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Examining the role of grief in the etiology of Posttraumatic Stress Disorder (PTSD)  
symptoms in American Indian adolescents

by

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The University of Montana, 2006

Presented in partial fulfillment of the requirements

for the degree of

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Psychology

Examining the role of grief in the etiology of Posttraumatic Stress Disorder (PTSD) symptoms in American Indian adolescents

Chair, David Schuldberg

#### ABSTRACT

The prevalence of Posttraumatic Stress Disorder (PTSD) is reported to be comparatively high in child and adolescent populations (Reinherz, Gaiconia, Leftkowitz, Pakiz, & Frost, 1993). However, recent research has suggested that there may be differing etiological factors, specifically, Child Traumatic Grief (CTG), that contributes to the development of PTSD symptoms in American Indian adolescents (Morsette, at al., 2007). First this study demonstrated that CTG symptoms predicted PTSD symptoms above and beyond that which was predicted by violence exposure. Second, it was found that CTG predicted depression above and that which was predicted by PTSD symptoms. Third, it found that grief was significantly correlated with PTSD symptoms. Similarly, grief was also significantly correlated with the depressive symptoms. Finally, using a two-tailed Pearson's Product moment correlation this study found there was no correlation between PTSD symptoms, grief symptoms, depressive symptoms, and American Indian student's Grade Point Average and absenteeism. However, a post-hoc analysis using a one-tailed Pearson's Product moment correlation indicated a statistical significant correlation between GPA and depression. Additional etiological models are explored. This study is the first to examine etiological factors of PTSD in American Indian adolescents. Additional qualitative research is necessary to better understand the contribution of grief in the development of PTSD symptoms.

## Acknowledgements

I would like to thank everyone who assisted me with this project. Conducting studies such as this, I believe, is essential to improving the quality of mental health services in Native American communities. Interestingly enough, I also believe it provides evidence of the strength and resiliency in Native American children. It has been an honor to work with so many intelligent individuals who have provided me with guidance and leadership. Dr. David Schuldberg, your dedication to students, your willingness to be available to provide assistance and your attention to detail has helped make this a comprehensive dissertation that contributes to the understanding of PTSD and grief in American Indian populations, Dr. Rick van den Pol, your encouragement and support has helped me significantly throughout this process. Dr. Stolle your ability to work within Indian country and your willingness to continually help and provide support has helped me to understand the importance of writing about what I know and who *I am* and has helped me over the course of my graduate studies. Dr. Gyda Swaney, I can not thank you enough for your dedication to Native students and the sacrifices that you have made. It is this dedication that has made it possible for many Native students to attend and complete graduate school. Finally, I'd like to offer a special thank you to Shelia Rutherford and Kathy Broere; without your dedication and commitment this project would not have been feasible. I truly appreciate the countless hours *all* of you have sacrificed to assist me with my dissertation. Finally, last but not least, this research was funded in part by the Substance Abuse and Mental Health Services Administration (SAMHSA), grant # 5 U79 SM058145-01 and the American Education Research Associations dissertation grant awards.. However, the views expressed in this paper are not necessarily endorsed by the funding agencies.

## Examining the role of grief in the etiology of Posttraumatic Stress Disorder symptoms

## (PTSD) in American Indian adolescents

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### *Introduction*

There are numerous American Indians tribes throughout the United States. Although each of these tribes represents a distinct cultural group, American Indians share a similar history, in that the populations were decimated by colonization and the westward movement. In comparison to the general population, present day American Indian populations encounter a greater number of problems with alcohol abuse and are more likely to die through violence (IHS, 1999). Despite the large number of American Indians residing throughout the United States, in addition to their history and current social problems they remain one the most understudied populations within the field of psychology. More specifically, very little is known about the contemporary psychological impacts of the turbulent history and current troubles encountered by Native American populations.

The purpose of this study is to differentiate between Posttraumatic Stress Disorder (PTSD), and Childhood Traumatic Grief (CTG). PTSD and CTG share symptom criteria and occur because of similarly difficult life events. They seem to overlap, and it has been difficult to distinguish between the two in Native American elementary, middle, and high school children participating in school based interventions. This is further complicated by the possible influence of Historical Trauma, or the theory that American Indians experience grief due to the history of genocide and detrimental government policies; it seems likely that historical experiences may contribute to the effects of contemporary experiences with both grief and trauma (Yellow Horse Brave Heart & DeBruyn, 1998). Additionally, the study looks at the impact of PTSD symptoms on academic performance.

*DSM-IV-TR Diagnostic Criteria for PTSD*

The six diagnostic criteria for Posttraumatic Stress Disorder (PTSD) are multifaceted. Ascertaining criterion A includes determining that an individual witnessed a traumatic event or was exposed to an event in which he/she was at risk of actual or threatened death injury, or there was a threat to an individual's physical integrity is the first step in the diagnostic process. As a result of the traumatic event, the individual is to have experienced intense fear accompanied by feelings of horror and helplessness. The symptoms are categorized into three clusters: (a) reexperiencing symptoms, (b) hyperarousal, and (c) avoidance behaviors. These symptoms must be present for more than one month and cause significant social and occupational impairment (American Psychiatric Association, 2000). It is widely understood that PTSD affects both children and adults (Davis & Siegel, 2000). However, some researchers indicate that there are differential prevalence rates among diverse ethnic minority groups, including Native Americans (Lonigan, Phillips & Richey, 2003; Sue & Sue, 1990; Yellow Horse Brave Heart, 2003).

*Diversity in American Indian Cultures*

There are over 500 culturally diverse Native American tribes and it is estimated that there are over 4.5 million Native Americans and Alaska Natives residing in the United States (U.S. Census Bureau, 2006). Native Americans are purported to be the fastest growing population in the U.S. (De Coteau & Hope, 2003; U.S. Census Bureau, 2000). Despite this widespread population growth Native Americans remain understudied in the field of psychology, particularly in the area of Posttraumatic Stress Disorder

(PTSD). This dearth of research may be attributable in part to difficult cultural barriers involved in studying Native American populations.

The importance of cultural sensitivity when researching and working in diverse populations has received increasing attention in psychology (APA, 2000; APA, 2002; Duran & Duran, 1995; Garrett & Pichette, 2000; Johnson et al., 1995; Morsette, 2006; Stamm & Stamm, 1999; Stuart, 2004; Sue & Sue, 2003). Native Americans have suffered a long history of cultural marginalization that has resulted in systemic distrust, something that underscores the need for cultural sensitivity in the research process.

In western society many are likely to look to psychology to explain and treat mental health problems (Garrett & Wilbur, 1999). In contrast, many Native American people are more likely to consider cultural explanations and use traditional healing practices for mental health problems (Duran & Duran, 1995; Garrett & Pichette, 2000; Yellow Horse Brave Heart & DeBruyn, 1998). Additionally, many Native American societies are considered to represent collectivist cultures (Duran & Duran 1995). This collectivism usually includes the family, social environment, community and the culture and these elements are often interdependent. One area where this can be observed is in Native American families, the family is often viewed as an extension of the self. As a result, a traumatic event that occurs to one family member has an indirect and a very direct impact on numerous family members, including the extended family, even when the event was not witnessed directly (Red Horse, 1982).

In many Native American cultures elders are the repositories of ancestral knowledge and are responsible for a wide array of activities essential to the Native American way of life. It is the elders who facilitate traditional tribal gatherings and

provide spiritual guidance to tribal members. The elders instruct and teach through traditional metaphorical and anecdotal narratives. Their services may be very useful and some cases crucial in therapy and research settings (Garrett, 1994).

In many Native American populations, individuals may appear “introverted.” For example, they may not make direct eye contact with a therapist (Garwick & Auger, 2000). This usually reflects respect and the context of the interaction, rather than conventionally conceived personality traits (Garwick & Auger, 2000). Finally, in Native American populations, humor is valued and emphasized. It is used to express amusement openly at one’s own, as well as one’s family’s, serious issues and circumstances. This humor is embedded in the culture and in no way diminishes the gravity of situations.

In short, it is essential that researchers not undermine these cultural values, as there is a growing need for additional research concerning Native American populations, particularly when it is considered that very little is known about the American Indian experience of trauma. However, there are certain factors within American Indian populations that do suggest they are at greater risk of being exposed to trauma, and this is likely to contribute to PTSD prevalence (Bhungalia, 2001; Lonigan, Phillips & Richey, 2003; Sue & Sue, 2003). As noted, the purpose of this study is to differentiate between PTSD and childhood traumatic grief, and the factors that may cause them. These include exposure to violence and to loss.

#### *Risk Factors for PTSD*

Childhood PTSD is a growing concern in contemporary society. According to one study, 10-50% of children in the United States are victims of violence at school, in the home, or within their community (Finkelhor & Dzubia-Leatherman, 1994). However,

not every child (nor every adult) who witnesses a traumatic event develops PTSD. Thus, the question arises, what places certain children at risk for developing PTSD? Breslau (2002) cites a number of factors that appear to contribute to the development of PTSD, including witnessing a traumatic event, a familial history of psychopathology, and a preexisting psychopathological disorder.

Researchers have indicated that developing PTSD is often dependent on the type of trauma, the level of exposure to the trauma, social support, coping mechanisms, and gender (Lonigan, Phillips & Richey, 2003). Regarding gender, meta-analysis suggests that, while men are more likely to experience traumatic events whereas, women are more likely to be develop PTSD symptoms. Additional research is still needed to account better for these gender differences (Tolin & Foa, 2006). There are disparities related to geographical regions, ethnicities and social status (Stein et al., 2003). However, these researchers do not specifically address PTSD in Native American populations, as well as other minority groups. Native Americans represent both a minority group, and a group where many live in impoverished conditions, two factors that refer to environments where violence is more likely to occur and put individuals at risk for developing PTSD (Lonigan, Phillips & Richey, 2003; Sue & Sue, 2003).

#### *Substance Abuse and PTSD*

In many cases research conducted in Native American populations has focused on substance abuse (Duclos et al., 1998; Hawkins et al., 2004; May, 1994, Novins, Fickensher, Manson, 2006). In fact, many researchers have cited alcohol abuse as the most critical issue facing Native American groups (Hawkins et al., 2006; May 1996). Native Americans are reported to have the highest rates of alcohol abuse among all ethnic

groups (Gilder, Wall Ehlers, 2004; Hawkins et al., 2004; Novins et al., 2006). In adult populations researchers have reported lifetime prevalence rates as high as 66% of men and 53% of women for alcohol dependence (Gilder et al., 2004). Among Native American adolescents rates appear to be inconsistent and vary by study.

In one study of a Native American adolescent population researchers reported a point prevalence of alcohol abuse of 65% for males and 71% for females (Whitbeck, Johnson, Hoyt, & Walls, 2006). Similar rates were found in Native American adolescents receiving treatment for substance abuse (Novins et al., 2006). In another study looking at American Indian adolescent detainees, researchers reported a point prevalence of 34% for alcohol abuse/dependence (Duclos et al., 2006; Swaney, 2008). In spite of the inconsistent rates of alcohol abuse in these studies, they all seem to share a common theme, that the substance or alcohol abuse found is reported to be highly comorbid with other disorders.

In adult Native Americans researchers reported that in eight percent of cases, alcohol abuse and depression were concurrent disorders, while in only 1.1% of cases did alcohol abuse occur in conjunction with anxiety disorders (Gilder et al., 2004). In that study researchers indicated that the term “concurrent” referred to a disorder, such as depression, that may be attributable to the alcohol use (Gilder et al., 2004). In other words, they had both disorders at the same time, but researchers could not determine which disorder occurred first. Among Native American adolescent populations alcohol comorbidity rates were higher. In one study researchers reported 83% of children who met criteria for alcohol abuse also had a disruptive disorder (Whitbeck et al., 2006). In a study of Native American youth receiving in-patient substance abuse treatment

researchers reported that 82% of adolescents had a comorbid disorder. The most common comorbid disorder was conduct disorder, followed by Attention-Deficit-Hyperactivity Disorder (ADHD) and Major Depressive disorder (MDD). Alcohol abuse also may be highly comorbid with PTSD.

In a study of 1,660 randomly selected individuals from seven different Native American tribes researchers examined the relationship of traumatic childhood exposures to adult alcohol abuse. Researchers reported that 86% of the participants had been exposed to adverse treatment as children (Koss et al., 2003). Additionally, nine percent of the men and five percent of the women in the study population met criteria for alcohol abuse, and 30% of the men and 18% of the women met criteria for alcohol dependency. Koss et al. (2003) reported that in men, physical and sexual abuse combined represented the most significant predictor of adult alcohol abuse, whereas for women, sexual abuse and attending boarding school combined in best predicting alcohol abuse. This particular study assessed an individual's exposure to traumatic events, rather than PTSD symptoms. Nevertheless, in one study of Native American adolescents it was found that 10% of adolescents had a comorbid substance abuse and PTSD diagnosis (Novins et al., 2006). Thus, it seems that alcohol abuse and PTSD do commonly occur together.

#### *Prevalence of PTSD*

PTSD prevalence rates vary across studies. According to Breslau (2002) these varying rates are due in large part to the fact that differing criteria are used in various studies. Furthermore, there have been changes in the Diagnostic and Statistical Manual's definition of the term "stressor." Specifically, the DSM-III defined a traumatic event as an event outside the realm of normal human experience. The DSM-IV-TR defines trauma

as an event in which an individual encounters a violent event where another person's life is threatened or there is a threat to one's own physical integrity. These changes in the definition of traumatic event, as well as the differing criteria, according to Breslau (2002), apparently have increased the number of cases of PTSD.

The DSM-IV-TR (APA, 2000) indicates that the lifetime prevalence of PTSD among adult populations is 8%. At this time there have not been any epidemiological studies determining the rates of PTSD in child and adolescent populations (APA, 2000; Davis & Siegel, 2000). Nevertheless, there have been a number of community-wide studies assessing prevalence of PTSD in child and adolescent populations. Community-wide samples differ from epidemiological studies in that they focus on a particular community, whereas epidemiological studies are reflective of census data and the larger population (Reinherz et al., 1993). In one longitudinal community-wide study conducted in South Carolina, researchers reported that 15% of the adolescent population qualified for a PTSD diagnoses. In another community-wide study of 386 Caucasian adolescents researchers reported a 6.3% percent lifetime prevalence of PTSD (Reinherz et al., 1993).

#### *Prevalence rates of PTSD in American Indian populations*

PTSD rates as high as 22% have been found in Native American populations (Yellow Horse Brave Heart, 2003). In American Indian adolescent populations it has been suggested that rates vary from 1.6% to 6.5%, comparable to those found in some community studies of Caucasian populations (Manson et al., 1996). However, data from the studies of American Indian adolescents were obtained utilizing DSM-III criteria, and, as noted earlier, the DSM definition of trauma has since been broadened. Furthermore, diagnostic instruments generally contain questions involving words that have different

meanings in Native populations (Manson et al., 1996). For example, among one tribe in Montana, residents often use the word “shame” to refer to “embarrassment.” The term shame is commonly used in diagnostic instruments for PTSD. Thus, some diagnostic instrument questions may have a different meaning in American Indian populations, which suggests the figures cited may provide inaccurate estimates of PTSD in Native populations.

