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## The influence of ethnic identity and family support on posttraumatic symptoms in maltreated youth

Harpreet Kaur

*University of Nevada, Las Vegas*

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THE INFLUENCE OF ETHNIC IDENTITY AND FAMILY SUPPORT ON  
POSTTRAUMATIC SYMPTOMS IN MALTREATED YOUTH

By

Harpreet Kaur

A thesis submitted in partial fulfillment of the requirements for the

Master of Arts Degree

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Christopher Kearney, Committee Chair

Laurel Pritchard, Committee Member

Cortney Warren, Committee Member

Margaret Oakes, Graduate College Representative

Ronald Smith, Ph. D., Vice President for Research and Graduate Studies  
and Dean of the Graduate College

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## ABSTRACT

### The Influence of Ethnic Identity and Family Support on Posttraumatic Symptoms in Maltreated Youth

By

Harpreet Kaur

Dr. Christopher A. Kearney, Examination Committee Chair  
Professor of Psychology  
University of Nevada, Las Vegas

Maltreated children are at greater risk of developing PTSD than nonmaltreated children (Ackerman et al., 1998; Epstein et al., 1997; Famularo et al., 1996; Kilpatrick et al., 2003; Widom, 1999). This study sought to assess the role of ethnicity, ethnic identity, and family support on the effects of maltreatment and trauma in adolescents. Participants (n=145) included adolescents from Child Haven, a Department of Family Services (DFS)-related site in Las Vegas, and youths in foster care assessed at the offices of Dr. Stephanie Holland. The first hypothesis was that non-Caucasian youth would have higher levels of PTSD-related symptoms than Caucasian youth. The second hypothesis was that lower scores on the PTSD related measures would associate with higher scores on a measure of ethnic identity (MEIM). The last hypothesis was that lower scores on the PTSD related measures would associate with higher scores on a measure of family cohesion. Hotelling's T2 and hierarchical linear regressions were used to analyze these hypotheses. Hypothesis one and two were not supported. Hypothesis three was supported, suggesting that family support is related to the onset of PTSD symptoms. Limitations, clinical implications, and future directions were discussed.

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# CHAPTER 1

## INTRODUCTION

### *Child Maltreatment: Definitions*

The Federal Child Abuse Prevention and Treatment Act of 1974 defines child maltreatment as “(1) any recent act or failure to act on the part of a parent or caretaker which results in death, serious physical or emotional harm, sexual maltreatment or exploitation; or (2) an act or failure to act which presents an imminent risk of serious harm” (U.S. Department of Health and Human Services [USDHHS], 2007). The American Psychological Association Committee on Professional Practice and Standards ([APACPP];1998, p.16) defines maltreatment as “actions that are abusive, neglectful, or otherwise threatening to a child's welfare.”

Four categories of maltreatment have been identified: physical, sexual, neglect, and emotional. Physical maltreatment refers to infliction of bodily injury on a child by non-accidental means. Examples include beating, shaking, scalding, and biting (Dubowitz & Bennett, 2007). Sexual maltreatment refers to sexual contact or attempted contact between a child and a caregiver or adult for purposes of the caregiver’s sexual gratification or financial gain. Neglect refers to failure to provide health care, education, protection from environmental hazards, or supervision (Dubowitz & Bennett, 2007). Emotional maltreatment refers to persistent and extreme neglect of a child’s basic emotional needs (Cicchetti & Toth, 2005). Debate about the most accurate definition of maltreatment continues, however, and acceptable disciplinary practices used by parents differ across cultures (Cicchetti, 2004; Cicchetti & Toth, 2005).

### *Prevalence*

In 2002, 2.6 million referrals were made to Child Protective Services (CPS) agencies throughout the United States. Of those, two-thirds were investigated and 896,000 children were determined to be victims of maltreatment. Approximately 12/1000 of all children and 16/1000 children under age 3 years are maltreated (Cicchetti, 2004; Cicchetti & Toth, 2005). One-third of reports are not investigated, so rates of child maltreatment are likely greater than what is reported. In 2006, 3.6 million children received a CPS investigation and 905,000 children were found to be victims of maltreatment, providing a national level victimization rate of 12.1/1000 children (USDHHS, 2007). More recent data (USDHHS, 2009) indicate that 5.8 million children were referred to CPS for alleged maltreatment. Approximately 62% of those were investigated and 25% of those children were found to be victims of maltreatment.

*Fatalities.* Fifteen hundred and thirty children died in 2006 (USDHHS, 2007) and 1760 died in 2007 because of maltreatment or neglect (USDHHS, 2009). Approximately 40% of the fatalities were due to neglect. Seventy-eight percent of the children who died were less than age 4 years, with infant boys having the highest death rate (18.5/100000) (USDHHS, 2007).

*Prevalence by maltreatment type.* According to the USDHHS (2007), 64.1% of maltreatment victims suffer from neglect, 16% suffer from physical maltreatment, 8.8% suffer from sexual maltreatment, and 6.6% suffer from emotional maltreatment. Fifteen percent experience some other type of maltreatment such as abandonment, threats, or congenital drug addiction. More recently, USDHHS (2009) reported that 59.0% of



maltreatment victims suffer from neglect, 10.8% suffer from physical maltreatment, and 7.6% suffer from sexual maltreatment.

*Prevalence by sex.* USDHHS (2009) reported that maltreatment victims are slightly more often female (51.5%) than male. Brosky and Lally (2004) examined 152 incarcerated youth and found that sexual and physical maltreatment rates were higher for girls than boys. Seventy-five percent of girls reportedly experienced a traumatic event such as physical or sexual maltreatment, whereas 51.3% of boys reported similar trauma. Adolescent girls are more likely to be victims of physical and sexual maltreatment and are more likely to be revictimized than boys (Abram et al., 2004; Cloitre, Tardiff, Marzuk, Leon, & Potera, 1996; Kaplan, Pelcovitz, & Labruna, 1999; Wood, Foy, Goguen, Pynoos, & James, 2002). However, some researchers report little difference in prevalence rates of physical and emotional maltreatment for boys and girls (Davis & Siegel, 2000; Kaplan et al., 1999).

*Prevalence by age.* According to USDHHS (2007), the rate of maltreatment is 24.4/1000 children for children aged 0-1 year, 14.2/1000 for children aged 1-3 years, and 13.5/1000 for children aged 4-7 years. Most (72%) children aged 0-1 year and 72.9% of children aged 1-3 years were neglected compared to 55% of youths aged 16 years and older. Fifteen percent of children aged 4-7 years were physically maltreated and 8.2% were sexually maltreated compared to 20.1% and 16.5% of 12-15 year olds, respectively. More recent data (UDDHHS, 2009) indicate similar findings, with rates of maltreatment highest for children aged 0-1 year (21.9/1000).

*Prevalence by ethnicity.*<sup>1</sup> The USDHHS (2009) reported that child maltreatment victims were mostly Caucasian (46.1%), African American (21.7%), and Hispanic (20.8%). Rates of victimization are highest for African Americans (19.8/1000), followed by American Indians (15.9/1000), Alaskan natives (15.4/1000), Hispanics (10.8/1000), Caucasians (10.7/1000), and Asians (2.5/1000). The National Institute of Justice (Kilpatrick, Saunders, & Smith, 2003) examined rates of specific types of maltreatment among different ethnicities and found that African Americans and Native Americans experience greater rates of sexual assault, physical maltreatment, and witnessing violence than Caucasians and Asians. Native Americans had the highest rates of sexual assault and Caucasians and Asians had the lowest rates. Native Americans, African Americans, and Hispanics had the highest rates of physical assault, ranging from 20-25%. However, Fluke and colleagues (2003) found that African American children were referred to CPS agencies at a higher rate than children from any other ethnic group, including Native Americans and Hispanics (Fluke, Yuan, Hedderson, & Curtis, 2003). Gnanadesikan and colleagues (2005) found the prevalence of sexual and physical trauma for young adults among Northern Plain Indians to be 51.7% and they found that girls were more likely to be sexually maltreated than boys in this population (Gnanadesikan, Novins, & Beals, 2005).

Others have examined prevalence rates for different groups across nations. Sebre and others (2004) found that children from Moldova (43%), Lithuania (42%), Latvia (33%), and Macedonia (18%) reported emotional and/or physical maltreatment. The highest rates of physical maltreatment were reported by children from Moldova and the highest rates of emotional maltreatment were reported by children from Lithuania

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<sup>1</sup> Ethnic and racial group labels vary throughout this paper to remain consistent with the literature.

(Sebre et al., 2004). Euser and colleagues (2010) found that 2.8% of all Dutch children were maltreated in 2005. The most prevalent type of maltreatment was physical neglect (0.93%) and the least prevalent type of maltreatment was sexual maltreatment (0.13%). Emotional neglect (13.7 %) was reported most frequently and sexual maltreatment (4%) was reported least frequently for children investigated by CPS (Euser, van Ijzendoorn, Prinzie, Bakermans-Kraneburg, 2010). In Saudi Arabia, 188 cases of maltreatment were reported to government agencies from 2000-2008. Of those, 94 were substantiated as maltreatment or neglect. The most common type of maltreatment in Saudi Arabia was physical maltreatment (48.9%) followed by neglect (32.3%), sexual maltreatment (15%), and emotional maltreatment (3.8%) (Eissa & Almuneef, 2010). According to the Australian Institute of Health and Welfare, the rate of maltreatment ranges from 2.4-9.3/1000 children based on substantiated CPS cases (Australian Institute of Health and Welfare, 2008).

### *Effects of Maltreatment*

Maltreated children often, but not always, display psychopathology and negative developmental outcomes. Chronically maltreated children exhibit more emotional and behavioral problems than other maltreated children and nonmaltreated children (Ethier, Lemelin, & Lacharite, 2004). The biological, emotional, and behavioral consequences of maltreatment are discussed next.

*Biological effects.* Biological effects of maltreatment include disruptive structural changes in the corpus callosum, cortex, hippocampus, and amygdala. Additional functional consequences include dysregulation of neurotransmitters and the

hypothalamic-pituitary-adrenal axis (HPA), the central aspect of the stress response (Grassi-Oliveira, Ashy, & Stein, 2008).

Global adverse brain development is seen in maltreated children, including enlarged ventricular spaces and smaller cerebral volumes (De Bellis et al., 1999). The hippocampus is an area with high levels of glucocorticoid receptors and an area vulnerable to stress. High levels of stress can prevent neuronal growth in this area and can reduce functioning of the hippocampus, which directly affects memory (Carrion, Haas, Garrett, Song, & Reiss, 2010). Maltreatment may also interfere with the myelination of the axons in the corpus callosum that leads to inefficient transmission of information between the two hemispheres (De Bellis et al., 1999; Teicher et al., 2004).

Trauma causes neural activation and perhaps increased levels of norepinephrine, dopamine, epinephrine, and cortisol (De Bellis et al., 1999; van der Kolk, 1996). Increased epinephrine and norepinephrine may cause agitation and a decrease in attention (Rossman et al., 2000b). As a result, the body may decrease the number of epinephrine and norepinephrine receptors which leads to a decrease in overall arousal.

A vast amount of literature is devoted to the study the of the HPA axis and cortisol levels in maltreated children. The HPA axis is the principal pathway of a stress response. In threatening situations, the hypothalamus releases corticotropin releasing factor (CRF) and stimulates the release of adrenocorticotrophic hormone from the pituitary gland and cortisol from the adrenal gland. Cortisol release inhibits the HPA axis by reducing the release of the CRF (Lopez, Akil, & Watson, 1999). The HPA axis is necessary for survival but can have detrimental effects if activated chronically (Twardosz & Lutzker, 2010).

Cortisol plays an important role in stress regulation. Cortisol increases corticotrophin release hormone (CRH), which is a mediator of stress response, coordinating adaptive behavior and psychological changes that occur during stress. The release of CRH also increases adrenocorticotrophic hormone (ACTH) and, as a result, levels of cortisol. Maltreatment can lead to a dysregulation of the HPA system which can lead to an excess of cortisol. Increased cortisol, especially during childhood, leads to cellular death in areas with high concentration of glucocorticoid receptors. These areas include the hippocampus, prefrontal lobe, amygdala, and cerebellar vermis (Sapolsky, 2000; Twardosz & Lutzker, 2010).

The research is inconsistent regarding cortisol levels in maltreated children. Some suggest that maltreated children have elevated levels of cortisol (Cicchetti & Rogosch, 2001; De Bellis et al., 1999; Gunnar, Morison, Chriholm & Schuder, 2001). Others have found similar levels of cortisol between maltreated and nonmaltreated children (Hart, Gunnar, & Cicchetti, 1995; Kaufman et al. 1997). Furthermore, supportive social environments protect the HPA from dysregulation during stressful situations. Nachimas and colleagues (1996) found that fearful children did not show high levels of cortisol if they were with a parent who responded sensitively to the child (Nachimas et al., 1996). Dettling and colleagues (2000) found similar results when they examined pre-school children in day care. Children with low responsive caretakers had higher levels of cortisol throughout the day than those with highly responsive caretakers (Dettling, Parker, Lane, Sebanc, & Gunnar, 2000). Fortunately, dysregulation of the HPA system is reversible. Providing children with a warm, responsive environment restores functioning of the HPA axis (Fisher, Gunnar, Chamberlain, & Reid, 2000).

Disturbances in the normal diurnal rhythm occur for children reared in deprived social environments. The normal diurnal rhythm is marked by an increase in cortisol levels 30 minutes after waking followed by a gradual decrease throughout the day (Schmidt-Reinwald et al., 1999). Bruce and colleagues (2008) found that maltreated children in foster care had lower levels of cortisol than children in the community. Levels of cortisol differed in foster care children based on type of maltreatment they experienced. Children with low cortisol experienced physical neglect whereas children with high cortisol experienced emotional maltreatment (parental rejection, abandonment, failure to protect child from witnessing traumatic events). A difference in cortisol level may emerge because neglect and emotional maltreatment are different stressors. Neglect is a pervasive, chronic stressor and emotional maltreatment is a periodic, acute stressor (Bruce, Fisher, Pears, & Levine, 2008).

The inconsistency in the research regarding cortisol is complicated by the amount of support a child receives, psychopathology, type of maltreatment experienced by the child, and method of measurement of cortisol (blood or saliva) The neurological and biological effects generally lead to a disruption in a child's ability to cope with stressors in his environment that creates a vulnerability to psychopathology, specifically, posttraumatic stress disorder (PTSD) and depression (Kaplow & Widom, 2007; Putnam, 2003; Teicher et al., 2005).

*Deficiencies in peer relations.* Maltreated children interact with peers differently than nonmaltreated children. Maltreated children show more aggression towards their peers or more withdrawal from their peers than nonmaltreated children. Peers also rate physically maltreated children as disliked, less popular, and withdrawn

(Kaplan et al., 1999). Maltreated adolescents have difficulties developing and maintaining friendships, have less intimacy, and have higher rates of conflict in their friendships and dating relationships than nonmaltreated adolescents (Cicchetti & Toth, 2005; Kaplan, et al., 1999; Wolfe, Wekerle, Reitzel-Jaffe, & Lefebvre, 1998). Ethier and colleagues (2004) found that the longer a child had been maltreated, the more his peers reported aggression and instigation (Ethier et al., 2004).

*Suicidal and risk-taking behaviors.* Physically maltreated children are at greater risk for suicide and other risk-taking behaviors than nonmaltreated children (Avery, Massat, & Lundy, 2000; Kaplan et al., 1999; Linning & Kearney, 2004). A history of physical maltreatment increases a person's risk of committing suicide by 5 times, whereas a history of emotional maltreatment increases a person's risk 12 times. Physically maltreated children are more likely to steal, smoke cigarettes, abuse drugs, and engage in risky sexual behaviors than nonmaltreated children. An increase in risky sexual behavior may explain high rates of teenage pregnancy for maltreated and neglected teens (Cicchetti & Toth, 2005; Kaplan et al., 1999). Additionally, neglected children cheat more at school and do not follow rules compared to nonmaltreated children (Cicchetti & Toth, 2005).

*Psychological disorders.* Physical maltreatment has been linked to depression, anxiety, aggression, conduct disorder, delinquency, attention deficit hyperactivity disorder, oppositional disorder, posttraumatic stress disorder, personality disorders, substance abuse, suicide, somatization, and dissociation (Cicchetti, 2004; Cicchetti & Toth, 2005; Davis & Siegel, 2000; Johnson et al., 2002; Kaplan et al., 1999). Dissociation and depression will be discussed at length because they occur frequently in

the maltreated population. Differences in the presentation of these disorders may provide information about the risk and resiliency factors important in the onset of PTSD.

A common coping mechanism used by children subsequent to maltreatment is dissociation. Dissociation refers to a failure to successfully manage painful emotional experiences. In children, dissociation can occur in memory, perception, or identity (Macfie, Cicchetti, & Toth, 2001). Dissociation usually occurs during and after trauma as a coping mechanism, but it can easily become a dysfunctional method of coping (Barnyard, William, & Siegel, 2001; Macfie et al., 2001). Dissociation ranges from normal, everyday lapses in memory to dissociative identity disorder. Some dissociation in children is normal, such as memory lapses about school or homework. However, dissociation becomes problematic when a child cannot remember something when prompted. Some children use dissociation to cope with maltreatment and then have difficulty remembering the trauma because its memory was not encoded (Haugaard, 2004).

Physically and sexually maltreated children exhibit more dissociative symptoms than nonmaltreated children. Macfie and colleagues (2001) found that maltreated children aged 3-6 years displayed more symptoms of dissociation than nonmaltreated children. Physical maltreatment and neglect were highly associated with dissociation. Seventeen percent of the physically maltreated and/or neglected children scored in the clinical range for dissociation. Severity and chronicity of maltreatment was correlated with dissociation, and dissociation was correlated with externalizing and internalizing behavior for boys and girls (Macfie et al., 2001).



Depression is an internalizing disorder that commonly occurs following exposure to a traumatic event. Paxton and others (2004) found subclinical depression among African American boys, 75% of whom were exposed to traumatic violence. The subclinical level of depression indicates that most of these boys were at risk for depression. Exposure to violence was correlated with depressive symptoms in African American youth who had witnessed violence (Paxton, Robinson, Shah, & Schoeny, 2004). Kaplan and others (1999) reported that 8% of physically maltreated children had a current diagnosis of major depressive disorder, 40% had lifetime major depressive disorder (MDD), and 30% had a disruptive disorder. Kaufman (1991) found that 18% of maltreated children met criteria for depression and 25% met criteria for dysthymia. The presence of emotional maltreatment and neglect may be stronger predictors for these disorders than physical maltreatment (Kaplan et al., 1999).

Widom and others (2007) found that about 25% of participants who experienced maltreatment or neglect before age 11 years met criteria for lifetime MDD. Children who had been physically maltreated or who experienced multiple types of maltreatment were more likely to experience lifetime MDD (31.4%), whereas neglected children were more likely to experience current MDD (15.9%). Most (96%) of the children who met criteria for lifetime MDD had a lifetime diagnosis for another DSM-IV-TR disorder (Widom, DuMont, Czaja, 2007).

Sanders-Phillips and colleagues (1995) found the depression rates among sexually maltreated Latina girls to be higher than sexually maltreated African American girls. Higher depression scores were related to age at maltreatment and relationship to perpetrator. Latina girls were more likely to be maltreated at a younger age by a family

member. Latina girls also reported more family conflict and lack of maternal support after maltreatment, contributing to elevated depressive symptoms (Sanders-Phillips, Moisan, Wadlington, Morgan, & English, 1995).

Similar patterns emerge in maltreatment studies in different countries. Finzi and colleagues (2001) assessed 6-12 year old children from the Tel Aviv area for symptoms of depression. The children were physically maltreated, neglected, or part of a nonmaltreated control group. Mean Children's Depression Inventory (CDI) scores were reported for those physically maltreated (15.9), neglected (11.4), and not maltreated (6.5). Physically maltreated children displayed more suicidal behavior and expression such as ideation, threats, and attempts. Neglected children scored the same as controls for behavior and expression of suicidal intent (Finzi et al., 2001).

*Limitations of research on effects of maltreatment.* Many child maltreatment studies suffer from research design limitations such as sampling bias and small sample sizes. Most studies rely on limited convenience samples because of participant recruitment difficulties and ethical concerns. Researchers typically recruit from intervention programs or foster care facilities, while others rely on retrospective studies (Yehuda, Spertus, Golier, 2001).

