CHILDHOOD SEXUAL ABUSE, POSTTRAUMATIC STRESS DISORDER, AND GENDER

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CHILDHOOD SEXUAL ABUSE, POSTTRAUMATIC STRESS DISORDER, AND GENDER

Childhood sexual abuse (CSA) is common problem in both the United States and Canada, with prevalence rates ranging from 6% to 62% for females and from 3% to 31% for males (Peters, Wyatt, and Finkelhor, 1986). A variety of long-term consequences have been associated with CSA (Polusny & Follette, 1995). To date, the majority of research examines the relationship between CSA and a variety of adjustment variables in women (for reviews see Browne & Finkelhor, 1986; Polusny & Follette, 1995). However research on the relationship between CSA and adjustment variables among male abuse survivors is limited.

Although not all childhood sexual abuse survivors (CSAS) experience deleterious effects, research suggests that CSAS are more likely to experience psychological difficulties than individuals without an abuse history. CSA appears to be associated with a variety of long-term adjustment difficulties including general distress, depression, self-destructive behaviors, anxiety disorders, substance use disorders (alcohol and drug abuse or dependence), eating disorders, and somatization difficulties (for review see Browne & Finkelhor, 1986; Polusny & Follette, 1995). Included among these difficulties is posttraumatic stress disorder (PTSD). While PTSD has been found in up to as many as 73% of CSAS populations (O'Neill & Gupta, 1991; Rowan, Foy, Rodriguez, & Ryan, 1994), much remains unknown in terms of predicting who will develop PTSD.

PTSD has been explored in CSA populations, but the majority of studies examining PTSD in CSA populations use predominantly female samples limiting the generalizability of findings. This is particularly problematic because findings in the

general PTSD literature suggest that women are more likely to develop PTSD in response to trauma than are men. The present study investigated the relationship between childhood sexual abuse, gender, and posttraumatic stress symptomatology. More specifically, the proposed study was designed to provide a methodologically sound, well-controlled examination of gender differences in CSAS with PTSD. It was proposed that men and women would differ in terms of their susceptibility for PTSD symptomatology. Before specific hypotheses are discussed, a review of the general literature for CSA and its effects will be discussed. The general literature for PTSD will then be reviewed, followed by a review of the literature exploring gender differences among individuals with PTSD.

Childhood Sexual Abuse

Prevalence

Childhood sexual abuse (CSA) is both a serious and a common problem facing individuals in the United States. Estimates for prevalence rates in the general population among females range from 15-33%, and among males range from 13-16% (for review see Browne & Finkelhor, 1986; Polusny & Follette, 1995). While there is general consensus for approximate rates of abuse, discrepancies still exist across studies. Different methodological approaches (e.g., differences in the sample, assessment method, definition of CSA, etc.) may play a role in these inconsistencies (Wyatt & Peters, 1986).

Differences in the populations sampled (clinical, community, or college) influence the prevalence rates noted in the literature. In general, clinical populations yield the highest prevalence rates, followed by community populations and then college populations. Clinical samples exhibit prevalence rates with female clients reporting CSA

rates ranging from 35-75%, and male clients reporting ranges from 13-23% (Polusny & Follette, 1995). For example, Briere (1988) reported that 67% of his female clinical sample reported a history of CSA. Similarly Briere and Runtz (1986) reported that 68% of their clinical sample of women experienced CSA.

Somewhat more moderate rates of abuse are seen in community samples of individuals with a history of sexual abuse. Russell (1983) reported that 16% of a community sample of women had an abuse history (36% when a more stringent definition of abuse was utilized), while Wyatt (1985) reported that 62% of her community sample of women had a history of CSA. Lower reported rates of CSA (ranging from 12% to 29.7%) are seen across college populations. For example, rates of 12% (Schaaf & McCanne, 1998), 20.1% (Messman-Moore, Long, & Siegfried, 2000), and 29.7% (Arata, 2000) have been reported in female samples, whereas a rate of 21.1% has been reported in a co-ed college sample (Liem & Boudewyn, 1999).

The nature of the contact considered necessary for an act to be labeled as sexual abuse may also affect prevalence rates. When the definition of CSA distinguishes between contact and noncontact abuse, prevalence rates for CSA decrease. When Russell (1983) defined CSA as including both contact and noncontact abuse, 54% of a community sample of women demonstrated a CSA history. When the definition of CSA was restricted to include only contact abuse, 38% of the sample reported an abuse history. Peters (1988) found that 85% of a community sample of women experienced CSA when contact and noncontact experiences were both considered abuse, while only 59% exhibited a history of abuse when noncontact experiences were excluded. Wyatt (1985) reported a prevalence rate of 62% in a community sample of women when the definition

of CSA included both contact and noncontact experiences. This rate decreased to 45% when noncontact experiences were excluded from the definition.

