

THE INFLUENCE OF CUMULATIVE TRAUMA,  
BINGE EATING, AND COPING STYLES ON THE  
GENERAL HEALTH OF AMERICAN INDIANS

By

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STYLES ON THE GENERAL HEALTH OF AMERICAN INDIANS

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## CHAPTER I

### THE INFLUENCE OF CUMULATIVE TRAUMA, BINGE EATING, AND COPING STYLES ON THE GENERAL HEALTH OF AMERICAN INDIANS

The purpose of this study was to investigate three possible factors that may be associated with poor mental and physical health within American Indian communities. Data was gathered from 302 American Indian adults living in the United States. Participants' style of coping, cumulative trauma history, and eating behaviors were explored in order to investigate the influence of these variables on current general mental and physical health. Multiple regression analyses were conducted to evaluate the relationships among the variables. Cumulative trauma exposure was found to predict mental, physical and general health. Significant relationships were found between the combined effects of cumulative trauma exposure, binge eating, and coping styles on general health and mental health.

Recent literature, both in medicine and psychology, has focused on the interconnection between the mind and the body. Studies have repeatedly noted the association between depression and physical health problems. Kop and Gottdiener (2005) found that depression negatively impacts the immune system. Furthermore, diabetes, heart disease, coronary artery disease, and mortality risk have all been shown to be associated with depression (De Groot, Anderson, & Freedland, 2001; Egede, Zheng, & Simpson, 2002; Rutledge et al, 2006; Sahmoun, Markland, & Helgerson, 2007).

American Indians have continued to face high rates of both physical and mental health challenges. While research in the areas of psychology and medicine have explored the relationship, as well as the environmental factors, between physical health and psychological well-being very little research has been done with American Indian populations. American Indian communities have faced countless adversities since the time of colonialization. The multitude of these challenges has greatly strained the well being of American Indian communities. Currently, American Indians face despairingly high rates of physical health problems and psychological problems. The interconnected nature of mental health and physical health has caused challenges in adequately assessing these problems. Furthermore, American Indian communities have faced countless adversities since the time of colonialization. The multitude of these challenges has greatly strained the well being of American Indian communities. Currently, American Indians face despairingly high rates of physical health problems and psychological problems. The interconnected nature of mental health and physical health has caused challenges in adequately assessing these problems. Furthermore, the lack of delineation of contributing factors has compromised effective and efficient treatment of physical health concerns and psychological difficulties.

Comparatively, there are few studies in the psychological and medical literature that have used American Indians in their samples. The results from studies conducted on Caucasian or other

ethnic minorities should not be generalized to American Indian communities due to the differences in culture. Although there is a lot of variance in culture between American Indian tribes, tribes share more in common than they do with other ethnic groups. Due to a lack of research on specific tribes, American Indians are commonly grouped together as a homogeneous population. Due to the difficulties in securing a large sample from one tribe, this study will also combine all American Indian tribes into one sample.

The present study aimed to delineate factors that contribute to poor physical health and psychological health in a sample of American Indians. Factors that were considered as possibly contributing to poor health were cumulative trauma exposure, binge eating, and coping styles. The following is a review of the psychological literature in regards to these variables.



## CHAPTER II

### THE INFLUENCE OF CUMULATIVE TRAUMA, BINGE EATING, AND COPING STYLES ON THE GENERAL HEALTH OF AMERICAN INDIANS

#### *Factors contributing to Poor Mental and Physical Health*

Environmental factors have been shown to impact both physical and mental health. Recent literature, both in medicine and psychology, has focused on the interconnection between the mind and body. Numerous studies within each discipline have proliferated this phenomenon. Research has also shown the multifaceted impact of poor physical and mental health from both biological and psychosocial factors. The following is a review of recent literature demonstrating this phenomenon.

Somerfield and McCrae (2000) found that factors contributing to stress and illness are impacted by social support, self-esteem, hardiness, and locus-of-control. One of the most well documented correlational findings in the social sciences literature has been the influence of socioeconomic status on mental health problems (McLeod & Kessler, 1990). Markstorm (2003)

reported that poverty was the most incapacitating factor to physical and mental health. The correlation between poverty and poor mental health has been well illustrated as anxiety and depression are disproportionally found in families with lower socioeconomic status (Miech, 1999). Educational attainment has also been shown to correlate with physical health (Drossman et al., 2000).

Depression and anxiety disorders are two of the most common and frequently diagnosed psychological problems. Several studies have demonstrated the impact of depression and anxiety on physical health. Kop and Gottdiener (2005) found that depression negatively impacted the immune system by causing a dysfunction in its regulation by elevating some aspects and suppressing others. This study found that depressed individuals have lower lymphocyte counts and increased inflammation, which included high levels of proinflammatory cytokines and acute-phase proteins. In combination, these dysfunctions impact the effectiveness of natural killer cells and make an individual more susceptible to infection (Kop & Gottdiener, 2005).

Chiba, Suzuki, and Hinokio (2000) examined the impact of depression from a neurological perspective. Their study found several neuroendocrine and neurotransmitter abnormalities common to both depression and diabetes. Other studies have also noted a significant association between diabetes and depression (DeGroot, Anderson, & Freedland, 2001; Egede, Zheng, & Simpson, 2002). De Groot, Anderson, and Freedland (2001) examined the impact of depression on the prognosis of patients with diabetes. The results indicated that concurrent diabetes and depression were associated with a significantly higher risk for diabetes-specific complications such as retinopathy, nephropathy, macrovascular complications, and sexual dysfunction (DeGroot et al., 2001).

Rutledge and colleagues (2006) studied the impact of depression on heart disease. Their findings revealed that depression was significantly associated with increased heart disease risk, and increased risk factors for coronary artery disease. Depression was significantly associated with increased risk, presence and severity of physical symptoms, and prognosis for coronary artery disease. Furthermore, depression was related to higher rates of hospitalization, cardiac symptom presentation, and increased mortality risk (Rutledge et al., 2006). Through a meta-analysis, Buckley and Kaloupek (2001) proposed that adaptation to chronically stressful conditions elevate levels of basal heart rate and diastolic blood pressure, which are both associated with stress related disorders such as Posttraumatic Stress Disorder, anxiety and depression.

Unfortunately, depression has also been shown to be one of the many consequences of childhood maltreatment (McNally et al., 2006). Familial abuse, depression and Posttraumatic Stress Disorder have been shown to be some of the largest predictors of poor physical health (Kira et al., 2008). Batten and colleagues (2004) reported that one of the most robust risk factors for developing adult depression was severe or prolonged childhood stress. A history of trauma exposure, especially in regards to childhood abuse, is another environmental factor that has been repeatedly found to significantly impact both physical health and mental health. Additionally, the risk for depression and other psychopathology has been shown to increase with the number of incidents of abuse, as well as the severity of the childhood abuse history (Teacher et al., 2006). Recent studies have also found that childhood abuse survivors are at an increased risk for cardiovascular disease, diabetes, and metabolic syndrome (which is a precursor for type-2 diabetes) (Batten et al., 2004; Kendall-Tackett & Marshall, 1999).

Batten, Mihaela, Maciejewski, and Mazure (2004) studied the link between childhood maltreatment, adult cardiovascular disease, and depression in a national sample with 5,393 adults. Results revealed that men and women who had a history of childhood maltreatment were significantly more likely to have depression and cardiovascular disease. The association between childhood maltreatment and depression was stronger for men who experienced abuse than women who experienced abuse. Women who experienced childhood abuse were nine times more likely to have cardiovascular disease than women who had not experienced childhood abuse. Furthermore, the age of onset of cardiovascular disease was earlier for women who had a history of childhood maltreatment when compared to women who did not have a history of childhood abuse. The authors recommend that future researchers further examine the risk factors in childhood maltreatment and adult health, especially in regards to emotions-focused and avoidant-coping styles.

Obesity has been shown to be a significant risk factor for cardiovascular disease (Batten et al., 2004). Childhood maltreatment has been shown to be associated with obesity and increased weight gain in adulthood (Lissau & Sorensen, 1994; Walker et al., 1999). The risk for obesity has been shown to increase with the number of childhood abuse incidents, as well as with the severity of each incident of abuse (Williamson et al., 2002). Felitti (1991) reviewed medical charts at a primary care facility and found that 60% of patients with a history of sexual abuse were at least 50 pounds overweight, in comparison to the 28% of individuals without a history of sexual abuse.

Childhood physical abuse and childhood sexual abuse have been shown to predict both depression and obesity (Rhodes et al., 2008). However, others studies have reported a stronger association between childhood physical abuse and depression, when compared to childhood

sexual abuse (Grilo & Masheb, 2001; Grilo et al., 2005). In addition, studies have shown a stronger association between childhood sexual abuse and obesity, when compared to childhood physical abuse (Walker et al., 1999).

Rohde and colleagues (2008) examined the association between childhood abuse and subsequent adulthood depression and obesity in a sample of 4,660 middle-aged women. Due to the relatively small number of ethnic minorities in the sample (n=759), African American, Hispanic and American Indians were collapsed into one group. The African American, Hispanic and American Indian group reported the highest rates of physical abuse when compared to their Caucasian and Asian counterparts. Results revealed that both childhood physical abuse and childhood sexual abuse were significant predictors of both depression and obesity. The magnitude of association between childhood physical abuse and childhood sexual abuse did not significantly change after controlling for age and ethnicity. However, child physical abuse and depression varied across ethnicity. After controlling for childhood physical abuse, the African American/ Hispanic/ American Indian group depression remained statistically significant. Furthermore, results indicated that that physical abuse and sexual abuse in childhood predicted binge eating and body dissatisfaction, which together were associated with obesity. The authors suggest that future researchers should further study these associations using more diverse samples.

Kendall-Tackett (2000, 2003) examined physical and psychological consequences of childhood abuse. Childhood abuse history appears to be a cause of chronic pain and chronic headaches in adults. It is theorized that traumatic events or chronically stressful events caused the body to learn to hyper-respond to stimuli, increasing the experience of pain. Women who reported a history of childhood abuse or a history of domestic violence also reported

significantly more pain symptoms. Women who had a history of abuse (either as a child or as an adult) were three times more likely to report depression than their counterparts who had not experienced maltreatment. Childhood abuse also appeared to make victims more susceptible to PTSD in reaction to current life stressors. Severity of abuse appeared to influence the severity of the symptoms of PTSD that adult survivors experienced. Furthermore, hyperarousal is common in PTSD, depression, and irritable bowel syndrome. This provides further evidence for the impact of both physical health and mental health consequences of childhood abuse.

Scarinci and colleagues (1994) investigated the relationship between history of abuse and an altered sense of pain in patients with irritable bowel syndrome. Results indicated that abused patients had significantly lower pain thresholds levels in response to finger pressure and significantly lower cognitive standard for judging stimuli as noxious when compared to those with irritable bowel syndrome and history of abuse.

In a sample of women with gastrointestinal disorders, Drossman and colleagues (2000) found that the severity of abuse history was associated with poorer physical health. In this study, health status was primarily explained by the impact of the abuse history, problem solving skills, and the individual's belief about the amount of control he or she had (Drossman et al., 2000).

### *Neurological Impacts of Traumatic Experiences in Childhood*

Several studies have noted the detrimental effect of multiple trauma exposures as well as the severity of each traumatic exposure in the likelihood of having developing psychopathology, especially Post Traumatic Stress Disorder (Bevans, Cerbone, & Overstreet,

2008; 2009; Kira et al., 2008). Children appear to be more susceptible than adults to the detrimental effects of trauma exposure through neurological dysregulation. Children can experience more severe effects of trauma due to the plasticity of the brain in childhood, as many critical neural connections are still forming (Weber & Reynolds, 2004). This is especially the case when a child is exposed to trauma at a critical period in development. Trauma exposure in childhood has been shown to have numerous effects on one's brain, particularly in the limbic system, corpus callosum, prefrontal cortex, amygdala, and hippocampus (Weber & Reynolds, 2004). The following is a review of several articles that examine the effects of childhood maltreatment on the levels of cortisol as well as effects on the hypothalamic-pituitary-adrenal axis (HPA).

Bevans, Cerbone, and Overstreet (2008) examined cortisol levels of children in relation to exposure to life stress, previous trauma, and recent trauma. In the sample, repetitive trauma exposure was associated with blunted a.m. and elevated p.m. cortisol levels. This effect was particularly apparent with more recent trauma exposure. Blunted a.m. and elevated p.m. cortisol levels were attributed to a loss of the daily rhythm of cortisol and is attributed to disruptions in HPA functioning. Basal HPA functioning was affected by exposure to chronic stress and hypocortisolism, particularly with chronic stress as opposed to a one-time occurrence. Children experiencing a first time trauma experienced elevated basal cortisol levels. It was found that a.m. cortisol levels were highest for children who have previously experienced a low level trauma, but had recently experienced a higher level of trauma. Repetitive stress exposure was found to be associated with flattened daily cortisol rhythm and hypocortisolism. Thus, significant stressors were found to initially elevate cortisol levels, however, after frequent activation; this resulted in a down regulation of HPA. After repeated and prolonged exposure to stress, cortisol secretion was found to be lower (Bevans et al., 2008).

Several studies have looked at cortisol levels in children at various points since trauma exposure and the subsequent impact on Post Traumatic Stress Disorder. Delahanty, Nugent, Christopher, and Walsh (2005) looked at urinary epinephrine and cortisol levels in a sample of children who recently experienced trauma and the effects on the development of Post Traumatic Stress Disorder. Shortly after a traumatic event children who subsequently developed Post Traumatic Stress Disorder were shown to have altered levels of cortisol and catecholamines. This study found that elevated levels of cortisol and epinephrine were positively associated with PTSD symptoms 6-weeks post trauma, even when controlling for depression. The relationship between elevated levels of cortisol and epinephrine and PTSD symptoms showed a stronger relationship for males than females. Others have also found the symptoms of PTSD in children to be associated with elevated mid-afternoon cortisol levels, prior trauma history, and recent exposure to trauma (Bevans, Cerbone, & Overstreet, 2009). Weems and Carrion (2007) examined the level of salivary cortisol and PTSD symptoms in a sample of children. This study found that elevated levels of cortisol were positively associated with PTSD symptoms in children with recent trauma exposure. Although this relationship was present for more distant trauma exposure, the relationship was not as strong.