Past research has failed to identify the effect that ethnicity and ethnic identity have on psychological well-being. Ethnic identity is defined as the part of the person's self that comes from participation in social group and encompasses value and importance with participation in that social group, and includes self-identification and a sense of belonging (Phinney, 1992). Only 6.7% of the maltreatment literature from 1997 to 1998 focused on ethnicity and only 50% of articles from 1995-1998 noted the

ethnic background of the participants. Additionally, only 12% examined ethnicity as a confounding variable, 13% included ethnicity as variable to be analyzed, and 75% did not include ethnicity as a variable in the study (Behl, Crouch, May, Valente, & Conyngham, 2001).

Researchers often neglect to include participants from multiple ethnic backgrounds and assess how reactions to maltreatment relate to ethnicity and cultural background. Another important factor is the additional daily stressors minorities face. Ethnic minorities may be exposed to more violence and discrimination than majority groups, but this information has not been included in past research. Additionally, very low numbers of various ethnic/racial groups were compared to larger Caucasian samples. Other studies include different ethnic groups but do not differentiate them. Lastly, little or no research has examined the importance of protective factors, such as social support or ethnic identity, with respect to maltreatment and psychological disorders such as PTSD. PTSD is a particularly common problem in children who have been maltreated, so the following sections concentrate on this disorder.

### *Posttraumatic Stress Disorder*

#### *PTSD Criteria*

PTSD is an anxiety disorder involving characteristic symptoms following a traumatic stressor (American Psychiatric Association, 2000). Traumatic stressors include events such as rape, physical attack, war, vehicular accident, or a natural disaster. A diagnosis of PTSD is appropriate when a trauma involves:

- direct personal experience of an event involving actual or threatened death
- serious injury, or other threat to one's physical integrity

- witnessing an event that involves death, injury, or a threat to the physical integrity of another person
- learning about unexpected or violent death, serious harm, or threat of death or injury experienced by a family member or another close associate

A person's response to an event is accompanied by fear, helplessness, horror, and disorganized behavior (agitation in children). A person must also persistently re-experience the trauma through thoughts, dreams, flashbacks, and distress or reactivity. The distressing dreams may occur weeks after the trauma and may be generalized or specific to the event (DeBellis & Van Dillen, 2005). Avoidance of stimuli related to the trauma occurs when a person avoids thoughts, feelings, activities, situations, or people. Avoidance may also occur when a person experiences feelings of numbness, loses interest in activities or people that were once pleasing, and feels that the future is shortened. A person may also experience amnesia related to the event. Lastly, a person may experience increased arousal in the form of sleep difficulties, hypervigilance, startle response, irritability, anger, or loss of concentration. Symptoms must be present for a month or more and cause significant distress. Acute PTSD is diagnosed when symptoms are present for less than three months, chronic PTSD is diagnosed when symptoms are present for 3 months or longer, and delayed onset PTSD is diagnosed when symptoms appear 6 months after the traumatic event (American Psychiatric Association, 2000).

### *PTSD and Children*

PTSD symptoms in children manifest themselves slightly differently than in adults. Children may have generalized nightmares instead of dreams about a specific

event and they may experience agitated or disorganized behaviors rather than fear or helplessness (Davis & Siegel, 2000; Margolin & Vickerman, 2007; Salmon & Bryant, 2002). Furthermore, symptoms may present as repetitive play related to the trauma (Davis & Siegel, 2000; Margolin & Vickerman, 2007). Children may experience long periods of re-experiencing that alternate with feelings of avoidance and numbing (Dyregov & Yule, 2006). This symptom pattern may lead to underdiagnosis of PTSD. In addition, children may not be able to describe or understand their experiences, trauma, and symptoms (Davis & Siegel, 2000). They thus report fewer cognitive and avoidance symptoms (Fletcher, 1996). Children with PTSD may also experience headaches, stomachaches (American Psychiatric Association, 2000), sleepwalking, night terrors, bedwetting, and attentional difficulties (Davis & Siegel, 2000).

The age of a child influences subsequent posttraumatic reactions. The reactions of preschool children to traumatic events often match their parents' reaction to the event. Children aged 8-10 years better understand the traumatic situation than preschool children and can react to the situation more independently of their parents (Dyregov & Yule, 2006). Adolescents may engage in risk-taking behaviors as a form of re-enactment and may have a sense of a foreshortened future because they better understand long-term perspectives (Davis & Siegel, 2000; Dyregov & Yule, 2006).

Portnova (2007) found that the most common PTSD symptoms in children were difficulty going to sleep and waking up tired and drowsy (34.8%). The next most common symptom was fear related to trauma (23.6%), and this occurred more frequently for children aged 3-6 years. Aggressiveness and irascibility was experienced by 21.7% of children and adolescents. Depressive symptoms were found in 19.9% of

the children who had experienced trauma. Tiredness, exhaustion, and a decrease in activity were experienced more by youths aged 12-18 years than younger children.

### *Prevalence of PTSD in Youth*

Reinherz and colleagues (1993) found a lifetime PTSD prevalence rate of 6.3% among adolescents with a mean age of 17.9 years. This rate was slightly higher than the rate of 5.8% for adults in the same sample (Reinherz, Giaconia, Lefkowitz, Pakiz, & Frost, 1993). The prevalence rates from this study suggest that PTSD is one of the most common disorders affecting youth following depression, phobias, and substance dependence (Davis & Siegel, 2000). The National Comorbidity Study indicated the lifetime prevalence of PTSD in children to be 10% (Kessler, Sonnega, Bromet, & Hughes, 1995). Prevalence rates may increase to 26% when diagnostic criteria are made more sensitive to young children (DeBellis & Van Dillen, 2005). Prevalence may be higher when altered criteria are applied to children who have experienced trauma.

Rates of PTSD are higher among incarcerated youth than the general population (Dixon, Howie, & Starling, 2005; Steiner, Garcia, Matthews, 1997). Abram and colleagues (2004) found that 90% of incarcerated youth experienced some kind of trauma and that 11.2% had PTSD (Abram et al., 2004). Rates of PTSD are somewhat higher for girls (37%) than boys (30%) in custody (Dixon et al., 2005; Steiner et al., 1997). Rates of PTSD also vary according to the type of trauma experienced by the child: natural disasters (0-5%), war (27-33%), violent crimes (27-33%), and sexual maltreatment (0-90%) (Salmon & Bryant, 2002).

### *Course and Outcome*

PTSD symptoms usually occur within three months of the traumatic event. Symptoms typically last 3-12 months but can continue longer. The severity, onset, and duration of symptoms vary depending on social support, family history, childhood experiences, personality, and presence of other psychopathology (American Psychiatric Association, 2000). Children are particularly vulnerable to the onset of the PTSD if the trauma occurred before age 11 years. Younger children are 3 times more likely to be diagnosed than those who experienced trauma after age 11 years. Trauma during adolescence may make teens vulnerable to PTSD symptoms because of the physical and social changes they are already experiencing in adolescence (Davis & Siegel, 2000).

### *Sex*

Girls are five times more likely than boys to develop PTSD when exposed to trauma and are more likely to report symptoms than boys. Girls also tend to experience comorbid internalizing disorders such as anxiety and depression, whereas boys tend to act out or experience comorbid externalizing behavioral disorders (Davis & Siegel, 2000). Girls have also reported greater severity of symptoms and more anxiety than boys (Khoury et al., 1997; Pynoos, Goenjian, Tashjian, & Karakshian, 1993). Incarcerated girls were 50% more likely to experience PTSD symptoms than incarcerated boys (Cauffman, Feldman, Waterman, Steiner, 1998). Girls also experience symptoms differently than boys. Brosky and Lally (2004) found that 21% of incarcerated girls and 8% of incarcerated boys reported re-experiencing symptoms and that 34% percent of girls and 17% of boys reported increased arousal.

### *Ethnicity*

The National Institute of Justice (Kilpatrick et al., 2003) found that Asians (6.5%), Native Americans (7.1%), and Caucasians (7.3%) had similar rates of PTSD in a sample within the U.S. African Americans (11.0%) and Hispanics (11.6%) had higher rates of PTSD. The elevation in prevalence rates for African American and Hispanics may be attributed to differences in prior exposures to trauma, such as racism and discrimination. Racism may be a risk factor for psychological trauma, may exacerbate the impact of psychological trauma, or may be considered trauma itself. Differences in prevalence may also be due to lack of protective factors or access to treatment following trauma (Ford, 2008). The research is limited regarding risk and protective factors for minority youth exposed to child maltreatment.

Bal and Jensen (2007) examined whether DSM-IV-TR criteria for PTSD applied well to other countries in which children experienced natural disasters. They assessed 293 Turkish children exposed to earthquakes and found that 60% experienced moderate to severe levels of PTSD symptoms. The authors concluded that the DSM-IV-TR criteria did apply to these young earthquake victims (Bal & Jensen, 2007). Catani and others (2008) examined rates of PTSD among Sri Lankan students exposed to war, tsunami, and family violence. Most (80%) were reportedly exposed to war and 50% reported violence in their homes. Many children (69%) were reportedly beaten with an object and 18.8% reported at least one injury from maltreatment. The authors found that violence in the home and exposure to war were strong predictors of PTSD for these children, with family violence being a stronger predictor. Thirty-three percent of these children were diagnosed with PTSD and 20% were diagnosed with depression with



suicidal ideation (Catani, Jacob, Schauer, Kohila, Neuner, 2008). How PTSD is experienced also differs for some ethnic groups. The children from Sri Lanka diagnosed with PTSD reported somatic complaints and suicidal ideations (Catani et al., 2008).

Very few studies incorporate the importance of ethnicity when working with maltreated children. The few studies that examine ethnicity have very small sample sizes. Some studies that report ethnicity do not provide an option for participants such as multi-racial or an “other” category. Many studies fail to inquire about ethnic identity in participants. Ethnic identity provides more detailed information about whether a person identifies with their reported ethnic background.

#### *Risk Factors*

Individual and environmental characteristics may increase risk for PTSD after a traumatic event (Koenen, Moffitt, Poulton, Martin, & Caspi, 2007). Key risk factors for trauma and PTSD are the presence of externalizing behaviors, family history of psychological disorders, family adversities, and chronic environmental stressors (Copeland, Keeler, Angold, & Costello, 2007; Koenen et al., 2007; Silva et al., 2000). Others (Dekovic, Koning, Stams, & Buist, 2008; Pine & Cohen 2002) found lack of social support and a strong acute response to trauma to be associated with PTSD as well.

Pina and others (2004) found that victims who felt their lives were in danger during a traumatic event experienced more PTSD symptoms than those who did not feel endangered. The victims in this study were exposed to a fire in a bar in Netherlands. Those who had pre-existing anxiety and used passive coping styles were also more

likely to experience PTSD symptoms. Others (Pina et al., 2008) have found that children who experienced blame, anger, and social withdrawal were more likely to have PTSD symptoms than those who did not experience such feelings after a hurricane. The researchers also found that avoidant coping strategies predicted symptoms of PTSD in children following Hurricane Katrina.

Environmental factors may also place a child at risk for increased exposure to violence. Zyromski (2007) found that high levels of trauma and violence make victims vulnerable to the development of PTSD. Children who live in areas with high levels of violence are at greater risk for developing PTSD than those who live in safer neighborhoods. Some suggest that the relationship between violence and PTSD symptoms is mediated by sex. Berton and Stabb (1996) found that boys from schools with the highest rates of murder and other criminal activity had the lowest rates of PTSD and that girls from the same schools had the highest rates of PTSD. They also found that African American boys were exposed to more violent crimes than Caucasian boys and, overall, there was a 29% prevalence rate of PTSD for adolescents living in a metropolitan area (Berton & Stabb, 1996). This rate is almost five times the prevalence rate reported for adolescents in a community sample.

Other studies reveal similar results when examining violence, ethnicity, and PTSD. Reynolds and colleagues (2001) found that African American and Latino youth are more likely to live in neighborhoods with high levels of violence and are more likely to witness or experience trauma (Reynolds, O’Koon, Papademetriou, Szczygiel, & Grant, 2001). Compounded stress may also make youth vulnerable to the development of PTSD. African American youth and Latino youth face daily stressors

such as discrimination, racism, and prejudice. Witnessing or experiencing traumatic stress in addition to daily stressors may make them particularly vulnerable to the onset of PTSD (Zyromski, 2007).

### *Comorbidity*

Disorders that commonly occur with PTSD are depression, anxiety, ADHD, and substance abuse (Margolin & Vickerman, 2007; Portnova, 2007). Comorbidity with other disorders such as anxiety, depression, and alcohol and drug dependence is more likely if PTSD is diagnosed before age 18 years (DeBellis, 2002). A diagnosis of PTSD is significantly correlated with anxiety, suicidal ideation, ADHD, psychotic disorders, and mood disorders for youth aged 6-17 years (Margolin & Vickerman, 2007). Widom and Hiller-Sturmfel (2001) suggested that teens may abuse substances to reduce their social isolation or to increase their self-esteem after trauma. However, substance use may place teens at further risk for aggression, violence, and rejection that can then exacerbate PTSD symptoms (Margolin & Vickerman, 2007). Lipschitz and colleagues (1999b) found that adolescents with PTSD in an acute inpatient setting had two times the number of comorbid diagnoses such as anxiety, eating, and somatization disorders than patients without PTSD. Juveniles in the court system also experience similar comorbid disorders (Davis & Siegel, 2000; Famularo, Fenton, Augustyn, & Zuckerman, 1996). Dixon and others found that girls in custody with PTSD reported higher rates of depression, substance abuse/dependence, anxiety disorders, psychoses, and eating disorders than girls in custody without PTSD (Dixon et al., 2005).

The interplay between psychological and environmental factors that lead to the development of PTSD provides information about differences in the development and

maintenance of PTSD in victims of trauma. The following biological, cognitive, and developmental models will be used to further explain the differences in the onset of PTSD.

### *Models of PTSD*

Several theoretical models explaining the development of PTSD have emerged. Models discussed here focus on biological processes (Farkas, 2004), cognitive or information-processing variables (Ehlers & Clark, 2000; Salmon & Bryant, 2002), and developmental variables (Koenen, 2010).

#### *PTSD Biological Models*

Biological models are based on the diathesis-stress paradigm (Flouri, 2005). Individuals may have a predisposition to posttraumatic stress symptoms and these symptoms are expressed following exposure to stress. The model includes explanations of how specific biological systems interact to produce and maintain symptoms. Studies in adults with PTSD indicate heightened levels of norepinephrine and dopamine and serotonin abnormalities (Kowalik, 2004). The HPA axis, discussed earlier, has been linked to PTSD (Kowalik, 2004; Nemeroff et al., 2006).

Changes in brain structure and volume, especially of the hippocampus, have been observed in adults with PTSD (Carrion et al., 2010; Kowalik, 2004; Nemeroff et al., 2006). Neuropsychological testing, measures of cerebral blood flow, and fMRI results reveal abnormalities in brain function of adults with PTSD. An exaggerated response to stimuli has also been observed in adults with PTSD (Kowalik, 2004). Early childhood traumas and stress may be associated with neuroendocrine alterations, sensitivity to later stressors, and susceptibility to PTSD and dissociative symptoms.

This model does not account for various other factors that influence susceptibility to PTSD such as social, familial, and individual variables (Flouri, 2005).

Recent studies show that children who experienced maltreatment, regardless of PTSD diagnosis, display disruption of neurotransmitters, specifically increased catecholaminergic activity (De Bellis, 2001; Kowalik, 2004). Stress in children may result in dysregulation of neuroanatomical and neurophysiological systems (Meiser-Stedman, 2003). Maltreated children tend to exhibit some degree of HPA axis dysfunction as indicated by salivary and urinary cortisol level tests (Bruce et al., 2008; Cicchetti & Rogosch, 2001; De Bellis et al., 1999; Gunnar et al., 2001; Kowalik, 2004). Children with PTSD have smaller total brain volume and smaller hippocampus regions (Kowalik, 2004; Teicher et al., 2004). Ongoing trauma may continue to cause changes in a child's biology (De Bellis, 2001; Farkas, 2004).

### *Cognitive Model*

Cognitive and information-processing models of PTSD are based on the theory that cognitions, appraisals, and emotions related to traumatic events are stored in memory or fear networks (Chemtob, Roitblat, Hamada, & Carlson, 1988; Ehlers & Clark, 2000; Foa, Steketee, & Rothbaum, 1989; Salmon & Bryant, 2002). Ehlers and Clark's (2000) model of PTSD emphasizes three areas of importance in determining onset and duration of PTSD. The model emphasizes incomplete processing, lack of integration, lack of elaboration of the trauma memory, and negative appraisal of the trauma and the events following the trauma (Ehlers & Clark, 2000). Negative appraisals include overgeneralization of the event and perception of normal events as dangerous, or beliefs that negative events will continue to happen in the future.

Negative appraisals also include cognitions about how a person felt during trauma and implications of the same reaction in the future. Appraisals continue after the trauma and lead to exacerbation or maintenance of PTSD because the person engages in negative coping strategies. A sense of threat may trigger dysfunctional cognitive and behavioral functioning as well as other symptoms of anxiety such as re-experiencing and arousal. Some of the behavioral and cognitive strategies used by the victim to help forget the trauma - such as thought suppression, rumination, selective attention, avoidant behavior, and safety behaviors - may actually worsen the symptoms and maintain the disorder.

There is confusion in the literature about the discrepancy between a person's inability to intentionally recall parts of the trauma and the involuntary intrusive memories, such as re-experiencing, that frequently occurs. According to this model, re-experiencing is typically triggered by sensory impressions that are experienced as if they are happening right now, not as a memory. Additionally, a person can experience the physiological sensations and emotions associated with the trauma without remembering the event. Some of the stimuli that trigger the re-experiencing do not have a strong semantic relationship with the trauma. The sensory impressions are similar to the experience during the trauma, even though there may be additional information gathered later to contradict the original event. In contrast, recall is difficult because of poor elaboration and integration. The poor integration of the trauma memory may relate to the dissociation or numbing that occurs during and after the trauma. Other factors that may influence memory are characteristics of the trauma,

previous experience with the trauma, intellectual ability, prior beliefs, and appraisal of the trauma (Ehlers & Clark, 2000).

Ehlers and colleagues (2003) applied this theory to children aged 5-16 years who were in traffic accidents. They found a small correlation between a child's perceived threat and fear during the incident and subsequent PTSD symptoms. They found a larger correlation between cognitive variables and subsequent PTSD symptoms. Specifically, rumination was a strong predictor of PTSD as time elapsed. Negative appraisals and incomplete processing were also correlated with the onset of PTSD in children. Younger children encode information at a slower rate than older children and adults. Prior knowledge influences a child's understanding and appraisal of trauma resulting in less detailed or lasting representation and gaps in memory. Language development also influences how well information can be encoded verbally (Salmon & Bryant, 2002). Parents may also serve as external support, helping a child make sense of the traumatic event by discussing the event to prevent forgetting, helping the child appraise and interpret the experience, correcting misconceptions, and helping the child regulate emotions (Salmon & Bryant, 2002).

### *Developmental Model*

The developmental model focuses on early childhood factors that influence the onset of PTSD. According to this model, development consists of constitutional and contextual factors. Constitutional factors are associated with a child's internal characteristics such as intelligence, temperament, and psychological disorder. IQ is inversely related to the development of PTSD (Saltzman, Weems, & Carrion, 2006). Children with higher IQ can process trauma better than children with lower IQ, which

lowers the risk of developing PTSD (Koenen et al., 2007). A second constitutional factor is temperament. Children with hyperactivity, difficult temperament, and antisocial behavior are at greater risk for PTSD than children with less difficult temperaments (Koenen et al, 2007). Externalizing behaviors may interfere with one's ability to accept emotions (e.g., fear) associated with a trauma and might also interfere with eliciting support from parents. As a result, emotional processing and recovery from trauma are impeded. The last constitutional factor addressed by the authors is juvenile psychological disorders. Fifteen percent of 11-15 year olds without a history of a psychological disorder developed PTSD compared to 41% with one disorder and 48% with two or more disorders (Koenen et al., 2008). The genetic and/or environmental factors that contributed to the development of these other psychological disorders may have contributed to the onset of PTSD.