The upper age limit of CSA is also a source of controversy. Finkelhor (1979, 1984), Long and Jackson (1993), and Briere and Runtz (1986) define childhood sexual abuse experiences as contacts occurring at or before age 16, whereas Russell (1983) and Wyatt (1985) report their upper age limit as age 17. While these cutoffs are somewhat arbitrary, prevalence rates will increase as the potential age range for CSA experiences increases.

There is currently no consensus on exact prevalence rates of CSA in the United States because of the factors just reviewed. One of the most widely used definitions of CSA is derived from Browne and Finkelhor (1986). They stated that CSA consists of two specific patterns: forced or coerced sexual behavior imposed on the victim and sexual activity occurring between the victim and a much older person (operationalized as five or more years age difference between victim and perpetrator). Although these characteristics are included in the identification of abuse in most of the CSA literature, it is important to note that this definition is not always used. When alternative age ranges are used, the general prevalence rates may increase or decrease (larger ranges yielding greater prevalence rates and vice versa). Despite discrepancies in the exact number of individuals exhibiting a history of sexual abuse, it is clear that CSA is a both a serious and common problem experienced by many men and women.

Abuse Characteristics

CSA occurs in a variety of forms. Such experiences may vary with regard to the nature of abuse, its duration, the age the victim experienced the abuse, the identity of the

perpetrator, and the presence of force/coercion. These characteristics are reviewed below.

Nature of Sexual Abuse. Sexual abuse may include contact experience or noncontact experiences. Contact sexual abuse experiences include genital or nongenital fondling, kissing, oral, anal or vaginal intercourse, and penetration via objects. Noncontact experiences do not involve physical contact between the perpetrator and the victim and may include exhibitionism (either exposure or masturbation in front of the victim), voyeurism, and sexual solicitations. Finkelhor et al. (1990) reported that approximately half of CSAS have experienced attempted or completed oral, anal or vaginal intercourse. In a review of the literature, Salter (1992) reported that 2-45% of female and 0-13% of male CSAS had a contact experience, while 4-62% of females and 7-63% of males included both contact and noncontact abuse experiences.

Duration and Frequency of Sexual Abuse. Based on a review of the literature, Polusny and Follette (1995) report an average duration of abuse ranging between two and six years. In a non-clinical adult sample, Briere and Runtz (1988) found that 41.4% of CSA survivors experienced only one abuse incident, 46.4% were abused multiple times for up to one year, and 12.2% were abused for longer than one year. DiLillio, Long, and Russell (1994) reported that 54.4% of female college student CSAS were abused on only one occasion, 21.2% were abused for up to one year, and 24.3% were abused for longer than a year. Long and Jackson (1993) also reported duration of abuse in a sample of female college students; 60.3% experiences one abuse episode, 24.3% were abused for up to one year, and 15.4% were abused for longer than one year.

Age of Onset. In a review of the literature, Polusny and Follette (1995) reported

that the average age of CSA onset is between seven and nine years of age. Kendall-Tackett and Simon (1988) also reported a similar average age of onset for both boys and girls at 7.5 years of age. Among females, Edwards and Donaldson (1989) reported the average age of onset to be 7.21 years. Finkelhor (1979) reported a slightly later onset; girls were 10.2 years of age and boys were 11.2 years of age.

Identity of the Perpetrator. CSA victims are typically acquainted with the perpetrator. Research suggests that approximately 70% of victims are familiar with their aggressor (Finkelhor, 1979; Gomes-Schwartz et al., 1990). Not only does the child often know their perpetrator, the perpetrator is often a member of the child's family. Edwards and Donaldson (1989) reported rates of intrafamilial abuse for a community sample of female CSAS. They found that 43.3% of women were abused by their father, 34.6% by a brother, 5.8% by the grandfather, 15.4% by an uncle, 10.6% by a stepfather, and 15.4% were reported as "other" (Note: Victims could endorse multiple perpetrators, therefore percentages do not add to 100%). While there is evidence supporting the familiarity of the perpetrator, there is also research that contradicts this finding. A random community sample found that 42.58% reported intrafamilial abuse, while 81.23% reported extrafamilial abuse [Note. Percentages sum to greater than 100% because some participants reported having both intrafamilial and extrafamilial perpetrators] (Russell, 1983).