In a study conducted on a Native American reservation in the North Central US, researchers assessed and treated PTSD in a school aged population (Morsette et al., 2006). The sample was composed of 48 children in the sixth grade, all of whom were Native American. Researchers administered an abbreviated version of the Life Events Scale (LES; Singer, Anglin, Song, & Lunghofer, 1995), a measure used to assess violence exposure, and the Child Posttraumatic Stress Symptom Scale (CPSS), a measure used to assess PTSD symptoms (Foa, Johnson, Feeny & Treadwell, 2001; Stein, 2003). Research demonstrated that 96% of the sample had clinically significant levels of violence exposure and 75% had clinically significant levels of PTSD symptoms (Morsette et al., 2006). As noted above, clinical significance implies that these children’s scores were above the measure’s cutoff scores and that a clinical interview was in order to determine whether the child meets full PTSD criteria (Stein et al., 2003).

In spite of these high rates of violence exposure and PTSD symptoms, counselors and researchers observed that students often reported grief and the loss of loved ones to be more troubling compared to violence. In fact, it was not uncommon for students during interviews to state that when they were completing the CPSS (the measure of PTSD symptoms used in this research), they were thinking about a loved one who had

passed away, not violence exposure, as they had been instructed. Furthermore, they were reporting that at the time they had witnessed violence they did not feel a sense of horror or helplessness; thus, they did not meet criterion A-2 for PTSD symptoms, as listed in the DSM-IV-TR, and therefore did not qualify for a full PTSD diagnoses (APA, 2000). This theme was also observed in replication sites on two other Native American reservations that represented different tribal groups. Thus, it is possible that historical trauma, Childhood Traumatic Grief (CTG), Complex Trauma, or bereavement may account for PTSD symptoms in Native American populations (Comaz-Dias, 1996; Morsette et al., 2006). These terms are defined more precisely below.

### *Historical Trauma*

The concept of historical trauma in Native Americans has its roots in studies examining intergenerational effects of the Holocaust (Cohen, Dekel Solomon & Lavie, 2003; Dasberg, 2001; La Capra, 1994; La Capra 2004; Yellow Horse Brave Heart & DeBruyn, 1998). Researchers have suggested that, although only indirectly affected, many children of holocaust survivors themselves developed PTSD symptoms (Baranowsky, Young, Douglas, Keeler & McCarrey, 1998; La Capra, 1994). It is postulated that Native Americans, as a result of the loss of life, land, and destructive government policies, suffer from a legacy of historical unresolved grief, which shares PTSD symptomatology (Morissette, 1994; Yellow Horse Brave Heart & DeBruyn, 1998). In recent years historical trauma has gained increased attention in Native American populations (Whitbeck, Adams, Hoyt & Chen, 2004). Many older and middle-aged American Indians have responded to this idea and have developed traditional ceremonies

to treat individuals suffering from possible historical trauma (Morrissette, 1994; Whitbeck et al., 2004; Yellow Horse Brave Heart, 2003).

Yellow Horse Brave Heart and DeBruyn (1998) are two of the leading theoreticians in this area, and they draw on European and American Indian history to develop their ideas. They state that, since the time of contact, American Indians have been the victims of genocide. This European contact with American Indians resulted in decimation of the American Indian populations through disease as well as military policies. Specifically, many Native American tribes were removed from their original homelands, often encountering long walks, such as the Trail of Tears, that resulted in numerous deaths, and were forced to live on reservation lands (Yellow Horse Brave Heart & DeBruyn, 1998).

Subsequently, the boarding school era began and children were removed from their families and forced to attend boarding schools. These schools operated under the assumption that American Indian people could and should assimilate to the dominant culture and become *civilized individuals*. In contrast, the boarding schools actually had a very negative impact on Native people. These schools often did not adhere to humane practices and instead many Native people suffered at the hand of their educators through physical, emotional and sexual abuse. Furthermore, considering that children were removed from their families, they lacked positive role models and appropriate instruction necessary for positive development (Yellow Horse Brave Heart & DeBruyn, 1998).

In addition to the boarding school era the Federal Government's Assimilation policies also had a detrimental effect (Morissette, 1994; Yellow Horse Brave Heart & DeBruyn, 1998). The assimilation policies begin as early as 1887 with the Dawes

Allotment Act. This Act allocated ownership of reservation lands to individual families and opened remaining lands to non-Indian settlement. Additional assimilation policies included the Voluntary Relocation Program. This program financed the moving of American Indian people from the reservation to larger urban areas, where many faced racism and discrimination as well as poverty and unemployment (Yellow Horse Brave Heart & DeBruyn, 1998).

As a result of genocide, government policies, and what they call historical disenfranchised grief, Yellow Horse Brave Heart and DeBruyn (1998) suggest that Native Americans suffer from historical unresolved grief. Historical disenfranchised grief contributes to historical unresolved grief, in that the losses of Native Americans have never been openly acknowledged; thus many have not undergone the grieving process that facilitates healing (Brown & Goodman, 2005). Thus, historical unresolved grief and historical disenfranchised grief have been transferred inter-generationally. This may indicate that current PTSD formulations do not represent an accurate conceptual model of the Native experience of trauma (Morrissette, 1994; Whitbeck, et al., 2004; Yellow Horse Brave Heart, 2003). However, although historical trauma may provide a better understanding of Native American history and its impact on older and middle-aged Native American adults, it may pertain less to American Indian adolescents. Furthermore, it does not account for on-going traumatic experiences and losses.

It seems likely that in order to develop or experience historical trauma an individual would need to have a strong sense of ethnic identity. One research study found that American Indian adolescents ages 12-15 are cognizant of their American Indian heritage, but most have not begun to reflect on what their ethnic identity means to them (Newman,

2005). Thus, it would seem that Native American adolescents would be less likely to suffer from historical trauma. However, many American Indian children do experience ongoing losses and violence exposure. Recent research suggests that PTSD does not fully account for ongoing violence and loss and has begun to develop the idea of what is termed “complex trauma,” even in younger populations. It is important first to look at the number of losses experienced by American Indian populations before delving into the definition of complex trauma.

*Loss and violence exposure among American Indians*

Many Native Americans experience significant losses every year (Stahl & Chong, 2002). According to Indian Health Services (IHS, 1999), Native Americans and Alaska Natives suffer from and subsequently die from diabetes at a greater rate than all other races and ethnicities combined in the United States. The leading causes of death among Native Americans and Alaskan Natives ages 1-14 are accidents and homicides. The leading causes of death among this same population ages 15-24 are accidents, suicide, and death. For those aged 25-44 the leading causes of death are accidents, followed by chronic liver disease and cirrhosis, which are usually attributable to excessive alcohol use. Again, these rates of death are higher among Native Americans and Alaskan Americans, compared to all other races in the U.S (IHS, 1999). Given these high rates of death and dying it is likely that many Native Americans begin experiencing losses, and thus may also be more likely to be exposed to violence, at a young age. As noted, recent research has suggested that the effects of such losses may best be accounted for by the notion of complex trauma.

*Complex Trauma*

Complex trauma is an evolving concept that is similar to PTSD. Complex trauma is defined as consisting of a prolonged period of exposure to maltreatment, such as physical abuse, sexual abuse and neglect. Researchers posit that PTSD does not provide an adequate framework to capture the phenomena that complex trauma does (Cook et al., 2005). Complex trauma symptoms include PTSD criteria associated with recent trauma exposure, along with the effects of persistent abuse. Additionally, manifestations of PTSD symptoms are present and correlated with abuse and multiple traumas (Briere, & Spinazzola, 2005). Prolonged exposure to traumatic circumstances apparently causes children to lose the ability to self-regulate, and they may exhibit interpersonal deficiencies as well (Brier & Spinazzola, 2005). Earlier trauma may also have a “kindling” or sensitizing effect on the consequences of subsequent event.

Researchers (Briere & Spinazzola, 2005; Cook et al., 2005; Courtois, 2004) further suggest that its etiology can be traced in part to difficulties involving early attachment, in that healthy attachment may not be formed with the primary caregivers. As a result of prolonged exposure and neglect, children may be at risk of biological deficiencies, such as improper brain development in the prefrontal cortex partially responsible for emotion regulation. Subsequently children with complex trauma are likely to experience impaired affect regulation, which can lead to substance abuse and self-harm. They may dissociate and feel intense guilt and shame. Their self-perception is altered, and they have difficulty trusting other people. Children with complex trauma disorders are more likely to have somatic problems and often feel they can not relate to other people (Briere & Spinazzola, 2005; Cook et al., 2005; Courtois, 2004).

In many Native American populations, adolescents are more likely to endorse multiple and ongoing traumatic events. Additionally, as noted, they are more likely to report multiple losses from suicide, accidents, and even familial imprisonment, which have a negative impact on normal functioning (Mitchell et al., 2006; Morsette et al., 2006). Thus, it is also possible that even complex trauma does not adequately capture the etiology of their PTSD symptoms, and that traumatic grief may also need to be considered, as there are conceptual similarities.

#### *Childhood Traumatic Grief*

Childhood Traumatic Grief (CTG) is defined as the loss or death of a loved one through traumatic circumstances, which also include unexpected deaths such as a heart attack (Cohen, Mannarino, Greenberg, Padlos & Shipley, 2002; Cohen, Mannarino & Knudsen, 2004; Cohen Mannarino, Deblinger, 2006; Layne, Goodman, Farber, Brown, & Pynoos, 2007; Pynoos, 1992). The symptoms of CTG are similar to those of PTSD and consist of reexperiencing, as well as avoidant and hyperarousal behaviors associated with the loss (Cohen et al., 2004). It is believed that CTG results when distress reactions related to the loss of a significant person encroach upon an adaptive grieving process (Layne et al., 2007). According to one theory the normal grieving process consists of (a) acceptance of the death, (b) coping with emotions related to the loss, (c) enhancing the social support network to help with coping, (d) developing new relationships, (e) experiencing pleasant memories of the loved one, (f) creating meaning and understanding of the loss, and (g) continued development (Brown & Goodman, 2005). Nevertheless, there are those who would argue that there is no universally defined method of grieving across cultures (Akhtar, 2001; Layne et al., 2007).

Goodman & Brown (2005) do suggest that there is a prescribed way of grieving across cultures. As noted throughout this paper, American Indian populations are diverse across and within reservations and tribal affiliations. Often, different tribal groups have different methods for what is considered appropriate grieving. Among the Lakota people, for example, it is suggested that appropriate grieving should include family, community, social, and traditional activities (Stone, 1998). The current model proposed by Goodman and Brown (2005), although it acknowledges the importance of social relationships, seems to suggest an individualistic approach to healing. The Lakota model suggests a collectivist approach to facilitate healing (Stone, 1998).

The former and the latter points are of critical importance to the understanding of appropriate treatments when it is considered that researchers implementing a PTSD intervention observed that many American Indian adolescent children had some difficulty identifying their emotions (Morsette et al., 2006). Instead of endorsing sadness, they would indicate that they were angry. In some cases students had to be taught the range of emotions and reassured that expressing certain emotions was not a sign of weakness. Because of this possible difficulty with verbally expressing emotions, it seems likely that these children might have difficulty navigating an adaptive grieving process whether their culture dictated a collectivist approach, or the grieving process proposed by Brown & Goodman (2005). Thus, they might be more likely to develop CTG.

Standard PTSD screening instruments focus on violence exposure rather than loss, yet CTG also results in PTSD symptoms (Cohen, Mannarino, Greenberg, Padlos, & Shipley, 2002; Cohen, Mannarino & Knudsen, 2004; Cohen Mannarino, Deblinger, 2006). Thus, unless a clinician specifically inquires about loss, such issues may never be

addressed in treatment and may even lead to treatment drop-out. In any case, it appears that additional research is still needed to provide a better conceptual understanding of CTG in order to differentiate it from PTSD (Cohen et al., 2004). Research studies examining bereavement may also contribute to the understanding of childhood traumatic grief (Cohen et al., 2004).

### *Bereavement*

Similar to complicated grief and CTG, the effects of bereavement on psychological functioning are gaining increasing attention in the psychological literature (Layne et al., 2007; Manson, 1996; Mitchell et al., 2006; Neimeyer, 2006; Pynoos, 1992; Verducci, Weller, & Weller, 2006). Bereavement is included in the DSM-IV-TR as a secondary clinical condition (APA, 2000; Boelen, van den Bout, & van den Hout, 2003; Hensley, 2006). Bereavement usually occurs in three phases and includes numbness, depression and recovery (Clayton, 1982). Numbness can last as long as a few weeks, and during this stage an individual is able to function relatively normally, but the person is less present and does not process information as well. The depressive stage can last from a few weeks to a year or more, and includes depressive symptoms as classified in the DSM. The recovery stage entails acceptance of the loss and a return to normal functioning (Clayton 1982; Hensley, 2006). Bereavement occurs when an individual is unable to navigate the grieving process or avoids dealing with emotions associated with the loss, an idea very similar to CTG (Boelen et al., 2003). Thus, historical trauma, complex trauma, CTG, and bereavement may all result in PTSD symptoms, and all seem to be directly relevant to American Indian populations (Briere & Spinazzola, 2005; Cohen et al., 2004; Courtois, 2004; Morsette et al., 2006; Yellow Horse Brave Heart &

DeBruyn, 1998). Furthermore, PTSD is often comorbid with depression, which is also associated with grief and bereavement.

### *Depression*

PTSD usually co-occurs with depression; thus it must also be factored in the examination of PTSD symptoms in American Indian populations, even in the case that a full diagnosis is not warranted (Davis & Siegel, 2000; Jaycox et al., 2002; Morsette et al., 2006; O'Donnell et al., 2004; Stein et al., 2003). More specifically, this gives the clinician a more comprehensive conceptualization of the child. The DSM-IV-TR (2000) defines Major Depressive Disorder (MDD) as including a period of two weeks or more when an individual feels intense sadness. Depression is often characterized by loss of interest or pleasure in activities, a change in weight, social isolation, crying, worrying, anxiety, an inability to concentrate, and somatic symptoms (APA, 2000). It is estimated that 10-20% of the general population suffers from MDD. In one study researchers found a lifetime prevalence rate of 17% for a major depressive episode, and a 12 month prevalence rate of 8% among Native Americans (Whitbeck, Hoyt, Johnson, & Chen, 2006).

In adolescent Native American populations researchers have reported a prevalence rate of 14% for MDD (Novins et al., 2006). Some researchers have suggested that depression may create a vulnerability to PTSD, while others have suggested that PTSD may make an individual more susceptible to depression (O'Donnell, Creamer & Pattison, 2004). In one study examining the relationship between depression and PTSD, researchers found that children who had greater levels of intrusive PTSD symptoms also had greater levels of depression (Runyon, Faust, & Orvaschel, 2002). Considering that

PTSD is usually comorbid with depression and also shares PTSD symptom criteria with CTG, complex trauma, and bereavement, it is also likely that depression co-occurs with these disorders as well. If any of these disorders is left untreated, this can have negative consequences.

#### *Other Adverse impacts of PTSD*

In a study of 400 inner-city youth, composed of 200 incarcerated youth and 200 high school adolescents, students were matched and compared on exposure to community and family violence and on PTSD symptoms (Wood, Foa, Layne, Pynoos & James, 2002). Researchers also conducted an analysis of the sample of incarcerated youth, comparing exposure to multiple forms of violence and PTSD symptoms, exposure to family and community violence, and the level of delinquent behavior. The results indicated that 40% of the incarcerated youth exhibited PTSD symptomatology. In comparison, only 23% of the matched sample exhibited PTSD symptoms (Wood et al., 2002). Incarcerated youth also experienced more direct exposure to violence. This included being the victim of gunfire, knowing someone who had been killed, and a high prevalence of witnessing sexual assaults (Wood et al., 2002). In the sub-sample analysis, it was found that exposure to violence was associated with greater levels of PTSD symptoms (Wood et al., 2002). In short, it appears that PTSD symptoms are correlated with criminal behavior.