The contextual factors emphasized in this model include poverty, residential stability, maternal depression, and caregiver stability. Children raised in low SES environments were 2.5 times more likely to develop PTSD than those raised in a high SES environment. Also, children who moved 3 or more times before age 11 years were twice as likely to develop PTSD than children who did not move before age 11 years (Koenen, 2010). Poverty, residential stability, maternal depression, and caregiver stability are factors that influence predictability and control of an environment. In animal models, unpredictability and lack of control lead to emotional dysregulation, insecure attachment, and dysregulation of the HPA axis (Coplan et al., 1998; Rosenblum & Paus, 1984). As discussed earlier, dysregulation of HPA axis has been linked to PTSD in children and adults (Bruce et al., 2008; Cicchetti & Rogosch, 2001; De Bellis



et al., 1999; Gunnar et al., 2001; Koenen, 2010; Kowalik, 2004). Affect dysregulation and insecure attachment have also been identified as key risk factors for PTSD (Dietrich, 2007; Muller et al., 2000, 2001; Taft, Schumm, Marshall, Panuzio, & Holtzworth-Munroe, 2008).

PTSD symptoms often occur after a traumatic event in children but symptom presentation and prevalence rates can vary across sex and ethnic groups. The next focus of this paper is on PTSD symptomatology following child maltreatment, risk factors for developing PTSD, and the role of family support and ethnic identity in subsequent PTSD symptomatology in children.

## CHAPTER 2

### LITERATURE REVIEW

#### *PTSD and Child Maltreatment*

##### *Prevalence*

Maltreated children are at greater risk of developing PTSD than nonmaltreated children (Ackerman, Newton, McPherson, Jones, & Dyman, 1998; Epstein, Saunders, & Kilpatrick, 1997; Famularo et al., 1996; Kilpatrick et al., 2003; Widom, 1999). The prevalence of PTSD in children who have been physically or sexually maltreated varies. Yehuda and colleagues (2001) found that PTSD rates range from 21-55% and Saigh and others (1999) found that PTSD rates range from 11.1-70.8% for maltreated children (Saigh, Yasik, Sack, & Koplewicz, 1999). Copeland and colleagues (2007) found the lifetime prevalence rate of PTSD in physically maltreated children to be 7.2%. Famularo and colleagues (1996) found that 40% of severely maltreated children met criteria for PTSD immediately after leaving parental care and that rates decreased to 33% two years later.

Girls are most likely to develop PTSD, especially those exposed to trauma before age 15 years (Breslau, Davis, Andreski, Peterson, & Schultz, 1997; Brewin, Andrews, & Valentine, 2000). Those who experienced long-term and different types of maltreatment and were victimized by more than one person are also likely to experience PTSD (Linning & Kearney, 2004). Ackerman and colleagues found, in a clinic setting, that 26% of physically maltreated children had PTSD and 50% of physically maltreated girls had PTSD compared to 18% of physically maltreated boys (Ackerman et al., 1998). Kilpatrick and colleagues (2003) found that 15.2% of boys and 27.4% of girls

who were physically maltreated, and who received no services, experienced PTSD symptoms. PTSD rates for maltreated children were higher than rates of nonmaltreated boys and girls (3.1% and 6.0%, respectively). Youths may also be at risk for maltreatment and PTSD based on variables other than sex or type of abuse. Among homeless youth, 60% of girls and 25% of boys exhibited one or more PTSD symptoms. For girls, PTSD symptoms followed instances of physical, emotional, and sexual maltreatment. For boys, PTSD emerged primarily after sexual maltreatment (Gwadz, Nish, & Leonard, 2007).

#### *Symptomatology, Outcome, and Comorbidity*

PTSD in children is often associated with a range of behavioral problems. Maltreated children with PTSD are more likely to exhibit trauma-related symptoms such as re-experiencing, avoidance, and arousal than maltreated children not diagnosed with PTSD (Linning & Kearney, 2004). Symptoms common in sexually maltreated youth are heightened arousal, re-experiencing, avoidance, and numbing. Other behavioral changes in maltreated children involve disturbed sleep, avoidance, loss of interest in activities, hypervigilance, and aggressiveness (Avery et al., 2000). Reactions to trauma usually fluctuate between anxious/hyperarousal and blunted affect and may include inappropriate affect, poor impulse control, and relationship problems in children with PTSD (van der Kolk, 2005). Copeland and colleagues (2007) suggested that dreams, repetitive thoughts, behavioral avoidance, and emotional avoidance are most predictive of PTSD in children. Avery and colleagues (2000) found that high levels of PTSD in sexually maltreated children suggested high levels of worry, appetite, headaches, stomachaches, depression, and suicidal ideation. PTSD in maltreated

children was correlated with attentional, behavioral, and performance problems in school and increased levels of family disruption for children experiencing high levels of PTSD symptoms (Avery et al., 2000).

Other behavioral changes occur in children diagnosed with PTSD after maltreatment. Physically and sexually maltreated youth with PTSD score higher on internalizing and externalizing behaviors than maltreated children not diagnosed with PTSD (De Bellis et al., 1999). Specifically, PTSD in maltreated youth is associated with sleep and appetite disturbances, social withdrawal, sadness, avoidance, excessive worry, somatic complaints, inattentiveness, family and academic problems, aggression, avoidance, and thought disturbances (Avery et al., 2000; Saigh, Yasik, Oberfield, Halamandaris, & McHugh, 2002). Research on the outcome of PTSD suggests that the symptoms continue for long periods of time. Famularo and colleagues (1996) found that 32.7% of severely maltreated children continued to meet criteria for PTSD over a 2-year period. Lansford and colleagues found that maltreated kindergartners experienced more PTSD symptomatology than nonmaltreated peers. Some suggest that PTSD in maltreated youth remains stable because of the repetitive nature of the stressor (Arias, 2004; Fletcher, 2003).

Common comorbid diagnoses in maltreated children with PTSD include attention deficit hyperactivity, oppositional defiant, and conduct disorder. McLeer and colleagues (1994) reported that 23.1 % of sexually maltreated children with PTSD had attention deficit hyperactivity disorder, 15.4% had conduct disorder, and 11.5% had both (McLeer, Callaghan, Henry, & Wallen, 1994). Other disorders that commonly occur with PTSD in maltreated children include substance abuse as well as anxiety,

mood, psychotic, and adjustment disorders (Ariga et al., 2008; Dixon et al., 2005; Ford et al., 2000; Saigh et al., 2002; Schumacher, Coffey, & Stasiewicz, 2006; Stevens, Murphy, & McKnight, 2003; Titus, Dennis, White, Scott, & Funk, 2003; Weinstein, Staffelbach, & Biaggio, 2000).

#### *Limitations of the Research on PTSD and Child Maltreatment*

Studies of PTSD in maltreated children are relatively sparse with respect to certain topics (Salmon & Bryant, 2002). Research is lacking regarding long-term clinical presentation, comorbidity, and secondary consequences of chronic PTSD symptoms. More research is also needed on the influence of trauma factors as well as individual factors such as sex, and age. Other factors such as ethnicity, familial factors, environmental factors, and protective factors will provide additional information about the onset and development of PTSD in maltreated children (Flouri, 2005; Lonigan, Phillips, & Richey, 2003; Pfefferbaum, 2005).

Very few studies incorporate the importance of ethnicity and ethnic identity in maltreated children and PTSD. Studies have not thoroughly examined the presentation of PTSD symptoms among different ethnic groups. Even fewer studies have examined the relationship between PTSD symptoms and ethnic identity in maltreated youth. Past studies have also failed to examine the relationship between family support and other possible protective factors and the presence of PTSD and PTSD-related symptoms after maltreatment.

Studies examining PTSD prevalence consistently reveal that maltreated children are at significantly increased risk of PTSD and PTSD-related symptoms compared to nonmaltreated peers. Past research, data regarding epidemiology, symptomatology, and

comorbidity reveal a clear relationship between child maltreatment and PTSD. The following sections outline key risk and protective factors for PTSD in maltreated youth. With the aforementioned limitations in mind, a majority of these sections are devoted to constructs in the present study: ethnicity, ethnic identity, and family support.

### *Risk Factors*

Several factors can exacerbate risk of PTSD following maltreatment. Children most likely to demonstrate posttraumatic stress symptoms tend to be older and have a history of maltreatment (Copeland et al., 2007). Sexual maltreatment victims are more likely to develop PTSD when maltreatment occurs over an extended period of time and if they were physically coerced (Wolfe, Sas, & Wekerle, 1994). Sexual maltreatment may be the most serious form of maltreatment and the strongest predictor of PTSD symptoms. Even attempted sexual assault may lead to PTSD symptoms (Boney-McCoy & Finkelhor, 1995). Additionally, PTSD symptoms are more likely to occur when a traumatic event is caused by a trusted person (Green et al., 2000). Other key risk factors include neurobiological dysfunction, affect dysregulation, cognitive impairment, poor attachment, dissociation, depression, and membership in a minority ethnic group. These are discussed next.

### *Biological Factors*

The presence of PTSD in maltreated children can lead to specific neurological changes. Changes in brain structure and function lead to changes in cognitive and executive functioning. The following section summarizes the literature regarding neurological and biological changes in adults and children with PTSD in maltreated

subjects. The research on children is limited on this topic, so some adult studies are summarized to illustrate the biological changes associated with PTSD.

Several researchers have examined structural volume changes in the brain. Bremner and colleagues (2003) examined hippocampal size in individuals with a history of maltreatment. Women with sexual maltreatment histories and PTSD had a lower hippocampus volume than those who had been maltreated but did not have PTSD as well as a control group. No differences were found between maltreatment without PTSD group and the no abuse/no PTSD group, suggesting that the differences were strongly related to the presence of PTSD (Bremner et al., 2003). Research on maltreated children does not support these findings, however, so hippocampal atrophy may occur only in older adults or may be delayed (DeBellis & van Dillen, 2005; Teicher et al., 2004).

Global changes in brain development are seen in maltreated children with PTSD, including enlarged ventricular spaces and smaller cerebral volumes (De Bellis et al., 1999). Maltreated children with PTSD have frontal lobe asymmetry and lower total cerebral volume (DeBellis, Keshavan, Spencer, & Hall, 2000). Teicher and colleagues (2004) compared corpus callosum areas among children admitted for psychiatric evaluation. The researchers compared abused/neglected children in a psychiatric setting (half diagnosed with PTSD) to a nonmaltreated psychiatric contrast group and a control group. They found a 16% reduction in corpus callosum area in abused/neglected children compared to the healthy control group with no maltreatment history. Additionally, they found an 11% decrease in abused/neglected children when compared to the psychiatric population with no maltreatment history. The corpus callosum area between the control group and nonmaltreated psychiatric population was not

significantly different. Teicher and colleagues found that neglect had a substantial effect on corpus callosum area for boys and sexual maltreatment had a greater effect for girls than boys (Teicher et al., 2004).

Research regarding cortisol levels with PTSD is also inconsistent. Some suggest that low levels of cortisol are present in adults with PTSD. Increased CRF secretion and heightened pituitary glucocorticoid receptors are present in PTSD (Graham, Heim, Goodman, Miller, & Nemeroff, 1999; Yehuda, 1998). In children with PTSD, higher concentrations of cortisol are present (Carrion, et al., 2002; De Bellis et al., 1999). De Bellis suggested the higher levels of cortisol in children triggers a negative feedback loop resulting in the lower levels of cortisol seen in adults with PTSD.

#### *Attachment and Family Environment*

Children demonstrating secure attachment with their caretaker have lower levels of cortisol in stressful situations (Dettling et al., 2000; Nachimas et al., 1996). Poor early attachment occurs frequently for victims of maltreatment. Many (86%) maltreated children display insecure attachment (Barnett, Ganiban, Cicchetti, 1999; Cicchetti & Toth, 2005). This pattern of insecure attachment has been linked to depressive symptoms (Toth & Cicchetti, 1996) and peer rejection in relationships that involve revictimization or victimizing others (Kaplan et al., 1999). Moreover, maltreated children are less likely than nonmaltreated children to have secure relationships. Instead, they tend to have disorganized attachment styles (Barnett et al., 1999) and form their own conceptions of how acceptable or unacceptable they are in their parents' eyes (Cicchetti & Toth, 2005). Insecure attachments may be formed because a parent is the source of support and danger for the child (Hesse & Main, 2006; Lieberman & Van



Horn, 2005). Ruchkin and colleagues (1998) found that PTSD symptoms in adolescent male rape victims were strongly associated with parental rejection and low emotional warmth (Ruchkin, Eismann, Hagglof, 1998). Parental rejection with child maltreatment and exposure to interparental violence also impact intimate relationship abuse perpetration in adults with PTSD symptoms (Taft, et al., 2008). Others (Muller et al., 2000, 2001) found that maltreated youth who endorsed insecure attachment styles experienced multiple PTSD symptoms.

Family environments of sexually maltreated children are more dysfunctional than those of nonmaltreated children. Such dysfunction may be slightly lower for families and victims who suffered from extra-familial sexual maltreatment compared to intra-familial maltreatment. Gold and colleagues (2000) found that victims of sexual maltreatment rated the quality of positive parenting lower than individuals who were not maltreated. Sexually maltreated children report parental neglect and rejection and report that they were not taught adequate social, coping, and instrumental skills. Family environments of maltreated children are less cohesive, less organized, less likely to encourage independence and religious ideas, and less involved recreationally than those of non-abusive families (Gold et al., 2004).

The relationship between parents of maltreated children differs from the relationship between parents of nonmaltreated children. Kurtz and colleagues (1993) found that parents who neglected their children had higher rates of marital conflict and interpersonal problems. Abusive parents had higher rates of depression than parents who did not maltreat their children, and both physically maltreated and neglected families reported drug and alcohol problems (Kurtz et al., 2003). Rossman and Ho

(2000) examined three groups of community or shelter-based youths exposed to parental violence and/or abuse. PTSD symptoms of intrusive/reexperiencing and arousal/avoidance were positively associated with low SES, family stressors, spousal verbal and physical aggression, and neighborhood violence and negatively associated with mother availability. Other researchers indicate that adverse parenting has been implicated as a key predictor of PTSD symptoms in trauma-exposed female juvenile offenders (Ariga et al., 2008; Landolt, Vollrath, Ribl, Gnehm, & Sennhauser, 2003).

### *Affect regulation*

Affect regulation refers to “intra- and extraorganismic factors by which emotional arousal is redirected, controlled, and modified so that an individual can function adaptively in emotionally challenging situations” (Cicchetti, Ganiban, & Barnett, 1991). Maltreated children experience deficits in affect regulation, specifically in recognizing, expressing, and understanding emotions (Camras, Sachs-Alter, & Ribordy, 1996). Physically maltreated children experience higher levels of distress, aggression, impulsivity, irritability, hypervigilance, and paranoia and cannot recognize pain in others when exposed to anger-provoking situations. Additionally, physically maltreated boys experience fear when exposed to unresolved anger between two adults. Some suggest that constant exposure to violence triggers greater emotional reactivity (Cicchetti & Toth, 2005; Kaplan et al., 1999).

Physically maltreated children show an increased sensitivity to the detection of anger. The increased sensitivity to anger may lead to a decreased sensitivity for emotions other than anger (Cicchetti & Toth, 2005; Kaplan et al., 1999). Neglected children do not show a response bias, but they have a harder time discriminating

emotions (Pollak, Cicchetti, Hornung, & Reed, 2000). A similar effect is evident for younger children. Maltreated toddlers use few words to describe negative affect compared to nonmaltreated children of the same age. Maltreated toddlers respond to peer distress with anger, fear, or aggression instead of empathy or concern (Cicchetti & Toth, 2005). Cicchetti and Toth suggested that this difference occurs because maltreated children expect a negative response from their caregiver when they use words to describe negative emotions (Cicchetti & Toth, 2005). Affect dysregulation has been linked to revictimization in adults with PTSD who suffered maltreatment as children (Dietrich, 2007).

*Cognitive/Academic Impairment.*

Cognitive models of PTSD emphasize the importance of distorted cognitive functioning in the development of PTSD following maltreatment. Maltreated children typically display negative and unrealistic thoughts. They describe themselves as inadequate, incompetent, and lacking self-esteem (Bagely & Mallick, 2000; Dinwiddie et al., 2000; Higgins & McCabe, 2000; Paunovic, 1998). Runyon and Kenny (2002) compared youths aged 8-17 years who were maltreated physically or sexually and found that type of maltreatment and a negative explanatory style best predicted trauma-related distress. Youths who were physically maltreated displayed less trauma-related distress but were more prone to a negative explanatory style than youths who were sexually maltreated.

Sexually maltreated children perceive themselves less favorably and inferior to their peers. They focus on external threats after their maltreatment and minimize their own thoughts, needs, and desires (Harter, 1999). Sexually maltreated children also

blame themselves for negative events and believe they are different from their peers (Mannarino, Cohen, and Berman, 1994). Adults who were sexually maltreated as children describe themselves using statements of self-blame and self-denigration (Paunovic, 1998). These cognitive distortions and negative self-attributions may develop because maltreated children cannot understand the abusive events and cannot recognize the effect maltreatment has on their life (Mannarino et al., 1994).

PTSD symptoms in maltreated children are maintained by cognitive processes such as poor verbal processing, intense emotions, maladaptive thoughts, overestimation of danger, and excessive worry (Briere, 1992; Margolin & Vickerman, 2007; Salmon & Bryant, 2002). The dysfunctional cognitive processes affect how they process information after trauma. The cognitive processing difficulties along with the emotional response from the trauma may lead to aggressive or risk taking behavior or an attention bias regarding threatening information (Rossman & Ho, 2000). Pine and colleagues (2005) found that children with a history of physical maltreatment and a diagnosis of PTSD turned their attention away from threatening stimuli (Pine et al., 2005). Masten and colleagues (2008) found that maltreated youths with or without PTSD identified fearful faces more quickly than controls with no history of maltreatment (Masten et al., 2008). Dalglish and colleagues (2000) found that youth with PTSD estimated that negative events were more likely to happen to others than themselves (Dalgiesh et al., 2000).

Leen-Feldner and colleagues (2008) found that youth who were fearful of the consequences of anxiety were at higher risk for PTSD symptoms than those who were not fearful. Lemos-Miller and Kearney (2006) found that trauma-related cognitions

were significantly correlated with PTSD in maltreated youth at a state residential facility. Negative thoughts about self, negative thoughts about the world, and self-blame were significantly correlated with reexperiencing, avoidance/numbing, increased arousal, and distress aspects of PTSD.

Academic impairment has also been linked to maltreatment and PTSD.

Saltzman and colleagues (2006) found that symptoms of PTSD correlate inversely with verbal and full-scale IQ scores, suggesting that lower IQ scores are a risk factor for PTSD in maltreated youth (Saltzman et al., 2006). Kurtz and colleagues (1993) found that physically maltreated children display severe academic deficits and that neglected children are at extreme risk for school failure. The academic deficits are apparent after maltreatment and diminish over time. Specifically, maltreated youth demonstrate deficits in receptive and expressive language. The greatest deficits in expressive language and achievement are seen in neglected youth (Eckenrode, Laird, Dorris, 1993; Wodarski, Kurtz, Gaudin, Howing, 1990). Others have found that maltreated children with PTSD or trauma symptoms perform more poorly on memory, attention, and abstract reasoning and executive function tasks than controls (Beers & De Bellis, 2002; Eisen, Goodman, Qin, Davis, & Crayton, 2007). Poor performance on tasks related to working memory, inhibition, auditory attention, and processing speed has been linked to physical and sexual maltreatment and dissociation (DePrince, Chu, & Combs, 2008; DePrince, Weinzierl, & Combs, 2008, 2009).

### *Dissociation*

A key coping mechanism used by children subsequent to maltreatment is dissociation, but it can easily become a dysfunctional method of coping (Barnyard et al.,

2001; Macfie et al., 2001). Collin-Vezina and Hebert (2005) evaluated sexually maltreated children aged 7-12 years. Nearly 30% of the maltreated group had dissociation symptoms compared to 4.5% of the control group. Forty-six percent of the group presented with PTSD symptoms. Those who experienced penetration displayed more PTSD and dissociation symptoms than those who did not experience penetration. Characteristics about the perpetrator and length of maltreatment were not a factor in PTSD or dissociation symptoms. Children who experienced intrafamilial maltreatment experienced the same symptoms as children who experienced extrafamilial maltreatment. Those who were maltreated once experienced the same symptoms as those who were maltreated for an extended time period (Collin-Vezina & Hebert, 2005).