Force/coercion. CSA experiences also vary according to whether or not force was involved. Force is defined as actual physical restraint or aggression or the threat of force. Finkelhor (1979) reported that 55% of college women experiencing CSA experienced force or the threat of force. In a community sample of CSAS, 41% of cases included

force (Russell, 1983). Long and Jackson (1993) reported that 19% of the females college CSAS reported force. While percentages of force in CSA are apparently varied, force appears to be a relatively common factor in abuse experiences.

Adjustment Implications. Not only does the experience of CSA vary for victims, the nature of the abuse is thought to have an impact on later adjustment. The examination of individual abuse characteristics and their association with subsequent adjustment has been somewhat inconclusive. Findings do provide some suggestion that greater adjustment difficulties are associated with characteristics thought to be more severe. Examples would include the presence of contact experiences (more specifically the presence of penetration) (e.g., Finkelhor et al., 1989; Russell, 1986), multiple perpetrators (e.g., Briere & Runtz, 1986), longer duration (e.g., Kendall-Tackett et al., 1993), younger age of onset (e.g., Long & Jackson, 1993; van der Kolk et al., 1991), and presence of force (e.g., Briere & Runtz, 1989; Finkelhor, 1979).

Effects of Child Sexual Abuse

CSA is associated with a variety of problems, including initial and long-term difficulties. While CSA is associated with a variety of maladaptive effects, it is important to note that a causal relationship between CSA and initial/long-term difficulties has yet to be established. Initial difficulties are problems that arise at the time of victimization (in childhood), while long-term difficulties are those persisting into adulthood. Both the initial and the long-term difficulties will be discussed below.

Initial Difficulties. Immediate effects of CSA include aggression (including anger and hostility), sexualized behavior, school problems, anxiety (e.g., fears and phobias), depression, withdrawn behavior, somatic complaints, and suicidal behavior (Briere &

Runtz, 1986; Gomes-Schwartz, Horowitz, & Sauzier, 1985; Kendall-Tackett, Williams, & Finkelhor, 1993). Tufts' New England Medical Center (1984) reported that between one-fifth to two-fifths of children experiencing sexual abuse manifest pathological disturbance in the time immediately following victimization. Such initial effects include reactions of anger and hostility among 7 to 13 year olds. They also reported that four to six year old children experiencing CSA reacted with inappropriate sexual behavior when compared to both clinical and control norms for children. Children experiencing CSA also appear to have more difficulties at school (Browne & Finkelhor, 1986).

There is general agreement that boys and girls exhibit different reactions to traumatic behavior. Overall boys tend to exhibit more externalizing behaviors (e.g., aggression), while girls tend to exhibit more internalizing behaviors (e.g., depression) (Tufts, 1984). While these patterns appear to be relatively consistent throughout the literature, there are exceptions to this finding. Finkelhor (1990) reported that the response of boys is relatively similar to girls. This is surprising since boys are less likely to be abused by family members, different social stigma is associated with the sexual abuse of a male, and boys experience different sexual issues than girls.

Long-Term Difficulties. The negative problems associated with CSA are also long lasting. In adult populations, CSA is associated with general distress, depression, self-destructive behaviors, anxiety disorders, substance use disorders (alcohol and drug abuse or dependence), eating disorders, dissociation, somatization difficulties, and interpersonal relationship difficulties among other problems (for review see Browne & Finkelhor, 1986; Polusny & Follette, 1995).

General distress levels are often elevated in CSAS (see Polusny & Follette, 1995

for review). Utilizing the General Severity Index (GSI; an index of general distress) on Hopkin's Symptom Checklist-90 (SCL-90), Fromuth and Burkhart (1989) found that CSA was significantly correlated with an increase in distress. Utilizing the Minnesota Multiphasic Personality Inventory (MMPI), Hunter (1991) found that CSAS reported higher scores on almost all of the scales when compared to a matched control group (indicating greater levels of distress).

Elevated levels of depression are frequently seen in CSAS. Briere and Runtz (1988) and Roesler and McKenzie (1994) reported that female CSAS had significantly greater levels of depression than nonabused females. Burnam et al. (1988) also found elevated levels of depression in survivors of CSA. Stein et al. (1997) found that female CSAS had a four time greater risk for developing major depression than nonabused controls.