Other studies have looked at the levels of cortisol of adults who reported a history of childhood maltreatment and have found that changes in the neuroendocrinology persist into adulthood (King, Mandansky, King Fletcher, & Brewer, 2001). Lower resting cortisol levels have been shown in women who experienced childhood sexual abuse (King, Mandansky, King Fletcher, & Brewer, 2001). Carpenter, Carvalho, Tyrka, Wier, Mellow, Mello, Anderson, Wilkinson, & Prince (2007) found the suppression of cortisol in response to stressors among healthy adults with a history of childhood maltreatment.



Ganzel, Eckenrode, Kim, Wethington, Horowitz, & Temple (2007) examined salivary cortisol and mood in a sample of healthy women who had trauma histories. Women who reported experiencing higher arousal during traumatic events showed the most physiological disturbances. This subgroup had significantly lower afternoon cortisol levels and reported higher levels of negative affect following a stressor. This led the authors to conclude that the central emotional processing systems are also affected by trauma history. Traumas in which there was a social loss were highly associated with PTSD symptoms.

Heim, Newport, Bonsall, Miller, and Nemeroff (2003) found that adults who experienced maltreatment as children have an altered stress response system and are more vulnerable to experiencing stress. They have also been shown to enhance delayed-type hypersensitive reactions to stress (Altemus, Cloitre, & Dhabhar, 2003). Women who experienced childhood abuse were shown to have greater pituitary responses to acute stress when compared to their male counterparts. These effects are seen through corticotrophin releasing factors systems in the central nervous system. Adults with childhood abuse histories were shown to have increased pituitary-adrenal and autonomic reactivity, exaggerated ACTH response, and altered adrenocortical functioning reflecting adrenocortical insufficiency, low basal adrenocortical activity, and decreased cortisol (Heim et al., 2003).

Researchers have also focused on the affects of childhood abuse on the hypothalamic-pituitary-adrenal axis (HPA). Dysfunctions to the HPA have been shown following trauma exposure in childhood (King et al., 2001; Wilson, Van Der Kolk, Burbridge, Fislser, & Kradin; 1999). The disruption to this system has been seen through the hyper activation of the HPA system (Ruiz, Neto, Schoedl, & Mello; 2007). Sensitization to the HPA and the autonomic stress response has also been shown in women with a history of childhood abuse (Heim, Newport,

Heit, Graham, Wilcox, Miller, & Nemeroff; 2000). This study found an increase in the reactivity of the pituitary to stress. This relationship was found through the effects to the adrenal cortex as evidenced by increased levels of adrenocorticotrophic hormones (ACTH) (Heim et al., 2000). Ruiz, Neto, Schoedl, and Mello (2007) found that increases in glucocorticoid lead to decreased adrenocorticotrophic hormone as well as cortisol levels. Wilson and colleagues noted that individuals who later developed PTSD experience deregulation of the hypothalamic-pituitary-adrenal axis. This study also found increased lymphocyte activation (Wilson et al., 1999).

Adults who experienced childhood maltreatment but did not develop major depression, PTSD, or an anxiety disorder were also shown to have neurological effects. These individuals were shown to have suppression of cortisol response, ACTH response, and hyporeactive pituitary adrenal response to acute environmental stressors. This sample also showed decreased adrenocorticotrophic hormone diminished (HPA) response to psychosocial stressor. These affects were shown to be particularly apparent when the form of childhood abuse was neglect (Carpenter, et al., 2007).

The studies mentioned above clearly illustrated the interconnection between physical health and mental health. The previously mentioned literature also provides evidence for the psychosocial impact of trauma on both physical health and mental health.

### *Health Status of American Indians*

Poor physical health and mental health have long been a legacy of the American Indian community. Sampath (1974) reported depression as being one of the most prevalent problems within some American Indian communities; he described the severity of depression as limiting

one's sense of control and coping resources. More recently, Jernigan and colleagues (2010) reported on the devastatingly high rates of obesity, hypertension, and obesity within the American Indian communities. American Indians have also traditionally had high rates of suicide, especially in adolescence. In comparison to Caucasian adolescents, American Indians have three times the rate of suicide (Duclos & Manson, 1994). Recently, studies have focused on the relationship between physical and mental health within American Indian samples.

Sahmoun, Markland, and Helgerson (2007) examined the relationship between mental health and diabetes in a robust sample of American Indians and Caucasians. Results indicate that participants rating their mental health as "not good" for two weeks or more were 65% more likely to also have diabetes. American Indians reported significantly higher rates of depression and diabetes than their Caucasian counterparts. The association between poor mental health and diabetes was stronger for American Indians than for Caucasians. Lower socioeconomic status was found to be significantly associated with higher numbers of depressive symptomology and an increased risk for diabetes. Furthermore, the odds for having diabetes increased with age and body mass index, with 45-65 years old being the most susceptible time period.

Based on a study funded by the Center for Disease Control and Prevention in 2005, 16.4% of American Indian adults reported having cardio vascular disease (Galloway, 2005). This percentage was nearly double that of other ethnic minority groups: 9.9% for blacks, 7.4% for Hispanics, and 7.5% for Asians (Galloway, 2005). Other studies have shown that the number of American Indian adults with heart disease recently doubled the United State's national average (Welty et al., 2002). A recent study that examined data from the Center for Disease Control and Prevention reported that in a ten-year period, the prevalence of type-2 diabetes in American

Indian adults increased by 26.9% (Jernigan et al., 2010). Jernigan and colleagues (2010) also found that in an eight-year period, the prevalence of type-2 diabetes in adults ranging in age from 20-34 years, increased by 73.7%. Obesity in American Indian adults has been shown to be the highest among all ethnic groups. Between 1995-2006, there was a 25.3% increase in the reported rates (Jernigan et al., 2010). American Indian adults have been shown to have the highest rates of all ethnic groups in diabetes, obesity, and hypertension (Jernigan et al., 2010).

### *Trauma within American Indians*

Research has long demonstrated the oppression of multiple forms of traumatization that has plagued American Indian communities since colonialism. Similar to other ethnic groups, physical health and psychological health has been shown to correlate with socioeconomic status and trauma exposure within American Indian communities (Robinson, 2005).

Poverty is a significant problem in many American Indian communities. Some have even characterized reservations as being worse than third world countries (Posner, 1982). American Indians continue to live in impoverished homes with insufficient food, housing, and health care (LaFromboise, 1998). The rates of poverty and unemployment within American Indians are higher than among all ethnicities (Proctor & Dalaker, 2002). In one study, over 50% of the participants made less than \$ 25,000 for their total household income (Jernigan et al., 2010). In the same study, the highest level of educational attainment by the majority of the participants was a high school diploma or less (Jernigan et al., 2010). Low educational attainment is possibly a risk factor for poverty. The impact of poverty in American Indian communities is poignantly stated by a member of the Blackfoot tribe, Tom Rogers, "Poverty is both the cause and the consequence of all the ills visited upon Native Americans. Failure to address poverty causes

deprivation and hardship in these communities today, and robs the next generation of any opportunity to succeed and thrive tomorrow“(Rogers, 2011).

Trauma in the form of sudden and traumatic death is another obstacle faced by American Indian communities. High rates of suicide, especially in adolescents, have also been well documented in Indian country (Duclos & Manson, 1994; LaFromboise, 1998). Significant relationships have been shown between victimization and depression, Posttraumatic Stress Disorder symptomology, and suicide attempts within American Indian communities (Hamby & Skupien, 1998).

Trauma in terms of abuse has also been well documented within American Indian communities. According to the National Crime Victimization Survey (1993-1998) American Indians experience the highest rates of violent victimization of any race in the US. Native women experienced more overall crimes of violence, rape/sexual assault, simple and aggravated assaults, intimate partner violence, and serious violent crime (Rennison, 2001). The findings of one study reported that within a sample of American Indian girls, aged 4-16 years, over half reported experiencing sexual abuse (Minde & Minde, 1995). Domestic violence is another form of abuse that has been shown to be highly prevalent. On one reservation, 47.9% of the sample had experienced intimate partner violence in the past year (Hamby & Skupien, 1998).

Yuan, Koss, Polacca, and Goldman (2006) examined risk factors for physical assault and sexual assault in American Indians using a large sample from six American Indian tribes. In this sample, 96% of the participants lived within tribal boundaries. Demographic characteristics from the sample revealed that 42% had a household income of less than \$15,000, and only 76% were high school graduates. Both males and females from all tribes indicated alarming rates of trauma. Females from all tribes reported higher percentages of physical assault and/or sexual

assault (27%, 54%, 58%, 71%, 67%, 49%) than males (7%, 55%, 40%, 67%, 49%, 31%). Results also indicated that childhood neglect, emotional abuse, sexual abuse, and physical abuse increased the risk of revictimization in adulthood. Furthermore, predictors of physical assault and sexual assault in women were marital status (being single, divorced or widowed), having had an alcoholic parent, childhood abuse or neglect, and current alcohol dependency.

Walters and Simoni (1999) examined a sample of 68 urban American Indian women in regards to trauma history, substance use, and HIV risk. Their findings revealed that 44% of the women had experienced physical assault and/or sexual assault. The results found that lifetime traumatic experiences were significantly positively associated with HIV risk taking behaviors. Furthermore, a history of trauma was also associated with alcohol or other drug use (Flanigan, 1990). Walters and Simoni (1999) propose that future researchers should consider the impact of trauma history, substance use, and HIV risk taking behaviors across generations of American Indians and their influence on alcohol and drug use.

Hobfoll and colleagues (2002) studied a sample of 160 adult American Indian women. Of those in the study, 67% were unemployed, 41% had only some high school as their highest level of education, 61% made less than \$15,000 as their yearly household income. Of the sample, 42% reported a history of childhood sexual abuse, and 56% reported a history of childhood physical abuse and childhood emotional abuse. A history of childhood physical-emotional abuse was shown to have a greater impact on depressive mood, anger, and AIDS risk taking behaviors than a history of childhood sexual abuse. The results indicated adults who had experienced physically-emotionally abuse as a child had 5.14 greater odds of having a sexually transmitted disease in his or her lifetime than those who had experienced only marginal or no physical-emotional abuse. Social support emerged as a factor that significantly contributed to resiliency

in terms of AIDS risk taking behaviors. The authors urge future researchers to consider the level of abuse and the victim's relationship to the perpetrator.

Bohn (2003) studied a sample of 30 American Indian women in their 3<sup>rd</sup> trimester of pregnancy who sought services from an Indian health clinic. Results indicated that 87% of the women experienced physical and/or sexual abuse in their lifetime, with 54% experiencing both. Of the sample, 83% experienced physical abuse by a partner. Two-thirds of the sample reported multiple victimizations within their lifetime. Furthermore, all of the women who had experienced abuse as children were revictimized as adults; they also experienced more abusive occurrences than those who were not abused as children. Thirty-percent of this sample reported suicide attempts. Bohn (2003) suggests that future research focus on the health implications of revictimization, or lifetime abuse, to guide treatment and prevention work for American Indians. Multiple forms of trauma and repeated trauma exposure have shown to be significant problems within Indian country.

#### *Binge Eating and Trauma Exposure*

Smolak and Murnen (2002) conducted a meta-analysis and found a relationship between childhood sexual abuse and eating disorders. Disordered eating, specifically binge eating, has been linked with obesity (Allison et. al, 2007). Larsen and Geenen (2005) reported that 23% of female bariatric surgery candidates reported a history of childhood sexual abuse. Grilo and Mashbeb (2001) found that a history of multiple forms of childhood maltreatment was two-to-three times more prevalent in individuals with binge eating disorder, when compared to a normative sample.

Allison, Grilo, Masheb and Stunkard (2007) studied a sample of obese adults who had binge eating disorder, night eating syndrome, and those who were obese but did not have either disorder in regards to exposure to various forms of childhood maltreatment. All three groups reported high levels of at least one form of childhood maltreatment: 82% (binge eating), 79% (night eating), and 71% (control). Results indicate that 54% of participants with binge eating disorder reported a history of childhood emotional abuse, in comparison to 32% of the control group. Higher rates of emotional abuse and emotional neglect were associated with binge eating disorder. The rate of physical and sexual abuse was not significant between the groups. Across the sample, depression was significantly correlated with emotional abuse, physical abuse, sexual abuse, and emotional neglect. Furthermore, participants with moderate to severe depressed mood reported significantly higher rates of emotional abuse, emotional neglect, physical abuse, and physical neglect when compared to participants with no to minimal levels of depression. The authors suggested that future researchers look at risk and resiliency factors in individuals who have experienced childhood maltreatment, especially among individuals who are obese and from diverse ethnicities.

Few studies have examined binge eating within ethnic minority populations. Harrington, Crowther, Payne Hendrickson, and Mickelson (2006) examined the relationship between trauma, stress, ethnicity, and binge eating among African American and Caucasian women. Results indicate that trauma and stress were significantly positively correlated with binge eating, as measured by the Binge Eating Scale (Gromally et al., 1982). Stress due to discrimination was also significantly correlated with high scores on the Binge Eating Scale in the sample of African Americans. Future researchers are urged to find more variables impacting binge eating in ethnic minority samples.