#### *Possible Biological impacts*

Researchers have postulated that children exposed to a traumatic event may experience impaired development in the form of neurobiological alterations (Cohen, Peril, DeBellis, Friedman, & Putman, 2002). Humans' emotional response is regulated by

the amygdala, which is also responsible for memory retention. PTSD may result from over-stimulation of the amygdala. The medial prefrontal cortex, responsible for extinguishing fear responses, may be under-stimulated. It has been proposed that the overly sensitive responses of the amygdala, in conjunction with under-stimulation in the medial prefrontal cortex, may contribute to PTSD. Thus, unless therapy addresses these deficiencies, children may never learn appropriate emotional regulation. More importantly, trauma may impact normal brain development, and resulting abnormalities could continue to impair an individual's functioning (Cohen et al., 2002).

#### *Academic Impacts*

In addition to these brain alterations some have suggested that PTSD can impact academic performance. Some researchers have posited that a student's ability to perform in the academic arena is dependent on healthy mental health functioning (Vanderbleek, 2004). As noted, CTG and complex trauma share symptom criteria, characterized by reexperiencing the traumatic event, avoiding thoughts associated with the trauma, and hyperarousal symptoms (APA, 2000; Briere & Spinazzola, 2005; Cohen et al., 2002; Cohen et al., 2004; Cohen et al., 2006; Cook et al., 2005; Courtois, 2004). A further examination of these criteria suggests that avoidant symptoms may result in a reduction of interest in significant activities and detachment from other people. The arousal cluster of symptoms may include a loss of sleep, angry outbursts, trouble concentrating and hypervigilance (APA, 2000). Thus, it seems a child who is preoccupied with a traumatic event, is not getting adequate sleep, and is unable to concentrate would be likely to have difficulties focusing on his/her academic work. Further, if this child is unable to sit still and is prone to outbursts of anger, he/she would be more likely to encounter discipline

problems, similar to what is seen in children with Attention-Deficit Hyperactivity Disorder (ADHD).

It is also reported that when a child encounters academic and disciplinary problems related to poor mental functioning, the mental health problems are exacerbated (Vanderbleek, 2004). Thus, it becomes increasingly important to treat children suffering from PTSD and other disorders in order to disrupt this deteriorating spiral. As suggested above, many American Indian populations are reluctant to seek services because of distrust of therapeutic service providers (Morsette, 2006). However, therapeutic services including treatment and screenings provided within the school system may minimize some of this distrust. Furthermore, this may provide the perfect venue for conducting research that will delineate better the etiological factors involved in PTSD, particularly the relationship between grief and PTSD symptoms.

#### *School-Based Psychotherapeutic Services*

School-based treatment in the population to be used in this study is relevant because (a) learning more about PTSD will help this population, (b) psychotherapeutic services can be provided in the school system, and (c) treatment of PTSD may improve school performance.. According to research less than one-third of child and adolescent populations who suffer from a mental health disorder will receive therapeutic services (Burns et al., 1995; Weist & Evans, 2005). Many researchers believe that school systems are the most logical place to implement mental health programs, and these programs are commonly referred to as expanded school mental health (ESMH; Vanderbleek, 2004; Weist & Evans, 2005; Weist et al., 2005) programs. First, it is axiomatic that school systems have access to the largest majority of the child and adolescent population on a

daily basis. Second, many schools employ a number of mental health professionals, including school psychologists, counselors, and social workers (Vanderbleek, 2004). Third, schools have access to federal and state funds, including grant funding opportunities, to provide services (Vanderbleek, 2004). Fourth, 75% of all children's mental health contacts do occur within the school system (Burns et al., 1995). Finally, research demonstrates that school based programs can be empirically and clinically effective (Weist & Albus, 2004; Stein et al., 2002; Yule, 2001). Nevertheless, only 10% of schools provide ESMH programs; however, schools are increasingly recognizing the importance of providing mental health services (Sherman, 2008; Tacker & Dobie, 2008; Weist, Rubin, Moore, Adelsheim, & Wrobel, 2007).

Researchers are also increasingly arguing that schools can no longer ignore the mental health needs of children (Sherman, 2008). They posit that poor mental health is contributing to bullying, suicides, and school shootings (Sherman, 2008). Some have suggested that schools can provide early identification through large screenings (Levitt, Saka, Romanelli, & Hoagwood, 2006; Weist et al., 2007). It is recommended that such large screenings include (a) significant stakeholders, such as families, school teachers, and community representatives in the planning process, (b) collaborative relationships through formal memorandum of agreements between the schools and community agencies involved in mental health, (c) logistics, or identified years in which large scale screenings occur, (d) training, supervision and support for staff members responsible for conducting the screening, and (e) integration a of broader range of mental health services in the school (Weist et al., 2007). It has also been suggested that these large scale screening will enable schools to provide both intervention and prevention programs

(Levitt et al., 2006). However, ESMH programs are usually not well defined and are not without their drawbacks and share of controversy.

*Strengths and weaknesses of school based services*

There may be some drawbacks however to implementing ESMH programs in schools. First, there is relatively little research indicating that school-based mental health programs are either efficacious or effective. Second, there are differences in the delivery of school counseling services and mental health services (Stein et al., 2002). For example, Stein et al. (2003), the developers of the Cognitive Behavioral Intervention for Trauma in Schools (CBITS) program, suggest that very few interventions utilized in schools follow a participatory research model; and they attribute part of the success of CBITS to their following such a model. Third, many school based programs also suggest that parents should be included in the treatment process, which is not always a straight forward process (Stein et al., 2003; Vanderbleek, 2004). Fourth, many school-based therapies are conducted in a group format, which is not effective for every student (Yule, 2001). Fifth, many school-based therapies lack a developmental component, and some have posited that this should be an aspect of the therapy (Saltzman, Steinberg, Layne, Aisenberg, & Pynoos, 2001). Treatments are often manualized, and levels of emotional and cognitive maturity are not always accounted for in the development of treatment programs.

Some school officials as well as researchers have suggested that ESMH programs, including large-scale screenings, are perceived as being intrusive (Weist et al., 2007). Some, have also argued that providing mental health programs in schools can reduce privacy and confidentiality (Levitt et al., 2006), and others have suggested that mental

health programs in the school may be stigmatizing for children who are experiencing a mental health problem (Weist et al, 2007). Finally, research has demonstrated that ESMH programs do not impact out-of school suspension rates (Bruns, Moore, Stephan, Pruitt, & Weist, 2005).

Nevertheless, school based interventions may afford some children the opportunity to receive psychotherapeutic services, including assessments, that they may not otherwise receive (Kovacs & Kohr, 1995; Weist, 2007; Yule, 2001). Additionally, one program known as Cognitive Behavioral Intervention for Trauma in Schools (CBITS) program, was developed utilizing a number of minority populations from disadvantaged backgrounds, and these groups often receive inferior care in comparison to their Caucasian counterparts (Geiger, 2003). School based interventions may decrease some of the disparities in service delivery (Yule, 2001).

All screenings and intervention programs only occur based upon parent assent and child consent (Weist et al., 2007). Thus, these programs have the potential to reach those who wish to receive and participate in services thereby reducing any perceived intrusion. Finally, the data indicate that children who received therapy in general improved psychologically, when compared to those who did not receive treatment (Kovacs & Kohr, 1995). Two school-based treatment programs highlighted here are Structured Psychotherapy for Adolescents Responding to Chronic Stress (SPARCS) and CBITS, both designed to treat PTSD symptoms.

*Relevant treatments for child and adolescent populations**Structured Psychotherapy for Adolescents Responding to Chronic Stress**(SPARCS)*

Structured Psychotherapy for Adolescents Responding to Chronic Stress (SPARCS) was initially piloted in a school system for use with pregnant teenage adolescent females. SPARCS integrates three different treatment methods for its program. First, it uses the mindfulness and interpersonal skills components of Dialectical Behavior Therapy (DBT; Linehan, 1993). DBT was developed for the treatment of Borderline Personality Disorder (BPD), and research indicates it is an effective method of treatment (Linehan, 1993). Second, SPARCS integrates a problems-solving component. Third, it utilizes the social support and future planning components of the School-Based Trauma/Grief Group (National Child Traumatic Stress Network, 2005).

SPARCS treats adolescent males and females between the ages of 13-21. It is a 22 week program for youth who have been exposed to repeated traumatic stressors and have difficulty with emotion regulation, impulsivity, somatization, and disassociation. However, the research on this particular program has been mixed. The treatment developers indicate that the initial research had a small sample size, but they found a statistically significant reduction on scores on the Youth Outcome Questionnaire (YOQ), and students reported that they found the group helpful. Research on SPARCS in a number of other settings is ongoing (NCTSN, 2005), but it does not appear that it has been used in rural Native American populations. An alternative program that has been demonstrated to be empirically efficacious and has been used in rural Native American

populations is Cognitive Behavioral Intervention for Trauma in Schools (Stein et al., 2003).

*Cognitive Behavioral Intervention for Trauma in Schools (CBITS)*

The Cognitive Behavioral Intervention for Trauma in Schools (CBITS) protocol was designed for implementation in inner-city schools with diverse populations (Jaycox, 2006; Stein et al., 2003). It is a 10 week (50 minutes per session) treatment program conducted primarily in a group format. The CBITS model follows the theoretical framework of Cognitive Behavioral Therapy (CBT). It is reported to decrease symptoms of PTSD, depression and anxiety related to trauma (Stein et al., 2003). In a randomized controlled trial (RCT) Stein and colleagues (2003) collected baseline data on the Child Posttraumatic Stress Symptom Scale (CPSS) and Life Events Scale (LES). Students were then randomly assigned to a treatment group or a delayed treatment control group. Qualification for participation was based upon scores from the LES and CPSS. Data assessing psychosocial dysfunction was obtained on the Pediatric Symptom Checklist (PSC), a parent report measure, and the Teacher-Child Rating Scale (Jaycox, 2004; Stein et al., 2003). Students in the delayed treatment control group and the treatment group were then reassessed after three months.

At posttest, it was found that the mean treatment groups scores (8.9) on the CPSS were significantly lower than the delayed intervention control group scores (15.5; Stein et al., 2003). The adjusted baseline scores indicated that 86% of those in the treatment group exhibited significant decreases of PTSD symptomatology at the three month point (Stein et al., 2003). The CDI adjusted baseline scores indicated that 67% of those in the treatment group exhibited fewer depressive symptoms (Stein et al., 2003). These same

researchers reported that, once the delayed intervention control group received treatment, data were again collected on the early intervention group and there were no significant differences between the two groups on the CPSS and CDI. This suggests that following treatment that symptom reduction remains stable over time and that there is some “spontaneous recovery” of untreated children. Based on parent reports on the PSC, children also exhibited less psychosocial dysfunction. However, there were no changes in teacher’s perception of behavior on the Teacher-Child Rating (Stein et al., 2003). The findings suggest that CBITS may be an effective therapy in schools for students exhibiting significant PTSD and depressive symptomatology.

#### *CBITS in American Indian Populations*

In the Fall of 2004 CBITS was adapted and initially utilized with a rural Native American population (Morsette et al., 2006). Similar to the research conducted on the initial manualization of CBITS, children were administered multiple pretest and a posttest assessing violence exposure, using the LES, and PTSD symptoms, using the CPSS. Students with clinically significant levels of violence exposure and PTSD symptoms participated in a clinical interview. Clinical significance was defined as including those students who scored above the measure’s cutoff scores (see methods section for cutoff scores). Thus, the symptom levels were higher than what would be expected in the general population and warranted further clinical inquiry. Forty-eight students were assessed and, as noted above, all 48 students reported that they had been exposed to at least one violent event, and 75% of those students had clinically significant PTSD symptoms. The LES mean score was 6.86 and the mean score on the CPSS was 6.33; both levels are considered clinically significant. However, only 7 (14%) of the students

qualified for treatment based upon the measures, a screening interview by the school counselors, as well as parent consent and child assent. Of note, those students who were selected and assented to treatment had a higher number of clinically significant PTSD symptoms at screening, treatment participants had a CPSS mean of 8.57, compared to the overall mean of non-participants of 6.33 (Morsette et al., 2006).

Prior to treatment implementation students were again administered the LES, the CPSS, and the Children's Depression Inventory (CDI). At that time children had a LES mean score of 6.25, and a CPSS mean score of 8.43. On the CDI students had a mean score of 14.29. All those selected to participate still had clinically significant violence exposure, as well as PTSD and depressive symptoms. Following the completion of the treatment program, the LES mean score was 1.5, the mean score on the CPSS was 3.5, and the CDI mean score was 4.5 (Morsette et al., 2006).

Data from a larger sample that includes the CBITS implementation from the fall of 2004 through spring of 2006 also support the effectiveness of the program. Since the initial implementation, CBITS has also been delivered in 4 additional schools on two different American Indian reservations replicating initial research. SPSS was utilized to examine data from each of these reservation sites. The results from all children completing the surveys, (including those discussed above) indicated that on the CPSS there was significant improvement from screening to pretest to posttest ( $F [2, 30] = 17.70, p < .0005$ ; partial  $\eta^2 = .541$ ). On the CDI from pretest to posttest there was a significant reduction of depressive symptoms ( $F [1, 30] = 5.86, p = .011$  and partial  $\eta^2 = .163$ ). There was also statistically significant change from screening to pretest on the CPSS ( $F [1, 31] = 7.61, p = .01$ ) and from pre to post ( $F [1, 31] = 15.37, p < .0005$ ). The

effect was larger over the course of the group (partial  $\eta^2 = .332$ ) than from screening to pre-group (partial  $\eta^2 = .197$ ; Morsette, Schuldberg, Stolle, & van den Pol, 2006).

The results from both studies indicate that CBITS is an effective school-based method of treatment for reducing clinically significant PTSD and depressive symptoms for a rural reservation American Indian adolescent population. This research has a number of strengths. First, it was implemented in multiple reservations representing distinct cultural groups. Thus, the data suggests that it is generalizable to diverse tribal groups. Second, it is one of the few treatment studies conducted in American Indian populations. Third, it was implemented in the schools by counselors, which makes it a likely to be a sustainable program.

This research was not without its weaknesses. First, there was no control group, and it is possible that the results were attributable to maturation, history, or regression effects. Second, this program was used in a rural reservation, and the results may not be generalizable to Native Americans living in urban areas. Third, despite the large number of students who exhibited clinically significant PTSD symptoms, less than 20% participated in the program. Fourth, it was not clear whether violence exposure was the primary contributing factor to the PTSD symptoms. Finally, given the large number of non-participants, there may have been psychological factors that contributed to non-participation. More specifically, the clinical screenings and interviews focused on violence exposure and PTSD symptoms possibly resulting from these incidents. Thus, it is plausible that children and parents refused participation because the program was not completely addressing American Indian children's trauma experience.

*Cultural Shortcomings of the Field of Psychology*

It is quite evident that PTSD is a common disorder in adolescent populations, particularly Native American populations, and it appears to have detrimental effects on academic performance, development, and behavior. However, the manner in which PTSD is defined is based upon a Western perspective on mental health. Thus, although a school-based program appears to be beneficial in assessing and treating PTSD symptoms, PTSD may not provide accurate and complete conceptualization of the mental health problems experienced by Native American youth. In many Native American cultures it is believed that health or well being is dependent on the four components of the self. These four components are the mental, physical, emotional and spiritual domains. Healthy functioning occurs when all facets are balanced.