In addition to depression, CSAS often exhibit self-destructive behaviors. Van der Kolk et al. (1991) reported that the presence of an abuse history was associated with more self-mutilation, suicide attempts, and other self-destructive behavior than the absence of an abuse history. Approximately 47% of a clinical sample of CSAS reported self-mutilating behaviors (Rodriguez, Ryan, & Foy, 1992). When compared to nonabused controls, female CSAS have been noted to be more likely have a history of suicide attempts (Briere, 1988; Briere & Runtz, 1986,1988) and more self-mutilation (Briere, 1984, 1988). In community samples, CSAS have higher rates of suicidal ideation and suicidal attempts (Bagley & Ramsay, 1985; Saunders, Villeponteaux, Lipovsky, Kilpatrick, & Veronon, 1992), as well as more deliberate attempts at self-harm as compared to nonvictims (Bagley & Ramsay, 1985). Sedney and Brooks (1984) had

similar reports from their college sample where CSAS had more thoughts of hurting themselves than controls.

CSA is also associated with an increase in anxiety symptoms. Elevated levels of anxiety for CSAS have been reported in a variety of studies (Briere & Runtz, 1988; Browne & Finkelhor; 1986; Murphy, Kilpatrick, Amick-McMullan, Veronen, Paduhovich, Best, Villeponteaux, & Saunders, 1988). Briere (1984) reported that 54% of CSAS experienced anxiety attacks compared to 28% of nonabused clients. In addition to anxiety attacks, a variety of anxiety disorders also appear to be associated with CSA including generalized anxiety disorder (GAD), posttraumatic stress disorder (PTSD), phobia, panic disorder, and obsessive-compulsive disorder. Murphy et al. (1988) found that generalized anxiety is a typical reaction for CSAS based on the SCL-90-R. The development of PTSD in conjunction with CSA has also been well established and will be discussed in greater detail later (Andrews et al., 2000; Briere & Runtz, 1988; Dickinson et al., 1998; Jehu, 1991; Kiser et al., 1991; O'Neill et al., 1991; Rodriguez et al., 1996). Burnam et al. (1988) found that CSA and sexual assault were associated with phobias, panic disorder and obsessive-compulsive disorder.

Substance use disorders are also highly related to CSA (for review see Browne & Finkelhor, 1986; Polusny & Follette, 1995). Briere (1988) found that CSAS reported more alcoholism and drug addiction than subjects without an abuse history. Rodriguez et al. (1992) reported that one third of their sample reported daily intoxication. Najavits, Weiss, and Shaw (1997) present a review on substance abuse and PTSD and report that this dual diagnosis most commonly arises from childhood physical and/or sexual assault. One study found that 69% of subjects being treated for chemical dependency also

reported a history of CSA or childhood physical abuse (CPA) (Ellason, Ross, Sainton, & Mayran, 1996). Burnam et al. (1988) found that CSA and sexual assault were predictive of later substance use disorders including alcohol and drug abuse or dependence.

CSA is also associated with other problems including eating disorders. Rodriguez et al. (1992) reported that approximately 80% of their clinical sample of CSAS reported some sort of disordered eating. Other studies have found greater levels of eating problems among CSAS when compared to nonabused subjects (Calam & Slade, 1987, 1989; Smolak, Levine, & Sullins, 1990).

There is also evidence for a relationship between CSA and dissociative symptoms (for review see Polusny & Follette, 1995). Using the Posttraumatic Stress Disorder Syndrome and Dissociation checklist, Roesler and McKenzie (1994) found increased dissociation among their sample of CSAS. Strong relationships between CSA and dissociation were found by Briere and Runtz (1988) and Carlson, Armstrong, Loewenstein, and Roth (1998).

CSA is also related to a variety of somatic complaints and somatization disorders. Studies have found more chronic somatization symptoms (based on SCL-90 scores) in CSAS than in nonabused controls (Briere & Runtz, 1988). Walker, Katon, Hansom, Harrop-Griffiths, Holm, Jones, Hickok, and Jemelka (1992) also reported that female CSAS were more likely to develop a somatization disorder than non-abused victims.

In light of the numerous disorders related to CSA, it is not surprising that the interpersonal relations of CSAS are also affected (for review see Browne & Finkelhor, 1986; Polusny & Follette, 1995). Briere (1984) reported that victims have difficulty trusting others. Reported feelings of isolation in adulthood are also common (Harter,

Alexander, & Neimeyer, 1988). In addition to these difficulties, CSAS are more likely to be revictimized (including rape, sexual assault, or domestic violence) (Messman & Long, 1996; Messman-Moore, Long, & Siegfried, 2000; Polusny & Follette, 1995).