French and colleagues (1997) looked at differences in ethnicity in regards to binge eating in a sample of adolescent females from various ethnicities. Of the sample, 29% of American Indians reported engaging in binge eating. Results indicated that binge eating was associated with adolescent females from all ethnic groups who were weight dissatisfied, those who perceived themselves as being overweight, or had low body pride. Furthermore, poor body image was the strongest predictor of eating disordered behaviors across all ethnic groups.

Only one study was found to examine binge eating in a sample of Native Americans. Dorton (2008) examined correlates of binge eating in a sample of Native American adults. Results indicate that emotional distress, stress related to racism, and experiences of racism across one's lifetime were all significantly and positively correlated with binge eating. Furthermore, emotional distress accounted for 18% of the variance in binge eating (Dorton, 2008). The author suggests that future researchers focus on coping styles utilized by Native Americans in regards to binge eating.

Heatherton and Baumeister (1991) suggested that binge eating is a form of maladaptive coping, as it serves as an escape from self-awareness. During a binge, an individual's focus is on the immediate sensation of eating food. A binge is a form of escape from a self-awareness that may be aversive or affectively unpleasant as the binge is associated with a reduction in negative affect. Consequently, an escape from self-awareness fosters the act of bingeing. Thus, the strength of the association between bingeing and escape from self-awareness are reinforced (Heatherton & Baumeister, 1991).

### *Coping Styles and Health Outcome*

Coping has been conceptualized as responses to external environmental and psychological stressors. Coping serves two primary functions of regulating emotions and guiding action towards changing a distressing situation (Folkman & Lazarus, 1985). Coping has been further delineated into three primary styles: problem-focus, emotions-focus, and avoidant-focused (Folkman & Lazarus, 1985; Moos & Schaefer, 1984). Problem-focused coping refers to task orientation or activity attempting to change the distressing situation (Endler & Parker, 1990; Folkman & Lazarus, 1985). Emotions-focused coping refers to person orientation, or the process of attempting to regulate distressing emotion by focusing on the self or fantasizing possible reactions (Endler & Parker, 1990; Folkman & Lazarus, 1985). Avoidant-focus can include either task orientation or person-orientation, where the primary objective is to avoid emotions and situations that are reminders of the distressing situation (Endler & Parker, 1990). Coping styles have been shown to co-occur, however, individuals have been shown to display preferences in coping styles and predominantly engage in the particular style across settings (Carver & Scheier, 1994; Endler & Parker, 1989).

Several studies have attempted to examine the relationship between various coping styles and psychological health and physical health. Early researchers theorized that problem-focused coping was adaptive and emotions-focused coping was maladaptive based on their study that found that problem solving instead of focusing on emotions reduced depression (Folkman & Lazarus, 1985). Avoidant-focused coping has been theorized to also lead to psychological problems (Holahan & Moos, 1987). Jackson (1989) reported that emotions-focused was positively related to psychopathology in both males and females. However,

problem-focused in absence of active emotional coping can also be problematic (Holahan & Moos, 1987).

More recently, Coyne and Racioppo (2000) reported that emotions-focused coping and especially avoidant-focused coping were associated with overall worse mental health. Emotions-focused and avoidant-focused have been shown to be related to anxiety (Dusenburn & Albee, 1988). More specifically, Stewart (1999) found avoidant-focused coping to be a strong predictor of Posttraumatic Stress Disorder.

Schnider, Elhai, and Gray (2007) examined the relationship between coping styles and the severity of symptoms in complicated grief and Posttraumatic Stress Disorder in a sample of college students who reported a history of trauma. Results indicated that avoidant emotional coping was significantly associated with the severity of complicated grief and Posttraumatic Stress Disorder. The authors suggest future research further study the effect of avoidant emotional coping.

Baschnagel, Gudmundsdottir, Hawk and Beck (2009) looked at post-trauma symptoms in a sample of college students in New York following the September 11<sup>th</sup> World Trade Center terrorist attack. This study used the Coping Inventory for Stressful Situations (Parker & Endler, 1999) to examine coping styles. Prior to the attack, females indicated more usage of emotions-focused-coping and avoidant-focused coping than males. Results indicated that females who had experienced trauma prior to the attack showed significantly more Posttraumatic Stress Disorder symptomology after the attack, in comparison to males and females without a prior trauma history. Results further indicated that individuals who used more emotions-focused coping prior to September 11<sup>th</sup>, displayed higher levels of Posttraumatic Stress Disorder symptomology at one-month and three-month intervals after the attack. Contrary to previous

research (Coyne & Racioppo, 2000; Schnider et al., 2007; Stewart, 1999) and the author's hypotheses, this study did not find an association between avoidance-focused and psychological distress. The authors speculated that this result might have been due to the indirect nature of the trauma exposure. The authors further suggested that the avoidant-focused coping might negatively impact the recovery of PTSD, but be unrelated to the onset of PTSD symptoms. The authors suggest that future researchers examine different coping strategies in terms of long-term adjustment following a traumatic event.

Staiger, Melville, Hides, Kambouropoulos, and Lubman (2009) examined the influence of coping styles in a sample of adolescents with Posttraumatic Stress Disorder and substance use disorders and a sample of adolescents with substance use disorders. The results indicated that the group with PTSD and substance use disorders reported significantly higher levels of emotions-focused coping. The group with PTSD and substance use disorders also reported overall higher levels of alcohol usage and were more likely to use drugs in response to distressing situations, thus indicating that adolescents with PTSD are more likely to use substances than adolescents without PTSD. Contrary to the study's hypotheses, there was no difference in the use of avoidant-focused coping between the two groups. The authors speculated that within the group of adolescents with PTSD and substance use disorders, the drug use may have served as avoidance from stressful situations and emotions, as this would be consistent with Giaconia and colleagues' (2003) self-medication hypotheses. The findings of this study suggest that adolescents who have been exposed to trauma may be particularly susceptible to drug and alcohol usage in an attempt to cope with stressful emotions and situations.

Standfort, Bakker, Schellevis and Vanwesenbeeck (2009) examined the difference in coping styles between heterosexual, homosexual, and bisexual men and women in regards to their physical and mental health. The study found that emotion-focused and avoidance-focused coping significantly predicted both poorer mental and poorer physical health. Furthermore, they found that emotion-focused coping accounted for more variance in the prediction of both mental and physical health than avoidant-focused. This study also found that task-focused coping was not a significant factor in the prediction of mental and physical health (Standfort et al., 2009).

Robinson (2005) examined a sample of Native Americans in regards to coping styles. Results indicated that coping style had a direct effect of culturally related anxiety and on perceived stress. When an individual believed his or her situation to be more stressful, he or she showed to be more vulnerable to psychological problems such as anxiety and depression. Furthermore, results indicated that task-focused (problem-focused) coping was likely to diminish the effects of psychological problems. Emotion-focused and avoidant-focused increased the likelihood of psychological problems in this sample.

### *Conclusion*

The previously mentioned studies have demonstrated an interconnection between physical health, psychological well being and the environmental factors that influence both, with some findings suggesting a connection between trauma exposure and negative states of mental and physical health. Trauma, especially in regards to childhood maltreatment, has been shown to have devastating repercussions, especially in regards to physical and mental health. Researchers have discovered the consequences of disordered eating on physical health. They

have also noted psychological factors that contribute to the susceptibility of engaging in binge eating. The coping literature has also found implications for various coping styles and their contribution to health outcome.

While current statistics indicate American Indians experience extremely high rates of psychological difficulties and physical health problems, few studies have examined the internal and external factors that induce feelings of distress among this population. Studies focusing solely on American Indians samples have been sparse in the psychological literature. Few studies were found that examined the variables being considered in this study. Several authors have urged future researchers to consider future studies with samples from diverse ethnicities. The following study aimed to examine the influence of cumulative trauma exposure, binge eating, and coping styles as they relate to physical health and psychological health of American Indians.

### *Purpose of the Study*

This study aimed to provide further evidence to the psychological literature of the mind body connection; specifically, the potential mental and physical health consequences of experiencing and coping with various forms of trauma exposure. The purpose of this study was to examine the influence of cumulative trauma, coping styles, and binge eating on the physical and mental health of American Indian adults. This study aimed to examine whether coping styles in combination with trauma exposure and binge eating had an effect on general health, especially mental health of American Indian adults. Furthermore, this study aimed to gather data on cumulative trauma experiences among American Indian adults as this has yet to be explored within the psychological literature. The findings of this study will contribute to the

psychological literature in increasing the current understanding of the repercussion of repeated trauma exposure and coping, specifically for American Indians.

### *Research Questions and Hypotheses*

The study attempted to answer several questions regarding factors that may influence the general mental and physical health of American Indian adults such as, cumulative exposure to trauma, binge eating behaviors, and styles of coping. The research questions and their corresponding statistical procedures for this study are as followed.

Based on previous literature, it is safe to say that exposure to trauma may negatively impact both physical and mental health (general health measure). In the context of this study, the researcher hypothesized that cumulative trauma would predict poorer general health.

**H1: The general health (mental and physical health) of American Indian adults can be predicted by the frequency of lifelong trauma exposure (cumulative trauma).** There are likely differences in the impact of trauma on mental and physical health. Therefore, the following two hypotheses explore this possible connection. **H2: The mental health of American Indian adults can be predicted by the frequency of lifelong trauma exposure (cumulative trauma).** **H3: The physical health of American Indian adults can be predicted by the frequency of lifelong trauma exposure (cumulative trauma).**

The literature has also provided evidence for the influence of binge eating and various forms of coping on poorer health outcomes. This study will look at what is the strongest predictor of health in American Indian adults: cumulative trauma, binge eating and coping styles.

**H4: The general health (mental and physical health) of American Indian adults can be predicted by the frequency of lifelong trauma exposure (cumulative trauma), various forms of coping (avoidant-focused, task-focused, and emotions-focused), and the frequency of binge eating. H5: The mental health of American Indian adults can be predicted by the frequency of lifelong trauma exposure (cumulative trauma), various forms of coping (avoidant-focused, task-focused, and emotions-focused), and the frequency of binge eating. H6: The physical health of American Indian adults can be predicted by the frequency of lifelong trauma exposure (cumulative trauma), various forms of coping (avoidant-focused, task-focused, and emotions-focused), and the frequency of binge eating.**



## CHAPTER III

### THE INFLUENCE OF CUMULATIVE TRAUMA, BINGE EATING, AND COPING STYLES ON THE GENERAL HEALTH OF AMERICAN INDIANS

#### *Sample*

Data were collected from 302 American Indian adults who live in the United States, however 12 sets of data were incomplete. The usable sample consisted of 290 participants (102 males and 188 females). Ninety-three percent of the participants were enrolled members of a tribe, with representation from 45 different tribes. Thirty-three percent of the sample reported being full blood quantum, and 78.3% reported being of  $\frac{1}{4}$  blood quantum or more.

#### *Measures*

Participants were asked to complete the following measures:

1) Binge eating behavior was measured using the *Binge Eating Scale (BES)* (Gormally et al., 1982). The BES is a 16-item scale that measures binge-eating behaviors and its severity categorized as non-bingers, moderate bingers, and severe bingers. The instrument describes behavioral attributes associated with binge eating, as well as the emotional and cognitive aspects of engaging in a binge. Gormally and colleagues (1982) reported norm groups for non-bingers (22%), moderate bingers (55%), and severe bingers (23%) for the instrument. The primary differences shown between the three groups were the emotional consequences and amount of self-control one felt during a binge. Non-binge eaters were associated with experiencing minimal emotional responses, and viewed the binge as a pleasurable activity, which they had control over. Moderate binge eaters were associated with emotional tolerance over the binge and viewed themselves as maintaining control over a binge, but occasionally engaging in the behavior. Severe binge eaters were associated with experiencing extreme guilt and self-hate after a binge, and viewed themselves as having a complete lack of control over the behavior. On each item, participants were given four statements and asked to circle the statement that best matches eating behaviors and emotions surrounding binge eating. Within each item, each statement is given varying point values, ranging from 0-3, for the degree to which the statement describes binge eating. Sample items include, "I feel capable of controlling my eating urges when I want to" and "I have days when I can't seem to think about anything else but food". Higher scores indicate more binge eating attributes. Scores of 17 or less indicated non-binge eating, scored of 18-26 indicated moderate binge eating, and severe binge eating was indicated by scores of 27 or higher. The instrument showed moderately high internal consistency ( $\alpha = .85$ ), and all chi square tests of significance were above 9.1 ( $p < .01$ ) (Gormally et al., 1982). The BES also

demonstrated test-retest reliability ( $r = .87, p < .001$ ) (Greeno, Marcus, & Wing, 1995).

This instrument has been shown to be a reliable and valid measure with American Indians, as internal consistency was 0.92 (Dorton, 2007).