Although the field of psychology has grown in its examination of cultural factors influence on pathology it still tends to look primarily at the emotional and mental components (Sue & Sue, 2003). Additionally, the DSM is based upon a western conceptualization of mental disorders. The DSM seems to emphasize an etic approach where the understanding of mental disorders, and the treatment of such disorders is applied cross culturally by those who may not actually participate or have an understanding of a particular culture. Thus an emic approach, where mental health disorders and treatment are defined within a particular culture, may be more appropriate. In order to address such issues, the authors of the DSM have provided a cultural formulation of pathology (APA, 2000). This approach suggests that clinicians should; (a) recognize the cultural identity of the individual, (b) consider cultural explanations of an individual's illness, (d) examine factors such as social support and religious beliefs, and

(e) consider cultural barriers or disconnect in the therapeutic relationship. In addition, although not all-encompassing, the DSM provides a list of culture-bound diagnoses found in particular populations, including American Indian populations (APA, 2000). In spite of such advances it is evident that the field of psychology still has room for improvement.

Duran and Duran (1995), in their book *Native American Post-colonial Psychology*, argue that the Western conceptualization of disorders is inappropriate for Native American populations. Joseph Gone (2000), a Native American researcher, goes a step further and suggests that psychologists represent a new tradition of missionary work. Gone (2004) suggests that psychologists, through their work, are imposing values and beliefs regarding appropriate behavior from a Western perspective. This is similar to the work of early missionaries and to governmental policies that had detrimental effects on Native Americans. Although Gone's proposition may be somewhat extreme, it poignantly depicts arguments posed by multi-cultural researchers. Researchers and psychologists have suggested that cultural values and norms define etiology and the display of symptoms. Thus, in a sense, disorders are based partially on socially acceptable norms of behavior. Essentially, the value of culture is minimized by using an etic approach to mental disorders; this is a common criticism shared among minority populations (Sue & Sue, 2003).

### *Cultural Marginalization*

Cultural marginalization can be defined as the minimization of culture and its impact on an individual's life experiences. This phenomenon has created discord between individuals from different cultures and can be viewed as a form of racism or discrimination. As a result, individuals from minority populations may be distrustful of

practitioners and researchers. Racism and discrimination can also influence behavior. In other words, this distrust may hinder individuals who feel their culture has been marginalized from seeking treatment, or terminating therapy early (Sue & Sue, 2003). Among Native American populations it is not uncommon to hear individuals state that they do not want to see the local psychologist because he or she is Caucasian, and they fear their problems won't be understood (Garrett, 1994). This statement seems to reflect a fear of cultural marginalization, as well as a cultural contextual understanding of the problems they are experiencing. There is a fear that the clinician will integrate an ethnocentric perspective in the interpretation and understanding of behavior.

Similarly, psychological measurements of disorders are based upon Western criteria of mental health. As noted, many Native American children who participated in the CBITS groups, although they endorsed violence exposure and had PTSD symptoms, reported that grief and loss were more troubling. Thus, it seems possible that the use of the culturally embedded conceptions of the DSM and cultural barriers may have interfered with a complete and accurate case conceptualization, which has been determined in part by theoretical framework, the DSM criteria, and subsequently by psychological assessments.

#### *Psychological Assessments*

Psychological measurements are commonly used in the field of psychology to improve the diagnostic picture for a given individual. The Minnesota Multiphasic Personality Inventory (MMPI-2) is a widely used personality assessment (Greene, 2000; Stewart, 2006), which has been used in many Native American populations. However, the MMPI-2 only included 77 Native Americans in its standardization process (Greene,

2000). Research has demonstrated that Native Americans generally have higher scores on five validity and clinical scales on the MMPI-2 (Robin, Green, Albaugh, Caldwell, & Goldman, 2003; Stewart, 2006). The Children's Depression Inventory, a popular measure used to assess depressive symptoms in children, did not include Native Americans in the standardization process (Kamphaus & Frick, 1996). Some measurements such as the Short Michigan Alcohol Screening Test (SMAST), a commonly used test for assessing alcoholism, have been found to be invalid among American Indian populations (Robin et al., 2004). One study using the National Anxiety Disorder Screening Day Instrument found that the instrument worked well for a Caucasian sample, but not as well for minorities, including Native Americans (Ritsher, Struening, Hellman, & Guardino, 2002). Posttraumatic Stress measurements may suffer from the same inadequacies.

#### *Posttraumatic Stress Measurements*

There are a number of different measuring tools that have been developed to assist with the diagnosis of PTSD. The Trauma Symptom Checklist for young children (TSCYC; Briere et al., 2001) is a 90-item measure administered to caretakers of children. It assesses a child's trauma history, as well abuse-related PTSD symptoms. It contains eight clinical scales, which include PTSD symptoms, anxiety, and depression. It is reported to have good reliability, and it surveyed African Americans and Hispanic Americans in the standardization sample, but it did not include any Native Americans in the standardization process (Briere et al., 2001). The Child Posttraumatic Stress Symptom Scale (CPSS) is based on DSM-IV-TR criteria, and its standardization group consisted of 89% Caucasians (Foa, Johnson, Feeny & Treadwell, 2001). The Impact of Events Scale (IES; Briere & Elliot, 1998), which is also used to assess PTSD symptoms, had African

Americans, Hispanic Americans and nine Native Americans in its standardization sample. Research indicated that there were race differences in PTSD symptoms for African Americans and Hispanics, but the sample of Native Americans was too small to determine any effects attributable to ethnicity (Briere & Elliot, 1998).

As noted, mental disorders are generally defined through a Western conceptualization of illness and deviant behaviors. Additionally, many of the instruments that have been developed to help with the diagnostic process have failed to include Native Americans in the standardization process. Measurement research that has been conducted has demonstrated that in many cases Native Americans and minorities tend to have elevated scores on indicators of psychopathology in comparison to their Caucasian counterparts (Briere & Elliot, 1998; Robin et al, 2003).

#### *Trauma research in American Indian populations*

As mentioned above, research conducted on multiple Native American reservations found that children had high levels of PTSD symptoms and high levels of violence exposure reported on the CPSS and the Life Events Scale (LES). Children who participated in a clinical interview confirmed that they had been exposed to violence, but they frequently reported that when they were completing the measures they thought about the loss of a loved one (Morsette et al., 2006). This may suggest that the measures were incomplete in providing a clear diagnostic picture, and for aiding in planning treatment. This has significant implications for research and treatment. In short, a better understanding of the etiology of PTSD and related conditions is needed for both assessment and treatment. It is necessary that a clearer depiction of the consequences of

PTSD symptoms be researched, and this may also increase comprehension of the social ills experienced by reservation communities.

### *Hypotheses*

There may be many cultural shortcomings when using the DSM-IV to conceptualize and define mental health problems, particularly PTSD, in Native American populations. Recent research has demonstrated that rates of PTSD are higher in Native American adult and adolescent populations (Morsette et al., 2006; Yellow Horse Brave Heart, 2003). However, there may be cultural barriers that interfere with American Indians' seeking psychotherapeutic services. PTSD has many negative correlates, including increased rates of alcohol abuse, and may impact a student's performance (Koss et al., 2003; Novins et al., 2006; Vanderbleek, 2004).

Although one study has demonstrated that a school-based intervention is beneficial in reducing PTSD symptoms in Native American adolescents, it was unclear whether PTSD provided an accurate conceptualization of the mental health problems experienced by the adolescents in the study (Morsette et al., 2006). In other words, PTSD diagnostic measures may not provide an accurate diagnostic picture in Native American adolescent populations, and current research on PTSD may not adequately account for consequences of PTSD symptoms (Greene, 2000; Morsette et al., 2006). The picture seems to be complicated by grief.

Thus, it is hypothesized that:

1. In a Native American adolescent population it is expected that symptoms of grief, as measured by the EGI, will predict PTSD symptoms over and above violence exposure.

2. In a Native American adolescent population it is expected that grief symptoms will better predict depression compared to PTSD symptoms.

3. Native American adolescents with higher scores, compared to those with lower scores, on the Expanded Grief Inventory will also demonstrate higher scores on the Child Posttraumatic Stress Symptom Scale.

4. Native American adolescents with higher scores, compared to those with lower scores, on the Expanded Grief Inventory will have higher levels of depressive symptoms, as measured by the Children's Depression Inventory.

5. Native American adolescents with higher scores, compared to those with lower scores, on the Expanded Grief Inventory, Child Posttraumatic Stress Symptom Scale, and Children's Depression Inventory will demonstrate a lower Grade Point Average.

6. Native American adolescents with higher scores compared to those with lower scores on the Expanded Grief Inventory, Child Posttraumatic Stress Symptom Scale, and Children's Depression Inventory will demonstrate a greater rate of school absenteeism.

Additionally, evaluations are made of the overlap of measures of grief, PTSD symptoms, and depression, and a possible etiological model is tested and presented.

## Methods

### *Participants*

Participants included 193 Native American students attending a rural reservation middle school in the Northwestern United States. Forty three percent of the participants were in the seventh grade, and 57% were in the eighth grade. Student participants were between the ages of 11 and 14. Forty-five percent of the students were males and 55% were females. Ninety-six percent of the participants identified themselves as American Indian, 4% identified as Hispanic, .5% of the sample was Caucasian, and 3.1% identified their ethnicity as “other.” These percentages add up to more than 100 because participants could check more than one ethnicity.

Prior to conducting this research, a power analysis for the correlational analyses indicated that 90 subjects would be sufficient to uncover medium effects (in the predicted correlations, for  $r = .3$ , Power = .84,  $\alpha = .05$ , for a two tailed test). For a one-tailed test 90 subjects again would be sufficient to detect medium effect sizes (in the predicted correlations, Power = .91 with a  $\alpha = .05$ , for a two tailed test). The regression power analysis indicated that 100 subjects would be sufficient to detect medium effects (in the predicted regression analysis Power = .93,  $\alpha = .05$  for the 1<sup>st</sup> IV, and for the 2<sup>nd</sup> IV, Power = .81,  $\alpha = .05$ ), using grief and violence exposure as the Independent Variables to predict PTSD symptoms.

### *Measures*

*Life Events Scale.* Students were screened on their level of exposure to violence utilizing the Life Events Scale (LES; please see Appendix A, Life Events Scale). The LES was developed in order to assess children’s level of exposure to violence, and it is

purported to have good reliability with diverse populations (Singer et al., 1999). The original scale contained 38 questions that inquire about direct and indirect violence exposure (Singer, Anglin, Song & Lunghofer, 1995). It uses a four-point Likert scale ranging from 0-3 points, with 0 representing no violence exposure and 3 representing significant violence exposure, with a possible point total of 114. For children a series of thermometers is used to anchor the scales.

For the purposes of this research a revised edition of the LES was used. The revised edition was developed in response to time concerns of Los Angeles school personnel and clinicians employing it as a screening tool (Stein, 2004). The revised LES demonstrated 99% sensitivity and specificity, in regards to detecting direct and indirect exposure to violence, based upon preliminary research on a sample of 6<sup>th</sup> grade students. Data from a screening sample of 247 American Indian students revealed an *alpha* of .75 (Morsette et al., 2006). It contains 9 questions pertaining to violence exposure. It uses a four-point Likert scale format (0-3), with 0 representing no violence exposure and 3 representing significant or frequent violence exposure, with a possible point total score of 36. The revised (9-item) LES utilizes a cutoff score of 3 for clinically significant violence exposure (Singer, Anglin, Song, & Lunghofer, 1995; Stein, 2004) Following suggestions by school counselors an additional 3 questions were developed that inquired of direct exposure to violence, and the analyses in this paper utilize this 12-item measure.

*Child PTSD Symptom Scale (CPSS)*. Adolescents also completed the CPSS, a self-report inventory (please see Appendix B, Child PTSD Symptom Scale). The CPSS also served as a screening measure. The CPSS is a relatively new assessment tool and was developed as the children's version of the Posttraumatic Diagnostic Scale (PTDS;

Foa et al., 2001). The sample population utilized in standardizing the CPSS included 89% Caucasian adolescents and 11% members of unidentified ethnic minorities. It is one of the few screening instruments for children that is based on the DSM-IV criteria. The CPSS is used to assess and diagnose PTSD in children ranging in age from 8-18 years. The original scale includes one question from each of the 17 diagnostic criteria listed in the DSM-IV; these are rated on a 4-point Likert scale. It also contains seven additional items that inquire about a child's daily functioning, such as relationships and friends, which are scored either 0 or 1 for absent or present, with higher scores indicative of impairment.

The 17 items that assess PTSD symptoms result in scores that range from 0-51 and also assess the severity of the three clusters of symptoms (e.g. arousal, avoidance and reexperiencing). The total symptom score (.89 coefficient *alpha*), and the three cluster symptoms, arousal (.70 coefficient *alpha*), avoidance (.73 coefficient *alpha*) and reexperiencing (.80 coefficient *alpha*) exhibited good internal consistency as well (Foa et al., 2001). The test-retest reliability, based on a 1-2 week re-administration, of the CPSS was high, at .84 for the total scale, .76 for arousal, .63 for avoidance, and .85 for reexperiencing (Foa et al., 2001). The functional impairment scale had low internal consistency of .35 due to one vague item which pertained to a child's happiness with life. When the item was removed the internal consistency rose to .89 (Foa et al, 2001.). The test-retest reliability of functional impairment was good at .70.

For the purposes of this study a revised and shortened edition of the CPSS was utilized for assessing PTSD symptomatology. This edition was developed in response to time concerns of school personnel and clinicians (Stein, 2004). The revised CPSS

contains seven questions from the original scale, which were selected based upon their contributions to sensitivity, specificity and validity. The revised CPSS demonstrated 97% sensitivity and 88% specificity based upon preliminary research with a sample of 769 6<sup>th</sup> grade students (Stein, 2004). In a separate sample of 274 6<sup>th</sup> grade students, the revised CPSS demonstrated 95% sensitivity and 84% specificity (Stein, 2004). Screening data from a pilot test with 246 American Indian students revealed a Cronbach's coefficient *alpha* of .85 for the total scale. The revised CPSS is scored on four-point Likert scale (0-3), with a possible point total of 21 and a clinical selection cutoff score of 4, which suggests the presence of clinically significant PTSD symptomatology, such as arousal, avoidant and reexperiencing symptoms.

*Expanded Grief Inventory (EGI; Layne, 2001).* The EGI is a 28 item questionnaire used to assess and measure symptoms of CTG. It has three subscales, Childhood Traumatic Grief (CTG), Existential Grief Reactions (EGR) and Positive Connection (PC; please see Appendix C). The CTG grief scale assesses the encroachment of distress on the putatively beneficial grief process. Higher scores on this subscale are indicative of a more traumatic reaction related to death. The EGR subscale assesses how the loss has impacted a child's purpose and meaning in life. High scores suggest that the loss has reduced a child's purpose and meaning in life. The PC subscale assesses how positively connected the respondent remains to the loss individual despite the loss. High scores on this subscale would indicate a positive connection through dreams or memories with the person that was lost.

