sibling(s) [4]
- With Friend(s) [5]
- With Grandchild(ren) [6]
- Other, Please specify [7]

## Are you tribally enrolled?

- No [1]
- Yes [2]

## Tribal Affiliation:

- CSKT [1]
- Salish [2]
- Kootenai [3]
- Pend O'Reille [4]
- Other [5]

## Number of Years Living on a Reservation(s):

[number]

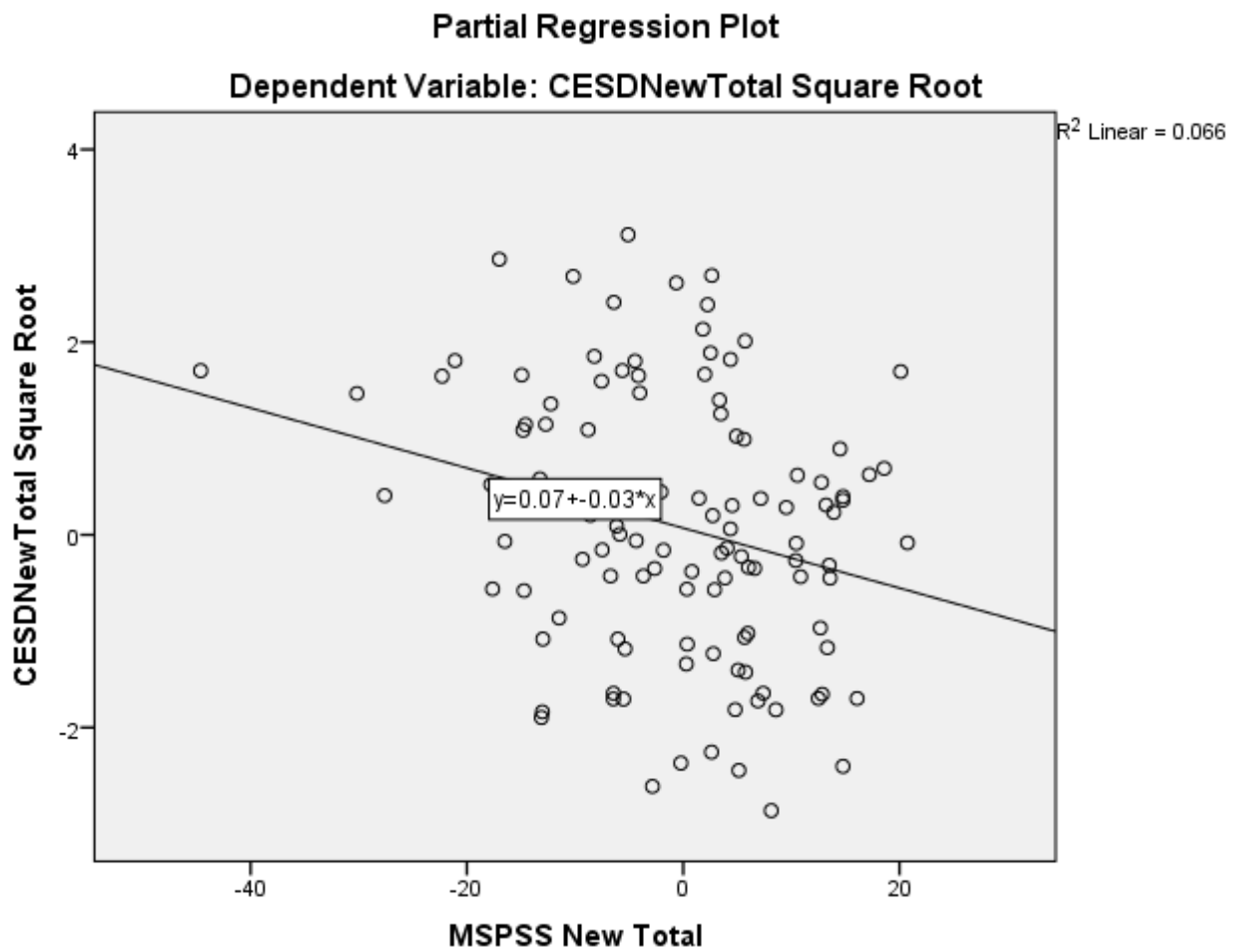
Check here if you would like to receive general information based on the findings from this study.

Blank [0]

Checked [1]

**Appendix E**

MSPSS and CES-D partial regression scatterplot



**Appendix F**

MSPSS and CES-D partial regression scatterplot