- 2) Coping Style will be measured using the *Coping Inventory for Stressful Situations (CISS;* Endler & Parker, 1999). The CISS, in its second edition, is a 48-item instrument that measures multi-dimensional coping. The instrument is composed of three factors associated with coping-orientations: task-focused, emotion-focused and avoidant-focused. There were sixteen items that assessed each of the three orientations. Task-focused coping refers to task oriented efforts in attempts to solving a problem. This orientation primarily focuses on the individual attempting to solve the problem through tasks and planning, and can include cognitive restructuring of the problem or attempts to alter the problematic situation. Emotion-focused coping refers to strategies that are self-oriented in an attempt to reduce stress, and can include blaming or criticizing oneself, fantasizing about reactions, or experiencing negative emotions such as anger or tension. Avoidant-focused refers to cognitions and activities which are aimed at avoiding the problematic situation, and includes distracting oneself to avoid the stress or creating social diversions. This orientation has two subscales: distraction and social diversion. Distraction refers to when an individual engages in a substitute task as a means of avoiding the distressing situation. Social diversion refers to when an individual seeks out other people as a means of avoiding the distressing situation. (Endler & Parker, 1999). Participants were instructed to indicate, on a 5-point Likert type scale (1 = not at all, 5 = very much) the degree to which they engaged in each activity when they encountered a difficult, stressful, or upsetting situation. Sample items included, "Focus

on the problem and see how I can solve it” and “Feel anxious about not being able to cope”. Higher scores in each subscale indicated greater usage of the orientation. The CISS has shown reliability throughout each subscale: task-focused ( $\alpha = .90$ ), emotion-focused ( $\alpha = .88$ ), and avoidant-focused ( $\alpha = .83$ ) (Parker & Endler, 1992). The CISS has shown test-retest reliability, internal reliability, external validity, and construct validity (Endler & Parker, 1999; Jackson, 1989). Through a review of the psychological literature in the search engine PsychInfo, the CISS was utilized in 144 studies. These studies used diverse sample in regards to ethnicity, socioeconomic status, language, and mental and physical health status. This instrument has been shown to be a reliable and valid measure to use with American Indians (Robinson, 2004; Slesnick, Bartle-Haring, Dashora, Kang, & Aukward, 2008). Robinson (2004) reported means and standard deviations for each subscale with a sample of American Indians: avoidant-focused ( $M = 48.27, SD = 11.04$ ), emotions-focused ( $M = 40.68, SD = 12.9$ ), and task-focused ( $M = 52.34, SD = 12.19$ ).

- 3) Cumulative trauma was measured using the Cumulative Trauma Scale (CTS; Kira et al., 2008). The CTS is a 32-item instrument that measures cumulative trauma in terms of frequency, type and impact. Six categories of trauma were revealed through factor analysis: collective identity trauma, family trauma, secondary trauma, personal identity trauma, survival trauma, and attachment trauma. Collective identity trauma includes trauma related to exposure to war as well as discrimination based on race, ethnicity, or national origin. Family trauma includes trauma related to child physical abuse, history of violence in the home, parental divorce, and remarriage. Secondary trauma includes trauma related to having witnessed a traumatic event occurring to another individual,

impacting interdependence. Personal identity trauma includes traumas related to having experiences sexual abuse and being robbed. Survival trauma includes trauma due to experiencing torture, car accidents and natural disasters. Attachment trauma includes trauma due to abandonment. On each item, participants were instructed to indicate their experiences with a traumatic event on a 5-point Likert type scale (1= never, 5= many times). Participants were then instructed to indicate the effect of the event on a 7-point Likert type scale (1 = extremely positive, 7 = extremely negative) if they had experienced the event. Sample items included “In my life, I witnessed or experienced natural disasters, for example, earthquakes, hurricanes, tornados, or floods” and “I have been involved in or witnessed a war or combat”. Higher scores indicated higher levels of trauma exposure and impact severity. This instrument has shown adequate internal consistency ( $\alpha = .847$ ) for adults (current studies have only used Arab and Palestinian refugees and African Americans as their sample populations) (Kira et al., 2008). The instrument has shown predictive validity as cumulative trauma was significantly correlated with Posttraumatic Stress Disorder ( $r = .54, p < .001$ ), cumulative trauma disorders ( $r = .24, p < .001$ ), and poor health ( $r = .37, p < .001$ ) (Kira et al., 2008). The instrument also showed divergent validity as it was significantly negatively correlated with sociocultural adjustment ( $r = -.25, p < .001$ ), and futuristic orientation ( $r = .37, p < .001$ ); furthermore, after controlling for demographics, cumulative trauma dose significantly predicted poor health ( $\beta = .24$ ), Post Traumatic Stress Disorder ( $\beta = .57$ ), and cumulative trauma disorders ( $\beta = .11$ ) (Kira et al., 2008). In a review of the psychological literature through the search engine PsychInfo, the CTS has only been used minimally as it is a newer instrument. (Kira et al., 2008; Kira, Templin, Lewandowski, Ramaswamy, Ozkan, Abou-Mediane, Mohanesh, & Alamia,

2011) The CTS is the only known instrument to measure and assess the impact of cumulative trauma and to assess trauma in a cumulative fashion.

- 4) General health was measured using the Medical Outcome Study, Short-Form- 36 version 2 (SF-36; Ware & Shelbourne, 1992). The SF-36 was developed from the Medical Outcomes Study and is an 11question, 36-item instrument that measures health status. The SF-36 used a multi-item scale to measure health concepts through physical functioning, role limitations due to physical /emotional health issues, bodily pain, social functioning, general mental health, vitality, and general health perceptions. Participants were asked to indicate their responses to each question based on a Likert-type response choice under each item. Sample items included “Compared to one year ago, how would you rate your health in general now” and “I seem to get sick a little easier than other people”. Lower scores indicated higher disruptions to functioning based on limitations from physical health and mental health. This instrument has shown content, construct, and predictive validity (Ware & Shelbourne, 1992). The SF-36 has shown internal consistency throughout the subscales (Chronbach’s  $\alpha$  ranging from 0.73 to 0.96) and test re-test reliability ( $r$  ranging from 0.60 to 0.81) (Brazier et al., 1992). Convergent validity was shown as groups were differentiated in regards to severity of symptoms within the physical health construct and the mental health construct (McHorney, Ware, & Raczek, 1993). In a review of the psychological literature through the search engine PsychInfo, the SF-36 was utilized in 3,120 studies. These studies used diverse samples in regards to ethnicity, socioeconomic status, language, and mental and physical health status. This instrument has been shown to be a reliable and valid measure to use with

American Indians (Daniels, Goldberg, Jacobson, & Welty, 2006; Jing, Beals, Caucasiansell, Roubideaux, & Manson, 2009; O'Connell et al., 2005).

- 5) Demographic information was collected from all participants. The demographic questionnaire included questions regarding age, gender, education, height, weight, and specific mental and physical health problems. This information was utilized to further assess possible characteristics that impact an individual's general health.

#### *Data Analysis*

Multiple regression is a form of statistical analysis which tests the predictive power of a set of variables for a particular outcome. (Pallant, 2007). In this form of analysis, each independent variable is assessed for its unique variance in the dependent variable, as well as assessing the variables as a set for their variance (Pallant, 2007). For hypotheses 1, cumulative trauma (independent variable) was assessed for its ability to predict general health (dependent variable). For hypotheses 2, cumulative trauma (independent variable) was assessed for its ability to predict mental health (dependent variable). For hypotheses 3, cumulative trauma (independent variable) was assessed for its ability to predict physical health (dependent variable). For hypotheses 4, cumulative trauma (independent variable), binge eating (independent variable), and coping styles (independent variable) were assessed as a set for their ability to predict general health (dependent variable). ). For hypotheses 5, cumulative trauma (independent variable), binge eating (independent variable), and coping styles (independent variable) were assessed as a set for their ability to predict mental health (dependent variable). ). For hypotheses 6, cumulative trauma (independent variable), binge eating (independent

variable), and coping styles (independent variable) were assessed as a set for their ability to predict physical health (dependent variable). All statistical analysis was conducted using SPSS.

### *Procedures*

Participants were recruited through convenience sampling from on-line listservs, local tribal health clinics, pow-wows/cultural dances, social media, and tribal complexes. Participants from all recruiting sites consisted of non-clinical samples. E-mail solicitations were sent out through American Indian listservs and social networking sites. At recruitment sites, the researcher set up a table at each site and remained at the site on average for 4 hours. A recruiting flyer was used to solicit participants for the study. Participants were given the option to participate on-line (through a secure server) or through a paper version. Those who chose to participate in the on-line version were given the web address of the study site through the recruiting script. Those who chose to participate in the paper version were given a manila envelope that contained the printed material of the study and a writing utensil. Participants were able to fill out the study in a place of their choosing; this frequently consisted of waiting rooms, individual offices, and chairs seating next to their family/friends. Participants were asked to return the sealed packet to the researcher's table by the end of the time that the researcher would be on site. Participants were offered a \$5 Wal-Mart gift card for their participation in the study and upon returning a sealed packet participants were given the gift card.

The majority of the sample (75%) chose to participate through the paper version. Participants were administered the Binge Eating Scale (BES; Gormally et al., 1982), Coping Inventory for Stressful Situations (CISS; Endler & Parker, 1999), Cumulative Trauma Scale, Short Form (CTS-SF, Kira et al, 2008), Medical Outcome Study, Short-Form- 36 version 2 (MOS, SF-



36v2; Ware & Shelbourne, 1992), and a demographics questionnaire which assessed mental and physical diagnoses, height and weight, and other sociocultural variables.

## CHAPTER IV

### THE INFLUENCE OF CUMULATIVE TRAUMA, BINGE EATING, AND COPING STYLES ON THE GENERAL HEALTH OF AMERICAN INDIANS

#### *Demographics*

Participants ranged in age from 18 to over 70, with the average age of participants between 50-59 (22.8%). The sample consisted of 290 American Indian adults (102 males and 188 females), 75% of who were living in Oklahoma. The sample primarily consisted of individuals who identified their sexual orientation as heterosexual, however, 3.8% identified as being gay/lesbian, bisexual, or questioning. The majority of the sample (29.7%) reported that their highest level of education was 9-12 years. A little over 25 % of the sample reported an annual income of \$15,000 or less, while 17% reported an annual household income of \$15,000-\$25,000. A majority of the sample (44.5%) reported living in a rural area, 35.5% currently live in an urban area and twenty percent of participants presently live on a reservation/tribal land. Based on self-reported height and weight, the Body Mass Index (BMI) of participants ranged from 18.31 to 63.47, with 56% of the sample being obese (BMI 30 or higher), 24% over-weight (BMI of 25 - 29.9), and 20% normal weight (BMI of 18.5 – 24.9). In regards to physical illness, 7% of

the sample reported a diagnosis of Cardiovascular Disease, 26% reported a diagnosis of Diabetes, and 38% reported a diagnosis of Hypertension. In regards to mental illness, 23% of the sample reported a diagnosis (either past or present) of Depression, 19 % reported a diagnosis (either past or present) of Anxiety, 5% reported a diagnosis (either past or present) of Post Traumatic Stress Disorder, 3% reported a diagnosis (either past or present) of Bipolar Disorder, 4 % reported a diagnosis (either past or present) of Alcohol Dependency, and 2 % reported a diagnosis (either past or present) of an Eating Disorder. (Please refer to table 1 for a further list of demographic characteristics).

#### *Reliability of Scales*

An assessment of internal consistency was examined for each instrument to determine its appropriate use for the sample. Chronbach's alpha was used to determine the internal consistency of each scale. For the SF-36 measure of general health  $\alpha = .76$ . For the SF-36 measure of mental health  $\alpha = .71$ . For the SF-36 measure of physical health  $\alpha = .94$ . For the measure Binge Eating Scale  $\alpha = .87$ . For the Cumulative Trauma Scale, questions referring to the appraisal of a traumatic event were dropped from the analysis, as these rating do not pertain to the frequency of trauma exposure. The final number of items for this scale was 32. Chronbach's alpha for the Cumulative Trauma Scale was  $\alpha = .88$ . (Please refer to Table 3 for a list of means and standard deviations of each scale).

The sample showed high rates of various forms of trauma exposure. Twenty-eight percent reported having experienced childhood physical abuse, 32.4% reported sexual contact by someone who was older than themselves, 22.2% reported having been raped, 5.8% reported sexual contact by a parent, 25.6% reported witnessing domestic violence as a child, and 81.9%

reported growing up in an impoverished home. Furthermore, 44% reported witnessing the severe assault of acquaintance or stranger, 15.7% reported experiencing robbery involving a weapon, and 62% reported experiencing acts of racial discrimination. (Please refer to table 2 for a further list of traumatic exposure statistics).

In regards to the Binge Eating Scale, 73% reported no binge eating behavior, 17% reported moderate levels of binge eating, and 4% reported severe binge eating. In regards to the Coping Inventory for Stressful Situations the sample engaged in more task-focused coping ( $M = 54.2$ ,  $SD = 11.4$ ), followed by avoidance-focused ( $M = 45.3$ ,  $SD = 10.9$ ) and emotion-focused ( $M = 40.1$ ,  $SD = 12.2$ ). In regards to the measures of health, the sample reported higher rates of physical health ( $M = 74.1$ ,  $SD = 28.4$ ), followed by mental health ( $M = 66.7$ ,  $SD = 16.2$ ) and general health ( $M = 64.8$ ,  $SD = 19.6$ ).

### *Regression Analysis*

Standard multiple regression was used to assess the ability of cumulative trauma (Cumulative Trauma Scale) to predict general health, mental health, and physical health (SF-36 general health subscale). Analysis revealed that cumulative trauma significantly accounted for 5.3% of the variance in general health ( $F(1, 290) = 4.036$ ,  $p < .001$ ), 5.5% of the variance in mental health ( $F(1, 290) = 4.090$ ,  $p < .001$ ) and 1.5% of the variance in physical health ( $F(1, 290) = 2.103$ ,  $p < .05$ ). (Please refer to tables 3-5).

Standard multiple regression was used to assess the combined effects of cumulative trauma (Cumulative Trauma Scale) coping styles (CISS) and binge eating (Binge Eating Scale) to predict general health (SF-36 general health subscale), mental health (SF-36 mental health

subscale), and physical health (SF-36 physical functioning subscale). Analysis revealed that the combined effect of cumulative trauma, coping styles, and binge eating significantly accounted for 16.4% of the variance in general health ( $F(5, 286) = 11.24, p < .001$ ) and 40.3% of the variance in mental health ( $F(5, 286) = 38.61, p < .001$ ) health. However, the set of variables did not significantly predict physical health. (Please refer to table 6-8).