A total composite score is generated through summing the 5-point Likert scale items. The CTG scale is reported to have an internal consistency .94 (Cronbach's *alpha*),

whereas for the PC is Cronbach's *alpha* .62 and Cronbach's *alpha* for the PM scale is .73 (Layne, Savjak, Saltzman, & Pynoos, cited in Cohen, Mannarino & Knudsen, 2004). For this research a revised version was used that contained 17 questions and is also scored using 5 point Likert scale items. Data on the reliability, sensitivity, specificity, and validity of the revised version have not yet been reported.

*Children's Depression Inventory (CDI)*. Depression is often comorbid with PTSD (Runyon & Kenny, 2002) and is important to assess in PTSD research. The CDI was developed as a modification of the Beck Depression Inventory (BDI; Kovacs, 1980/81). The CDI is a widely used self-report inventory composed of 27 Likert type items and is utilized with children ages 6-17. It contains questions that assess overt symptoms of depression, such as sadness, anhedonia, sleep disturbances, and suicidal ideation. In earlier use of the instrument any students who endorsed suicidal thoughts were immediately seen by the school counselors for further suicidal assessment. In this research the suicide item was not used in the survey. Each question on the CDI assesses one symptom of depression via three choices, scored from 0-2. The CDI yields a composite score of 51, with a higher score representative of more severe depression. In addition to the total score, the CDI contains five subscales. These are Negative Mood, Interpersonal Problems, Ineffectiveness, and Negative Self-Esteem, and these are used to identify problem areas. The CDI was normed on a school aged sample in Florida and is backed by strong empirical research (Kamphaus & Frick, 1996). It is reported that internal consistency of the CDI is good, with *alpha* coefficients in the .80 range. Finally, factor analytical studies have provided evidence that the CDI is a valid measure of depression (Kamphaus & Frick, 1996).

For the purpose of this research the CDI-Short (CDI-S) was utilized to assess depressive symptomatology. The CDI-S was developed based on the normative data from the original sample (Kovacs, 2003). The 10 items retained from the original scale were selected by using a backward stepwise internal consistency reliability analysis. The items were selected based on the least amount of reduction in the *alpha* coefficient of .80; thus, the original *alpha* coefficient is basically retained in the short form. Furthermore, the CDI-S correlates with the original scale on the order of  $r = .89$  (Kovacs, 2003).

*Measure of Loss and Weighted Loss* (Morsette & Schuldberg, 2007). In order to assess the number of losses children experienced a measure of loss was developed and used in this research (please see Appendix D). The loss measure contains 14 questions which inquire of the number and type of losses a child has experienced in the previous three years. It inquires of the child's relationship to the person they lost and how that individual passed away. Two scores were computed. First, the number of losses was tallied then the losses are weighted, based upon the child's relationship to the deceased individual, and a weighted sum loss is calculated for the child. For instance, the loss of a relative was weighted higher than the loss of an acquaintance. The psychometric properties of the loss measure have not been evaluated.

## Study Design

### *Procedure*

In the spring of 2007 the lead researcher obtained approval from the University of Montana's (UM) Institutional Review Board (IRB) to conduct this study. The proposed study was also reviewed by the tribal IRB during the spring of 2007 and IRB members unanimously gave their approval for the completion of the study. Upon the tribal and UM

IRB approval the study was taken before the local school board by the lead research and the school counselors. Following the review of the proposed study the local school board gave it administrative approval to conduct the study.

In the Fall of 2007 all parents of all students who were attending the rural reservation middle school where this survey was conducted were sent a passive permission slip through the United States Postal Service (please see Appendix E). The permission slip outlined the purpose of the research and described the data that would be collected for each student who participated in the study. Parents who did not want their child to participate were requested to return the permission slip to the school counselors. Five children's parents returned the slips. At the recommendation of the school counselors and administrative staff children who did not participate were allowed to go to the school library or the counselor's office during the assessment. Passive permission was approved by the tribal Institutional Review Board (IRB), The University of Montana's IRB and the local school board.

The large assessment was conducted in the Fall of the 2007-2008 academic school year by the school's two counselors and the lead researcher. The Child PTSD Symptoms Scale (CPSS), Life Events Scale (LES), Expanded Grief Inventory (EGI), Children's Depression Inventory, and loss measure, as well as demographic form were utilized during the assessment. Participants were primarily American Indian adolescents in grades 7 and 8, ranging in age from 11-14. Additionally, data on Grade Point Average (GPA) and absenteeism were collected for those students who participated in the survey.

As the students completed the survey they were monitored by the school counselor for discomfort. Five children expressed some discomfort regarding recent

losses while taking the survey. These students were provided with a brief session to discuss their loss and reduce anxiety and sadness associated with the loss.

Once students completed the measures, the school counselors detached the cover sheet with the student's name and identification number. The counselors then entered the names into an Excel spreadsheet. The cover sheet was then stored by the counselors in locking client file cabinets. Once survey data were entered into an Excel spreadsheet by identification numbers (ID), a list of those students, by numbers, with elevated scores on the CPSS and LES was sent to the school counselors for possible clinical interviews and potential services. At the end of the first academic quarter in which students completed the survey instruments, the school counselors collected students' GPA and absenteeism data. These data were entered into a second Excel file by student identification numbers and sent to the lead researcher.

## Results

### *Statistical Analyses*

A hierarchical regression analysis was used to test hypothesis one. Students who left the EGI, CPSS and/or CDI completely blank were considered as having missing data on the variables based on the measure. As expected, violence exposure was a significant predictor of PTSD symptoms,  $F(1, 171) = 34.563, p < .0005$ , explaining 16.3% of the variance in this dependent variable. Grief symptoms were also a significant predictor of PTSD symptoms,  $F(1, 170) = 49.359, p < .0005$ , explaining 18.5% of the variance above and beyond that which was explained by violence exposure. Of note, after removing effects of depression (which does account for 46% of the variance in PTSD scores), both the LES and EGI are still significant contributors to predicting PTSD symptoms, with both together accounting for an additional 6.6% of the variance. Thus, hypothesis one was supported (see Table 1).

A second hierarchical regression analysis was used to examine the predictive value of grief symptoms compared to PTSD symptoms in accounting for symptoms of Depression.. The results demonstrated that Post Traumatic Stress symptoms significantly predicted depressive symptoms  $F(1, 171) = 143.995, p < .0005$ , explaining 45.4% of the variance in depression. Grief symptoms also significantly predicted depressive symptoms  $F(1, 170) = 10.776, p = .001$ , accounting for three percent of the variance. The two variables together explain 48.3% of the variance overall. Thus, hypothesis two was supported (see Table 1).

In order to test the final four hypotheses, Pearson product-moment correlation coefficients were used, with two-tailed significance tests. Again, in order to ensure the

validity of the results students who left the EGI, CPSS, LES and/or CDI completely blank were considered as having missing data on the measure for these analyses. The results indicated that hypothesis three was supported. Scores on the EGI, and CPSS are highly correlated  $r(171) = .540, p < .005$ , compared to the correlation of the CPSS with violence exposure  $r(191) = .441, p < .005$ . Additional correlations were computed among the EGI (and its subscales), the CDI, the loss measure, and the CPSS. The CPSS was significantly correlated with the traumatic grief subscale  $r(170) = .613, p < .005$ , the existential grief subscale  $r(170) = .509, p < .005$  and the positive memories subscale  $r(171) = .189, p < .005$  of the EGI. The CDI was also correlated with CPSS in the order of  $r(189) = .687, p < .01$ . On the loss measure the CPSS was correlated with the number of losses  $r(191) = .446, p < .01$  and the weighted loss scores  $r(191) = .412, p < .005$ .

Of note, on the EGI 94.3% of students reported that they had lost someone close to them during their lifetime. Using the loss measure that was developed for this research, and whose data included the entire sample ( $n = 205$ ), in the previous three years up to the date of the survey, 74.6% of students had lost someone close to them; 24.9% lost a classmate, 56.5% had lost someone they “just kind of knew,” 18.5% had lost a close friend, and 80.5% had lost a relative, such as grandmother, cousin, or uncle (see Table 2).

The fourth hypothesis was also supported. The EGI was significantly correlated with the CDI on the order of  $r(171) = .516; p < .005$ . The CDI was significantly correlated with the subscales of the EGI with a correlation of  $r(170) = .542, p < .005$  with the traumatic grief subscale, and  $r(170) = .583, p < .005$  with the existential grief subscale. The positive memory subscale and CDI were correlated  $r(171) = .085$ . The

correlation between the CPSS and the CDI was larger at  $r(189) = .687, p < .005$  (see Table 2).

Analyses used to test the fifth hypothesis demonstrated that there were only slight correlations between the variables of interest and GPA, but none was significant. There was a small negative correlation between GPA and depression, on the order of  $r(169) = -.128$ , indicating that higher depression scores are associated with lower grades. For the CPSS and GPA there was also a very small negative correlation of  $r(169) = -.032$ . EGI and GPA were also very slightly negatively correlated  $r(169) = -.066, p < .01$ , and GPA and absenteeism were essentially uncorrelated  $r(169) = -.004$ .

Tests of the sixth hypothesis demonstrated negative correlations for nearly all of the variables of interest, but these correlations were very small (essentially zero).

Absenteeism was negatively correlated with depression,  $r(169) = -.022$ , with grief,  $r = -.029$ , and with GPA,  $r(169) = -.004$ . The correlation between the CPSS and rate of absenteeism is .064. None of these correlations is statistically significant using a two-tailed test and the Pearson product moment correlation. However, a one-tailed Pearson's Product moment correlation revealed that depression was significantly correlated with GPA  $r(171) = -.128, p < .05$ .

### *Gender Differences*

Following the analyses of the entire sample involved in this study, additional analyses were conducted to examine gender differences. The hierarchical regression analyses demonstrated that for males violence exposure was a significant predictor of PTSD symptoms,  $F(1, 73) = 11.003, p = .001$ , explaining 11.9% of the variance in this dependant variable. Grief symptoms were also a significant predictor of PTSD

symptoms,  $F(1, 72) = 13.047, p = .001$ , explaining 12.5% of the variance above and beyond that which was explained by violence exposure. Violence exposure was also a significant predictor of PTSD symptoms for females,  $F(1, 96) = 34.287, p < .0005$ , explaining 25.5% of the variance in this dependant variable. Grief symptoms were also a significant predictor of PTSD symptoms for females,  $F(1, 95) = 28.798, p < .0005$ , explaining 18.3% of the variance above and beyond that which was explained by violence exposure (See Tables 3 and 4).

Hierarchical regression analysis was also used to examine the predictive value for grief symptoms compared to PTSD symptoms in both males and females in accounting for symptoms of Depression. The results demonstrated in males that Post Traumatic Stress symptoms significantly predicted depressive symptoms  $F(1, 73) = 47.705, p < .0005$ , explaining 39.5% of the variance in depression. There was a trend or Grief symptoms to predicted depressive symptoms  $F(1, 72) = 3.701, p = .058$ , and to account for additional 1.4% of the variance. The two variables combined explained 40.9% of the variance overall. Thus, hypothesis two was supported (see Table 1). The results demonstrated that in females Post Traumatic Stress symptoms significantly predicted depressive symptoms  $F(1, 96) = 84.847, p < .0005$ , explaining 46.4% of the variance in depression. Grief symptoms also significantly predicted depressive symptoms  $F(1, 95) = 48.101, p = .012$ , explaining an additional 2.9% of the variance, with the two variables explaining 49.3% of the variance overall (See Tables 3 and 4).

Gender differences on the correlational analyses were also examined for males and females. Scores on the EGI and CPSS are highly correlated for males  $r(73) = .458, p < .005$ , as are the correlations for the CPSS with violence exposure  $r(84) = .410, p < .005$ .

Additional correlations for males were computed among the EGI (and its subscales), the CDI, the loss measure, and the CPSS. The CPSS was significantly correlated with the traumatic grief subscale  $r(72) = .488, p < .005$ , the existential grief subscale  $r(72) = .450, p < .005$ . The positive memories subscale was not significantly correlated with the CPSS  $r(73) = .210, p < .005$  of the EGI. The CDI was also correlated with CPSS on the order of  $r(83) = .639, p < .005$ . On the loss measure the CPSS was correlated with the number of losses  $r(84) = .393, p < .005$  and the weighted loss score  $r(84) = .352, p < .001$  (see Table 5).

In males the EGI was significantly correlated with the CDI on the order of  $r(73) = .441, p < .005$ . Also for males, the CDI was significantly correlated with the subscales of the EGI with a correlation of  $r(72) = .473, p < .005$  with the traumatic grief subscale, and  $r(72) = .531, p < .005$  with the existential grief subscale. The positive memory subscale and CDI were correlated  $r(73) = .068$ , which was not statistically significant. The correlation between the CPSS and the CDI was slightly larger at  $r(83) = .639, p < .005$  (see Table 5).

Among females scores on the EGI and CPSS are highly correlated  $r(96) = .575, p < .005$ , compared to the correlation of the CPSS with violence exposure  $r(105) = .528, p < .005$ . Additional correlations were computed among the EGI (and its subscales), the CDI, the loss measure, and the CPSS. The CPSS was significantly correlated with the traumatic grief subscale  $r(96) = .664, p < .005$  and the existential grief subscale  $r(96) = .532, p < .005$ . The Positive Memories subscale was not significantly correlated with the CPSS  $r(95) = .159, p > .10$  of the EGI. The CDI was also correlated with CPSS on the

order of  $r(104) = .696, p < .005$ . On the loss measure the CPSS was correlated with the number of losses  $r(104) = .454, p < .005$  and the weighted loss score  $r(104) = .428, p < .005$  (see Table 6).

In females the EGI was significantly correlated with the CDI on the order of  $r(96) = .545; p < .005$ . The CDI was significantly correlated with the subscales of the EGI, with a correlation of  $r(96) = .554, p < .01$  with the traumatic grief subscale, and  $r(96) = .602, p < .01$  with the existential grief subscale. The Positive Memory subscale and CDI were correlated  $r(96) = .066$ , which was not statistically significant. The correlation between the CPSS and the CDI was larger at  $r(105) = .696, p < .005$  (see Table 6).

#### *Comparing male and female means: Independent Sample t-Tests*

An independent t-test sample revealed that there were significant differences between males and females on means on the CPSS  $t(173) = 2.07, p = .014$ , on the EGI  $t(173) = 2.46, p = .015$ , on the Traumatic Grief subscale  $t(173) = 2.76, p = .006$ , on the CDI  $t(173) = 2.86, p = .005$ , and the number of losses  $t(173) = 2.01, p = .045$ , with females scoring higher on average on each of these respective scales.

#### *Structural Equation Modeling*

In order to elaborate further on the regression analyses and to better understand the complex relationship between grief and PTSD symptoms, Structural Equation Modeling (SEM) was conducted using the AMOS program of SPSS. The AMOS analyses were carried out on a smaller subset ( $n = 170$ ) of participants who did not have missing data on any of the observed variables included in these analyses.

The structural model with the three variables of interest, PTSD, CTG symptoms and violence exposure provided a good fit for the model, with RMSEA = .098 and CFI =

.966 (Byrne, 2001). The model's  $X^2$  (17,  $I=170$ ) = 44.67, is significant, which indicates relatively poor fit; however, the  $X^2$  fit statistic is very sensitive to sample size, which is why the other fit indices provide a better evaluation of the quality of the model (Byrne, 2001). The statistically significant path coefficients were those connecting PTSD symptoms were grief (with a path coefficient of .51), PTSD with Violence exposure (.30), and the correlational (double-arrow) path of the upstream linking the latent variables Violence exposure and Grief (.42).