Kaplow and colleagues (2005) found that children who experienced dissociation, anxiety, arousal, and avoidance after or during sexual maltreatment are at a greater risk of PTSD. They found dissociation to be the strongest predictor because it prevents open expression of the trauma, which then prevents adequate processing of the trauma and thus re-experiencing (Kaplow, Dodge, Amaya-Jackson, & Saxe, 2005). Lemos-Miller and Kearney (2006) found that dissociation correlated with symptoms of PTSD in maltreated children at a residential facility. Amnesia, absorption, passive influence, and depersonalization/derealization significantly correlated with reexperiencing, avoidance/numbing, increased arousal, and distress aspects of PTSD. The authors suggested that dissociation can lead to social isolation, ineffectiveness, anhedonia, poor self esteem, and poor cognitive and memory processes that make a child vulnerable to the development of PTSD.

## *Depression*

Vulnerability to psychopathology, specifically depression and anxiety disorders, may serve as a risk factor for the development of PTSD after a traumatic event.

Deblinger and colleagues (1990) found that levels of depression varied across different periods of treatment for sexually maltreated children. Depression increased at the beginning of treatment, perhaps because children were revisiting their traumatic experiences. The depressive symptoms faded as treatment progressed suggesting there is a strong link between depressive and PTSD symptoms (Deblinger, McLeer, & Henry, 1990).

The link between depression and trauma suggests that depression may be a key gateway between child maltreatment and eventual PTSD development (Storr, Ialongo, Anthony, & Breslau, 2007). Runyon and colleagues (2002) evaluated children with PTSD, MDD, or comorbid PTSD/MDD to determine specific differences in symptomatology among these groups. More girls were in the MDD and PTSD/MDD group and more boys were in the PTSD only group. Children with PTSD and MDD were more likely to report flashbacks and difficulty sleeping, whereas children with PTSD only were more likely to experience amnesia. Flashbacks in children with PTSD and MDD may have caused powerlessness and hopelessness that contributed to depression (Runyon, Faust, & Orvaschel, 2002).

Boney-McCoy and Finkelhor (1996) interviewed maltreated children and their parents. The most common type of maltreatment for this group of children was sexual maltreatment. Maltreated children were more likely to experience PTSD and depressive symptoms than nonmaltreated children. Sexually maltreated children were at a greater

risk for PTSD than all other groups and 4 times more likely to experience depressive symptoms than nonmaltreated children. Sexually maltreated boys were almost 5 times more likely to develop depressive symptoms than nonmaltreated boys and sexually maltreated girls were almost 4 times more likely to develop depressive symptoms than nonmaltreated girls.

Linning and Kearney (2004) examined 58 maltreated youth in a residential setting, 37 of whom met criteria for PTSD. Youth with PTSD were more likely than those without PTSD to be diagnosed with dysthymia and/or major depressive disorder. Those experiencing difficulties with concentration and decisiveness were more likely to be diagnosed with PTSD. The authors suggested that youth with depression or dysthymia may have genetic predispositions, or already experience negative affect, learned helplessness, misattributions, family problems, and lack of social support. As a result, these predispositions may make them more vulnerable to PTSD after trauma (Linning & Kearney, 2004).

Lemos-Miller and Kearney (2006) found that trauma-related cognitions and dissociation were connected to PTSD symptoms in maltreated adolescents if depression was involved. The authors suggested that depression led to an increased presence of PTSD symptomatology in maltreated youths. Lemos-Miller and Kearney also found that multi-racial children had a stronger relationship between depression and PTSD after maltreatment than other groups. African American children did not demonstrate this strong relationship between PTSD and depression, suggesting that African American children may have a stronger support network while multi-racial children



lack support. The results of this study help demonstrate the importance of understanding the relationship between ethnic group affiliation, maltreatment, and psychopathology.

### *Ethnicity*

Beliefs about appropriate child rearing practices, maltreatment, and neglect vary across ethnic backgrounds and cultures. Cultural beliefs about child rearing practices, acceptable behaviors, and societal harm to children should be considered when examining child maltreatment. The concept of self varies across individualistic and collectivist communities, including what are “normal” and “abnormal” reactions to trauma. A child’s cultural background is thus expected to affect symptoms after exposure to trauma (Cohen, Deblinger, Mannarino, & de Arellano, 2001; Tummala-Nara, 2007). The following section examines the importance of ethnicity and its relation to maltreatment and PTSD.

Ferrari (2002) examined differences in opinion about the seriousness of maltreatment among 150 non-traditional college students enrolled in night and weekend classes. Hispanics, African Americans, and European Americans were presented with a series of maltreatment vignettes. Opinions varied with respect to seriousness of maltreatment ratings in the vignettes. African Americans rated parents’ promotion of child delinquency as a more serious form of maltreatment than Hispanics in the vignettes. Additionally, African American parents were more nurturing than Hispanic parents, but they also used more physical discipline than European American and Hispanic parents. African American mothers used more physical and verbal punishment than other mothers in the study. Deater-Deckard and others (1996) suggested that nurturing paired with physical punishment explains why some African

American children do not experience as much aggression or externalizing behavior as European American children after physical punishment (Deater-Deckard, Dodge, Bates, & Pettit, 1996).

Ferrari (2002) also found that those who valued familialism were less likely to physically harm their children, but were also less nurturing. Familialism refers to family unity and respect for all members of the family and is common in African American and Hispanic cultures. In families that valued machismo, fathers were more likely to use physical punishment with their children. Machismo is typical in Hispanic cultures and refers to a system of living that adheres to strict sex role practices, placing the male as the dominant member of the family. Machismo was related to less nurturance for the Hispanic parents, but not African American or European Americans.

#### *Type of Maltreatment*

Differences in maltreatment emerge when children are grouped by ethnicity. One of the biggest differences that emerged was the type of maltreatment and perpetrator of maltreatment. Fitzpatrick and Boldizar (1993) found that 51% of African American youth were maltreated by a family member. Hispanic children were more likely to be living with their abuser than African Americans and were more likely to be maltreated by a male relative (Rao, DiClemente, & Ponton, 1992). Sanders-Phillips and colleagues (1995) found that Hispanic girls were more likely to be maltreated by their fathers and for longer periods of time than African American or European American children (Sanders-Phillips et al., 1995). The cultural roles of the dominant male figure and subservient female role in the Latino culture may contribute to differences found among these groups. Latino boys are more likely to be victims of sexual maltreatment,

specifically anal penetration, compared to African American boys (Moisan, Sanders-Phillips, & Moisan, 1997; Sanders-Phillips et al., 1995) and more likely to have been maltreated by members of their extended family (Moisan et al., 1997). African American boys from the same sample were more likely to be maltreated by a member of the immediate family and to display anger after maltreatment. Rao and colleagues (1992) found that Latinos and African Americans were more likely to be victims of sexual maltreatment (specifically anal or vaginal penetration) than European American or Asian children. Latino and African American youth are generally more likely to be maltreated by someone in the home and are more likely to experience a specific type of maltreatment.

#### *Interpretation of Maltreatment*

The interpretation of maltreatment and cultural values influence the effects of maltreatment. In Hispanic culture, a collectivist nature and Catholic beliefs may contribute to feelings of shame after maltreatment. Feiring and colleagues (2001) found that Hispanic children exhibited high levels of general shame and that European American children reported more shame related to maltreatment than Hispanic children. The individualistic nature of European American culture may make a child feel partly responsible for maltreatment (Feiring, Coates, & Taska, 2001).

Studies have also examined maltreatment interpretations outside the United States. Sebre and colleagues (2004) found a lower prevalence of maltreatment in Macedonia (18%) compared to other communist countries and suggested that this difference was due to a different cultural interpretation of abusive behaviors. Children are taught that discipline comes from Heaven and helps them grow into a good person.

Additionally, children are taught not to speak ill of their family or parents and may feel pressured to speak positively of their parents (Sebre et al., 2004). Daigneault and colleagues (2007) assessed sexually maltreated children and found that the Haitian adolescents referred to “Caucasian magic” or “spirits” as ways of coping with trauma (Daigneault, Cyr, & Tourigny, 2007).

#### *PTSD and PTSD-related Symptoms*

Some have evaluated differences in the onset of PTSD and PTSD-related symptoms among different ethnic and cultural groups. Gnanaskedian and colleagues (2005) found a significant relationship between PTSD and sexual maltreatment among sexually and physically maltreated children in the Northern Plains, but found no significant relationship between other types of trauma and PTSD in this population. The extent of the trauma affected the development of PTSD symptoms. Those who experienced 6 or more traumas were more likely to develop symptoms than those who experienced 5 or less traumas. Gnanaskedian and colleagues (2005) found that children who experienced trauma at a younger age displayed more PTSD symptoms than others, and girls experienced more PTSD symptoms than boys. Higher rates of PTSD in girls do not necessarily mean they are more vulnerable to developing PTSD than sexually maltreated boys in this population. The higher rates may be related to higher rates of sexual maltreatment for girls (Gnanadeskian et al., 2005).

Paxton and colleagues (2004) examined the prevalence of PTSD among African American youth. Most (75%) had witnessed violence and 33% were reportedly direct targets of violence. Direct victimization was highly correlated with PTSD symptoms and depressive symptoms in this population (Paxton et al., 2004). Andres-Hyman and

colleagues (2004) found that Hispanics reported less intrusive PTSD symptoms than African Americans and non-Hispanic Caucasians following sexual maltreatment. Higher rates of PTSD and depression were found in physically and sexually maltreated African American women than in Hispanic and Caucasian women (Andres-Hyman, Cott, & Gold, 2004). The differences in symptoms for Hispanic children compared to other groups stem from various factors. Guilt may be placed on a child for breaking family ties or girls may be required to stay silent and may not be able to report maltreatment or receive support. Cultural and religious ideas about premarital sex may also make it difficult for a child to report sexual maltreatment (Fluke et al., 1995). Latina girls are more likely to be maltreated by a relative living in the home, so reporting maltreatment becomes difficult and the child has to carry the burden of separating a family. Latina mothers may feel their role is to preserve the family and may support a perpetrator because he is the source of financial support. These factors may place a child in a position where she does not have control over a situation and this may explain why elevated levels of depression are found in the Hispanic/Latin population (Fluke et al., 1995; Moisan et al., 1997).

Findings from Phillips-Sanders and others (1995) suggest the opposite. Sexually maltreated African American girls aged 8-13 years were found to have better psychological functioning than sexually maltreated Latina girls the same age (Phillips-Sanders, Moisan, Wadlington, Morgan, & English, 1995). In contrast to Latino family structure and cultural beliefs, African American families are often headed by single women and maltreatment is usually perpetrated by someone outside the home. A child may thus find it easier to disclose maltreatment to family members and receive maternal

support (Rao et al., 1992). African American children are more likely to have witnessed several other traumatic events in their lives, which may explain why some studies find high levels of anger and aggression in that population (Shakoor & Chalmers, 1991).

Research has not been consistent about effects of maltreatment on children from different cultures. Some find that children from minority groups experience more symptoms and negative effects than European American children (Sanders-Phillips, et al., 1995). Rao and others (1992) found that sexually maltreated Asian children reported more suicidal ideation than African American or Hispanic children even though they reported less intrusive types of sexual maltreatment (Rao et al., 1992).

Some researchers have examined rates of PTSD in maltreated children outside the United States. Grassi-Oliveira and Stein (2008) found that maltreated, specifically neglected, children in Brazil were more vulnerable to developing PTSD than other children. In another study with Danish youth, Elklit (2002) found that 5.6% of boys and 12.3% of girls aged 13-15 years met criteria for PTSD after they experienced a traumatic event. Some (11.0%) boys and girls (17.4%) met criteria for subclinical levels of PTSD. The Danish youth in this study revealed attempted suicide, death of family member, and illness as the most traumatic event, but Elklit found that sexual maltreatment, neglect, physical maltreatment, and attempted suicide had the strongest associations with PTSD. In contrast to previous studies, some report no differences in PTSD related symptomatology in children from different ethnicities after maltreatment or trauma (Mennen, 1994; Mennen, 1995; Wyatt, 1990). The inconsistency in the literature may be better explained by examining the limitations of the existing literature.

### *Limitations of the Research on Ethnicity and PTSD in Maltreated Children*

The biggest limitation in past studies that have examined ethnic differences is sample size. Many of the studies used very small samples, thus limiting generalizability of findings. Past studies have generally compared a sample of minorities to a large sample of the majority group. Studies have also failed to report the additional unique stressors minorities face. For example, ethnic minorities may be exposed to more violence and discrimination than majority groups, but this information has not been included when examining PTSD in maltreated children. This information may help explain the difference in PTSD prevalence rates between minority and majority groups. Past studies have also neglected to include cultural information that may impact the symptoms maltreated children experience. For example, a child may feel more shame regarding sexual maltreatment if a culture frowns upon premarital sex. This additional shame may contribute to PTSD symptomatology. These relationships need to be examined further.

Research has failed to examine the importance of ethnic identity as a protective factor in the development of psychopathology after maltreatment. A participant can report a specific ethnic background but may not identify with his/her ethnicity. The relationship between ethnicity and ethnic identity, in addition to other protective factors, will greatly expand the knowledge on PTSD and ethnic minority children.

### *Protective Factors*

Protective factors for maltreated youth include child resilience, effective coping strategies, and a supportive family environment (Linning & Kearney, 2004). Factors that contribute to resiliency in maltreated children are positive self-esteem and ego

overcontrol (Cicchetti & Rogosch, 1997). Parents serve as protective factors after traumatic events such as natural disasters or accidents and can minimize PTSD symptoms (AACAP, 1998). The remainder of this review covers ethnic identity and family support as protective factors because these variables are a key focus of the proposed study.

### *Ethnic Identity*

A protective factor against psychopathology identified in the literature is ethnic identity. Marcia (1980) developed four stages of ethnic identity development: diffused, foreclosed, moratorium, and achieved identity. From that, Phinney (1989) developed three stages of ethnic identity development for adolescents: unexamined phase, a search or exploration phase, and an achieved phase. Phinney (1992) describes ethnic identity as the part of the person's self that comes from participation in social group and encompasses value and importance with participation in that social group, and includes self-identification and a sense of belonging.

Those with a strong sense of ethnic identity have greater self-esteem and positive coping styles (Gray-Little & Hafdahl, 2000; Phinney, 1992, Phinney & Chavira, 1992; Rowley, Sellers, Chavous, & Smith, 1998; Smith, Walker, Fields, Broskins, & Seay, 1999; Umana-Taylor, Diversi, & Fine, 2002). Roberts and others (1999) found that members of ethnic minority groups demonstrate stronger ethnic identity than those of a majority group. Furthermore, African American youth have been shown to have higher levels of ethnic identity than European Americans or Hispanics. The African American youth with high levels of ethnic identity have high self-esteem and low levels of depression (James, Kim, & Armijo, 2000; Yasui, Dorham,



& Dishion, 2004). Phinney and Chavira (1992) found a positive relationship between self-esteem and strong ethnic identity in African American and Latin American, but not European Americans. Ethnic identity is also associated with effective coping styles. Those with high levels of ethnic identity use discussion instead of passive or aggressive methods of coping (Phinney and Chavira, 1995). Several studies also reveal a negative relationship between ethnic identity and loneliness, depression, suicidal ideation, and anxiety (Arroyo & Ziegler, 1995; Phinney & Chavira, 1992; Roberts et al., 1999).

Strong identification with a group serves as a protective factor against some of the negative aspects of being a minority (Branscombe, Schmitt, & Harvey, 1999), and ethnic identity is important in coping, optimism, and general mastery (Roberts et al., 1999). Victims of discrimination with strong ethnic identity have their own ethnic group as a resource (Shelton et al., 2005). African American college students who valued their ethnic identity and viewed their ethnicity in a positive way were not greatly affected by discrimination compared to those who did not (Sellers & Sheldon, 2003). BealeSpencer and others (2001) found higher academic achievement in African American students who developed ethnic identity compared to students in the unexamined phase (BealeSpencer, Noll, Stoltzfus, & Harpalani, 2001).

Other researchers have found that those who identify strongly with more than one group have a strong sense of self when faced with discrimination because they have flexibility in choosing which ethnic background to relate to and draw strength from. This increases the availability of possible support for multiracial individuals (Hong & Seltzer, 1995; Pittinsky, Shih, & Ambady, 1999; Roccas & Brewer, 2002). These findings were consistent with that of Kiang and others (2008) when they examined

multiple social identities in ethnically diverse adolescents. They found that any ethnic identity, regardless of ethnicity, served as a protective factor (Kiang, Yip, & Fuligni, 2008).

Other research indicates that multiracial children experience more problems such as isolation, depression, and shame than other children (Sanders-Phillips et al., 1995). Cooney and Radina (2000) found that multiracial adolescent boys and girls had higher rates of counseling, grade retention, suspension, and expulsion than European American peers. Some suggest that multiracial children experience more problems because multi-racial couples have more conflict in their relationships and are overprotective (Gibbs & Moskowitz-Sweet, 1991; Xie & Goyette, 1997). Lacking a sense of belonging to a particular group may also cause conflicts for multiracial children, especially for girls (Gibbs and Moskowitz-Sweet, 1991).

*PTSD and PTSD- related symptoms.* The diagnostic criteria of PTSD do not consider responses to stress and experiences by minority cultures, so PTSD is difficult to diagnose in minorities (Keane, Kaloupek, & Weathers, 1996; Marsella, Friedman, & Spain, 1996). Racism and discrimination for ethnic minorities may be classified as emotional maltreatment for some and become traumatic experiences themselves and interfere with the development of a positive self-concept (Sanchez-Hucles, 1998). Therefore, minorities such as African Americans may be more vulnerable to PTSD symptoms when faced with additional trauma (Allen, 1996).

Khaylis and others (2007) examined the effect of ethnic identity on the severity of PTSD in the context of race-related stress. The researchers recruited 91 undergraduate students who experienced race-related stress (i.e. "Someone hurt my

family member because of our race or ethnicity”). Participants were Asian (47.3%), Hispanic (18.7%), Caucasian (11%), Other (8.8%), African American (6.6%), and Middle Eastern (5.5%). A positive relationship was found between PTSD and ethnic identity if the stressor placed on the person was race-related. Those with higher levels of ethnic identity experienced higher levels of PTSD when exposed to race-related stress compared to those with lower levels of ethnic identity. Although these results are inconsistent with other research that strong ethnic identity serves as a protective factor, it should be noted that these results are for race-related stress and not other potential stressors (Khaylis, Waelde, & Bruce, 2007).

*Limitations of research on ethnic identity and PTSD.* Research regarding ethnic identity is sparse. Moreover, research regarding ethnic identity and the presentation of PTSD and PTSD-related symptoms is almost non-existent. Expanding the research on ethnic identity and PTSD symptomatology may guide future research and intervention with maltreated youth, especially if there are differences in the symptoms expressed by different ethnic groups. Most studies only examine the differences in symptoms among ethnic groups without considering the impact of ethnic identification. The relationship between ethnic identity and PTSD symptoms may provide further information about ethnic identity as a protective factor against PTSD symptoms after maltreatment. Examining the relationship between ethnic identity and PTSD symptoms may provide further insight on the inconsistencies in the literature, the difference in symptoms experienced by different ethnic groups, and guide treatment for ethnic minorities based on the strength and importance of protective factors such as social support and ethnic identity.

## *Support*

Social support refers to feeling loved, valued or esteemed, and belonging to a social network (Cobb, 1976). Social support, specifically family support, is a protective factor for maltreated children. Children who have been maltreated and have a stable caring parent in their lives were less likely to experience the negative consequences of maltreatment than those who did not have stable support (Kaufman & Henrich, 2000). The following section discusses the impact of family support on maltreated children.

*Psychological and behavioral functioning.* Psychological and behavioral functioning are linked to social support. Significant negative relationships exist between social support and delinquency (Bender & Losel, 1997; Garnefski & Diekstra, 1996), anger (Bal, Crombez, Van Oost, & Debourdeaudhuij, 2003), anxiety (Malecki & Demaray, 2002; White, Bruce, Farrell, & Kliewer, 1998), drug use (Piko, 2000), dissociation (Bal et al., 2003), sexual problems (Bal et al., 2003), and depression (Bal et al., 2003; Demaray & Malecki, 2002) in adolescence. The presence of social support has led to positive outcomes for children of divorce, learning disabilities, high-risk and disadvantaged children, and gifted children (Malecki & Demaray, 2002).

The source of support that a child receives after a traumatic event influences subsequent outcome. For maltreated children, having the support of a caring and stable parent or guardian was most important for preventing negative outcomes (Kaufman & Henrich, 2000). Kaufman and others (2006) found that mothers were listed by children as the most important social support for 61% of maltreated children and 83% of nonmaltreated children. Other parental figures were listed as the primary social support for 30% of the maltreated and 10% of the nonmaltreated children (Kaufman, 2008).