Effect size is a measurement of the strength or magnitude of a relationship and provides practical significance to the data (Cohen, 1992). Effect size for each hypothesis was measured using Pearson's correlation as recommended by Cohen (1992). The prediction of general health by cumulative trauma produced a small effect size ( $r = .22$ ). The prediction of mental health by cumulative trauma produced a medium effect size ( $r = .24$ ). The prediction of physical health by cumulative trauma produced a small effect size ( $r = .14$ ). The prediction of general health by cumulative trauma, binge eating and coping styles produced a large effect size ( $r = .40$ ). The prediction of mental health by cumulative trauma, binge eating and coping styles produced a large effect size ( $r = .63$ ).

## CHAPTER V

### THE INFLUENCE OF CUMULATIVE TRAUMA, BINGE EATING, AND COPING STYLES ON THE GENERAL HEALTH OF AMERICAN INDIANS

As reported through the demographic information, the sample reported high levels of exposure to various forms of trauma. Although the rates are concerning, unfortunately they are not surprising. Results from this study revealed that repeated exposure to traumatic events throughout the lifespan account for variance in both mental and physical health. Based on the findings in this study, cumulative trauma accounted for more variance in mental health (6%), followed by general health (5%), and physical health (2%). These findings suggest that the experiences of cumulative trauma pose a greater risk to mental health and general health than to physical health among this sample of Native American adult men and women. An examination of the frequency data (Table 2) provides a depth of understanding of the history of the types of traumatic experiences of this sample as categorized by the Cumulative Trauma Scale. Of the six trauma types, the most frequently experienced types of trauma were Secondary Trauma ( $M = 7.04$ ,  $SD = 4.80$ ), Survival Trauma ( $M = 5.37$ ,  $SD = 4.22$ ), Personal Identity Trauma ( $M = 4.01$ ,  $SD = 4.65$ ), and Collective Identity Trauma ( $M = 2.72$ ,  $SD = 4.65$ ).

For example, 35% of respondents experienced the sudden death of a parent, close friend, or loved one (Secondary Trauma) several times (more than 3) in their lifetime; 12 % experienced at least three deaths, 17 % experienced at least two deaths, and 20% experienced at least one death of a loved one in their lifetime. The grief experienced after a loss of a loved one may cause depressive symptomatology, especially if this loss was unexpected (LaFromboise, 1998). The findings of the present study provide further evidence to the existing literature, as 23% of the participants reported a prior diagnosis of depression.

Given the following statistics, it is not surprising that this sample of adults have experienced loss. American Indians and Alaskan Natives have been shown to have the highest rates of suicide within all ethnic groups in the United States, especially in adolescence to early adulthood (15-24 years of age) (Center for Disease Control and Prevention, 2008). American Indians also have a shorter life expectancy (2.4 years less) than all other ethnic groups in the United States (Indian Health Services, IHS, 2006). They have the highest rates of infant mortality of all ethnic groups in the United States; 8.5% per every 1,000 as compared to 6.8% per 1,000 (IHS, 2006). When comparing American Indians with other Americans in the form of mortality, American Indians have the highest rates of death due to Tuberculosis (600%), Alcoholism (510%), motor vehicle crashes (229%), Diabetes (189%), unintentional injuries (152%), homicide (61%), and suicide (62%) (IHS, 2006). The aforementioned statistics depict several disparities in regards to early and unexpected death within American Indian communities. Based on these statistics, it should not be surprising that 84% of the sample has experienced a sudden death of a loved one.

The experience of racism (Collective Identity Trauma) was another frequently reported traumatic experience. From the sample, 62 %, (n=182), reported being put down, threatened or

discriminated against because of their ethnicity, race, culture, and religion. One hundred and thirteen participants, or 39% of the sample, reported experiencing racism many times (more than three) throughout their life. Experiences of racism in the last year and across the lifetime were also found in another study among a sample of mostly obese Native American females (Dorton, 2008) supporting the idea that experiences of may racism may lead to detrimental consequences to mental and physical health. For example, internalized messages of negative racial attributes may induce symptoms related to depression, such as worthlessness, as they may begin to view themselves as less valuable than others. Feelings of anxiety may develop, particularly in situations where they are around other racial groups at work, school, or in their community. This could pose a particular problem for urban Indians, who are more geographically removed from their tribe(s), and further alienated from their culture and traditions. Prolonged exposure to anxiety and/or depression may influence individuals to cope in maladaptive ways such as binge eating, smoking, excessive alcohol use, drug use, or exercising less. In combination, these factors may lead to detrimental consequences on physical health such as obesity, a precursor to diabetes (DeGroot et al., 2001; Egede et al., 2002) or heart disease (Rutledge et al., 2006), both known health disparities in American Indian communities (Galloway, 2005; Jernigan et al., 2010).

Exposure to poverty (Collective Identity Trauma) in childhood was the final type of most frequently exposed traumatic event in this sample. Fifty-five percent of the sample ( $N = 162$ ), reported having grown up in a poor family with many hardships, and 7% ( $N = 20$ ) percent reported being part of a family that was extremely poor. As adults, these individuals continue to live in impoverished conditions as 25% ( $N = 73$ ) of the sample reported having an annual household income of \$15,000 or less, and 17% ( $N = 43$ ) reported an annual household income of \$15,000 - \$25,000. The findings of the present study yielded similar findings to past research



conducted with American Indians, who have documented high rates of poverty (Jernigan et al., 2010, Yuan et al., 2006). However, the rates of poverty (making less than \$25,000 or less) in this study (42.5%,  $N = 124$ ) were somewhat lower than those in other studies. Yuan et al. (2006) reported that 42% of their sample had an annual household income of less than \$15,000. Jernigan et al. (2010) also documented similar findings, with over 50% of their sample reporting a household income of less than \$25,000. The participants in this study lived in urban area, rural areas, and on tribal lands. None of the participants lived on reservations, which consistently have higher rates of poverty and have been shown to be amongst the poorest counties in the United States (Rogers, 2011). Poverty in Indian country has been well documented for at least 29-years now (Posner, 1982), yet little attention continues to be paid to the ramifications of this type of traumatic exposure.

This particular type of traumatic exposure is particularly concerning as several studies (McLeod & Kessler, 1990; Markstorm, 2003; Miech, 1999) have documented the detrimental consequences of being impoverished. Poverty has been shown to be the most incapacitating factor to physical and mental health (Markstorm, 2003). Furthermore, one of the most well documented findings in the social sciences is the correlation between socioeconomic status and mental health problems (McLeod & Kessler, 1990). Lower socio-economic status has been found to be significantly associated with higher numbers of depressive symptomology, disproportional levels of anxiety, and an increased risk for diabetes (Miech, 1999; Sahmoun et al., 2007).

The findings of high rates of trauma exposure and high rates of poverty of the present study are further concerning as socioeconomic status and trauma exposure has been correlated with health problems (Robinson, 2005). The data from the present study is consistent with prior research that has repeatedly documented the prevalence of high rates of depression,

hypertension, cardiovascular disease, diabetes, and obesity in American Indian populations (Galloway, 2005; Jernigan et al., 2010; Sahmoun et al., 2007; Sampath, 1974).

Results from the present study found that the combined effect of cumulative trauma, task-focused coping, and binge eating significantly predicted general health (16%). Binge eating accounted for the most variance ( $\beta = .24$ ), followed by cumulative trauma ( $\beta = .18$ ), and task-focused coping ( $\beta = .12$ ). This finding indicates that the combined effect of trauma throughout an individual's life, the thoughts and behaviors surrounding binge eating, and task-focused coping (dealing with stressful situations by attempting to solve the problem through tasks and planning) can predict the general (physical and mental) health of an individual. The act of engaging in binge eating could be serving as avoidance from stressful situations and emotions, which would be consistent with the self-medication hypothesis purposed by Giaconia and colleagues (2003). Frequently engaging in binge eating can lead to obesity and diabetes (Allison et al., 2007, Larsen & Geenen, 2005), both of which were prevalent in the present study (obesity 56%, diabetes 26%).

Results further indicated that the combined effect of cumulative trauma, all forms of coping styles (emotions, task, and avoidant), and binge eating significantly predicted mental health (40%). Emotion-focused coping accounted for the most variance in mental health ( $\beta = .46$ ), followed by binge eating ( $\beta = .22$ ), avoidance-focused coping ( $\beta = .22$ ), cumulative trauma ( $\beta = .13$ ), and task-focused coping ( $\beta = .13$ ). This finding indicates that the combined effect of the amount of trauma an individual is exposed to throughout his or her life, the thoughts and behaviors surrounding binge eating, and the way an individual deals with stressful situations [i.e. by attempting to solve the problem through tasks and planning (task-focused coping), by engaging in cognitions and activities which are aimed at avoiding the problematic situation

either through distraction or creating social diversions to avoid the stress (avoidance-focused coping), or by blaming or criticizing oneself, experiencing negative emotions, and fantasizing about possible reactions in an attempt to deal with the stress (emotion-focused coping)] can predict the mental health of individuals.

The findings of the present study further add to the documented relationship between binge eating, trauma exposure and mental health. The influence of binge eating in the prediction of general health is consistent with prior literature that has found relationships between childhood abuse and binge eating (Harrington et al., 2006, Rohde et al., 2008). Furthermore, depression has been found to correlate with childhood abuse in a sample of adults with binge eating disorder (Allison et al., 2007). In a sample of American Indians, Dorton (2008) found a relationship between binge eating and emotional distress.

The results of the present study are consistent with Baschnagel, Gudmundsdottir, Hawk, and Beck (2009)'s study that individuals who used more emotion-focused coping experienced more symptoms of Post Traumatic Stress Disorder following a traumatic event. Staiger et al. (2009) also reported the relationship between emotion-focused coping and mental illness and also found higher levels of alcohol and drug usage in adolescents who primarily used emotion-focused coping. Furthermore, the findings of the present study are consistent with the findings of Robinson (2005) in that both studies found that emotions-focused coping accounted for more variance in mental health than task-focused and avoidant-focused in sample of American Indians.

It is possible that emotion-focused coping accounted for the most variance in the prediction of mental health due to its resultant impact on the limbic system and the autonomic nervous system, which are the primary neurological mechanisms connected to the experience of

emotions (Boeree, 2009). It is likely that emotion-focused coping causes a higher level of emotional arousal (than task-focused and avoidant-focused) as the individual focuses on and experiences negative emotions, thus, increasing the stimulation to these neurological systems. Chronic and prolonged stimulation to the limbic system and autonomic nervous system can cause permanent alterations and deregulation to the secretion of the primary hormones associated with mood, especially if this occurs during childhood (Bevans et al., 2008, Ganzel et al., 2007, King et al., 2001). It is likely that the participants in the present study have experienced neurological alterations as 28% of participants experienced childhood physical abuse, 38% experienced childhood sexual abuse, 26% witnessed domestic violence in their homes as children, and 82% were raised in an impoverished home. As adults, 62% reported experiencing racism, 42% currently live in poverty, and 84% have experienced a sudden death of a loved one.

The results from the present study are consistent with Kira et al. (2008) who reported that familial abuse, depression, and Post Traumatic Stress Disorder were the largest predictors of poor physical health. However, the present study examined the impact on both mental and physical health, finding a larger influence on mental health than physical health. These findings were consistent with Teacher et al. (2006) who found that the risk for developing mental illness increased with the number of incidents, and severity of each incident, of childhood abuse. Although the present study examined multiple forms of trauma, the sample reported high rates of exposure to trauma as children. Of the sample, 28% of participants were physically abused as children, 26% witnessed domestic violence, 32% experienced sexual abuse, 6% experienced sexual contact by their parent, and 82% were raised in impoverished homes. There is very little research to date with Native American samples on the ramifications of experiencing multiple traumatic events. In a sample of 1,368 American Indians, Yuan et al. (2006) found that exposure

to childhood abuse and/or neglect increased the risk of revictimization in adulthood. The finding from Yuan et al. (2006) was mirrored in the present study, as there were high rates of trauma exposure in both childhood and in adulthood. In another study with 30 American Indian women, Bohn (2003) found every participant who experienced abuse as a child was revictimized as an adult; they also experienced more abusive occurrences than those who were not abused as children. Adaptation to chronically stressful conditions has been associated with Post Traumatic Stress Disorder, anxiety, and depression (Buckley & Kaloupek, 2001). Batten et al. (2004) found that one of the robust risk factors for developing adult depression was severe or prolonged stress during childhood. Additionally, the risk for psychopathology has been shown to increase with the number of incidents of abuse, as well as with the severity of each event (Drossman et al., 2000, Teacher et al., 2006).

The combined effect of cumulative trauma, all forms of coping styles, and binge eating did not significantly predict physical health. This is quite surprising as cumulative trauma predicted physical health (refer to hypothesis 3). This is also surprising due to the high reports of physical illness (hypertension 38%, cardiovascular disease 7%, and diabetes 26%). A possible explanation for this finding could be due to a limitation of the study. All measures of health (general, mental and physical) were self-report measures. The questions on the health instrument (SF-36) subscales are fairly general and do not ask for specific illnesses, leaving more flexibility in the interpretation and response to the questions. It is possible that a person with a chronic physical condition may rate him/herself higher (healthier) than their true status due to being habituated to their condition/ level of discomfort. Individuals with chronic conditions may rate themselves as “healthier” than someone who is newly diagnosed with an illness, as a person with a recent diagnosis is likely to have a heightened awareness to the change in their

health, impact on his or her life style, and discomfort he or she is experiencing due to a recency effect (Miller & Campbell, 1959).

### *Concluding Remarks and Clinical Implications*

The findings of the present study are particularly concerning as they further document the travesties experienced in Native communities. This contribution to the literature is invaluable as there is a great lack of research in this area. This study has provided evidence for the multifaceted and complex effects of repeated trauma exposure. This study has provided evidence for the health disparities experiences by this population, and has further shown the predictive power of trauma exposure in predicting both mental and physical illness. Furthermore, this study has provided evidence for the combined influence of coping styles, binge eating, and trauma exposure on general health, and particularly mental health. It is imperative that these finding be translated into services that are provided to Native communities, both in traditional health care setting as well as in mental health facilities. The disparities in Native communities have been well documented. For there to be progress in these disparities it is imperative to move towards a path of healing, healing of the soul wound of historic trauma (Duran & Duran, 1995).