A second path analysis was conducted examining PTSD's relationship with violence exposure, CTG symptoms' relationship with loss, as well as the correlation between loss and violence exposure. For this model  $X^2$  (32,  $I=170$ ) = 106, RMSEA = .117 and CFI = .918. Again, this  $X^2$  is significant, which indicates relatively poor fit. Additionally, the high RMSEA value further suggests that this model is a poor fit to the data (Byrne, 2001). However, there were several statistically significant path coefficients. These were for the paths connecting PTSD symptoms with violence exposure (.61), loss with CTG symptoms (.62), and there was a high correlational relationship between violence exposure and loss (.75).

## Discussion

This study is the first to examine the relationships among violence exposure, traumatic grief, PTSD, and depressive symptoms, and their relationships to GPA and absenteeism in an American Indian adolescent population. The regression analysis revealed that CTG symptoms accounted for PTSD symptoms above and to a degree beyond what was accounted for by violence exposure symptoms, even when the effects of depression were removed from the analysis. This finding indicates that CTG symptoms are a strong predictor of PTSD in this population. This seems to suggest additional etiological factors in the development of PTSD symptoms and supports previous research in these populations, particularly when it is considered that the losses experienced by the participants ranged from natural circumstances to unexpected deaths (Morsette et al., 2008). Thus, these findings confirm and extend the understanding of the additive role of loss to PTSD symptoms (Layne, Goodman, Farber, & Brown, & Pynoos, 2007; Pynoos, 1992).

It is also possible that there are historical factors that should be considered in terms of these losses. As noted, Yellow Horse Brave Heart (2003) postulates that historical trauma is prevalent in American Indian communities and results from historical governmental policies that decimated American Indian populations. Loss may have special meaning in the case of elders, who are considered repositories of ancestral and cultural knowledge (Morsette, 2006). Elders' are responsible for sharing and passing this knowledge down through the generations'. This oral tradition is the mechanism for instruction of the Native language, customs, ceremonies, traditional stories as well as history. Thus, young children who lose a grandparent or an elder, particularly those who

represent a significant figure in their life, may not have the opportunity to learn traditional ways of life, thereby exacerbating loss effects, and potentially putting these individuals at-risk of developing historical trauma.

It is also possible that there is an intergenerational transmission of traumatic coping responses that contributes to the development PTSD symptoms. More specifically, American Indians who had negative experiences with the government and boarding schools may have later developed PTSD symptoms (Yellow Horse Brave Heart, 2003). Thus, they may have developed a coping style that included avoidance and arousal responses. For example, individuals with such experiences may be hypervigilant and thus quicker to respond in the face of a perceived threat. These responses would be sensible in the face of danger but less useful in safe environments. Additionally, they may be more likely to avoid thinking about past events and situations, such as negative boarding school experiences, that invoke internal discomfort and anxiety. It is also possible that these coping styles have been generalized to other stressful life situations and then transmitted generationally through modeling. If this is in fact the case, it seems this would facilitate or contribute to the exacerbation of PTSD symptoms in this population.

Alternatively, these results may support a diathesis-stress model of PTSD (McKeever & Huff, 2003; Seidler & Wagner, 2006). The diathesis stress model proposes that there are risk factors associated with the development of PTSD symptoms. These factors include psychiatric history of the family, genetics, environment, gender, as well as personality factors (Layne et al., 2008; McKeever & Huff, 2003; Seidler & Wagner, 2006). As noted previously, the historical experience of American Indians has been referred to as genocide (Cohen, Dekel, Solomon, & Lavie, 2003; Dasberg, 2001; La

Capra, 1994; Yellow Horse Brave Heart & DeBruyn, 1998), and it is plausible that through these past experiences, there were individuals who developed PTSD. In the diathesis-stress model this may put immediate and extended family members at risk of pathology, even cross generationally (Layne et al., 2008; McKeever & Huff, 2003; Seidler & Wagner, 2006). The historical experiences may have created a predisposition to PTSD, and the current losses may serve as a trigger to the development of PTSD symptoms.

As noted, 94% of the children in this sample had lost someone in their lifetimes, and 74.6% had lost someone “close” to them in the last three years. It has been found that two key resiliency factors among the population under study are social support and hope (Belcourt Ditloff, 2006; Wallace & Swaney, 2007). These factors may be lessened or compromised by the number of losses and the person’s relationship to the individual that they lost. More specifically, the loss of a loved one affects a large number of people, often the entire community; thus, the strength of the social support network is diminished. Furthermore, many of the children reported multiple losses, and being inundated with these experiences may decrease hope for the future, as well as their hope for loved ones, placing them at risk of developing PTSD.

The regression analyses for males and females revealed that violence exposure and CTG symptoms were significant predictors PTSD symptoms for both males and females, with CTG accounting for more of the variance in PTSD symptoms, when compared to violence exposure. Females also had higher mean levels of PTSD and CTG symptomatology compared to the males, which is consistent with existing research that suggests females may perceive stressful events differently than males and may even

identify more closely with victims of violent events are more likely to internalize the effects of stressful events (Buckner, Beardslee, & Bassuk, 2004; Hanson et al., 2008). It also possible the higher levels of symptomatology may be attributable to the socialization process. In other words, females may be encouraged to express and identify negative emotions, whereas males may be discouraged from exhibiting these emotions (Garside & Dugan, 2002).

The SEM analysis was conducted in part because it provides a confirmatory rather than an exploratory analysis and estimates causal relationships. The results of the SEM analyses suggest that CTG symptoms are a causal factor in the development of PTSD symptoms. Thus, the more CTG symptoms a child is experiencing, the more likely he or she is to have PTSD symptoms also. However, caution is warranted, as there are other factors involved in the development of PTSD symptoms, including violence exposure. In addition, path models and their related statistics can be subjected to a variety of different interpretations in the same data set.

The first SEM models supports research indicating that there are differing etiological factors involved in the development of PTSD symptoms, and that CTG may even be a more valid construct than PTSD as part of an explanatory model of stressors and symptomatology in American Indian adolescents (Byrne, 2001; Cohen et al., 2002; Cohen et al., 2004; Cohen et al., 2006; Layne et al., 2007; Pynoos, 1992).

This conclusion is further supported by the second path analysis conducted. Although the second analysis supported a causal relationship between violence exposure and PTSD symptoms and a second causal relationship between loss and CTG symptoms,

the model's overall RMSEA indicated this model was a poor fit, while the first model demonstrated a good fit (Byrne, 2001).

In the second regression analysis CTG symptoms predicted depressive symptoms over and above the amount predicted by CTSS symptoms. This may explain the sense of the loss of meaning and purpose of life in some American Indian adolescents, given the differing definition of families in American Indian populations. Thus, these children may feel more depressed because they have lost a part of themselves. Furthermore, it may provide some support to the historical trauma concept (Yellow Horse Brave Heart, 2003). As noted above, there may be an increased sense of sadness over the loss of the opportunity to receive appropriate instruction in traditional practices, particularly if the individual lost is a grandparent or an elder. In summary, this research may support the notion that the use of the culturally embedded conceptions of the DSM with regard to the Criterion A component of PTSD may interfere with a complete and accurate case conceptualization. Thus this seems to support the need for an emic approach in which participants within a culture define a mental health problem. The current definition of PTSD would exclude such a diagnosis despite that the American Indian adolescent respondents in this study endorsed the three clusters of PTSD symptoms related to the loss rather than violence exposure.

In terms of the third hypothesis regarding grief and PTSD symptoms, again the results appear to support previous research that indicates that there may be different etiological factors involved in mental health problems in Native American populations. For example, previous research has shown that Native American adolescents witness clinically significant levels of violence and also have elevated levels of PTSD symptoms

(Morsette et al., 2006). As noted, clinical significance in this work was defined as referring to those students who scored above the measures cutoff scores. PTSD rates of 22% have been reported in some Native American populations (Yellow Horse Brave Heart, 2003), a significantly greater rate than the 8% reported for the general population (APA, 2003). It is possible that these rates reflect a grief phenomenon rather than PTSD as it is defined in the DSM.

Grief symptoms had a stronger correlation with PTSD symptoms, compared to violence exposure. This was also true in the independent sample t-tests between males and females. However, among females there was stronger correlation between grief symptoms and PTSD symptoms. This may also be due to differences in socialization. These results seem to suggest that PTSD measurements may need to be redefined for these populations. Additionally, the results may suggest that there is a need for modification of treatment for American Indian adolescents experiencing PTSD symptoms. More specifically, the current treatment of grief differs somewhat from PTSD treatments. Grief treatment involves facilitating the grieving process, whereas PTSD treatment largely focuses on reducing anxiety associated with the traumatic event and addressing cognitive distortions (Cohen et al., 2003; Stein et al., 2003). PTSD treatment may need to include a grief component, or individuals may need to receive two different forms of treatment to resolve complete distress associated with losses and violence exposure.

The results also demonstrated that CPSS score were significantly correlated with the subscales of the EGI. The correlation between the traumatic grief subscale and CPSS supports the proposition that there are PTSD symptoms resulting from the unexpected or

traumatic death of a loved one (Cohen et al., 2004; Layne, Goodman, Farber, Brown, & Pynoos, 2007). This contrasts with the traditional criteria of PTSD found in the DSM-IV-TR. That definition requires that an individual is present at the time of the death, whereas CTG does not require that the child witnesses the death. The EGI, particularly the CTG subscale, may share some symptom criteria with PTSD, yet the symptoms pertain to loss rather than witnessing a violent event. Additionally, traumatic grief results from an inability to grieve adaptively, and they are unable to think about and process the loss (Cohen et al., 2004). This idea is supported in part by the correlation between the CPSS and the existential grief and positive connection subscales. The existential grief subscale items indicate that children were unable to develop meaning and purpose in life. On the positive connection subscale low scores indicate that children were unable to have a positive connection with the person they lost. These symptoms interfere with the normal grieving process and thus develop PTSD symptoms.

Depression was also correlated with PTSD symptoms. This supports previous research that suggests PTSD and depression are often comorbid (Davis & Siegel, 2000; Jaycox et al., 2002; Morsette et al., 2006; O'Donnell et al., 2004; Stein et al., 2003). As noted, EGI and CDI scores were significantly correlated. This indicates that the more loss and grief a child experiences the more likely, he or she is to exhibit signs of depression. The EGI inquires about the year in which an individual had lost someone close to them, but it does differentially consider the impact of recent losses compared to long-term ones. Additionally, children were instructed to only think about the loss that had the greatest impact on them; nevertheless, in many cases students named multiple losses, as well as multiple years in which they lost those individuals.

The additional loss scale that was developed for this research inquired of losses in the last three years. The losses ranged from traumatic unexpected circumstances, to natural causes, violence, and self-harm. A majority of the children had lost someone close to them in the last three years. The previous finding may suggest that children in this sample were not able to quantify or compare the impact of different losses, possibly due to the closeness of reservation communities, as well as the definition of family. More specifically, families are large, and many people are related; each family member serves a different role in an individual's life. For example, unlike in western culture, a cousin or a close friend may be considered to be a brother or an uncle. This individual then fulfills that familial role in that child's life, which differs from the role of a grandmother or an aunt. The role of each family member contributes to the well-being of the child. This concept is supported in part by the findings from the existential grief scale, which assesses how a child feels following a loss; higher scores reflect a reduction in a child's purpose and meaning in life. Thus each loss may be equally difficult because the participant is losing an important figure in his or her life.

As noted in the results section, there were no significant two-tailed Pearson product moment correlations between the symptom variables and GPA and absenteeism. This suggests the possibility that mental health, particularly as tapped by PTSD and grief symptoms, does not impair academic performance or school attendance. It is also possible that this is reflective of a larger phenomenon. More specifically, school counselors in this work noted that many children seem to have a propensity to perform at a higher level at the beginning of the school year, precisely when this research was conducted. A one tailed Pearson product moment correlation revealed a statistically

significant negative correlation between GPA and depression. This may suggest that students with increased levels of depressive symptoms do indeed perform more poorly in school. It is possible that the small magnitude of the correlation is due in part to the young age of the children and the fact that their parents do not allow them to miss school, something that may restrict the range of absences. Despite the significance of these findings this research is not without its limitations.

First, the sample consisted of primarily Native American students and generalizations to other cultures and even other tribes may be limited. Second, the sample was drawn from one school from one reservation. There are hundreds of tribes and many reservations located in the US, all of which have cultural as well as regional differences. Thus, the findings may not be generalizable to other school-aged populations. A comparison sample Caucasian sample was not obtained in this study large part because the primary area of interest was American Indian adolescent populations. Third, considering that many Native American tribes believe that healthy functioning requires balance in the physical, spiritual, emotional and mental domains, this study was limited in that it primarily examines factors related to mental and emotional well-being; the findings may be incomplete without the examination of those other related factors. Fourth, it is possible that local health beliefs may skew the results. In other words, students who believe in traditional concepts of healthy functioning may have obtained either elevated scores or decreased scores on the measures, as they may have been thinking about their functioning in a spiritual domain as opposed to the mental health domains assessed by the measures.

Fifth, the EGI measure did not assess whether a child was present at the time of the loss they experienced, or determine if he or she was the individual who discovered the death of the person they lost. There may be differential impacts pertaining to these two factors. For instance, if a child found the body of someone who committed suicide, depending on the mechanism of death they may have thought that person had been murdered. Thus, they may have felt their life was also in danger. Similarly, if they were present at the time of the person's death, such as a car accident or murder, they may have felt their life was also at risk. Sixth, only one academic quarter's GPA and absentee data were examined, and this may provide an insufficient time period to capture any academic consequences related to mental health functioning and a longitudinal examination of these factors may be in order. Finally, this research provides a quantitative understanding and lacks a qualitative understanding. Future qualitative research is in order to better understand PTSD etiological factors in American Indian adolescents. Nevertheless, this is the first research to examine the relationships between mental health functioning and school performance. It also provides evidence that CTG is a good predictor of PTSD symptoms in American Indian adolescents. In short, it challenges the current conceptualization of PTSD in American Indian adolescents.