Kaufman and others (2006) found that maltreated children with positive support had depression scores only slightly higher than nonmaltreated children in the control group, illustrating the importance of adequate support for children who have experienced trauma (Kaufman, et al., 2006).

Some have found differences in the impact of support on subsequent symptomatology for different ethnic groups. Plant and Sachs-Ericsson (2004) found that depression was higher for minorities than Caucasians, but this was explained by difficulties meeting basic needs. However, ethnic minorities rated their interpersonal functioning as more satisfying than Caucasians and this may protect them from having higher depression rates. Way and Robinson (2003) found that support from family, peers, and school had the same effect on self-esteem and depression for African Americans, Latin Americans, and Asian Americans.

Family support is an important variable for children from various ethnic groups. Family support has a strong influence for Hispanics, Native Americans, Asians, and African Americans (Demaray & Malecki, 2003). Stevenson and colleagues (1996) found that African American adolescents were more likely to view their kinship relationships as supportive and caring (Stevenson, Reed, & Bodison, 1996). Cauce and colleagues (1996) examined African American adolescents and found that support from extended families was related to social competence and self-worth and that support from teachers was related to competence in school (Cauce, Mason, Gonzales, Hiraga, & Liu, 1996).

Some researchers have examined differences in family support among ethnic groups after maltreatment. Sander-Phillips and colleagues (1995) assessed African

American and Latin American sexually maltreated girls aged 8-13 years. They found that Latina girls had higher rates of depression, higher levels of family conflict, and lower levels of maternal support than African American girls. Feiring and colleagues (2001) evaluated maltreated African American, Hispanic, and Caucasian children. Greater maltreatment severity was related to lower perceived emotional support from a caregiver. Hispanic mothers may strive to protect social harmony and support the abuser, who is often the wage earner. African American children and Caucasian children did not report significant differences in perceived emotional support. Ethnic identity may provide more information about varying levels of symptoms experienced by different groups and may explain inconsistencies in research related to ethnic groups.

Some have examined the relationship among support, self-esteem, and ethnic identity. Gaylord-Harden and colleagues (2007) examined this relationship in African American youth. Perceived support from family was negatively related to anxiety and depressive symptoms. Ethnic identity positively influenced self-esteem in boys and depressive symptoms in girls. The authors suggested that boys spend more time with their peers than with family and this allows them to develop their ethnic identity. Higher levels of perceived support were also found related to positive self-perception and positive perception of the ethnic group to which one belongs (Gaylord-Harden, Ragsdale, Mandara, Richards, & Petersen, 2007).

Family support is not the same in every country. Ystgaard (2007) found that support from family and friends in Norway contributed to healthy development even in the presence of negative events (breaking up with partner, parent's lose job, serious illness, maltreatment). DeRosier and Kupersmidt (1991) found that Costa Rican

children were more satisfied with relationships with family members than children from the U.S. They found the Costa Rican culture to emphasize interdependence and family solidarity. Fourth and sixth graders in the U.S rated their best friends as more important than their parents, siblings, or grandparents.

*PTSD.* Pina and colleagues (2008) examined PTSD rates and symptoms in children after Hurricane Katrina and found that PTSD- related symptoms were reduced when children perceived support from a source outside of the family or from a professional resource (Pina, et al., 2008). Birnes and colleagues (2009) examined PTSD rates in 153 children exposed to an industrial explosion. They found that those with the highest levels of family cohesion had the lowest levels of posttraumatic symptoms (Birnes et al., 2009). Burton and colleagues (1994) found significant correlations between PTSD and high levels of family conflict as well as absence of PTSD and higher levels of family cohesion among adolescents exposed to different types of trauma (Burton, Foy, Bwanausi, Johnson, & Moore, 1994).

Few studies have examined the effect of support on the presence of PTSD in victims of maltreatment. Vranceau and colleagues (2007) examined the roles of social support and stress in the development of PTSD and depression after maltreatment. The researchers recruited 100 women from an inner-city treatment center. Eighty-six percent of these women reported at least one instance of child maltreatment. A lack of support was found to be highly predictive of high stress and PTSD. Support lessened the effect of maltreatment and the development of PTSD. Maltreatment increased stress and impaired ability to develop necessary support. As a result, a person becomes

vulnerable to additional losses and stressors, which further increases risk for PTSD (Vranceau, Hobfoll, & Johnson, 2007).

Bal and colleagues (2003) examined the relationship between family support and trauma among adolescents aged 12-18 years. Many (42%) reportedly experienced some type of stressor and 4.4% reported sexual abuse. Adolescents with high levels of perceived support from family displayed fewer trauma-specific symptoms if they experienced a trauma other than sexual abuse. Family cohesion was the strongest predictor of subsequent symptomatology for the adolescents. Low cohesion was correlated with higher levels of anxiety, depression, posttraumatic symptoms, anger, and dissociation for adolescents who reported trauma other than sexual maltreatment (Bal et al., 2003). Support from family may lead to expression of feelings regarding the traumatic event which leads to a decrease in trauma symptoms. Alternatively, adolescents reporting high availability of support from friends reported more internalizing and externalizing behavior problems. Adolescents who rely on friend support may not have family support and are at risk for poor adjustment (Bal, DeBourdeaudhji, Crombez, & Van Oost, 2004).

*Limitations of the research on family support and PTSD.* Few studies have examined the relationship between family support and PTSD in maltreated children. Most of the literature on social support focuses on adult victims of child maltreatment or veterans of war. Very few studies have focused specifically on family support. Most studies focus on general support or support from multiple areas of a person's life. Family support may protect against the development of PTSD, but past research has not examined whether there is a difference in specific symptomatology in children who



receive family support compared to those without family support. Lastly, research on ethnicity and ethnic identity is sparse. Studies have not examined family support as a possible explanation for the differences in PTSD symptomatology among different ethnic groups. Treatment is now discussed at length.

### *Treatment*

Interventions for PTSD include cognitive-behavioral, art, play, psychodynamic, and pharmacological therapies. More specific approaches include psychoeducation, hypnotherapy, grief work, affect regulation, interpersonal skills development, narrative storytelling, coping skills, stress inoculation training, school consultation, and exposure-based practices (Cohen & Mannarino, 2006). Cognitive behavioral therapy (CBT) is most effective for treating children after maltreatment (Pine & Cohen, 2002).

Additionally, providing parents with CBT reduces externalizing and depressive symptoms in children. CBT techniques that are used with children exposed to trauma include cognitive processing, exposure, relaxation, positive imagery, thought stopping, and self-talk. Specific youth-based techniques include structured play, expressing maltreatment-related feelings such as fear, anxiety management, changing erroneous beliefs such as self-blame and negative attributions about others, teaching maltreatment prevention skills, and reducing isolation and stigma associated with maltreatment, such as in group therapy (Cohen & Mannarino, 2006).

Research regarding treatment of maltreated children has also focused on how beliefs about cultures might influence treatment options and outcome. Different types of therapies have been recommended for African American and Hispanic children such as brief therapy, goal directed therapy, problem oriented therapy (Cohen et al., 2001), or

holistic approaches for groups that involve non-traditional methods of healing (Rosack, 2000). Beliefs and shame about psychological or mental disorder influence which groups seek and follow through with therapy (Rosack, 2000). Additionally, beliefs about government and state facilities such as Child Protective Services and reporting maltreatment may influence disclosure of maltreatment from certain groups. Some believe that minority children are more likely to be removed from the home than Caucasian children (Cohen et al., 2001) and that may influence minority groups' beliefs about state-run facilities.

Minority children are less likely to receive treatment for PTSD and other disorders even though minority children are in greater need of services (Cohen et al., 2001), specifically Asian and Hispanic children (Bui & Takeuchi, 1992). African American children are less likely than European American children to have health insurance that includes mental health coverage (Woodward, Dwinell, & Arons, 1992) making it more difficult to access mental health care. There is a difference in access to care for minorities compared to European Americans (Garland et al., 2000). Knowledge about the risk and protective factors, in addition to knowledge about symptom expression in minority groups, may improve treatment outcome for some maltreated children.

#### *Purpose of Study*

Few studies have examined the importance of ethnicity vis-a-vis effects of maltreatment and subsequent symptomatology (Behl et al., 2001). Furthermore, past research has not included large, representative samples. Past studies have not included information on additional stressors that ethnic minorities face and have not compared

PTSD symptomatology among different groups. Studies that do examine ethnicity use very low numbers of ethnic/racial groups compared to larger Caucasian samples, and some studies that do include different ethnic groups do not differentiate various ethnic groups. Little research has involved the importance of ethnic identity and family support as protective factors in the development of psychopathology after maltreatment in children. The major findings in this area have been limited to adults, while the PTSD and maltreatment literature base in youths remains undeveloped.

Racial and ethnic factors have either been ignored or confounded by researchers making comparisons with insufficient sample sizes. This study aimed to address some of these methodological shortcomings and thoroughly examine possible ethnic variations in PTSD and its related symptoms in maltreated and traumatized youths. This study also sought to improve upon previous studies to assess the role of ethnicity, ethnic identity, and family support on the effects of maltreatment and trauma in adolescents.

This study examined cultural and ethnic differences in maltreated children and how these differences affect PTSD and related symptoms. Previous research has not examined how maltreated children from different cultural and ethnic backgrounds experience PTSD symptoms. This study evaluated levels of ethnic identity to determine if this construct impacts symptom manifestation. This study also evaluated the role of family support with respect to PTSD and related symptoms. Family support may be a key protective factor in situations involving abuse. This information will hopefully inform assessment, treatment, and prevention practices for children exposed to maltreatment.

### *Hypotheses*

This study examined PTSD-related symptoms within the context of ethnicity, ethnic identity, and family cohesion. The first hypothesis was that non-Caucasian youth (African American, Hispanic American, Native American, Asian, and multiracial) would have higher levels of PTSD-related symptoms than Caucasian youth on the Children's Posttraumatic Stress Disorder-Inventory (CPTSD-I), Children's Depression Inventory (CDI), Posttraumatic Cognitions Inventory (PTCI), and Adolescent Dissociative Experiences Scale (ADES) (Andres-Hyman et al., 2004; Ford, 2008; Paxton et al., 2004). The second hypothesis was that lower scores on the CPTSD-I, CDI, PTCI, and ADES would be associated with higher scores on a measure of ethnic identity (MEIM) (Bal et al., 2003; Brook, Balka, Brook, Win, & Gursen, 1998; Gaylord-Harden et al., 2007; Gold et al., 2000; Gray-Little & Hafdahl, 2000; Phinney, 1992; Phinney & Chavira, 1992; Rowley et al., 1998; Smith et al., 1999; Umana-Taylor et al., 2002; Vranceau et al., 2007; Ystgaard, 1997). The third hypothesis was that lower scores on the CPTSD-I, CDI, PTCI, and ADES would be associated with higher scores on a measure of family cohesion (FES cohesion subscale) (Demaray & Malecki, 2003; Feiring et al., 2001; Malecki & Demaray, 2002; Plant & Sachs-Ericsson, 2004; Sander-Phillips et al., 1995).

## CHAPTER 3

### METHODOLOGY

#### *Participants*

Participants ( $n=145$ ) included 66 males, 78 females, and 1 transgendered youth aged 11-17 years ( $M=14.5$ ,  $SD=1.6$ ). Participants were multiracial, (27.6%), African-American (26.2%), Caucasian (24.1%), Hispanic (13.1%), other (4.1%; included Albanian, Pacific Islander, Hungarian, and Guamanian), Asian American (2.8%), or Native American (2.1%). Parents were never married (37.2%), currently married (26.9%), divorced (23.4%), separated (5.5%), or widowed (0.7%) (unavailable: 6.2%). Most (91.0%) participants were born in the United States. Information about socioeconomic status was not available because of limited access to parents. Participants were asked about their parent's level of education: mother graduated high school (45.5%), mother did not graduate high school (29.7%), mother's level of education unknown (24.8%), father graduated from high school (36.6%), father did not graduate from high school (22.1%), or father's level of education unknown (41.4%).

Participants were asked to identify their most traumatic events (Table 1). Mean number of traumatic events endorsed was 2.4 ( $SD=1.8$ , range 0-12). Most participants were diagnosed with chronic PTSD ( $n=73$ ). Others were diagnosed with PTSD negative ( $n=43$ ), acute PTSD ( $n=21$ ), or no diagnosis ( $n=8$ ). Participants were also given scores based on how many PTSD symptom clusters (0-6) they were experiencing. Some participants (45%) displayed 6 symptom clusters and 28.8% met criteria for subclinical levels of PTSD (4-5 symptoms). Symptom clusters included exposure to a traumatic event, situational reactivity, reexperiencing, avoidance and numbing,

increased arousal, and significant distress. Sex and ethnicity information is provided in Tables 2, 3, and 4.

### *Measures*

*Demographic/Information Sheet.* A demographic/information sheet was used to solicit information on sex, age, race/ethnicity, country of origin, biological parent, race/ethnicity, parental marital status, family SES, and religion. Addendum questions were administered verbally to adolescents regarding type, frequency, and perpetrators of maltreatment as well as violence within and outside the family. Child Haven staff or Dr. Holland's office provided researchers with the reason for removal from home.

*Children's PTSD Inventory (CPTSD-I)* (Saigh, 1998). The CPTSD-I is a semi-structured interview that assesses DSM-IV-TR PTSD symptoms in youths aged 7-18 years (Saigh et al., 2000). Interview administration lasted 15-20 minutes (Saigh et al., 2000). Youth responses are scored on a dichotomous scale on five subtests (1 for presence and 0 for absence). The first subtest (2 questions) assesses exposure to trauma and reactivity during stress exposure, the second subtest (11 questions) assesses re-experiencing symptoms, the third subtest (16 questions) assesses avoidance and numbing, the fourth subtest (7 questions) assesses increased arousal, and the fifth subtest (5 questions) addresses distress. The CPTSD-I also assesses duration of distress for each symptom. The CPTSD-I yields one of five diagnoses: PTSD Negative, Acute PTSD, Chronic PTSD, Delayed Onset PTSD, and No Diagnosis. No Diagnosis includes youths who experienced a trauma but failed to acknowledge this during the interview (Yasik et al., 2001).

To establish content validity of the CPTSD-I, three members of the DSM-IV PTSD Work Group independently rated the measure for correspondence with current diagnostic criteria using a 0-100 point Likert scale (0=lowest correspondence and 100=highest correspondence). Mean subtest ratings were 86.7 for the Situational Reactivity subtest and 90 for all other subtests, indicating consistently high levels of correspondence between the CPTSD-I and DSM-IV PTSD Diagnostic criteria (Saigh et al., 2000).

Saigh and colleagues (2000) examined CPTSD-I internal consistency and reliability in traumatized and non-traumatized youths aged 7-18 years (mean age, 13.8 years) and a sample of 6-17 year olds (mean age, 12.5 years). Moderate to high internal consistency estimates were found for the subtests (.53-.89) as well as overall diagnostic internal consistency (.95). Cronbach's  $\alpha$  for the CPTSD-I for the present study was .85.

Excellent estimates of interrater reliability have been reported for the CPTSD-I. An overall interrater agreement of 98.1% was reported at the diagnostic level (Saigh et al., 2000). A Cohen's kappa of .96 was reported for the overall diagnostic level, indicating excellent diagnostic agreement between raters. Four subtests yielded Cohen's kappas of .84-1.00, indicating excellent interrater reliability. The sole exception was a fair to moderate kappa coefficient of .66 for the Situational Reactivity subtest (Saigh et al., 2000).

Excellent estimates of test-retest reliability were also obtained, yielding 97.6% agreement at the diagnostic level, with a Cohen's kappa of .91. The individual subtests yielded estimates of test-retest reliability ranging from .78-1.00. The Significant Impairment subtest yielded fair to good test-retest reliability (.66) (Saigh et al., 2000).

Yasik and colleagues (2001) examined the validity of the CPTSD-I in traumatized and non-traumatized youths aged 7-18 years (mean age, 13.4 years). The ethnic composition of the youth was 64.7% Hispanic, 16.7% African American, 9.8% Caucasian, and 8.8% Asian. The CPTSD-I displayed high concurrent validity compared to three well established and frequently used criterion measures: clinician derived diagnosis, Diagnostic Interview for Children and Adolescents-Revised PTSD module, and Structured Clinical Interview for DSM. Pearson product-moment correlation coefficients with the CPTSD-I were obtained for diagnostic efficiency (.93-.95), sensitivity (.87-1.00), specificity (.92-.99), positive predictive power (.65-.96), and negative predictive power (.95-1.00) (Yasik et al., 2001).

Yasik and colleagues (2001) also evaluated convergent and discriminant validity of the CPTSD-I with the Revised Children's Manifest Anxiety Scale (RCMAS) (Reynolds & Richmond, 1978), Children's Depression Inventory (CDI) (Kovacs, 1992), and Junior Eysenck Personality Inventory (JEPI) (Eysenck, 1963). Significant correlations between CPTSD-I overall symptom endorsement and RCMAS and CDI symptom endorsement indicated strong convergent validity. The CPTSD-I and JEPI extraversion scales were not associated, providing evidence for CPTSD-I discriminant validity.

*Adolescent Dissociative Experiences Scale (A-DES)* (Armstrong, Putnam, Carlson, Libero, & Smith, 1997). The A-DES is a 30-item self-report questionnaire that assesses dissociation following normal to pathological experiences in youths aged 12-18 years (Armstrong et al., 1997). A-DES scoring is based on a Likert-type scale where "0



= never” and “10 = always.” The individual is asked to indicate how often a particular experience happens to him when not under the influence of drugs or alcohol.

This scale contains four domains of dissociation. Dissociative amnesia refers to memory lapses for dissociative experiences. Absorption and imaginative involvement refers to involvement in fantasy activities to the extent that reality fades away, or the distinction between reality and fantasy is difficult to make. Passive influence refers to lack of control over bodily actions and sensations. Depersonalization and derealization refer to feelings of separation from one’s body and the world. Dissociated identity refers to feeling that one’s emotions and behaviors are not one’s own and dissociative relatedness refers to feeling that interpersonal relationships are not real (Armstrong et al., 1997).

Armstrong and colleagues (1997) examined A-DES validity among 102 adolescents: 73 inpatients, 12 outpatient, and 17 control adolescents and 70 non-clinical 11-17 year old adolescents. The Spearman Brown split half reliability was .92. The Cronbach alpha for the scale was .93 and the subscale alphas ranged from .72-.85, indicating good internal consistency. A-DES scores did not differ based on demographics such as age, sex, race, or grade (Armstrong et al., 1997). However, adolescents in the “no abuse” group scored significantly lower than adolescents in the “physical and sexual abuse” group. Adolescents who were in the dissociative disorder group scored higher than adolescents in all other diagnostic categories, excluding adolescents in the psychotic disorder group. The Cronbach’s  $\alpha$  for the A-DES for the present study was .95.

Farrington and colleagues (2001) examined A-DES internal reliability and factor structure among 768 non-clinical youths aged 11-16 years from the United Kingdom. Excellent internal reliability and split half reliability were indicated with a Cronbach's alpha of .94 and a Spearman-Brown value of .90. No significant age or sex differences were found. The factor structure of the A-DES revealed one main factor reflecting dissociative experiences, but factors for the A-DES subscales were not apparent. The overall mean for the group of non-clinical adolescents was 2.66, providing data on a normative sample (Farrington, Waller, Smerden, & Faupel, 2001).

Smith and Carlson (1996) also provided normative data, reliability, and validity for the A-DES among 180 high school students aged 12-17 years and 46 college students aged 18-21 years. A-DES total mean scores were 2.24 for high school students and .78 for college students. Subscale means ranged from 1.87-2.75. Two-week test-retest reliability of .77 was also found for high school students. Smith and Carlson (1996) also examined A-DES internal consistency and concurrent validity. Internal consistency was indicated with a Cronbach's alpha of .92 for the A-DES total score. Internal consistency values of A-DES subscales ranged from .64-.83. Additionally, adequate Spearman-Brown split-half reliability was reported for the A-DES at .94. Concurrent validity was examined by comparing responses of the college-aged group on the A-DES to the Dissociative Experiences Scale (Carlson & Putnam, 1993). Results indicated good concurrent validity (.77) (Smith & Carlson, 1996).