It is vital that physicians begin to ask their patients about their trauma histories, eating habits, and ways of dealing with stress to begin healing Natives more efficiently, through a holistic perspective. As psychologists, it is imperative that we consider the physical conditions of our patients, as they have been shown to not only be manifestations of trauma and prolonged stress, but also to predict and exacerbate mental illness. The time has come to connect the fields of medicine and psychology and to treat holistically. American Indian tradition has long

held the belief that health is the interconnection between mind, body, and spirit. In the Western practices of healing, it is due time to practice our crafts in a culturally appropriate manner, to serve Native communities efficiently, effectively, and appropriately.

### *Limitations and Future Research*

There are a few limitations that are inherent in the design of this study. The design of this study is not experimental, thus the study lacks the ability to infer causality. The data being collected were self-report; therefore, factors such as social desirability or the sensitive nature of some of the information may influence the accuracy of the data. Access to participants is another limitation to this study. Potential participants may have experienced distrust towards the researcher who was an outsider to the community. Further distrust of the researcher may have been found in her association with a university. The wording of demographic questions also provided a limitation to this study. In particular, when asking about diagnoses of mental and physical illness, the questions asked for lifetime rather than current. Although this may not have affected the results of physical illness, as these conditions generally do not go away once they are present, it is likely to have impacted mental health, as these diagnosis can ebb and flow throughout one's life. A final limitation of the study is how general, mental, and physical health was measured. Although the instruments for measuring these variables were statistically sound, the instruments were self-report subjective measures aimed at perceptions of one's health. As the results indicated, one's perceptions of health may not actually coincide with objective measures of health (i.e. current medical diagnoses). Furthermore, given what we know about the sociopolitical impact of boarding schools (Colmant, Schultz, Robbins, Ciali, Dorton, & Rivera-Colmant, 2004; Robbins, Colmant, Dorton, Schultz, Colmant, & Ciali, 2006), a further limitation

of the study is that it is unknown whether the individual, their parent, and or grandparents attended a boarding school.

It recommended that future researchers examine the relationship between coping, binge eating and cumulative trauma exposure and the impact on the mental health of American Indian adults. More specifically, for future researchers to examine if coping styles and/or binge eating serve as moderating variables to physical and psychological health. Researchers could also consider other resiliency and risk factors to mental and physical health, upon the presence of trauma exposure. Future researchers could also examine particular types of trauma (i.e. childhood abuse, natural disasters, witnessing violence) in regards to their impact on health. The delineation of specific factors and their unique contributions to health could provide invaluable knowledge in process of alleviating the health disparities in American Indian communities. It is also recommended that future researchers consider gender difference among these variables, especially in regards to specific diagnosis or mental and physical illness



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## APPENDICES

### INFORMED CONSENT- Paper Version

**Project Title:** THE INFLUENCE OF TRUAMA, BINGE EATING, AND COPING STYLES ON THE GENERAL HEALTH OF AMERICAN INDIANS

**Investigator:** Andrea Nael, M.Ed. Doctoral Candidate of Counseling Psychology

**Purpose:** The purpose of this study is to look at the impact of different types of coping, eating behaviors, and trauma exposure on physical and mental health.

**Procedures:**

This study requires that you complete 5 short questionnaires. You will first be asked to complete four self-report instruments. You will then be asked basic demographic information such as your age, race or ethnicity, education, etc. Finally, return the survey in pre-paid, pre-addressed envelope that is provided by placing it in the nearest mailbox.

**Length of study:**

Voluntary participation in this study includes completing 5 short questionnaires with an estimated length of 30-45 minutes.

**Risks of Participation:**

The risks associated with this study are minimal. While some of the survey items ask about personal issues and potentially could trigger an uncomfortable emotional response in some individuals, this level of discomfort should not be any greater than those ordinarily encountered in daily life. Moreover, you may simply not answer any survey items that you perceive as threatening and/or discomforting; you may also stop at any time. If some item is distressing so that you wish to talk to someone about it, you may contact the investigator at [omidyna@okstate.edu](mailto:omidyna@okstate.edu) or 405- 625-7774 and an appropriate referral can be made in your area.

**Benefits:**

The benefits of participation include a payment of \$5 in the form of a Wal-mart gift card. The results from this study will help health care providers understand more about the influence of mental health on physical health. This study will help mental health providers better understand the impact of certain life events and ways in which people deal with stress.

**Confidentiality:**

All information provided for this study will be held strictly confidential. There are several ways in which your confidentiality will be upheld. No identifying information will be asked from you on any question. All participants will be randomly assigned a number. All the information provided for this study will be kept in a locked filing cabinet and will only be accessible to the researchers.

**Compensation:** The benefits of participation include a \$5 Wal-mart gift card.

**Contacts:**

Andrea Nael at 405-625-7774 or [omidyna@okstate.edu](mailto:omidyna@okstate.edu)

If you have questions about your rights as a research volunteer, you may contact Dr. Shelia Kennison, IRB Chair, 219 Cordell North, Stillwater, OK 74078, 405-744-1676 or [irb@okstate.edu](mailto:irb@okstate.edu).

It is recommended that you keep this document for your records.



## PARTICIPANT INFORMATION SHEET — ON-LINE SURVEY

**Project Title:** THE INFLUENCE OF TRAUMA, BINGE EATING, AND COPING STYLES ON THE GENERAL HEALTH OF NATIVE AMERICANS

**Investigator(s):** Andrea Nael, M.Ed., Counseling Psychology Doctoral Student

**Purpose:** This is a web-based survey research study to examine and to assess how methods of coping, eating habits, and life experiences possibly impact the general health of American Indian adults.

**Procedures:** Proceeding with the web-based survey will imply your consent to participate in this study. You will answer questions online. You will first be asked to complete four self-report instruments. You will then be asked basic demographic information such as your age, race or ethnicity, education, etc. The amount of time to complete the entire survey should take between 30 and 45 minutes.

**Risks of Participation:** The risks associated with this study are minimal. While some of the survey items ask about personal issues and potentially could trigger an uncomfortable emotional response in some individuals, this level of discomfort should not be any greater than those ordinarily encountered in daily life. Moreover, you may simply not answer any survey items that you perceive as threatening and/or discomfoting; you may also stop at any time. If some item is distressing so that you wish to talk to someone about it, you may contact the investigator at [omidyna@okstate.edu](mailto:omidyna@okstate.edu) or 405- 625-7774 and an appropriate referral can be made in your area.

**Benefits:** The results from this study will help health care providers understand more about the influence of mental health on physical health particularly for individuals from a Native American heritage. This study will help mental health providers better understand the impact of certain life events and ways in which American Indians deal with stress.

**Compensation:** As an offering of thanks for participating in the study I am offering a \$5 Wal-Mart Gift Card.

**Confidentiality:** You will need to type your name/contact information at the end of the survey in order

to be entered into the drawing for a \$5 Wal-mart gift card. YOU WILL ENTER YOUR CONTACT INFORMATION ON A DIFFERENT WEBSITE THAT WILL **NOT** BE CONNECTED WITH YOUR ANSWERS TO THE STUDY. Your survey answers will be stored on a secure web server in the College of Education. Your answers will then be transferred to a spreadsheet for data analysis; your identity is not connected to your answers. At the end of the study all information will be removed from the website, downloaded to a CD and the CD will be kept in a locked file cabinet in an office of the faculty investigator. All of this information will become the property of the primary and secondary investigators for a period of not less than 5 years but not more than 10 years. At the end of the 10 years the CDs and any spreadsheets will be destroyed. No information on the spreadsheet or CD can link you to process and data collection will be observed or monitored by research oversight staff responsible for safeguarding the rights and wellbeing of people who participate in research.

**Contacts:** If you have any questions or concerns about this project, please contact Andrea Nael, M.Ed., 405- 625-7774, [omidyna@okstate.edu](mailto:omidyna@okstate.edu). If you have questions about your rights as a research volunteer, you may contact Dr. Shelia Kennison, IRB Chair, 219 Cordell North, Stillwater, OK 74078, 405-7443377 or [irb@okstate.edu](mailto:irb@okstate.edu).

**Participant Rights:** Your participation in this research is voluntary. You can discontinue the survey at any time without reprisal or penalty. You may also skip questions that you do not wish to answer. However, to receive the opportunity to be entered into the drawing for the \$5 VISA Gift Cards, you need to continue to the end of the survey and type in your name/contact information where indicated.

**Consent:** I have read and fully understand the consent form. I understand that my participation is voluntary. By clicking below, I am indicating that I freely and voluntarily and agree to participate in this study and I also acknowledge that I am at least 18 years of age.

It is recommended that you print a copy of this consent page for your records before you begin the study by clicking below. <http://www.surveymonkey.com/s/aistudy>

E-mail Solicitation:

#### SOLICITATION TO PARTICIPATE IN A RESEARCH STUDY

Hello! My name is Andrea Nael and I am a member of the Cherokee Nation of Oklahoma. I am currently a graduate student in Counseling Psychology at Oklahoma State University. As part of my requirements to graduate, I am working on my dissertation with my advisor, Dr. Julie Dorton Clark, a member of the Kiowa tribe of Oklahoma. My dissertation is focusing on life experiences, eating habits, ways of dealing with stressful situations, and general health in American Indian adults. As an American Indian adult, you are being asked to voluntarily participate in this research study. Please read the following information that explains the study. At the end of this email is a link you may click on that will take you to the actual study should you decide to participate. To be eligible to participate, you must self-identify as American Indian/ Native American and be 18-years or older. You may quit the study at any time without penalty.

As an offering of thanks for participating in the study I am offering a \$5 Wal-Mart Gift Card. At the end of the study you will have the option to enter your contact information to receive the gift card by mail. **YOU WILL BE ASKED TO ENTER YOUR CONTACT INFORMATION ON A DIFFERENT WEBSITE THAT WILL NOT BE CONNECTED WITH YOUR ANSWERS TO THE STUDY.**

You will answer all questions online. You will first be asked basic demographic information such as your age, race or ethnicity, education, etc. Then you will be asked to complete four self-report instruments. The amount of time to complete the entire survey should take between 30 and 45 minutes.

**I WOULD GREATLY APPRECIATE IF YOU COULD PLEASE FORWARD THIS EMAIL TO PARTICPATE IN THE STUDY TO PEOPLE YOU MAY KNOW WHO IDENTIFY AS AMERICAN INDIAN/NATIVE AMERICAN AND MAY BE WILLING TO PARTICIPATE.**

Please click on the link below to continue:

<http://www.surveymonkey.com/s/aistudy>

Thank you,

Andrea Nael, M.Ed.

[omidyna@okstate.edu](mailto:omidyna@okstate.edu)

405/625-7774

Recruitment Flyer:

Are you 18-years or old,  
American Indian, and  
interested in participating  
in research?

Then come help a Native  
student with her  
dissertation!

The study will ask you questions about your life experiences, your eating habits, the ways you deal with stress, and your current health. It will take about 30-45 minutes to complete the study. For your participation in the study, you will receive a \$5 Wal-Mart gift card!

\*\*Please see the research table to get a packet for the study.

\*\* The study can also be accessed on-line at  
<http://www.surveymonkey.com/s/aistudy>

For more information about the study or participation, please call Andrea Nael at (405) 625-7774 or e-mail at [omidyna@okstate.edu](mailto:omidyna@okstate.edu).

ID Number: \_\_\_\_\_

### Cumulative Trauma Scale

**Directions:**

**Many people have experienced different kinds of events and situations in their lives. These following questions will ask you about some specific events please indicate how many times happened if happened and how much it affected you negatively or positively on the provided scale.**

1. In my life I witnessed or experienced natural disasters, e.g. earthquake, hurricane, tornado or flood.

<b>Never</b>		<b>once</b>	<b>two times</b>	<b>three times</b>	<b>many times.</b>	
If this happened, how has this affected you?						
Extremely positive	Very positive	Somewhat positive	Neutral	Somewhat Negative	Very Negative	Extremely Negative
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>

2. I have experienced a life threatening accidents, e.g., motor vehicle accidents.

<b>Never</b>		<b>once</b>	<b>two times</b>	<b>three times</b>	<b>many times.</b>	
If this happened, how has this affected you?						
Extremely positive	Very positive	Somewhat positive	Neutral	Somewhat Negative	Very Negative	Extremely Negative
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>

3. I have been involved in or witnessed a war or combat.

<b>Never</b>		<b>once</b>	<b>two times</b>	<b>three times</b>	<b>many times.</b>	
If this happened, how has this affected you?						

Extremely positive	Very positive	Somewhat positive	Neutral	Somewhat Negative	Very Negative	Extremely Negative
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>

4. I have experienced sudden death of one of my parents or of close friend or loved ones.

**Never                      once   two times   three times   many times.**

If this happened, how much this affected you:

Extremely positive	Very positive	Somewhat positive	Neutral	Somewhat Negative	Very Negative	Extremely Negative
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>

5. I have experienced a life threatening or permanently disabling event for loved ones (e.g., parents, close friends).

**Never                      once   two times   three times   many times.**

If this happened how, has this affected you?

Extremely positive	Very positive	Somewhat positive	Neutral	Somewhat Negative	Very Negative	Extremely Negative
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>

**6. I have experienced life-threatening illness or permanently disabling event (e.g., cancer, stroke, serious chronic illness or major injury).**

**Never                      once   two times   three times   many times.**

If this happened, how has this affected you?