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**Table 1**

*Summary of Hierarchical Regression Analysis for Violence Exposure and Grief as Predictors of and Child Posttraumatic Stress Symptoms (CPSS): Equation 1*

Variable	<u>B</u>	<u>Standard error of the B</u>	<u>Adjusted R<sup>2</sup></u>	<u>Adjusted R<sup>2</sup> Δ</u>	<u>Sig Δ</u>
<b>Step 1</b>					
<b>Violence Exposure</b>	.563	.096	.163	.163	< .0005
<b>Step 2</b>					
<b>Violence Exposure</b>	.366	.089			
+					
<b>Grief Symptoms</b>	.152	.022	.348	.185	< .0005

*Summary of Hierarchical Regression Analysis for Child Posttraumatic Stress Symptoms and Grief (CPSS) as Predictors of Depressive Symptoms: Equation 2*

Variable	<u>B</u>	<u>Standard error of the B</u>	<u>Adjusted R<sup>2</sup></u>	<u>Adjusted R<sup>2</sup> Δ</u>	<u>Sig Δ</u>
<b>Step 1</b>					
<b>CTSS Symptoms</b>	1.518	.127	.454	.454	< .0005
<b>Step 2</b>					
<b>CTSS Symptoms</b>	1.260	.146			
+					
<b>Grief Symptoms</b>	.160	.049	.483	.029	< .0005

**Note:**  $n = 172$

**Table 2**  
*Correlations among CPSS and other variables of interest*

Variable	PTSD Sx's	Viol. Exp.	Grief Total	Trauma Grief	Existen. Grief	Pos. Conn.	Dep. Sx's
1. PTSD Sx's	1						
2. Viol. Exp.	.441**	1					
3. Grief Total	.540**	.314**	1				
4. Trauma Grief	.613**	.369**	.924*	1			
5. Existen. Grief	.509**	.305**	.960**	.859**	1		
6. Pos. Conn.	.189*	.056	.683**	.443**	.531**	1	
7. Dep. Sx's	.687**	.380**	.516**	.542**	.578**	.085	1
8. Loss	.446**	.392**	.436**	.420**	.416**	.272**	.345**
9. Weighted Loss	.412**	.417**	.447**	.425**	.425**	.295**	.329**

**Note:**  $n = 172 - 193$ .

\* Correlation is significant at  $p \leq .05$  (two tailed test)

\*\* Correlation is significant at  $p \leq .01$  (two tailed test)

**Table 3**  
*Summary of Hierarchical Regression Analysis for Violence Exposure and Grief as Predictors of and Child Posttraumatic Stress Symptoms (CPSS) Among Males: Equation 1*

Variable	<i>B</i>	<i>Standard error of the B</i>	<i>Adjusted R<sup>2</sup></i>	<i>Adjusted R<sup>2</sup> Δ</i>	<i>Sig Δ</i>
<b>Step 1</b> <b>Violence Exposure</b>	.355	.107	.119	.119	.001
<b>Step 2</b> <b>Violence Exposure</b> + <b>Grief Symptoms</b>	.240 .108	.104 .030	.244	.125	.001

*Summary of Hierarchical Regression Analysis for Child Posttraumatic Stress Symptoms and Grief (CPSS) as Predictors of Depressive Symptoms: Equation 2*

Variable	<i>B</i>	<i>Standard error of the B</i>	<i>Adjusted R<sup>2</sup></i>	<i>Adjusted R<sup>2</sup> Δ</i>	<i>Sig Δ</i>
<b>Step 1</b> <b>CTSS Symptoms</b>	1.197	.173	.395	.395	< .0005
<b>Step 2</b> <b>CTSS Symptoms</b> + <b>Grief Symptoms</b>	1.028 .104	.191 .054	.409	.014	< .0005

**Note:**  $n = 74$

**Table 4**  
*Summary of Hierarchical Regression Analysis for Violence Exposure and Grief as Predictors of and Child Posttraumatic Stress Symptoms (CPSS) Among Females: Equation 1*

Variable	<u>B</u>	<u>Standard error of the B</u>	<u>Adjusted R<sup>2</sup></u>	<u>Adjusted R<sup>2</sup> Δ</u>	<u>Sig Δ</u>
<b>Step 1</b> <b>Violence Exposure</b>	.903	.154	.255	.255	< .0005
<b>Step 2</b> <b>Violence Exposure</b> + <b>Grief Symptoms</b>	.611 .165	.146 .031	.435	.183	< .0005

*Summary of Hierarchical Regression Analysis for Child Posttraumatic Stress Symptoms and Grief (CPSS) as Predictors of Depressive Symptoms: Equation 2*

Variable	<u>B</u>	<u>Standard error of the B</u>	<u>R<sup>2</sup></u>	<u>R<sup>2</sup> Δ</u>	<u>Sig Δ</u>
<b>Step 1</b> <b>CTSS Symptoms</b>	1.605	.174	.464	.464	< .0005
<b>Step 2</b> <b>CTSS Symptoms</b> + <b>Grief Symptoms</b>	1.301 .195	.207 .077	.493	.029	< .0005

**Note:**  $n = 97$

**Table 5**  
*Means and standard deviations for males and females*

	Gender								
	Males			Females			Total		
	Mean	<i>N</i>	Std. Dev.	Mean	<i>N</i>	Std. Dev.	Mean	<i>N</i>	Std. Dev.
Age	12.79	86	.653	12.80	107	.665	12.80	193	.658
Violence Exposure Total Score	4.23	86	3.47	3.98	107	3.11	4.0	193	3.2742 <sup>1</sup>
LESTot	4.62	86	4.31	4.10	107	3.265	4.33	193	3.76
CPSS Total Score	4.49	86	4.26	6.05	107	5.719	5.35	193	5.16
EGI Total Score	26.77	75	15.43	31.98	98	15.66	29.72	173	15.73
Traumatic Grief	6.99	74	5.54	9.24	98	6.33	8.27	172	6.09
Existential Grief	10.49	74	7.48	12.37	98	7.95	11.56	172	7.79
Positive Mem.	9.53	75	3.97	10.37	98	3.59	10.01	173	3.77
Raw CDI	1.97	85	2.95	3.46	106	3.84	2.80	191	3.54
CDI T score	46.11	85	7.99	50.56	106	13.41	48.58	191	11.512
Number Losses	4.74	86	2.88	5.75	107	3.46	5.30	193	3.25
Weighted Loss	16.30	86	9.57	18.73	107	11.55	17.65	193	10.75

**Note:** Total  $n = 172 - 193$ ; males  $n = 74 - 86$ ; females  $n = 98 - 107$

Difference is significant at

\*\*  $p \leq .01$  (two tailed)

\*  $p \leq .05$  (two tailed)

**Table 6 Males**  
*Correlations among CPSS and other variables of interest by gender*

Variable	PTSD Sx's	Viol. Exp.	Grief Total	Trauma Grief	Existen. Grief	Pos. Conn.	Dep. Sx's
1. PTSD Sx's	1						
2. Viol. Exp.	.335**	1					
3. Grief Total	.458**	.306**	1				
4. Trauma Grief	.488**	.342**	.921*8	1			
5. Existen. Grief	.450**	.299**	.967**	.870**	1		
6. Pos. Conn.	.210*	.100	.759**	.511**	.626**	1	
7. Dep. Sx's	.639**	.360**	.441**	.473**	.531**	.068	1
8. Loss	.393**	.400**	.329**	.251*	.351**	.257*	.270*
9. Weighted Loss	.352**	.445**	.308**	.234*	.325**	.247*	.234*

**Note:**  $n = 74 - 86$

Correlation is significant at

\*\*  $p \leq .01$  (two tailed)

\*  $p \leq .05$  (two tailed)

**Table 7 Females**  
*Correlations among CPSS and other variables of interest by gender*

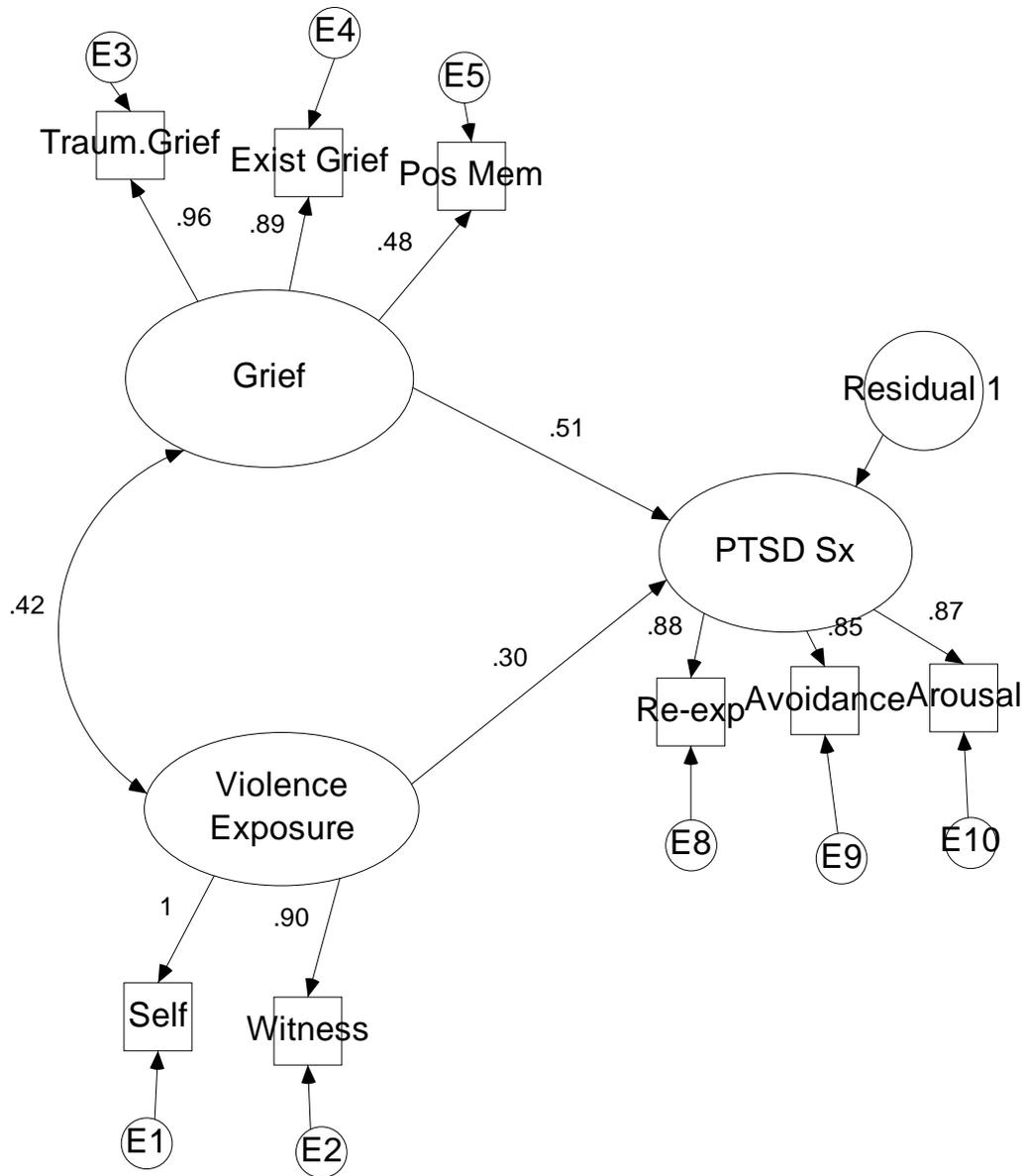
Variable	PTSD Sx's	Viol. Exp.	Grief Total	Traum a Grief	Existen. Grief	Pos. Conn.	Dep. Sx's
1. PTSD Sx's	1						
2. Viol. Exp.	.500**	1					
3. Grief Total	.575**	.372**	1				
4. Trauma Grief	.664**	.461**	.925*	1			
5. Existen. Grief	.532**	.353**	.956**	.852**	1		
6. Pos. Conn.	.159	.030	.614**	.385**	.451**	1	
7. Dep. Sx's	.696**	.480**	.545**	.554**	.602**	.066	1
8. Loss	.454**	.493**	.479**	.485**	.438**	.264*	.350**
9. Wted Loss	.428**	.436**	.519**	.512**	.472**	.318*	.351**

**Note:**  $n = 98 - 107$  Correlation is significant at

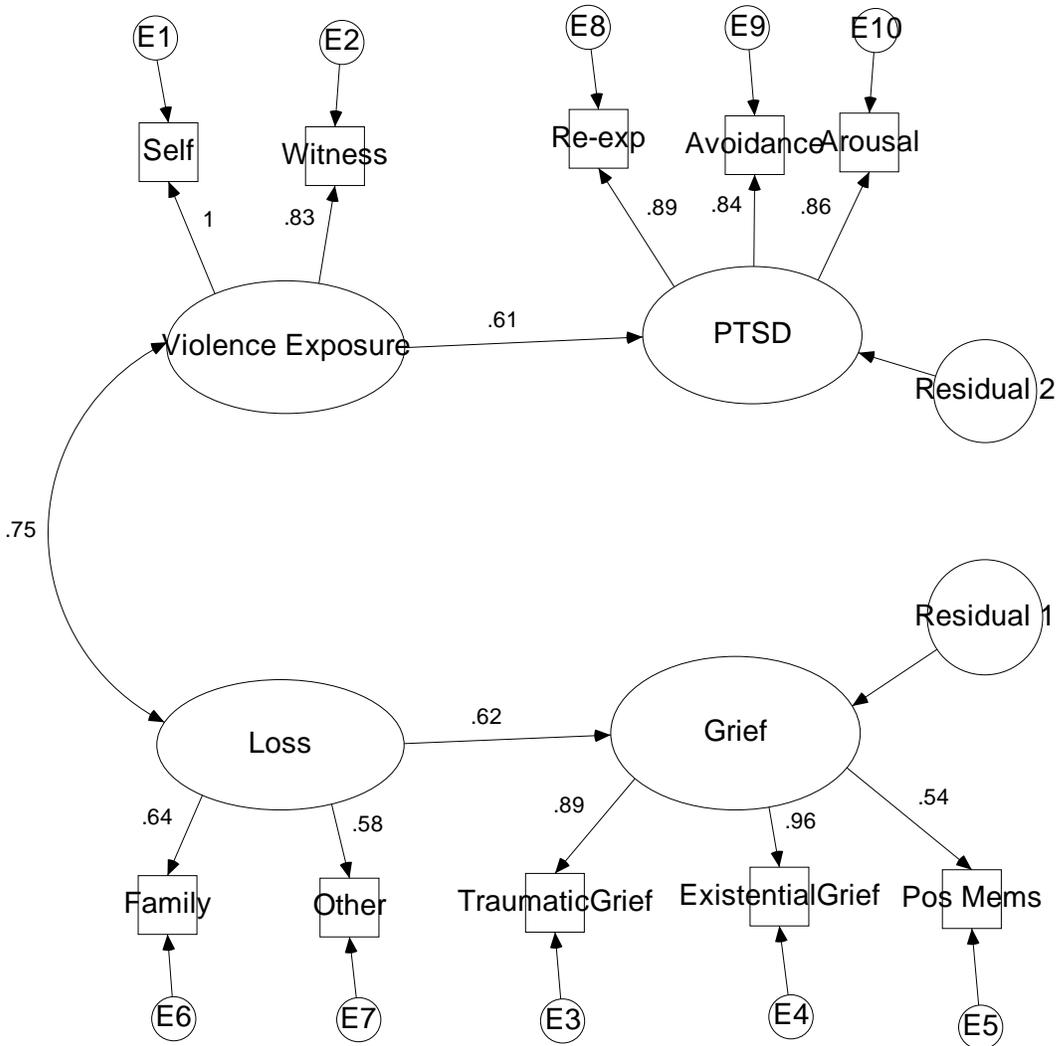
\*\*  $p \leq .01$  (two tailed)

\*  $p \leq .05$  (two tailed)

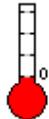
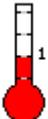
**Figure 1: Path Model for PTSD Symptoms**



**Figure 2: Path Model for PTSD Symptoms, including Loss**

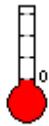
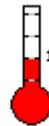