Muris and colleagues (2003) examined psychometric properties of the A-DES among 331 non-clinical adolescents aged 12-17 years. Factor analyses revealed a single factor measuring dissociative experiences. The authors provided normative data for the

A-DES and reported an A-DES total mean score of 1.27 in the non-clinical population. Mean scores for A-DES subscales were 1.79 for absorption/imaginative involvement, 1.58 for passive influence, 1.36 for dissociative amnesia, and .82 for depersonalization/derealization. Good reliability was reported with a Cronbach's alpha of .93. Demographic variables such as age and sex were unrelated to A-DES scores. Higher A-DES scores were associated with more PTSD symptoms as well as other anxiety disorder symptoms (Muris, Merckelbach, & Peters, 2003).

A more recent examination of the A-DES examined internal reliability and construct validity among 65 girls aged 11-18 years (Seeley, Perosa, & Perosa, 2004). They found the internal consistency to be high with a Cronbach's alpha coefficient of .94. Seeley and colleagues (2004) examined A-DES scores among sexually maltreated and control adolescent girls. They found that the A-DES was able to discriminate sexually abused adolescents and non-clinical adolescents. However, A-DES scores did not differentiate maltreated girls with PTSD from maltreated girls with other disorders. Seeley and colleagues (2004) found that A-DES scores correlated with therapist ratings of dissociation symptoms ( $r=.55$ ).

*Children's Depression Inventory (CDI)* (Kovacs, 1992). The CDI is a 27-item self-report questionnaire for youths aged 7-17 years. The CDI measures depressive symptoms during the past two weeks and yields a total depression score and five subscale scores for Negative Mood, Interpersonal Problems, Ineffectiveness, Anhedonia, and Negative Self-Esteem. The child is asked to endorse one of three statements that best applies during the last 2 weeks (e.g., "I am sad once in while," "I

am sad many times,” and “I am sad all the time”). Each item is based on a 3-point response format from “0 = absence of a symptom” to “2 = definite symptom.”

Smucker and colleagues (1986) reported normative and reliability data for the CDI from three public school samples consisting of 1,252 children aged 8-16 years. The authors found the mean to be 9.09 with a standard deviation of 7.04. The authors analyzed the scores by sex and found the mean to be 9.21 and 8.99 for boys and girls, respectively. The cutoff score was 19 based on the upper 10%. The internal consistency was good (.83-.89) and test-retest reliability was adequate (.74-.77) (Smucker, Craighead, Craighead, & Green, 1986). The Cronbach’s  $\alpha$  for the CDI for the present study was .91.

Nelson and colleagues (1987) examined CDI characteristics with inpatient boys and girls aged 6-18 years. Girls aged 13 years and older received higher CDI total scores than boys, but there were no sex differences for the pre-teen group. These sex differences may be more prominent in adolescents than children. The majority of boys and girls endorsed items suggesting loss of interest in activities and suicide. However, overall age differences were not apparent among CDI scores. Ethnic differences between African-American and European-American youths were not observed. Researchers reported coefficient alpha of .86 regarding internal consistency (Nelson, Politano, Finch, & Wendel, 1987).

Nelson and Politano (1990) assessed the test-retest reliability of the Children’s Depression Inventory (CDI) in 96 inpatient children aged 6-15 years. Subjects completed the CDI on three occasions: initially, 10 days later, and 30 days later. Scores decreased significantly from initial assessment to later administrations. Stability

coefficients for the overall group ranged from .47-.62. Stability between the 10- and 30-day administrations was somewhat lower for boys than girls (Nelson & Politano, 1990).

Liss and colleagues (2001) reported notable sex differences in CDI scores, with girls scoring higher than boys. This sex difference was significant for younger and older age groups. Among this large, diverse inpatient sample aged 7-17 years, racial differences in CDI scores were not apparent. Evidence for CDI discriminant validity was provided. Youths with depression-related disorders had higher CDI scores than those with primary aggressive/conduct disorders and those with primary aggressive/conduct disorders plus secondary emotional/depressive problems (Liss, Phares, & Liljequist, 2001).

Politano and colleagues (1986) examined racial/ethnic differences in CDI factor structure in 159 African American children and 392 Caucasian children aged 6-17 years. Five factors emerged via factor analysis: Social Isolation, Sadness, Lowered School Performance, Negative Self Image, Lethargy, and Suicidal Ideation. Separate factor analyses were conducted for African-Americans and European-Americans. African American children scored higher with respect to opposition and lower on suicidal ideation, whereas Caucasian children scored higher on the affective dimension (Politano, Nelson, Evans, & Sorenson, 1986).

Finch and colleagues (1987) examined test-retest reliability for the CDI in 108 children aged 7-12 years. Over the four administrations they found acceptable test-retest reliabilities at 2 weeks (.82), 4 weeks (.66), and 6 weeks (.67). However, initial CDI mean scores were higher than the 2-week CDI mean score and the biggest

difference in the scores emerged between the first and second administrations of the measure (Finch, Saylor, Edwards, & McIntosh, 1987).

CDI internal structure was examined with a diverse nonclinical sample of children aged 4-18 years (Helsel & Matson, 1984). Analyses revealed four factors with good face validity: affective behavior, image/ideation, interpersonal relations, and guilt/irritability. A split-half correlation of .89 was found for internal reliability. CDI scores did not differ according to race or sex. Older youths may report more depressive symptoms than younger children (Helsel & Matson, 1984).

Twenge and Nolen-Hoeksema (2002) evaluated the effects of age, sex, and socioeconomic status on the CDI. The researchers performed a within-scale meta-analysis on 310 data sets with 61,424 children aged 8-16 years. CDI scores steadily decreased with each administration. Analysis of age and sex show that boys' scores remained stable from 8-16 years with a slight increase in symptoms at age 12 years. Girls showed an increase in scores from childhood and adolescence. Overall, there were no statistically significant differences in the scores between sexes, but boys did score slightly higher than girls. The analysis showed no correlation between CDI scores and SES, but did show a relationship between ethnicity and scores. Hispanics (10.34) scored significantly higher than African Americans (8.67) and Caucasians (8.84) (Twenge & Nolen-Hoeksema, 2002).

*Posttraumatic Cognitions Inventory* (PTCI) (Foa, Ehlers, Clark, Tolin, & Orsillo, 1999). The PTCI is a 36-item self-report questionnaire that measures trauma-related thoughts and beliefs. The PTCI yields 3 factors in addition to a total negative cognitions score: Negative cognitions about self, Negative cognitions about the world,

and Self-blame. Each item is rated on a 7-point Likert-type scale ranging from 1 (totally disagree) to 7 (totally agree). No specific age requirements have been developed for this scale.

Cronbach alphas for the total and factor scores have been reported for total score (.97), negative cognitions about self (.97), negative cognitions about the world (.88), and self-blame (.86) (Foa et al., 1999). Cronbach's  $\alpha$  for the PTCI for the present study was .96. Test-retest reliability was .74 -.89 after a one-week interval and .80 -.86 after a 3-week interval. The PTCI scales correlate with PTSD severity, depression, and general anxiety (Foa et al., 1999). The PTCI also yielded higher scores with traumatized individuals versus non-traumatized individuals.

*Family Environment Scale, Form-R* (FES) (Moos & Moos, 1986). The FES is a 90-item true-false self-report questionnaire that assesses 3 main factors: Relationship, Personal Growth, and System Maintenance (Moos & Moos, 1986). The Relationship dimension features three subscales: cohesion, expressiveness, and conflict. The Personal Growth dimension features five subscales: independence, achievement orientation, intellectual-cultural orientation, active-recreational orientation, and moral-religious orientation. The System Maintenance dimension features two subscales: organization and control. Moos reported internal consistencies of .61-.78.

Robertson and Hyde (1982) examined the factor analytic structure of the FES among high school students (mean age, 15 years, 8 months). The authors suggested that the FES is best represented by the following 7 subscales: Group Cohesion, Conflict, Structure, Religion, Activities, Protestant Ethic, and Verbal-Intellectual Orientation (Robertson & Hyde, 1982). Waldron and colleagues (1990) further examined the factor

structure of the FES among college students and nonclinical adults. Reliability estimates of FES subscales varied from .43 (independence) to .51 (achievement orientation) to .77 (cohesion). Internal consistency was found in 5 FES subscales: cohesion (.77), intellectual-cultural (.75), moral-religious emphasis (.74), conflict (.74), and organization (.72). The other subscale alpha levels were .63-.66 (Waldron, Sabatelli, & Anderson, 1990). Roosa and Beals (1990) also examined the internal consistency of five scales: Cohesion, Expression, Conflict, Organization, and Control. Internal consistency was .36-.75 with the highest rate reported for the conflict scale (.61-.76) and the lowest for the control (.47-.67) and expression (.36-.69) scales (Roosa & Beals, 1990). Cronbach's  $\alpha$  for the FES Cohesion scale for the present study was .411.

Perosa and Perosa (1990) assessed convergent and discriminant validity for the cohesion and adaptability dimensions of the FES with two other measures of family functioning. The measures were administered to 85 high school students and 98 undergraduates. Convergent validity among measures of cohesion was strong; convergent validity for measures of adaptability was moderate. Problems with discriminant validity were noted (Perosa & Perosa, 1990).

Boyd and colleagues (1997) reported FES reliability estimates in adolescents aged 11-18 years. Internal consistency varied from low to moderate. Internal consistency was acceptable for the conflict, moral-religious emphasis, and cohesion scales (.72, .71, and .67, respectively). Lowest internal consistency estimates were reported for the independence and expressiveness scales (.31 and .39, respectively). Other subscale alphas were reported for achievement (.44), intellectual-cultural



orientation (.47), control (.59), organization (.60), and active-recreational orientation (.62) (Boyd, Gullone, Needleman, & Burt, 1997).

Family support was measured by the cohesion scale on the FES. This subscale measures the amount of family cohesion perceived by the child. The following table lists specific questions from the cohesion subscale.

<b>Cohesion Scale – FES</b>
Family members really help and support one another.
We put a lot of energy into what we do at home.
There is a feeling of togetherness in our family.
Family members really back each other up.
We really get along well with each other.
There is plenty of time and attention for everyone in our family.

*Multigroup Ethnic Identity Measure (MEIM)* (Phinney, 1992). The MEIM is a 20- item self report questionnaire. Fourteen items assess the following aspects of ethnic identity: positive ethnic attitudes and sense of belonging (5 items), ethnic identity achievement (7 items), and ethnic behaviors and practices (2 items). The remaining 6 items measure other-group orientation. These items are rated on a 4-point scale from strongly agree to disagree. The scale yields a mean total score and mean scores for each subscale. The scores range from 1 (low ethnic identity) to 4 (high ethnic identity). Additionally, the scale asks someone to self-identify ethnicity and the ethnicity of her parents (Phinney, 1992).

Phinney (1992) reported reliability data and examined factor structure among high school (aged 14-19 years) and college students (aged 18-34 years). The high school and college samples were from diverse socioeconomic and ethnic backgrounds. The high school sample was 32% Asian American, 31% African American, 21% Hispanic, 10% mixed, 3% White, and 2% other. The college sample was 43% Hispanic, 26% Asian American, 17% Whites, 8% African American, and 6 % mixed. The author found the overall reliability for the 14-item Ethnic Identity Scale to be .81 for the high school sample and .90 for the college sample. The following reliabilities were calculated for the subscales for the high school and college samples, respectively: Affirmation/Belonging (.75/.86), Ethnic Identity Achievement (.69/.80), and Other-group Orientation (.71/.74). Factor analysis revealed two factors (Ethnic Identity and Other-group Orientation) for the high school and college samples (Phinney, 1992).

Phinney (1992) also examined the difference in total ethnic identity scores based on ethnic groups and sex. For the high school sample, Blacks (3.04), Asians (2.92), Hispanics (2.91), and mixed participants (2.84) scored higher than White participants (2.42). Similar scores emerged for the college sample: Black (3.46), Hispanic (3.07), Asian (3.02), White (3.86), and mixed (2.62) (Phinney, 1992). Boys and girls scored similarly on the MEIM in both samples on the Affirmation/Belonging and Ethnic Identity Achievement scales. High school girls scored higher than boys on the Ethnic Behaviors and Practices subscale (Phinney, 1992).

Worrell (2000) also examined the factor structure of the MEIM among academically talented adolescents. The sample was 40% male and 60% female and aged 10-18 years (mean age, 14.8 years). The sample was Asian American (53%),

White (21%), African American (7.6%), Hispanic (7.6%), mixed (4.7%), and other (6.2%). Worrell extracted two factors (Ethnic Identity and Other Group Orientation) using a principal axis factor analysis with oblique rotation. The factors accounted for 41% of the variance and were similar to factors extracted by Phinney (1992). The mean scores for this sample ranged from 2.71 to 3.77 (Worrell, 2000).

Ponterotto and colleagues (2003) also examined the validity and factor structure among high school juniors and seniors (mean age, 16.8 years). The participants were White (85%), Pacific Islander/Asian (6%), Hispanic (5%), Native American (1%), or other or biracial. Mean scores were 2.9 for the Ethnic Identity Subscale and 3.6 for the Other Group Orientation subscale. The coefficient alphas were .89 and .59 for the Ethnic Identity Subscale and Other group orientation, respectively. The authors found no significant sex or ethnic group differences. The two-factor model suggested by Phinney was found to be a good fit using confirmatory factor analysis (Ponterotto, Gretchen, Utsey, Stracuzzi, and Saya, 2003).

Dandy and colleagues (2008) examined the psychometric properties of the MEIM among students aged 10-15 years. The students were Anglo-Celtic Australian, British European, Asian, and indigenous Australian. The two-factor model (Affirmation and Exploration as components of ethnic identity) was found to be a better fit than ethnic identity as a single factor. Cronbach's alpha for the Affirmation and Exploration subscales were higher than the Other group orientation scale (.83, .74, .66, respectively). The authors found no significant difference in scores for boys and girls on the Affirmation and Exploration scales, but girls scored higher than boys on the Other Group Orientation scale. Asian students scored higher than Anglo-Australian and

British students on the Affirmation and Exploration scales (Dandy, Durkin, McEvoy, Barber, & Houghton, 2008).

Reese and colleagues (1998) used the MEIM to measure ethnic identity in younger children. The participants were fourth and fifth graders at an inner city public elementary school. The participants were administered the MEIM twice, 6 weeks apart, to establish test-retest reliability. The mean total score for the first administration was 1.96, the mean for the Affirmation and Belonging scale was 1.83, Ethnic Identity Achievement was 2.25, and the mean for the Ethnic Behavior scale was 2.16. Cronbach's Alpha was .72 for the first administration and .59 for the second administration. Cronbach's Alpha were calculated for each of the following subscales for both administrations: Affirmation and Belonging (.71 and .62), Ethnic Behavior (.50 and .16), and Ethnic Identity Achievement (.30 and .15). The Cronbach's  $\alpha$  for the MEIM for the present study was .77.

The test-retest reliability was .25 for the total score, .20 for the Affirmation and Belonging subscale, .10 for the Ethnic Behaviors subscale, and .00 for the Ethnic Identity Achievement subscale (Reese et al., 1998). Lastly, the authors found that the Affirmation and Belonging, Ethnic Behaviors, and Ethnic Identity Achievement correlated positively with the total score (.82, .86, and .60, respectively). The factor analysis suggested one factor that the authors labeled Ethnic Pride. Reese and colleagues (1998) suggested that the MEIM is applicable to younger children, with the Affirmation and Belonging subscale as the most reliable (Reese, Vera, & Paikoff, 1998).

### *Procedure*

Procedures were in accordance with UNLV and DFS policies regarding research with human subjects. The UNLV Office for the Protection of Research Subjects, Institutional Review Board (IRB), Social and Behavioral Sciences committee approved protocol #1007-3523M on July 28, 2010 as a part of an ongoing study. An approved interlocal contract by UNLV and DFS was in accordance with county and state laws regarding children in protective custody. Participants were recruited through Child Haven and the offices of Dr. Stephanie Holland. Child Haven staff and the offices of Dr. Stephanie Holland referred adolescents to the researchers. Researchers discussed the study with adolescents who indicated interest in participating.

Assent to participate from each adolescent was obtained prior to data collection. Youths were advised not to answer questions they felt uncomfortable with and were informed they could withdraw from the study at any time without penalty. Youths were informed about research confidentiality, their rights as a participant, and limits of confidentiality.

Participating youths completed demographic/information forms as well as the CPTSD-I, CDI, A-DES PCI, MEIM, and FES. Assessment procedures were conducted in a confidential environment without DFS staff. A graduate student or licensed psychologist interviewed each adolescent following the demographic/information form and CPTSD-I. The demographic/information form and CPTSD-I took approximately 40 minutes to complete. When a youth did not endorse a traumatic event, the interview was discontinued and the youth was debriefed. Following the interviews, youths endorsing a traumatic event completed the self-report measures with the help of a

graduate student researcher or undergraduate research assistant. The self-report measures took approximately 60-90 minutes to complete.

Participating youths were encouraged to take breaks during the assessment process. If excessive fatigue was noted, a follow-up session was scheduled to complete the measures. If discomfort was expressed during the assessment process, a graduate student was available for support. If a youth expressed intent to harm others or themselves, appropriate actions were taken. A follow-up debriefing was conducted with each youth at the end of the assessment. During this debriefing, additional inquiries about the research or procedures were addressed. Youths were also given an introductory session on relaxation and healthy coping strategies to use when stressed. Each adolescent was also instructed on journaling to cope with stress. The researcher provided a handout of these techniques and a journal to each participating youth. All forms are kept confidential and coded by number to ensure anonymity.

## CHAPTER 4

### DATA ANALYSIS

#### *General comparisons*

Analysis of variance (ANOVA) was conducted to explore PTSD (CPTSDI), dissociation (A-DES), depression (CDI), posttraumatic cognitions (PTCI), ethnic identity (MEIM), and family cohesion (FES) across ethnic groups. A-DES scores differed significantly across ethnic groups:  $F(6,137) = 3.9, p = .001$ . The effect size, calculated using eta squared, was large (.15). Post hoc analysis (Tukey HSD) indicated that the mean A-DES score for the Other ethnic group category ( $M = 164.8, SD = 99.1$ ) was higher than the mean A-DES score for Hispanic ( $M = 34.9, SD = 47.6$ ), African Americans ( $M = 63.9, SD = 54.5$ ), Caucasians ( $M = 66.1, SD = 67.8$ ), multiracial participants ( $M = 76.5, SD = 57.8$ ), and Asian Americans ( $M = 46.0, SD = 35.0$ ). No other significant differences were evident (Table 5). Chi-square analyses revealed no differences in PTSD diagnosis across ethnicity or sex. A two-between groups analysis of variance was conducted to explore the impact of sex and ethnic group membership across levels of ethnic identity and family cohesion. The interaction effect between sex and ethnic group membership was not statistically significant.

Linear multiple regression was used to assess whether ADES, CDI, PTCI, and MEIM scores predicted PTSD symptoms. ADES, PTCI, CDI, and MEIM scores explained 27.5% of the variance in CPTSDI scores ( $F(4, 133) = 12.6, p = .0005$ ). CDI scores were the strongest predictors of CPTSDI scores ( $\beta = .27, p < .05$ ) (Table 6).

### *Hypothesis 1*

The first hypothesis was that children from minority groups (African American, Hispanic American, Native American, Asian American, and multiracial) would report more PTSD-related symptoms than Caucasians. Multivariate analysis of variance (MANOVA) was conducted across CPTSD-I, A-DES, CDI, and PTCI scores but revealed no significant differences. Hypothesis 1 was not supported (Table 7).

### *Hypothesis 2*

The second hypothesis was that lower scores on PTSD-related symptoms would be associated with higher MEIM scores. Scores on the CPTSDI, PTCI, ADES, and CDI were entered as the independent variables and scores on the MEIM were the dependent variable. A hierarchical linear regression was used to investigate this hypothesis after controlling for dissociative symptoms, posttraumatic cognitions, and depressive symptoms. PTCI, ADES, and CDI scores were entered at Step 1 and explained only 0.6% of the variance in ethnic identity. CPTSDI scores were entered in Step 2 and explained 1.3% of the total variance in ethnic identity. The analysis was repeated excluding adolescents aged 11-14 years but no significant effect was found. Hypothesis 2 was not supported.

### *Hypothesis 3*

The third hypothesis was that lower scores on PTSD-related symptoms would be associated with higher scores on the FES cohesion scale. Scores on the CPTSDI, PTCI, ADES, and CDI were entered as independent variables and scores on the FES were the dependent variable. A hierarchical linear regression equation was used to investigate this hypothesis after controlling for posttraumatic cognitions, dissociative symptoms,



and depressive symptoms. PTCI, ADES, and CDI scores were entered at Step 1 and explained 8.8% of the variance in family cohesion. CPTSDI scores were entered in Step 2 and explained 12.0% of the total variance ( $F(1, 119) = 4.060, p = .004$ ). In the final model, only CPTSD-I scores were significant, ( $\beta = -.207, p < .05$ ). Hypothesis 3 was supported.