Extremely positive	Very positive	Somewhat positive	Neutral	Somewhat Negative	Very Negative	Extremely Negative
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>

7. I have experienced robbery involving a weapon (robbed or mugged).

<b>Never</b>	<b>once</b>	<b>two times</b>	<b>three times</b>	<b>many times.</b>		
If this happened, how much this affected you:						
Extremely positive	Very positive	Somewhat positive	Neutral	Somewhat Negative	Very Negative	Extremely Negative
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>

8. I witnessed severe assault of acquaintance or stranger (e.g., got shot, stabbed or severely beaten up).

<b>Never</b>	<b>once</b>	<b>two times</b>	<b>three times</b>	<b>many times</b>		
If this happened, how has this affected you?						
Extremely positive	Very positive	Somewhat positive	Neutral	Somewhat Negative	Very Negative	Extremely Negative
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>

9. I have been threatened to be killed or to be seriously harmed.

<b>Never</b>	<b>once</b>	<b>two times</b>	<b>three times</b>	<b>many times.</b>		
If this happened, how has this affected you?						
Extremely positive	Very positive	Somewhat positive	Neutral	Somewhat Negative	Very Negative	Extremely Negative
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>

10. I have been physically abused, pushed hard enough to cause injury or beaten up by a caretaker, e.g., parent...

<b>Never</b>	<b>once</b>	<b>two times</b>	<b>three times</b>	<b>many times.</b>		
If this happened, how has this affected you?						
Extremely positive	Very positive	Somewhat positive	Neutral	Somewhat Negative	Very Negative	Extremely Negative
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>

11. I witnessed heard one of my parents or caregivers hitting, hurting and / or threatening to kill my other parent or caregiver.



<b>Never</b>	<b>once</b>	<b>two times</b>	<b>three times</b>	<b>many times.</b>		
If this happened, how has this affected you?						
Extremely positive	Very positive	Somewhat positive	Neutral	Somewhat Negative	Very Negative	Extremely Negative
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>

12. I was led to sexual contact by someone older than me.

<b>Never</b>	<b>once</b>	<b>two times</b>	<b>three times</b>	<b>many times.</b>		
If this happened, how has this affected you?						
Extremely positive	Very positive	Somewhat positive	Neutral	Somewhat Negative	Very Negative	Extremely Negative
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>

13. I was sexually abused or raped or involved in unwanted sex with one or more persons.

<b>Never</b>	<b>once</b>	<b>two times</b>	<b>three times</b>	<b>many times.</b>		
If this happened, how has this affected you?						
Extremely positive	Very positive	Somewhat positive	Neutral	Somewhat Negative	Very Negative	Extremely Negative
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>

14. I have been jailed and/ or tortured.

<b>Never</b>	<b>once</b>	<b>two times</b>	<b>three times</b>	<b>many times.</b>		
If this happened, how has this affected you?						
Extremely positive	Very positive	Somewhat positive	Neutral	Somewhat Negative	Very Negative	Extremely Negative
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>

15. My mother has abandoned or left/ or separated from me when I was young.

<b>Never</b>	<b>once</b>	<b>two times</b>	<b>three times</b>	<b>many times.</b>		
If this happened, how has this affected you?						
Extremely positive	Very positive	Somewhat positive	Neutral	Somewhat Negative	Very Negative	Extremely Negative
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>

16. My father has abandoned or left me or separated from me when I was young.

<b>Never</b>	<b>once</b>	<b>two times</b>	<b>three times</b>	<b>many times.</b>		
If this happened, how has this affected you?						
Extremely positive	Very positive	Somewhat positive	Neutral	Somewhat Negative	Very Negative	Extremely Negative
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>

17. I was put down, threatened or discriminated against by some others negative attitudes, stereotypes or actions because of my ethnicity, race, culture, religion or national origin.

<b>Never</b>	<b>once</b>	<b>two times</b>	<b>three times</b>	<b>many times.</b>		
If this happened, how has this affected you?						
Extremely positive	Very positive	Somewhat positive	Neutral	Somewhat Negative	Very Negative	Extremely Negative
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>

18. My parents went through divorce and or separation.

<b>Never</b>	<b>once</b>	<b>two times</b>	<b>three times</b>	<b>many times.</b>		
If this happened, how has this affected you?						
Extremely positive	Very positive	Somewhat positive	Neutral	Somewhat Negative	Very Negative	Extremely Negative
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>

19. My race has history of being oppressed, discriminated against or threatened by genocide.  
Never (1) little like it (2) partially like it (3) moderately like it (4) very much like it (5)

If this happened, how has this affected you?

Extremely positive	Very positive	Somewhat positive	Neutral	Somewhat Negative	Very Negative	Extremely Negative
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>

20. I have experienced a nervous breakdown or felt that I was about to have one (e.g., about to lose control) due to seemingly small but recurrent or unremitting hassles or chronic stressors.

**Never                      once   two times           three times           many times.**

If this happened, how has this affected you?

Extremely positive	Very positive	Somewhat positive	Neutral	Somewhat Negative	Very Negative	Extremely Negative
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>

21. At least one of my parents or siblings was involved in war, combat, or being tortured.

**Never                      once   two times           three times           many times.**

If this happened, how has this affected you?

Extremely positive	Very positive	Somewhat positive	Neutral	Somewhat Negative	Very Negative	Extremely Negative
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>

22. I experienced frequent failures in school.

**Never                      once   two times           three times           many times.**

If this happened, how has this affected you?

Extremely positive	Very positive	Somewhat positive	Neutral	Somewhat Negative	Very Negative	Extremely Negative
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>

23. I was uprooted and forced to move from my favorite environment in town, village. or country.

Never                      once    two times                      three times                      many times.

If this happened, how has this affected you?

Extremely positive	Very positive	Somewhat positive	Neutral	Somewhat Negative	Very Negative	Extremely Negative
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>

24. I have been physically attacked, beaten up by another stronger person or group of persons, and caused injury.

Never                      once    two times                      three times                      many times.

If this happened, how has this affected you?

Extremely positive	Very positive	Somewhat positive	Neutral	Somewhat Negative	Very Negative	Extremely Negative
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>

25. I was led to sexual contact by one of my caregiver/ parents.

**Never                      once    two times                      three times                      many times.**

If this happened, how has this affected you?

Extremely positive	Very positive	Somewhat positive	Neutral	Somewhat Negative	Very Negative	Extremely Negative
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>

26. I was put down, denied my rights, or discriminated against in the society (not by family members), by some others' negative attitudes, stereotypes or actions, or by institutions because of my gender (being a girl/ woman or a boy/ man).

**Never                      once    two times                      three times                      many times.**

If this happened, how has this affected you?

Extremely positive	Very positive	Somewhat positive	Neutral	Somewhat Negative	Very Negative	Extremely Negative
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>

27. I experienced serious rejection or failure in my relationships.

**Never                      once    two times                      three times                      many times.**

If this happened, how has this affected you?

Extremely positive	Very positive	Somewhat positive	Neutral	Somewhat Negative	Very Negative	Extremely Negative
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>

28. I experienced a loss of child or spouse.

**Never                      once   two times           three times           many times.**

If this happened, how has this affected you?

Extremely positive	Very positive	Somewhat positive	Neutral	Somewhat Negative	Very Negative	Extremely Negative
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>

29. I experienced employment termination, been laid off, or failed in business.

**Never                      once   two times           three times           many times.**

If this happened, how has this affected you?

Extremely positive	Very positive	Somewhat positive	Neutral	Somewhat Negative	Very Negative	Extremely Negative
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>

30. I remarried.

**Never                      once   two times           three times           many times.**

If this happened, how has this affected you?

Extremely positive	Very positive	Somewhat positive	Neutral	Somewhat Negative	Very Negative	Extremely Negative
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>

31. I experienced being part of poor family with many hardship.

0 Never poor (1) some what poor (2) real poor (3) very poor (4) extremely poor

If this happened, how has this affected you?

Extremely positive	Very positive	Somewhat positive	Neutral	Somewhat Negative	Very Negative	Extremely Negative
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>



ID Number: \_\_\_\_\_

### Binge Eating Scale

**Directions:**

**Below are groups of numbered statements. Read all of the statements in each group and mark the one that best describes your eating habits.**

1.

- a) I don't feel self-conscious about my weight or body size when I'm with others.
- b) I feel concerned about how I look to others, but it normally does not make me feel disappointed with myself.
- c) I do get self-conscious about my appearance and weight, which makes me feel disappointed in myself.
- d) I feel very self-conscious about my weight and frequently; I feel intense shame and disgust for myself. I try to avoid social contacts because of my self-consciousness.

2.

- a) I don't have any difficulty eating slowly in the proper manner.
- b) Although I seem to "gobble down" foods, I don't end up feeling stuffed because of eating too much.
- c) At times, I tend to eat quickly and then, I feel uncomfortably full afterwards.
- d) I have the habit of bolting down my food, without really chewing it. When this happens I usually feel uncomfortably stuffed because I've eaten too much.

3.

- a) I feel capable to control my eating urges when I want to.
- b) I feel like I have failed to control my eating more than the average person.
- c) I feel utterly helpless when it comes to feeling in control of my eating urges.
- d) Because I feel so helpless about controlling my eating I have become very desperate about trying to get in control.

4.

- a) I don't have the habit of eating when I'm bored.
- b) I sometimes eat when I'm bored, but often I'm able to "get busy" and get my mind off food.
- c) I have a regular habit of eating when I'm bored, but occasionally, I can use some other activity to get my mind off eating.
- e) I have a strong habit of eating when I'm bored. Nothing seems to help me break the habit.

5.

- a) I'm usually physically hungry when I eat something.
- b) Occasionally, I eat something on impulse even though I really am not hungry.
- c) I have the regular habit of eating foods, that I might not really enjoy, to satisfy a hungry feeling even though physically, I don't need the food.
- d) Even though I'm not physically hungry, I get a hungry feeling in my mouth that only seems to be satisfied when I eat a food, like a sandwich, that fills my mouth.



Sometimes, when I eat the food to satisfy my mouth hunger, I then spit the food out so I won't gain weight.

6.

- a) I don't feel any guilt or self-hate after I overeat.
- b) After I overeat, occasionally I feel guilt or self-hate.
- c) Almost all the time I experience strong guilt or self-hate after I overeat.

7.

- a) I don't lose total control of my eating when dieting even after periods when I overeat.
- b) Sometimes when I eat a "forbidden food" on a diet, I feel like I "blew it" and eat even more.
- c) Frequently, I have the habit of saying to myself, "I've blown it now, why not go all the way" when I overeat on a diet. When that happens I eat even more.
- d) I have a regular habit of starting strict diets for myself, but I break the diets by going on an eating binge. My life seems to be either a "feast" or "famine."

8.

- a) I rarely eat so much food that I feel uncomfortably stuffed afterwards.
- b) Usually about once a month, I eat such a quantity of food, I end up feeling very stuffed.
- c) I have regular periods during the month when I eat large amounts of food, either at mealtime or at snacks.

- d) I eat so much food that I regularly feel quite uncomfortable after eating and sometimes a bit nauseous.

9.

- a) My level of calorie intake does not go up very high or go down very low on a regular basis.
- b) Sometimes after I overeat, I will try to reduce my caloric intake to almost nothing to compensate for the excess calories I've eaten.
- c) I have a regular habit of overeating during the night. It seems that my routine is not to be hungry in the morning but overeat in the evening.
- d) In my adult years, I have had week-long periods where I practically starve myself. This follows periods when I overeat. It seems I live a life of either "feast or famine."

10.

- a) I usually am able to stop eating when I want to. I know when "enough is enough."
- b) Every so often, I experience a compulsion to eat which I can't seem to control.
- c) Frequently, I experience strong urges to eat which I seem unable to control, but at other times I can control my eating urges.
- d) I feel incapable of controlling urges to eat. I have a fear of not being able to stop eating voluntarily.

11.

- a) I don't have any problem stopping eating when I feel full.

- b) I usually can stop eating when I feel full but occasionally overeat leaving me feeling uncomfortably stuffed.
- c) I have a problem stopping eating once I start and usually I feel uncomfortably stuffed after I eat a meal.
- d) Because I have a problem not being able to stop eating when I want, I sometimes have to induce vomiting to relieve my stuffed feeling.

12.

- a) I seem to eat just as much when I'm with others (family, social gatherings) as when I'm by myself.
- b) Sometimes, when I'm with other persons, I don't eat as much as I want to eat because I'm self-conscious about my eating.
- c) Frequently, I eat only a small amount of food when others are present, because I'm very embarrassed about my eating.
- d) I feel so ashamed about overeating that I pick times to overeat when I know no one will see me. I feel like a "closet eater."

13.

- a) I eat three meals a day with only an occasional between meal snack.
- b) I eat 3 meals a day, but I also normally snack between meals.
- c) When I am snacking heavily, I get in the habit of skipping regular meals.
- d) There are regular periods when I seem to be continually eating, with no planned meals.

14.

- a) I don't think much about trying to control unwanted eating urges.
- b) At least some of the time, I feel my thoughts are pre-occupied with trying to control my eating urges.
- c) I feel that frequently I spend much time thinking about how much I ate or about trying not to eat anymore.
- d) It seems to me that most of my waking hours are pre-occupied by thoughts about eating or not eating. I feel like I'm constantly struggling not to eat.

15.

- a) I don't think about food a great deal.
- b) I have strong cravings for food but they last only for brief periods of time.
- c) I have days when I can't seem to think about anything else but food.
- d) Most of my days seem to be pre-occupied with thoughts about food. I feel like I live to eat

16.

- a) I usually know whether or not I'm physically hungry. I take the right portion of food to satisfy me.
- b) Occasionally, I feel uncertain about knowing whether or not I'm physically hungry. At these times it's hard to know how much food I should take to satisfy me.
- c) Even though I might know how many calories I should eat, I don't have any idea what is a "normal" amount of food for me.