Appendix A  
Life Events Scale

	0 	1 	2 	3 
1. How often over the past year did anyone tell you they were going to hurt <u>you</u> ?	Never	Sometimes	Lots of times	Almost every day
2. How often over the past year did you see <u>someone else</u> being told they were going to be hurt?	Never	Sometimes	Lots of times	Almost every day
3. How often over the past year have you <u>yourself</u> been slapped, punched, or hit by someone?	Never	Sometimes	Lots of times	Almost every day
4. How often over the past year have you seen <u>someone else</u> being slapped, punched, or hit by someone?	Never	Sometimes	Lots of times	Almost every day
5. How often over the past year have <u>you</u> been beaten up?	Never	Sometimes	Lots of times	Almost every day
6. How often over the past year have you seen <u>someone else</u> getting beaten up?	Never	Sometimes	Lots of times	Almost every day
7. How often over the past year have you <u>yourself</u> been attacked or stabbed with a knife?	Never	Sometimes	Lots of times	Almost every day
8. How often over the past year have you seen <u>someone else</u> being attacked or stabbed with a knife?	Never	Sometimes	Lots of times	Almost every day
9. How often over the past year has someone pointed a <b>real</b> gun at <u>you</u> ?	Never	Sometimes	Lots of times	Almost every day
10. How often over the past year have you seen someone pointing a <b>real</b> gun at <u>someone else</u> ?	Never	Sometimes	Lots of times	Almost every day

11. How often over the past year have you <u>yourself</u> actually been shot at or shot with a <b>real</b> gun?	Never	Sometimes	Lots of times	Almost every day
12. How often over the past year have you seen <u>someone else</u> being shot at or shot with a <b>real</b> gun?	Never	Sometimes	Lots of times	Almost every day

Appendix B  
Child Posttraumatic Stress Symptom Scale

	<p><b>0</b></p> 	<p><b>1</b></p> 	<p><b>2</b></p> 	<p><b>3</b></p> 
<p>1. Have you had upsetting thoughts or images about the event that came into your head when you didn't want them to?</p>	Not at all	Once in a while	Half the time	Almost always
<p>2. Have you been acting or feeling as if the event was happening again (for example, hearing something or seeing a picture about it and feeling as if you were there again)?</p>	Not at all	Once in a while	Half the time	Almost always
<p>3. Have you been feeling upset when you think about or hear about the event (for example, feeling scared, angry, sad, guilty, etc.)?</p>	Not at all	Once in a while	Half the time	Almost always
<p>4. Have you been trying not to think about, talk about, or have feelings about the event?</p>	Not at all	Once in a while	Half the time	Almost always
<p>5. Have you been trying to avoid activities, people, or places that remind you of the event (for example, not wanting to play outside or go to school)?</p>	Not at all	Once in a while	Half the time	Almost always
<p>6. Have you been feeling irritable or having fits of anger?</p>	Not at all	Once in a while	Half the time	Almost always
<p>7. Have you been jumpy or easily startled (for example, when someone walks up behind you)?</p>	Not at all	Once in a while	Half the time	Almost always

Appendix C  
Expanded Grief Inventory  
UCLA Grief Inventory © 2001 by C. M. Layne

UCLA Grief Inventory © 2001 by C. M. Layne

**Directions:** Below are five different calendars of the past month (30 days). For each question, choose the calendar that shows how often the thing that the question asks about happened. Then, circle that number.

<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>																																																																																																																																																																																																			
<b>Never</b>	<b>Rarely</b> (once every week or two)	<b>Sometimes</b> (two or three times a week)	<b>Often</b> (four or five times a week)	<b>Almost Always</b> (just about every day)																																																																																																																																																																																																			
<table border="1" style="border-collapse: collapse; width: 100px; height: 100px; text-align: center;"> <tr><td>S</td><td>M</td><td>T</td><td>W</td><td>H</td><td>F</td><td>S</td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> </table>	S	M	T	W	H	F	S																																											<table border="1" style="border-collapse: collapse; width: 100px; height: 100px; text-align: center;"> <tr><td>S</td><td>M</td><td>T</td><td>W</td><td>H</td><td>F</td><td>S</td></tr> <tr><td> </td><td>X</td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td>X</td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td>X</td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> </table>	S	M	T	W	H	F	S		X										X																				X											<table border="1" style="border-collapse: collapse; width: 100px; height: 100px; text-align: center;"> <tr><td>S</td><td>M</td><td>T</td><td>W</td><td>H</td><td>F</td><td>S</td></tr> <tr><td>X</td><td>X</td><td> </td><td> </td><td>X</td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td>X</td><td> </td><td> </td><td> </td><td>X</td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td>X</td><td>X</td><td> </td><td> </td><td> </td><td>X</td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td>X</td><td>X</td><td> </td><td>X</td><td> </td><td>X</td></tr> </table>	S	M	T	W	H	F	S	X	X			X					X				X									X	X				X									X	X		X		X	<table border="1" style="border-collapse: collapse; width: 100px; height: 100px; text-align: center;"> <tr><td>S</td><td>M</td><td>T</td><td>W</td><td>H</td><td>F</td><td>S</td></tr> <tr><td>X</td><td>X</td><td> </td><td>X</td><td> </td><td>X</td><td>X</td></tr> <tr><td>X</td><td>X</td><td> </td><td>X</td><td> </td><td>X</td><td>X</td></tr> <tr><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td></tr> <tr><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td></tr> <tr><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td></tr> <tr><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td></tr> </table>	S	M	T	W	H	F	S	X	X		X		X	X	X	X		X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
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A. Has anyone close to you ever died? (please circle the answer)	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 10%; text-align: center;"><b>No</b></td> <td style="padding-left: 10px;">(Please skip through Question 17)</td> </tr> <tr style="background-color: #e0e0e0;"> <td style="text-align: center;"><b>Yes</b></td> <td style="padding-left: 10px;">(Please complete through Question 17)</td> </tr> </table>	<b>No</b>	(Please skip through Question 17)	<b>Yes</b>	(Please complete through Question 17)	
<b>No</b>	(Please skip through Question 17)					
<b>Yes</b>	(Please complete through Question 17)					
<ul style="list-style-type: none"> <li>• Whose death has been the most difficult to deal with? (please describe your relationship to them) _____</li> <li>• In which year did this person die? _____</li> <li>• What happened that made this person die? _____</li> </ul>						
<p><b>Directions:</b> The following 17 statements concern how you are dealing with the death(s) of someone you cared about. For each statement, circle the number that tells how often it has happened during the past month. Use the Frequency Rating Scale (with the five different calendars) on the front of this survey to help you. Please answer every question that you can.</p>						
<i>Thought or Feeling:</i>	<table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <tr> <th style="width: 10%;">Never</th> <th style="width: 10%;">Rarely</th> <th style="width: 10%;">Sometimes</th> <th style="width: 10%;">Often</th> <th style="width: 10%;">Almost Always</th> </tr> </table>	Never	Rarely	Sometimes	Often	Almost Always
Never	Rarely	Sometimes	Often	Almost Always		
1) I enjoy good memories of him/her.	<table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <tr> <td style="width: 10%;">Never 0</td> <td style="width: 10%;">Rarely 1</td> <td style="width: 10%;">Sometimes 2</td> <td style="width: 10%;">Often 3</td> <td style="width: 10%;">Almost Always 4</td> </tr> </table>	Never 0	Rarely 1	Sometimes 2	Often 3	Almost Always 4
Never 0	Rarely 1	Sometimes 2	Often 3	Almost Always 4		
2) It is hard for me to believe that he/she is dead.	<table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <tr> <td style="width: 10%;">Never 0</td> <td style="width: 10%;">Rarely 1</td> <td style="width: 10%;">Sometimes 2</td> <td style="width: 10%;">Often 3</td> <td style="width: 10%;">Almost Always 4</td> </tr> </table>	Never 0	Rarely 1	Sometimes 2	Often 3	Almost Always 4
Never 0	Rarely 1	Sometimes 2	Often 3	Almost Always 4		
3) I don't do positive things that I <i>want</i> or <i>need</i> to do because they remind me of the person who died.	<table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <tr> <td style="width: 10%;">Never 0</td> <td style="width: 10%;">Rarely 1</td> <td style="width: 10%;">Sometimes 2</td> <td style="width: 10%;">Often 3</td> <td style="width: 10%;">Almost Always 4</td> </tr> </table>	Never 0	Rarely 1	Sometimes 2	Often 3	Almost Always 4
Never 0	Rarely 1	Sometimes 2	Often 3	Almost Always 4		
4) I feel more lonely since he/she died.	<table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <tr> <td style="width: 10%;">Never 0</td> <td style="width: 10%;">Rarely 1</td> <td style="width: 10%;">Sometimes 2</td> <td style="width: 10%;">Often 3</td> <td style="width: 10%;">Almost Always 4</td> </tr> </table>	Never 0	Rarely 1	Sometimes 2	Often 3	Almost Always 4
Never 0	Rarely 1	Sometimes 2	Often 3	Almost Always 4		
5) I can't stop thinking about the person who died when I want to think about other things.	<table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <tr> <td style="width: 10%;">Never 0</td> <td style="width: 10%;">Rarely 1</td> <td style="width: 10%;">Sometimes 2</td> <td style="width: 10%;">Often 3</td> <td style="width: 10%;">Almost Always 4</td> </tr> </table>	Never 0	Rarely 1	Sometimes 2	Often 3	Almost Always 4
Never 0	Rarely 1	Sometimes 2	Often 3	Almost Always 4		
6) I feel that, even though he/she is gone, he/she is still an important part of my life.	<table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <tr> <td style="width: 10%;">Never 0</td> <td style="width: 10%;">Rarely 1</td> <td style="width: 10%;">Sometimes 2</td> <td style="width: 10%;">Often 3</td> <td style="width: 10%;">Almost Always 4</td> </tr> </table>	Never 0	Rarely 1	Sometimes 2	Often 3	Almost Always 4
Never 0	Rarely 1	Sometimes 2	Often 3	Almost Always 4		
7) Unpleasant thoughts about <i>how</i> the person died get in the way of enjoying good memories of him/her.	<table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <tr> <td style="width: 10%;">Never 0</td> <td style="width: 10%;">Rarely 1</td> <td style="width: 10%;">Sometimes 2</td> <td style="width: 10%;">Often 3</td> <td style="width: 10%;">Almost Always 4</td> </tr> </table>	Never 0	Rarely 1	Sometimes 2	Often 3	Almost Always 4
Never 0	Rarely 1	Sometimes 2	Often 3	Almost Always 4		

8) Life for me doesn't have much purpose since his/her death.	Never 0	Rarely 1	Sometimes 2	Often 3	Almost Always 4
9) I avoid talking about the person who died because it is too painful to think about him/her.	Never 0	Rarely 1	Sometimes 2	Often 3	Almost Always 4
10) I enjoy thinking about him/her.	Never 0	Rarely 1	Sometimes 2	Often 3	Almost Always 4
11) I feel that my life is empty without him/her.	Never 0	Rarely 1	Sometimes 2	Often 3	Almost Always 4
12) I have upsetting or scary dreams about the person who died.	Never 0	Rarely 1	Sometimes 2	Often 3	Almost Always 4
13) I don't see myself having a good life without him/her.	Never 0	Rarely 1	Sometimes 2	Often 3	Almost Always 4
14) I feel more irritable since he/she died.	Never 0	Rarely 1	Sometimes 2	Often 3	Almost Always 4
15) I think about getting revenge on whoever is responsible for his/her death.	Never 0	Rarely 1	Sometimes 2	Often 3	Almost Always 4
16) I feel like a big part of me has died with him/her.	Never 0	Rarely 1	Sometimes 2	Often 3	Almost Always 4
17) I have pleasant or comforting dreams about the person who died.	Never 0	Rarely 1	Sometimes 2	Often 3	Almost Always 4

Appendix D  
Measure of Loss

1. Have you lost a close family member who died in the last three years?  
Yes \_\_\_\_\_ No \_\_\_\_\_
2. How many close family members have you lost during this time?  
0 \_\_\_\_\_ 1 \_\_\_\_\_ 2 \_\_\_\_\_ 3 \_\_\_\_\_ 4 or more \_\_\_\_\_
3. Have you lost a schoolmate or somebody you just kind of knew who died in the last three years?  
Yes \_\_\_\_\_ No \_\_\_\_\_
4. How many schoolmates have you lost during this time?  
0 \_\_\_\_\_ 1 \_\_\_\_\_ 2 \_\_\_\_\_ 3 \_\_\_\_\_ 4 or more \_\_\_\_\_
5. Have you lost somebody you just kind of knew who died in the last three years?  
Yes \_\_\_\_\_ No \_\_\_\_\_
6. How many people that you just kind of knew have you lost during this time?  
0 \_\_\_\_\_ 1 \_\_\_\_\_ 2 \_\_\_\_\_ 3 \_\_\_\_\_ 4 or more \_\_\_\_\_
7. Have you lost a close friend who died in the last three years?  
Yes \_\_\_\_\_ No \_\_\_\_\_
8. How many close friends have you lost during this time?  
0 \_\_\_\_\_ 1 \_\_\_\_\_ 2 \_\_\_\_\_ 3 \_\_\_\_\_ 4 or more \_\_\_\_\_
9. Have you lost a relative (for example, grandparent, cousin, uncle, aunt etc.) who died in the last three years?  
Yes \_\_\_\_\_ No \_\_\_\_\_

10. How many relatives have you lost during this time?

0 \_\_\_\_\_ 1 \_\_\_\_\_ 2 \_\_\_\_\_ 3 \_\_\_\_\_ 4 or more \_\_\_\_\_

11. Were any of these losses due to violence?

Yes \_\_\_\_\_ No \_\_\_\_\_

12. How many of these losses were due to violence?

0 \_\_\_\_\_ 1 \_\_\_\_\_ 2 \_\_\_\_\_ 3 \_\_\_\_\_ 4 or more \_\_\_\_\_

13. Were any of these losses due to illness?

Yes \_\_\_\_\_ No \_\_\_\_\_

14. How many of these losses were due to illness ?

0 \_\_\_\_\_ 1 \_\_\_\_\_ 2 \_\_\_\_\_ 3 \_\_\_\_\_ 4 or more \_\_\_\_\_

Appendix E  
Parent Permission Slip

Dear Parents:

It is reported that many children in the United States witness a traumatic event in the school or in the community. Additionally, many children have somebody that they are close to pass away. These events can often have an impact on a child's life. In some cases children stop engaging in social activities or experience difficulties with their school work. However, the potential impacts of such events are not completely understood.

Aaron Morsette, a graduate student at The University of Montana alumnus is conducting a research project for his dissertation. The purpose of this project is to attempt to get a better understanding of how a traumatic event and/or having somebody pass away may impact a child's life. We need to know if you object to Mr. Morsette using information gathered by the school that is related to your child. In short, he is investigating the impact of traumatic events and loss on a student's functioning at \_\_\_\_\_ Schools. He is also interested examining how these events may impact a child's academic performance and school attendance.

This project will also provide the administration and teaching staff with very important information that will benefit many of the students. Staff will be better able to match critical services to the needs of the students and this will allow us the school make continual improvements.

Please note that your child will not be doing anything extra for this project. Aaron Morsette will simply receive data form the school and conduct some statistical procedures. Your child's information will be anonymous, with no names attached to it, and all information will be kept in the strictest confidence; no one outside the school will have access to information that links your child to their completed survey. All information will be stored in a secured office and on a password-protected computer. At the end of the project all of the information will be destroyed. Finally, your child will have their name entered into a drawing for a chance to win one of eight \$25 drawings, whether or not they decide to participate in the survey.

If you have questions about this project, feel free to contact Aaron Morsette at 406-243-5291. You only need to return the form below if you DO NOT want this information to be provided to Aaron Morsette.

Thank you,

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By signing below and returning this form, you are indicating that you DO NOT want your child's information to be provided to Aaron Morsette. You only need to return this form if you DO NOT want this information to be provided to Aaron Morsette.

**Child Name:** \_\_\_\_\_ **Grade:** \_\_\_\_\_

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Parent or Guardian Signature

Date