## CHAPTER 5

### DISCUSSION

#### *General Discussion*

The present study involved an examination of PTSD-related symptoms within the context of ethnicity, ethnic identity, and family cohesion in a diverse group of adolescents exposed to trauma. Participants in this study included adolescents in a child protective services facility or foster homes in Clark County, Nevada. Participants had experienced trauma that included neglect, sexual abuse, physical abuse, or witnessing violence. Participants were diagnosed with chronic PTSD (50%), PTSD negative (26%), acute PTSD (15%), or no diagnosis (9%).

The first hypothesis was that non-Caucasian youth would have higher levels of PTSD-related symptoms than Caucasian youth. PTSD diagnoses, depression, negative cognitions, ethnic identity, and family cohesion, however, did not differ across ethnic groups. This result may be explained by a biological model of PTSD. Recent studies reveal that children who experienced severe maltreatment, regardless of PTSD diagnosis or ethnicity, display increased catecholaminergic activity, dysregulated neuroanatomical and neurophysiological systems, HPA axis dysfunction, and smaller hippocampuses than nonmaltreated children (Bruce et al., 2008; Cicchetti & Rogosch, 2001; De Bellis, 2001; De Bellis et al., 1999; Gunnar et al., 2001; Kowalik, 2004; Meiser-Stedman, 2003; Teicher et al., 2004). These biological effects lead to disruptions in motor, emotional, behavioral, language, social, moral, and cognitive development. The biological changes are severe and may thus overwhelm any ethnic

influences and may partly explain the lack of significant difference across ethnic groups.

The similar rates of PTSD and related symptoms may also be linked to the high rates of trauma exposure in this population and disruptions of family structure across all ethnicities. The results were perhaps consistent with a developmental model of PTSD (Koenen et al., 2007) which holds that the disorder is primarily influenced by dispositional and contextual factors such as poverty, residential instability, maternal depression, and caregiver instability. The adolescents in the present study were typically placed in multiple foster homes following maltreatment. The unpredictability and lack of control associated with such placement can lead to emotional dysregulation and insecure attachment (Coplan et al., 1998; Rosenblum & Paully, 1984) that have been identified as key risk factors for PTSD (Bruce et al., 2008; Cicchetti & Rogosch, 2001; De Bellis et al., 1999; Dietrich, 2007; Gunnar et al., 2001; Koenen, 2010; Kowalik, 2004; Muller et al., 2000, 2001; Taft et al., 2008). Results from the present study perhaps reflect the idea that similar rates of PTSD across ethnicity may be explained by highly unstable living environments. Participants removed from their homes because of severe maltreatment were perhaps vulnerable to the onset of PTSD despite their ethnic background.

Participants of “other ethnicity” in the present study experienced more dissociation than other ethnic groups. The high rates of dissociation were not associated with higher rates of PTSD symptoms, however. Douglas (2009) found that African Americans and Asian Americans experience more dissociative symptoms than European Americans, but these differences did not lead to poorer psychological

functioning. The author suggested that high levels of dissociation in African Americans and Asian Americans may have served as a coping mechanism because dissociation was unrelated to PTSD symptoms. Similar findings emerged in the present study with the “other ethnicity” group, although broad generalizations cannot be made because this group consisted of diverse ethnic groups such as Albanian, Hungarian, Guamanian, and Pacific Islander and was very small.

The second hypothesis was that lower scores on the CPTSD-I, CDI, PTCI, and A-DES would be associated with higher scores on the MEIM. Lower scores on the CPTSD-I, CDI, PTCI, and ADES, however, were not associated with higher scores on the MEIM. The benefits of strong ethnic identity were not apparent in this study. In contrast to previous studies, high levels of ethnic identity were unrelated to PTSD and other symptoms (BealeSpencer et al., 2001; Branscombe et al., 1999; Phinney & Chavira, 1992; Roberts et al., 1999). Past research indicates that those with a strong sense of ethnic identity have greater self-esteem and use positive coping styles (Gray-Little & Hafdahl, 2000; Phinney, 1992, Phinney & Chavira, 1992; Rowley et al., 1998; Smith et al., 1999; Umana-Taylor et al., 2002). The positive effects of ethnic identity are often seen in African American and Hispanic American youth who demonstrate high self-esteem, low levels of depression, and high academic achievement (James et al., 2000; Yasui et al., 2004). Strong identification with a group serves as a protective factor against some of the negative aspects of being a minority. Ethnic identity was similar across all ethnicities in the present study, however.

The adolescents in this study may have been too young for ethnic identity to fully develop. Ethnic identity development occurs in late adolescence and many of

these adolescents were in early to mid-adolescence. Phinney (1992) found a significant correlation between ethnic identity and self-esteem among Caucasian adolescents. The adolescents in that study were minorities in their schools, suggesting that ethnic identity may be a protective factor only if the child is a minority in their home or school environment. The adolescents in the present study may not have been minorities in their communities. In addition, the stressors the participants faced in their family environment may have hindered self-development and awareness because basic needs were not met.

The third hypothesis was that lower scores on the CPTSD-I, CDI, PTCI, and A-DES would be associated with higher scores on the FES cohesion subscale. As predicted, and consistent with past research, lower levels of PTSD symptoms were associated with higher scores on the family cohesion scale. A close relationship to family members may lead to expression of feelings regarding the traumatic event that then leads to reduced trauma symptoms. High levels of family cohesion have also been linked to less depression (Demaray & Malecki, 2002; Way & Robinson, 2003) and posttraumatic cognitions, both predictors of PTSD symptoms (Bal et al., 2004). Findings in the present study are also consistent with past studies revealing significant negative relationships between support and anxiety (Malecki & Demaray, 2002; White et al., 1998) and a positive relationship between support and overall adjustment (Malecki & Demaray, 2002; Sanchez-Hucles, 1998).

PTSD symptoms have been positively associated with family stressors and family conflict and negatively associated with mother availability and family cohesion (Ariga et al., 2008; Bal et al., 2003; Birmes et al., 2009; Burton et al., 1994; Landolt et

al., 2003). Support from any available person may reduce negative symptoms temporarily after a child is stressed, but social connection with family members is necessary for healthy long-term development (Bryant, 1994). For maltreated children, having the support of a caring and stable parent or guardian is most important for preventing negative outcomes (Kaufman, 2008; Kaufman & Henrich, 2000; Kaufman et al., 2006).

Gaylord and colleagues (2007) found that perceived family support was negatively related to anxiety and depressive symptoms and positively related to self-esteem, which are directly linked to PTSD symptoms. Kaufman and colleagues (2006) found that depression scores of maltreated children with high levels of family support were similar to the depression scores of nonmaltreated children, indicating that the presence of support contributed to reduced depressive symptoms. The link between family support, depression, and PTSD symptoms is further explained by biological differences in children with strong support compared to children with weak support. Kaufman and colleagues (2000) found that maternal support alters the DNA in the glucocorticoid receptor gene in the hippocampus that subsequently modifies stress response. As mentioned earlier, changes in the hippocampus are linked to PTSD. The present study did not support past research demonstrating that ethnic minorities reported greater levels of family support than Caucasians, however (Demaray & Malecki, 2003; Stevenson et al., 1996).

The present study also confirmed a link between depression and PTSD symptoms. Higher levels of depression in the present study predicted a greater number of PTSD symptoms, although a causal relationship cannot be established. Previous

literature (Boney-McCoy and Finkelhor, 1996; Lemos-Miller & Kearney, 2006; Linning & Kearney, 2004) has demonstrated a strong link between depression and PTSD. Ehlers and Clark (2000) proposed that adolescents may experience continued PTSD via ongoing and extreme negative appraisals of the trauma. Negative appraisals consist of anger, depression, and beliefs that the world is a dangerous place. The present study supported Ehlers and Clark's (2000) cognitive model of PTSD in that youth with higher levels of depressive symptoms experienced greater PTSD symptoms. Youth with depression may have a genetic predisposition to psychopathology, learned helplessness, family conflict, or lack of social support that can all contribute to PTSD symptoms (Linning & Kearney, 2004). The experience of flashbacks may also lead to feelings of hopelessness and loss of control that can contribute to the onset of depression. Social isolation and interpersonal problems typically seen in maltreated children with depression may translate to avoidance and numbing symptoms in PTSD.

### *Clinical Implications*

The present study has potential relevance for assessment, intervention, and prevention practices for traumatized youths. The present study examined children following maltreatment to provide information about the onset of PTSD symptoms and guide subsequent assessment and treatment strategies. The experience of a trauma affects each individual differently, but an adolescent who has experienced a trauma generally faces the risk of developing PTSD as well as comorbid symptoms often associated with PTSD, regardless of minority group status. This pattern of risk thus holds important implications for assessment, treatment, and prevention.

*Assessment.* Clinicians who assess maltreated children should focus on PTSD-related symptoms regardless of a child's ethnicity. Assessment should include observation of the child with caretakers, interview with the child, and self-report measures targeting symptoms associated with PTSD (Crooks & Wolfe, 2007). Information from multiple assessment methods and multiple informants will help provide a thorough presentation of the child's level of functioning after maltreatment (Scheeringa, Wright, Hunt, & Zeanah, 2006).

Observations in the home or a clinic setting may provide information about a child's interactions with guardians as well as the child's coping behavior. Child and parent behaviors should be observed. Important child behaviors include emotional or behavioral difficulties, responsiveness, anxiety, disagreement, and affection with the parent. Important parent behaviors include communication of understanding, acceptance, disapproval, attention, responsiveness, disagreement, and distraction when with the child (Budd, 2001).

Results of the present study suggest that maltreatment affects multiple areas of functioning. An interview with the child may be an effective way to understand a child's overall level of functioning (Azar & Wolfe, 2006; Crooks & Wolfe, 2007). The interviewer should develop rapport and establish trust with the child considering the sensitive nature of the topic and past maltreatment history. The child may be guarded with adults, so the interviewer should see the child more than once to establish rapport (Crooks & Wolfe, 2007). The interview should begin with a general discussion about activities the child enjoys and how the child feels about family or placement in foster care. The clinician should also address the child's emotions by asking questions about



mood and how the child reacts to different emotions (Azar & Wolfe, 2006; Crooks & Wolfe, 2007). The clinician can ask questions such as “What makes you really mad?” and “What do you typically do when you are really mad?”

Findings from the present study indicate that interview questions should focus on trauma-related symptoms. A semi-structured interview such as the CPTSD-I (Saigh, 1998) can be used to guide maltreatment questions during the interview. The adolescents in the present study experienced high rates of posttraumatic cognitions, including self-blame, that suggests that interview questions regarding cognition and attribution should be included. The Attribution for Maltreatment Interview (McGee, 1990) is another trauma-specific interview that yields five subscales for key trauma-related symptoms: Self-Blaming Cognition, Self-Blaming Affect, Self-Excusing, Perpetrator Blame, and Perpetrator Excusing. Interviewers should also assess for perceived family support, togetherness, and time spent with family based on the relationship between family cohesion and trauma symptoms that emerged in the present study.

Clinicians could also assess for PTSD, posttraumatic cognitions, depression, and family environment using self-report measures to supplement information from observations and interviews. Trauma-specific measures include the Trauma Symptom Checklist (Briere, 1996), which measures the impact of trauma as well as comorbid problems such as anxiety, depression, sexual concerns, dissociation, and anger. The Traumatic Events Questionnaire- Adolescents (Lipschitz, Bernstein, Winegar, & Southwick, 1999) assesses 6 forms of maltreatment as well as duration, identity of perpetrator, use of force, and details about the traumatic event. Clinicians should also

include a measure of misattributions based on the findings in the present study that demonstrate a relationship between posttraumatic cognitions and trauma symptoms.

The Children's Attribution Style Questionnaire-Revised (Thompson, Kaslow, & Nolen-Hoeksema, 1998) assesses whether a child attributes negative events to internal, external, or stable causes.

The close link in the present study between PTSD and depression suggests that depressive symptoms also need to be prioritized in assessment. Negative mood, interpersonal problems, anhedonia, and negative self-esteem are strongly associated with PTSD, so clinicians should focus on these symptoms using the CDI (Kovacs, 1992). The Children Depression Rating Scale-Revised (Poznanski, Cook, & Carroll, 1979) is another measure of depression for children and adolescents. The clinician rates the presence and severity of depressive symptoms in addition to depressed affect, speech, and behavior based on observations.

Findings in the present study link maltreatment to a number of significant consequences, so measures of major domains of child functioning should be administered. The Child Behavior Checklist (Achenbach, 1991) is one of the most widely used measures of emotional, social, and behavioral functioning. This measure provides information about the presence of problem behaviors. The Teacher Report Form and Youth Self Report may also be used for a multisource assessment. The Behavior Assessment System for Children (BASC-2; Reynolds & Kamphaus, 2004) assesses emotional and behavioral functioning and includes Teacher, Parent, and Self-Report Rating scales. The BASC-2 includes internalizing, externalizing, learning, behavioral symptoms, adaptive functioning, and validity scales. The Eyberg Child

Behavior Inventory (Eyberg & Pincus, 1999) also focuses on common behavior problems and their intensity. These measures provide an overall description of the child's level of functioning that provides information about subsequent measures to administer. Findings in the present study suggest that PTSD is linked to depression and poor family cohesion, so elevations in internalizing symptoms should prompt the administration of a PTSD questionnaire or interview. Past research has shown that PTSD is also linked to other comorbid problems such as ADHD, substance abuse, anger, anxiety, and eating disorders (DeBellis, 2002; Dixon et al., 2005; Margolin & Vickerman, 2007). Such findings also support the use of measures of overall functioning.

Findings in the present study indicate that measures of family support should also be included during the assessment process to identify maltreated youth who may be at risk for PTSD. The present study found that an adolescent from a cohesive family who experiences maltreatment may be less vulnerable to PTSD than an adolescent from a less cohesive family. The Children and Adolescent Social Support Scale (Malecki & Demaray, 2002) is a measure of social support from parents, teachers, classmates, and friends. The measure yields frequency of supportive behaviors for the four groups and how important the child believes those behaviors are in his/her life. The FES (Moos & Moos, 1986) is also a comprehensive measure of family environment domains such as cohesion, expressiveness and conflict.

*Treatment.* The link between posttraumatic cognitions, depression, and PTSD in the present study suggests that intervention should target these symptoms. Exposure techniques, psychoeducation, cognitive restructuring, and coping skills training should

be included in treatment for maltreated children (Cohen & Mannarino, 1993; Cohen & Mannarino, 1996; Deblinger, et al., 1996). The combination of these techniques has led to the development of a trauma-specific therapy.

Findings in the present study indicate that treatment should target depressive and cognitive symptoms as well as family functioning. Trauma-Focused Cognitive Behavioral Therapy (TF-CBT) is an evidence-based treatment for sexually maltreated youth (Cohen & Mannarino, 1993) and has been expanded to become an effective treatment for many trauma victims (Cohen & Mannarino, 2006). TF-CBT combines cognitive behavior therapy with interpersonal and family therapy to address trauma symptoms. TF-CBT includes an element for a non-offending parent that targets parents' distress related to the trauma, improves parenting practices, and increases support for the parent. TF-CBT includes parenting skills, psychoeducation, relaxation skills, affect modulation, cognitive processing, trauma narration, in vivo desensitization, child-parent sessions, and safety enhancement (Cohen, Deblinger, Mannarino, Steer, 2004).

TF-CBT has been shown to decrease PTSD, depression, anxiety, and posttraumatic cognitions in maltreated children (Cohen & Mannarino, 2006; Deblinger & Heflin, 1996; Deblinger et al., 1999). Cohen and Mannarino (1996) found that children and adolescents in TF-CBT experienced a greater reduction in symptoms than children in non-directive supportive therapy and child-centered therapy. TF-CBT is one of the very few treatment programs developed specifically for this population. TF-CBT effectively reduces the symptoms that are strongly linked with the presence of PTSD in this population, including depression and family conflict.

Findings from the present study indicate that family cohesion levels may guide treatment for traumatized youth as well. Family therapy should be incorporated into the treatment plan, especially if reunification is expected. Family therapy should include parent education, marital therapy, communication skills building, and emotional support for parents and children. In addition to the family component in TF-CBT, Multisystemic Therapy (Brunk, Henggeler, & Whelan, 1987) and Multigroup Therapy (MGT; Mezeen & O'Keefe, 1998a, b) have been utilized with maltreated youth. Brunk and others (1987) found that Multisystemic Therapy was more effective than Parent Training for reducing individual and family problems. Mezeen and O'Keefe (1998a, 1998b) found that MGT was more effective than traditional family therapy for improving family functioning and reducing behavioral problems (Cohen & Mannarino, 2006). Deblinger and colleagues (1996) found a significant reduction in child internalizing and externalizing behaviors when the mother participated in treatment with the child after sexual abuse, thus suggesting the importance of family involvement in treatment.

*Prevention.* Findings from the present study may also guide prevention efforts in maltreated youth. The present study indicated a strong link between the onset of PTSD and depression as well as low family cohesion. The strong link between depression and PTSD (Deblinger et al., 1990; Lemos-Miller & Kearney, 2006; Linning & Kearney, 2004; Runyon et al., 2002) suggests that maltreated children should be treated for depressive symptoms to possibly prevent the onset of PTSD. Interpersonal difficulties, anhedonia, and negative mood parallel withdrawal, avoidance, and numbing typically seen in maltreated children. Lemos-Miller and Kearney (2006) found that

depression mediated the relationship between PTSD symptoms and dissociation and posttraumatic cognitions. This suggests that children should be assessed for depression immediately after removal from home and TF-CBT could be used to target those symptoms shortly after removal.

The strong link between family cohesion and PTSD-related symptoms suggests that prevention efforts should focus on the family dynamic as well. Chamberlain and Reid (1991) examined the effects of placing children in Specialized Foster Care, or homes in which the foster parents were trained on parenting techniques and given support including family treatment, individual treatment, and access to community liaisons. Foster parents were trained to provide encouragement, set limits, respond consistently to positive and negative behaviors, and use a daily point system to track a child's behavior. The authors compared Specialized Foster Care to a control group of children placed in residential treatment centers or parents' or relatives' homes. Adolescents in the specialized foster homes experienced few problem behaviors over time and reported fewer symptoms of distress than the control group.

Rossman, Bingham, and Emde (1997) found that positive parenting was associated with fewer externalizing and internalizing symptoms for children after exposure to a stressor. In addition, families participating in programs with a focus on parenting skills report lower levels of maltreatment than families with no training (Peterson, Tremblay, Ewigman, & Saldana, 2003; Reynolds & Robertson, 2003). Individual therapy should also be provided to the child's parents because parent psychological functioning has been linked to the onset of PTSD after trauma (Kilic; Ozguven, & Sayil, 2003; Sack, Clark, & Seeley, 1995; Wolmer, Laor, Gershon, Mayes,

& Cohen, 2000). Therapy for parents should include psychoeducation about maltreatment, emotional expression, and coping skills. Gradual exposure techniques should be introduced to the parents to address maltreatment-related discussion and healthy behaviors. Behavior management strategies, including positive reinforcement, should be introduced to the parents to help manage a child's behavior after they have experienced maltreatment (Deblinger & Heflin, 1996) as maltreated children often display externalizing behaviors including aggression, impulsivity, and irritability (Cicchetti & Toth, 2005; Kaplan et al., 1999). These prevention and early intervention methods may prevent the onset of PTSD in maltreated youth.

### *Limitations*

Findings from the present study should be taken with caution considering several limitations. One limitation was limited access to maltreatment and family history. The sample in the present study was limited to maltreated youth in foster care. This study relied on DFS records and adolescent self-reports to determine maltreatment history because the adolescents were removed from their homes and parent access was limited. DFS reports may have been incomplete and adolescent self-reports may have been affected by a failure to remember or articulate a complete maltreatment history. Findings may thus have been limited with respect to accuracy of maltreatment history.

Another limitation was the compounded effects of multiple traumas. The adolescents in the present study experienced multiple traumas and were removed from their homes, exposing them to an additional stressor. Participants were assessed for trauma but the effects of being removed from their homes were not accounted for during the analyses. Given that family cohesion influences PTSD symptoms, removal

from home may have aggravated PTSD symptomatology. Indeed, adolescents with strong family cohesion experienced fewer PTSD-related symptoms than adolescents with weaker family cohesion. The present study did not specifically measure the impact of intra- and extra-familial trauma on symptom presentation.