ID Number: \_\_\_\_\_

### Demographics

**Directions:**

**Please fill in the blank or circle the answer that best describes you.**

1. Are you an enrolled member of an American Indian Tribe?
  - a. Yes
  - b. No
  
2. What Tribe are you enrolled in?  
\_\_\_\_\_
  
3. What is your blood quantum?
  - a. Full
  - b.  $\frac{3}{4}$
  - c.  $\frac{1}{2}$
  - d.  $\frac{1}{4}$
  - e. Less than  $\frac{1}{4}$
  - f. Unsure
  
4. How old are you?
  - a. 18-21
  - b. 22-29
  - c. 30-39
  - d. 40-49
  - e. 50-59
  - f. 60-69
  - g. 70 or older

5. What is your gender?
  - a. Male
  - b. Female
  - c. Transgender
  - d. Two-spirit
  
6. What is your sexual/affectional orientation?
  - a. Heterosexual/straight
  - b. Gay/Lesbian
  - c. Bisexual
  - d. Unsure/questioning
  
7. What is your highest level of education?
  - a. 0-5 years (elementary school)
  - b. 6-8 years (junior high)
  - c. 9-12 years (high school)
  - d. Vo-tech
  - e. Community college (2 year degree)
  - f. Some college
  - g. College graduate (4 year degree)
  - h. Graduate/Professional degree
  
8. What kind of area do you live in?
  - a. Reservation (or within tribal land or territory)
  - b. Rural (small town)
  - c. Urban (medium to large city)
  
9. What is your total household income?
  - a. Less than \$10,000
  - b. \$10,001 to \$15,000
  - c. \$15,001 to \$25,000
  - d. \$25,001 to \$35,000
  - e. \$35,001 to \$45,000
  - f. \$45,001 to \$55,000
  - g. \$55,001 to \$65,000
  - h. Above \$ 65,000
  
10. Have you ever been told by a medical professional that you have any of the following medical conditions? **(PLEASE MARK ALL THAT APPLY)**  
 Heart Disease  
 Diabetes  
 High Blood Pressure  
 Hypertension  
 Other (please specify): \_\_\_\_\_

11. Have you ever been told by a medical professional that you have any of the following psychological conditions? **(PLEASE MARK ALL THAT APPLY)**

Depression

Anxiety

Post Traumatic Stress Disorder

Bi-Polar Disorder

Alcohol Dependency

Eating Disorder

Other (please specify): \_\_\_\_\_

\*\* Please note that the Coping Inventory for Stressful Situation and SF-36 v2 have been removed from this section due to Copy Right Laws of these instruments.

Oklahoma State University Institutional Review Board

Date: Tuesday, December 14, 2010  
IRB Application No ED10136  
Proposal Title: The Influence of Trauma, Binge Eating, and Coping Styles on the General Health of American Indians

Reviewed and Processed as: Expedited

**Status Recommended by Reviewer(s): Approved Protocol Expires: 12/13/2011**

Principal Investigator(s):

Andrea Nael 421 Willard Stillwater, OK 74078	Julie Dorton Clark 421 Willard Stillwater, OK 74078
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The IRB application referenced above has been approved. It is the judgment of the reviewers that the rights and welfare of individuals who may be asked to participate in this study will be respected, and that the research will be conducted in a manner consistent with the IRB requirements as outlined in section 45 CFR 46.

The final versions of any printed recruitment, consent and assent documents bearing the IRB approval stamp are attached to this letter. These are the versions that must be used during the study.

As Principal Investigator, it is your responsibility to do the following:

1. Conduct this study exactly as it has been approved. Any modifications to the research protocol must be submitted with the appropriate signatures for IRB approval.
2. Submit a request for continuation if the study extends beyond the approval period of one calendar year. This continuation must receive IRB review and approval before the research can continue.
3. Report any adverse events to the IRB Chair promptly. Adverse events are those which are unanticipated and impact the subjects during the course of this research; and
4. Notify the IRB office in writing when your research project is complete.

Please note that approved protocols are subject to monitoring by the IRB and that the IRB office has the authority to inspect research records associated with this protocol at any time. If you have questions about the IRB procedures or need any assistance from the Board, please contact Beth McTernan in 219 Cordell North (phone: 405-744-5700, [beth.mcternan@okstate.edu](mailto:beth.mcternan@okstate.edu)).

Sincerely,



Shelia Kennison, Chair  
Institutional Review Board



Table 1

*Frequency Data of Demographic Information*

<b>Category</b>	<b>N</b>	<b>%</b>
<b>Age</b>		
18-21	20	6.3
22-29	56	17.7
30-39	56	17.7
40-49	53	16.8
50-59	66	20.9
60-69	33	10.4
70 or older	6	1.9
<b>Gender</b>		
Male	102	32.3
Female	188	59.5
<b>Enrolled in a Tribe</b>	270	85.4
<b>Sexual Orientation</b>		
Heterosexual	279	88.3
Gay/Lesbian	2	0.6
Bisexual	4	1.3
Questioning	5	1.6
<b>Education</b>		
0-5 years	1	0.3

6-8 years	2	0.6
9-12 years	86	27.2
Vo-Tech	24	7.6
Community College	34	10.8
Some College	80	25.3
College Graduate	38	12
Graduate Degree/Professional Degree	25	7.9
<b>Type of Area Lived In</b>		
Reservation/Tribal Land	58	18.4
Rural	129	40.8
Urban	103	32.6
<b>Household Income</b>		
Less than \$10,000	42	13.3
\$10,000 - \$15,000	32	10.1
\$15,001 - \$25,000	50	15.8
\$25,001 - \$35,000	44	13.9
\$35,001 - \$45,000	30	9.5
\$45,001 - \$55,000	29	9.2
\$55,001 - \$65,000	26	8.2
Above \$65,000	37	11.7
<b>Physical Illness</b>		
Cardiovascular Disease	19	7
Diabetes	81	25.6
Hypertension	109	37.5

<b>Mental Illness</b>		
Depression	73	23.1
Anxiety	59	18.7
PTSD	15	4.7
Bi Polar	10	3.2
Alcohol Dependency	14	4.4
Eating Disorder	6	1.9

Table 2

*Means and Standard Deviations of Lifetime Traumatic Exposure from the Cumulative Trauma**Scale*

<b>Collective Identity Trauma</b>	<b><i>M</i></b>	<b><i>SD</i></b>
Put down, threatened or discriminated against because of my ethnicity, race, culture	1.89	1.80
Race has history of being oppressed, discriminated against or threatened by genocide	0.31	0.46
Experienced being part of poor family with many hardship	1.33	1.10

<b>Attachment Trauma</b>	<b><i>M</i></b>	<b><i>SD</i></b>
Mother has abandoned or left or separated from when I was young	0.49	1.11
Father has abandoned or left or separated from when I was young	0.68	1.24

<b>Personal Identity Trauma</b>	<b><i>M</i></b>	<b><i>SD</i></b>
Led to sexual contact by someone older than me	0.69	1.25
Sexually abused or raped or involved in unwanted sex with one or more persons	0.43	0.99
Led to sexual contact by one of my caregiver/ parents	0.14	0.68
Physically attacked and caused injury	0.83	1.38
Experienced serious rejection or failure in relationships	1.24	1.45
Physically abused, pushed hard enough to cause injury or beaten up by a caretaker	0.81	1.45

<b>Achievement Trauma</b>	<b><i>M</i></b>	<b><i>SD</i></b>
Experienced frequent failures in school	1.12	1.49
Experienced employment termination, been laid off, or failed in business	1.02	1.21

**Survival Trauma**

	<i>M</i>	<i>SD</i>
Witnessed or experienced natural disasters	1.75	1.46
Experienced a life threatening accident	1.34	1.30
Involved in or witnessed a war or combat	0.26	0.82
Experienced life-threatening illness or permanently disabling event	0.95	1.24
Experienced robbery involving a weapon	0.20	0.5
Threatened to be killed or to be seriously harmed	1.00	1.4

**Secondary Trauma**

	<i>M</i>	<i>SD</i>
Experienced sudden death of a parent or of close friend or loved one	2.35	1.49
Experienced a life threatening or permanently disabling event of a loved one	1.38	1.4
Witnessed severe assault of acquaintance or stranger	1.02	1.44
Witnessed / heard parents hitting, hurting and / or threatening to kill other parent	0.72	1.41
Parents went through divorce and or separation	0.71	0.98
Parents or siblings was involved in war, combat, or being tortured	0.60	0.97
Experienced a loss of child or spouse	0.47	0.89

Table 3

*Prediction of General Health*

Variable	Beta	B	SE
Cumulative Trauma	-.23	-.24	.06
R <sup>2</sup>	.05		
F	16.29**		

*Note* \*\*  $p < .001$

Table 4

*Prediction of Mental Health*

Variable	Beta	B	SE
Cumulative Trauma	-.23	-.20	.05
R2	.06		
F	16.73**		

*Note* \*\*  $p < .001$

Table 5

*Prediction of Physical Health*

Variable	Beta	B	SE
Cumulative Trauma	-.12	-.19	.09
R <sup>2</sup>	.02		
F	4.42*		

*Note* \*  $p < .05$



Table 6

*Predictors of General Health*

Variable	Beta	B	SE
Coping-Task	.12*	.21	.10
Coping-Avoidance	.10	.19	.11
Coping-Emotion	-.10	-.16	.10
Cumulative Trauma	-.18*	-.19	.06
Binge Eating	-.24**	-.59	.15
R <sup>2</sup>	.16		
F	11.24**		

*Note* \*\*  $p < .001$ , \*  $p < .05$

Table 7

*Predictors of Mental Health*

Variable	Beta	B	SE
Coping-Task	.13*	.19	.07
Coping-Avoidance	.22**	.34	.08
Coping-Emotion	-.46*	-.62	.07
Cumulative Trauma	-.13*	-.11	.04
Binge Eating	-.22**	-.45	.10
R <sup>2</sup>	.40		
F	38.61**		

*Note* \*\*  $p < .001$ , \*  $p < .05$

Table 8

*Predictors of Physical Health*

Variable	Beta	B	SE
Coping-Task	.07	.19	.16
Coping-Avoidant	.02	.04	.18
Coping-Emotion	-.03	-.06	.16
Cumulative Trauma	-.12*	-.18	.09
Binge Eating	-.03	-.10	.23
R <sup>2</sup>	.028		
F	1.39		

*Note* \*  $p = .05$

VITA

Andrea Zainab Omidy Nael

Candidate for the Degree of

Doctor of Philosophy

Thesis: THE INFLUENCE OF CUMULATIVE TRAUMA, BINGE EATING, AND  
COPING STYLES ON THE GENERAL HEALTH OF AMERICAN INDIANS

Major Field: Counseling Psychology

Biographical:

Education:

Completed the requirements for the Doctor of Philosophy in Counseling  
Psychology at Oklahoma State University, Stillwater, Oklahoma in July 2012.

Completed the requirements for the Master of Science/Arts in your major at  
University/College, City, State/Country in Year.

Completed the requirements for the Bachelor of Science/Arts in your major at  
University/College, City, State/Country in Year.

Experience:

APA Accredited Pre-Doctoral Internship completed July 2012.

Center for Multicultural Training in Psychology, Boston Medical Center / Boston  
University Medical Campus

Training sites: Massachusetts Mental Health Center / Harvard Medical School and  
SPARK Center / Department of Pediatrics / Boston University Medical Campus

Training Director: Kermit Crawford, Ph.D.

Name: Andrea Zainab Omidy Nael

Date of Degree: July, 2012

Institution: Oklahoma State University

Location: Stillwater, Oklahoma

Title of Study: THE INFLUENCE OF CUMULATIVE TRAUMA, BINGE EATING,  
AND COPING STYLES ON THE GENERAL HEALTH OF  
AMERICAN INDIANS

Pages in Study: 102

Candidate for the Degree of Doctor of Philosophy

Major Field: Counseling Psychology

Scope and Method of Study:

The purpose of this study was to investigate three possible factors that may be associated with poor mental and physical health within American Indian communities. Data were gathered from 302 American Indian adults living in the United States. Participants' style of coping, cumulative trauma history, and eating behaviors were explored in order to investigate the influence of these variables on current general mental and physical health. Multiple regression analyses were conducted to evaluate the relationships among the variables.

Findings and Conclusions:

Analysis revealed that cumulative trauma significantly accounted for 5.3% of the variance in general health ( $F(1, 290) = 4.036, p < .001$ ), 5.5% of the variance in mental health ( $F(1, 290) = 4.090, p < .001$ ) and 1.5% of the variance in physical health ( $F(1, 290) = 2.103, p < .05$ ). Analysis revealed that the combined effect of cumulative trauma, coping styles, and binge eating significantly accounted for 16.4% of the variance in general health ( $F(5, 286) = 11.24, p < .001$ ) and 40.3% of the variance in mental health ( $F(5, 286) = 38.61, p < .001$ ) health. However, the set of variables did not significantly predict physical health. (Please refer to table 6-8). The prediction of general health by cumulative trauma produced a small effect size ( $r = .22$ ). The prediction of mental health by cumulative trauma produced a medium effect size ( $r = .24$ ). The prediction of physical health by cumulative trauma produced a small effect size ( $r = .14$ ). The prediction of general health by cumulative trauma, binge eating and coping styles produced a large effect size ( $r = .40$ ). The prediction of mental health by cumulative trauma, binge eating and coping styles produced a large effect size ( $r = .63$ ). This study has provided evidence for the multifaceted and complex effects of repeated trauma exposure. Furthermore, evidence has been provided for the health disparities experiences by this population, and has further shown the predictive power of trauma exposure in predicting mental and physical illness. This study has provided evidence for the combined influence of coping styles, binge eating, and trauma exposure on general health, and particularly mental health. It is imperative that these findings be translated into services both in traditional health care setting as well as in mental health facilities.

ADVISER'S APPROVAL: Julie Dorton Clark

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