Another limitation was that types of maltreatment were not differentiated. Neglect, sexual maltreatment, physical maltreatment, and witnessing domestic violence were included in the analyses as one group, although a recent study revealed that physical and sexual maltreatment victims experienced more PTSD-related symptoms than neglected children (Wechsler, 2009). The present study did not examine maltreatment types because of the limited access to maltreatment history.

The fourth limitation was the age of the participants. The positive effects of strong ethnic identity were not evident in this study, but are evident in studies with adults (Kiang et al., 2008; Sellers & Sheldon, 2005). The adolescents in this study were aged 11-17 years, but ethnic identity achievement typically occurs in late adolescence (age 16-19 years) (Phinney, 1992). A larger sample of participants aged 16-17 years may be needed to fully determine if ethnic identity influenced PTSD symptoms.

The fifth limitation was the use of the family cohesion FES subscale to measure family support. Items on the subscale include statements about family support, but the subscale is a measure of family cohesion. The findings on family support should be thus interpreted with caution.

#### *Recommendations for further study*

Findings from the present study may have some implications for further study. Researchers should attempt to gather information from multiple informants to have the



most accurate maltreatment history. Additional information from parents would add to the reliability and validity of the information provided by the participant. Future studies should include information from guardians with respect to the family environment. Parental mental health history, treatment history, and presence of other child disorders may also be important.

Researchers should differentiate maltreatment type to further tease apart PTSD-related symptoms and their specific relationship with type of trauma. Specific PTSD symptom presentations may differ among those experiencing physical, sexual, and emotional maltreatment or neglect. Researchers should also study the impact of trauma with respect to maltreatment severity and how different rates of trauma affect the onset of PTSD. PTSD symptoms may vary, for example, across mild and severe cases of maltreatment.

Researchers should also examine whether the type of trauma (intra-familial or extra-familial) affects the relationship between family cohesion and PTSD-related symptoms among maltreated youth. Specifically, researchers should determine whether low levels of family cohesion predict more PTSD symptoms in intra-familial than extra-familial trauma cases.

Researchers should also examine the effects of ethnic identity in older adolescents. Adolescents should be asked whether they are minorities in their home and school environments to assess whether ethnic identity is truly a protective factor. Phinney (1992) found a unique pattern of high ethnic identity in Caucasian youth who were minorities in their communities, which suggests the importance of minority status

when examining ethnic identity. Previous literature on ethnic identity has not examined this relationship, so future studies should be expanded in this way.

Researchers should also examine the characteristics of maltreated adolescents without PTSD to identify resiliency factors in these youth. The type of abuse, severity of abuse, treatment history, and removal history will help inform clinicians and researchers about possible symptom patterns in children who do not develop PTSD after maltreatment. Extensive family information may also provide clues about the type of parenting strategies associated with less PTSD symptoms after maltreatment. Identification of these factors will lead to valuable information for treating and preventing PTSD in this population.

Clinicians should also compare the effectiveness of treatment focused on family functioning with treatment focused on specific PTSD symptoms. Researchers have examined the effects of family functioning for children exposed to normative stressors (Rossman et al., 1997), but few studies have examined the link between family therapy and PTSD in maltreated adolescents (Cohen & Mannarino, 2006; Deblinger et al., 1996). Additional research on family therapy specific to this population is needed.

Few studies have examined effective prevention programs associated with reduced PTSD symptoms in maltreated adolescents. Researchers should examine the effectiveness of early intervention programs for maltreated adolescents. Investigators should also compare PTSD symptoms in children receiving early intervention with their families versus those receiving individual or no treatment. Information about prevention and early intervention may help inform and guide current foster care policies.

**APPENDIX I**

Information Sheet

Please fill this sheet out completely. The information you provide will be given a number so your name will not be on any papers you fill out. Please feel free to skip an item if you don't feel comfortable answering, but please try to honestly answer all questions the best you can.

1. Your ID#: \_\_\_\_\_

2. Your age: \_\_\_\_\_ 3. Are you: (circle one)

Male Female

4. Your Race: (circle one)

Asian African-American Caucasian Hispanic Multiracial Native American  
Other \_\_\_\_\_

5. Place of birth (state, and country): \_\_\_\_\_  
\_\_\_\_\_

5a. If you were not born in the United States, what country were you born in?

\_\_\_\_\_

6. Biological mother's race/ethnicity \_\_\_\_\_

\_\_\_\_\_

7. Biological mother's place of birth: \_\_\_\_\_

\_\_\_\_\_

8. Biological father's race/ethnicity \_\_\_\_\_

\_\_\_\_\_

9. Biological father's place of birth: \_\_\_\_\_

\_\_\_\_\_

10. Did mother/guardian graduate from high school?      Yes   No

How many years did mother/guardian go to college or trade school after high school? \_\_\_\_\_

11. Did father/guardian graduate from high school?      Yes   No

How many years did father/guardian go to college or trade school after high school?  
\_\_\_\_\_

12. What kind of work does mother/guardian do?

\_\_\_\_\_

13. What kind of work does father/guardian do?

\_\_\_\_\_

14. How many brothers and sisters do you have? \_\_\_\_\_

\_\_\_\_\_

15. Are your parents/guardians married now? (circle one)

married

never married

separated

divorced

16. If your parents/guardians are separated or divorced, who has custody of you? (circle one)

joint custody (both parents)

mother has custody

father has

custody

17. Have you ever used alcohol or drugs?

Yes

No

18. Does your family participate in religion on a regular basis?

Yes

No

19. Are you religious?

Yes

No

20. Is English the first language you learned?

Yes

No

20a. If English is not the first language you learned, what language did you first learn? \_\_\_\_\_

21. Please list all the languages you are fluent in (e.g., English, Spanish, etc.)\_\_\_\_\_

\_\_\_\_\_

22. What language do you primarily speak in your home?\_\_\_\_\_

\_\_\_\_\_

## APPENDIX II

### TABLES

**Table I**

**Prevalence of Trauma Events**

---

Type of trauma	N	Percent
Sexual Abuse/violation	31	21.4
Witness death/violence	24	16.6
Physical abuse	17	11.7
Removal from home by CPS	15	10.3
Other	15	10.3
Don't know/no abuse reported	15	10.3
Witness domestic violence	13	9.0
Neglect	8	5.5
Accident	4	2.8
Violence by non-relative	3	2.1

---

**Table II**

**Rates of PTSD According to the CPTSD-I Scores by Ethnicity**

---

<u>Ethnic group</u>	<u>Sub-clinical/clinical PTSD score</u>	<u>Non-clinical PTSD score</u>
Asian American	4	0
African American	24	14
Caucasian	22	13
Hispanic American	12	7
Native American	2	1
Multiracial	33	7
Other	6	0

---



**Table III**

**Rates of PTSD According to the CPTSD-I Scores by Sex**

<u>Sex</u>	<u>Sub-clinical/clinical PTSD score</u>	<u>Non-clinical PTSD score</u>
Girls	56	22
Boys	46	20

**Table IV**

**Mean Number of Symptoms Endorsed on the CPTSD-I, by Sex and Ethnicity/Race**

<u>Ethnic group</u>	<u>Boys</u>	<u>Girls</u>
Asian American	6.0	6.0
African-American	3.9	4.9
Caucasian	4.5	4.4
Hispanic	3.4	5.1
Multiracial	4.9	4.9
Native American	3.0	6.0
Other	5.7	5.3
<i>Total</i>	4.4	4.9

**Table V****Reports of PTSD and Related Symptoms by Ethnicity**

Related symptoms	<u>Ethnic group</u>						
	1	2	3	4	5	6	7
<u>CPTSD</u>							
<i>Mean</i>	6.0	4.4	4.5	4.3	4.9	5.0	5.5
<i>SD</i>	.0	1.8	1.7	2.0	1.6	1.7	.8
<u>ADES</u>							
<i>Mean</i>	46.0	63.9	66.1	34.9	76.5	40.7	164.8
<i>SD</i>	35.0	54.5	67.8	47.6	57.8	50.6	99.1
<u>CDI</u>							
<i>Mean</i>	11.5	10.9	10.0	7.8	11.4	6.7	20.0
<i>SD</i>	4.7	9.3	8.7	6.7	8.8	7.2	14.8
<u>PTCI</u>							
<i>Mean</i>	84.0	89.2	83.8	79.9	92.6	58.0	122.2
<i>SD</i>	29.0	40.6	43.1	37.6	43.8	19.3	65.1
<u>FES</u>							
<i>Mean</i>	4.0	5.7	4.6	6.2	5.9	3.7	6.8
<i>SD</i>	3.7	2.5	2.6	2.3	2.6	3.2	2.1
<u>MEIM</u>							
<i>Mean</i>	35.0	38.7	36.1	42.2	37.8	38.7	39.2
<i>SD</i>	10.9	6.3	7.9	15.9	8.9	11.2	4.7

*Note:* 1= Asian American, 2= African American, 3=Caucasian, 4=Hispanic American, 5=Multiracial,  
6=Native American, 7=Other

**Table VI**

**Correlations among PTSD Symptomatology and Related Symptoms**

<u>Related symptoms</u>	<u>PTSD symptomatology</u>
CDI Total Score	
<i>r</i>	.49*
PTCI Total Score	
<i>r</i>	.48*
A-DES Total Score	
<i>r</i>	.43*
MEIM Total Score	
<i>r</i>	.02 <sup>†</sup>

*Note.* \* = Correlation is significant at the 0.01 level (2-tailed). <sup>†</sup> = Correlation is non significant ( $p = .399$ ).

**Table VII****Reports of MEIM and Subtest Scores by Ethnicity**

MEIM scores	<u>Ethnic group</u>						
	1	2	3	4	5	6	7
<u>MEIM</u>							
<i>Mean</i>	35.0	38.7	36.1	42.2	37.8	38.7	39.2
<i>SD</i>	10.9	6.3	7.9	15.9	8.8	11.2	4.7
Affirmation and Belonging							
<i>Mean</i>	14.5	15.6	14.4	20.2	15.0	17.3	16.5
<i>SD</i>	4.8	4.0	4.0	19.4	3.9	3.1	3.6
Ethnic Identity Achievement							
<i>Mean</i>	16.3	18.3	17.6	22.4	17.8	17.3	18.3
<i>SD</i>	4.5	3.4	3.6	19.1	4.4	5.1	2.3
Ethnic Behaviors							
<i>Mean</i>	4.2	4.3	4.0	9.9	5.0	4.0	4.2
<i>SD</i>	1.7	1.9	1.7	21.6	1.8	3.6	1.3
Other Group Orientation							
<i>Mean</i>	18.0	19.8	19.1	23.8	21.0	22.3	16.7
<i>SD</i>	1.2	3.3	4.4	18.6	2.9	1.5	7.2

*Note:* 1= Asian American, 2= African American, 3=Caucasian, 4=Hispanic American, 5=Multiracial, 6=Native American, 7=Other

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**VITA**  
**Harpreet Kaur**  
(714) 335-6785  
[harpreetkaur484@gmail.com](mailto:harpreetkaur484@gmail.com)

**EDUCATION**

**University of Nevada, Las Vegas** Clinical Psychology Doctoral Student  
2008-

**Whittier College (Whittier, CA)**  
2002-2006

Bachelor of Arts degree, May 2006, *cum laude* Major: Psychology  
Bachelor of Science degree, May 2006, *cum laude* Major: Biology

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**HONORS AND AWARDS**

Excellence in Academic Performance in Psychology, 2006  
Excellence in Service in Psychology, 2006  
Beta Beta Beta (Honor Society in Biology), 2006  
Delta Phi Upsilon (Honor Society in Child Development), 2006  
Psi Chi (Honor Society in Psychology), member 2004-2006, president 2005-2006  
Dean's List, Whittier College, 2002-2006

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**RESEARCH EXPERIENCE**

**University of Nevada, Las Vegas** Las Vegas, NV  
**Graduate Research Student**

August 2008-  
Faculty Advisor: Dr Chris Kearney  
Responsibilities include assessing children for PTSD following abuse/neglect using the following measures: Children's PTSD Inventory, Adolescent Dissociative Experiences Scale, Posttraumatic Cognitions Inventory, Children's Depression Inventory, State Trait Anger Expression Inventory, Multi-group Ethnic Identity Measure, and Family Environment Scale.

**Whittier College, Department of Psychology** Whittier, CA  
**Research Assistant.**

September 2005-January 2007  
*ADHD and Interpersonal Functioning: A Group Therapy Treatment Intervention*  
Faculty Advisor: Ayesha Shaikh, Ph.D.  
Duties included assistance with an exhaustive literature search, creation of an original coding system, coding of data from a 12-week therapy intervention, observation and analysis of group therapy sessions, and data entry in SPSS.

**Whittier College, Department of Psychology** Whittier, CA  
**Research Assistant.**

September 2004-May 2005  
*Examining Schizophrenia as a Psychological Construct*  
Faculty Advisors: Lori Camparo, Ph.D. and Ayesha Shaikh, Ph.D.  
Duties included selecting a construct of study, an exhaustive literature search, completion of human subjects' approval process, creation of consent forms, development of an original coding system, and creation of a pedagogical tool for use at Whittier College



**Whittier College, Department of Child Development  
Research Assistant.**

**Whittier, CA**

February 2003-May 2003

*Bilingual Friendship Study*

Faculty Advisors: Anne Sebanc Ph.D.

Primary duties included transcription and coding of data.

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**CLINICAL EXPERIENCE**

**Offices of Dr. Gary Lenkeit and Dr. Shera Bradley**

**Las Vegas, NV**

**Graduate Practicum Therapist**

July 2011-

Responsibilities include conducting Department of Family Services referred psychological evaluations for parental fitness and custody; co-leading a Dialectical Behavior Therapy (DBT) group with a group of sexually exploited adolescents; develop and lead pilot group therapy DBT program at Clark County Detention Center; development of an independent living skills group for adolescent girls; individual therapy using DBT. Measurements include the Reynolds, UNLV PTSD Inventory, Difficulties in Emotion Regulation Scale, Deliberate Self Harm Inventory, PAI, PAI-A, BASC-2.

**Child Haven/ Department of Family Services**

**Las Vegas, NV**

**Graduate Practicum Student**

September 2008-

Responsibilities include administering psychodiagnostic/psychoeducational assessments using the following measures: Children's PTSD Inventory, Adolescent Dissociative Experiences Scale, Posttraumatic Cognitions Inventory, Children's Depression Inventory, State Trait Anger Expression Inventory, Multi-group Ethnic Identity Measure, Family Environment Scale, WISC-IV, and WRAT4. Also lead a group for adolescent girls which included psychoeducation about trauma, appropriate relationships, and coping skills.

**UNLV School Refusal and Anxiety Disorders Clinic**

**Las Vegas, NV**

**Practicum Therapist**

March 2010-

Responsibilities include assessing and treating children with Selective Mutism and other co-morbid disorders in the clinic, community, and school settings using exposure based therapy and group therapy techniques.

**Center for Individual and Family Counseling**

**Las Vegas, NV**

**Practicum Therapist**

August 2009-August 2010

Provided assessments and therapy to individual adults, children, and families with a variety of psychological and interpersonal difficulties.

**Psychology Assessment Clinic**

**Las Vegas, NV**

**Practicum Therapist**

August 2009-

Conducted extensive psychological assessments and completed integrated reports for individual adults and children.

**University Medical Center**

**Las Vegas, NV**

**Graduate Research Student**

November 2008-February 2009

Responsibilities include administering the following measures to children and parents following admission to a pediatric intensive care unit: PTSD checklist-Civilian Version, Child Behavior Checklist, Family Environment Scale, BDI-II, MAQ, MASC, CDI, and CPTSDI.

**Didi Hirsch Community Mental Health Center**  
**Suicide Prevention Center Hotline Counselor Volunteer**  
May 2007- July 2008

**Culver City, CA**

Responsibilities include serving as a suicide counselor to both high and low risk callers. Involves working under pressure and under a high amount of stress while responding to the callers needs.

**Whittier Area First Day Coalition.**  
**Psychology Intern**

**Whittier, CA**

February 2004- May 2004  
Supervisor: Donald James

Responsibilities included co-facilitating/attending group sessions, developing and co-authoring a working community engagement model, and observation of intakes.

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### **PROFESSIONAL PRESENTATIONS**

Kearney, C., Kaur, H. (March 2011). Selective Mutism in Children: Characteristics, Assessment, and Treatment. Workshop conducted at Anxiety Disorders Association of America, New Orleans, LA.

Kaur, H. (March 2011). The role of ethnic identity in the development of PTSD after maltreatment. Symposium presented at Anxiety Disorders Association of America, New Orleans, LA.

Kaur, H. (March 2011). Depression as an intermediary variable between maltreatment and PTSD. Symposium presented at Anxiety Disorders Association of America, New Orleans, LA.

Kearney, C., Kaur, H., & Schafer, R. (November 2010). Selective Mutism in Children: Characteristics, Assessment, and Treatment. Workshop conducted at Association for Behavioral and Cognitive Therapies, San Francisco, CA.

Kaur, H., Wechsler, A., & Day, T. (November 2010). Cognitive functioning as a predictor for the onset of PTSD symptoms following child maltreatment. Poster presented at Association for Behavioral and Cognitive Therapies, San Francisco, CA.

Day, T., Kaur, H., & Wechsler, A. (November 2010). Ethnic identity as protective factor in maltreated youth in a minority population. Poster presented at Association for Behavioral and Cognitive Therapies, San Francisco, CA.

Wechsler, A., Kaur, H., & Day, T. (November 2010). Risk and resiliency factors in posttraumatic stress disorder development in maltreated youth. Poster presented at Association for Behavioral and Cognitive Therapies, San Francisco, CA.

Wechsler, A., Kaur, H., Patterson, C., & Kearney, C. (November 2009). The additive traumatic effects of neglect on maltreated adolescents. Poster presented at the 2009 U.S. Psychiatric and Mental Health Congress, Las Vegas, Nevada.

Kaur, H. (April 2006). The history and development of health psychology. Paper presented at the Whittier Undergraduate Conference.

Shaikh, A., Camparo, L., Kaur, H., & Fehribach, S. (April 2006). Rewards and risks of multiple relationships between faculty and students: Navigating the slippery slope. Paper presented at the Western Psychological Conference, Palm Springs, California.

Camparo, L.B., Shaikh, A., Kaur, H., & Ibrahimovic, H. (April 2005). Undergraduate research: Student and faculty perspectives. Paper presented at the Western Psychological Conference, Portland, Oregon.

Kaur, H., & Halstensgaard, H. (April, 2005). The effects of suggestion on memory recall. Poster presented at the Western Psychological Conference, Portland, Oregon.

Kaur, H., & Halstensgaard, H. (April, 2005). The effects of suggestion on memory recall. Poster presented at the Whittier Undergraduate Research Conference, Whittier, California.

Kaur, H., & Halstensgaard, H. (November 2004). The effects of suggestion on memory recall. Poster presented at the Southern California Conference of Undergraduate Research, Whittier, California.

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### **PUBLICATIONS**

Kearney, C.A., Wechsler, A., Kaur, H., & Lemos-Miller, A. (2010). Posttraumatic stress disorder in maltreated youth: A review of contemporary research and thought. *Clinical Child and Family Psychology Review*, 13, 46-76.

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### **TEACHING EXPERIENCE**

**University of Nevada, Las Vegas**

**Las Vegas, NV**

**Course Instructor**

2010- 2011

General Psychology

Prepare and deliver lectures on a wide range of psychology topics, lead engaging class discussions, incorporate diversity issues into lecture, create exams, and evaluate students' performance.

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### **CAMPUS ACTIVITIES AND LEADERSHIP**

Nevada Psychology Association- Graduate Student Representative 2010- Present

Incoming Graduate Student Mentor 2009- Present

Graduate student mentor to minority undergraduate 2009-Present

Psi Chi (Psychology Honor Society) member - 2002-2006, president 2005-2006

Psychology Club member - 2002-2006

Psychology Outreach Program funded by a CEMRRAT grant from the APA - 2006

Delta Phi Upsilon (Child Development Honor Society) member - 2006

Beta Beta Beta (Biology Honor Society) member - 2006

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### **PROFESSIONAL MEMBERSHIP**

Western Psychological Association (student affiliate)

**2005-2007**

Nevada State Psychological Association

**2008-**

American Psychological Association

**2008-**

Society for the Teaching of Psychology

**2010-**

Anxiety Disorders Association of America