As the CSA literature continues to grow, there is accumulating evidence for the deleterious effects of CSA. The next section is devoted to exploring one additional area impacted by CSA, Posttraumatic Stress Disorder (PTSD).

An Introduction to Posttraumatic Stress Disorder

Another problem often associated with the occurrence of CSA is Posttraumatic stress disorder (PTSD). PTSD is an anxiety disorder characterized by a variety of specific symptoms. Individuals can experience either acute (less than one month duration, also known as acute stress disorder) or chronic posttraumatic stress symptomatology (more than three months duration, PTSD). In PTSD, the individual experiences a traumatic event where the individual "experienced, witnessed, or was confronted" with a situation involving actual or threatened physical harm or death. The individual also must experience "intense fear, helplessness, or horror" during this event (APA, 2000). Symptoms are "clinically significant" and include a re-experiencing of events (in the form of distressing recollections of the event, recurrent dreams of the event, feeling as if the event were recurring, distress in response to symbolic cues, or psychological reactivity to symbolic cues), avoidance of stimuli associated with the event (avoiding thoughts, feelings or conversations, activities, places or people associated with the trauma, inability to recall certain aspects of the trauma, diminished interest in significant activities, feelings of detachment, restricted range of affect, or sense of a foreshortened future), and symptoms of increased arousal (difficulty falling or staying

asleep, irritability, difficulty concentrating, hypervigilance, or exaggerated startle response) (APA, 2000).

Prevalence Rates of PTSD in CSA

There is little agreement on the prevalence of PTSD in CSAS. Although there is a standard definition for PTSD (APA, 2000), many assessment measures for PTSD are not designed to diagnose PTSD, they only inquire about PTSD symptomatology. The DSM-IV-TR definition for PTSD was also revised in 1994, so studies examining PTSD before this date examined slightly different criteria. Rates also differ according to the population sampled, with rates being higher for clinical samples than for the general population, and lowest in college samples.

Clinical Adult Population. O'Neill and Gupta (1991), in an outpatient sample of 26 female CSAS, found that 73.1% (19 women) were suffering from PTSD according to the Structured Clinical Interview for DSM-III-R (SCID-III-R). While this measure is designed to diagnose PTSD, it reflects the DSM-III criterion for PTSD.

Rowan, Foy, Rodriguez and Ryan (1994) also explored CSA and PTSD. CSA was defined as any type of sexual experience prior to the age of 16 with someone five or more years older. A clinical sample of 47 adult survivors of CSA (44 women and 3 men) completed a variety of self-report questionnaires including the Sexual Abuse Exposure Questionnaire (SAEQ), the SCID (based on DSM-III-R), and the PTSD Symptom Checklist (SCL). The SCID revealed that 69% ($N = 29$) of their sample had diagnosable PTSD with another 19% ($N = 8$) demonstrating partial PTSD. The SCL revealed similar rates of PTSD with 64% ($N = 30$) exhibiting diagnosable PTSD and 19% ($N = 9$) exhibiting partial PTSD. A positive diagnosis of PTSD was made based on the SCL

when participants indicated "moderate problems" on one reexperiencing, three avoidance, and two increased arousal symptoms. Participants indicating "moderate symptoms" in two of the three aforementioned areas were diagnosed with partial PTSD. While the operationalized definition for CSA is slightly different from what is most frequently utilized in the literature (prior to age 16 versus prior to age 17), this study is still a substantial contribution to the literature. A benefit of this study is the inclusion of multiple measures to assess PTSD: the SCID and the SCL. One of the shortcomings of this study is that the diagnosis and symptomatology explored were characteristic of the DSM-III and not the DSM-IV.

Clinical Adolescent Population. Kiser, Heston, Millsap, and Pruitt (1991) explored CSA and PTSD in a clinical population of adolescents. Of 163 adolescents assessed, 40 had been physically abused, 25 were sexually abused, and 24 suffered from combined abuse. Gender and abuse type breakdowns were not reported but they found that 55% of their population suffered from diagnosable PTSD (based on an individual interviews that used DSM-III-R criteria).

Lipschitz, Winegar, Hartnick, Foote, and Southwick (1999) also explored a clinical population of adolescents. They found that 50.0% of their sample (35 boys and 39 girls with an average age of 14.8 years) had experienced sexual abuse utilizing the Traumatic Event Questionnaire (TEQ-A). Of the adolescents experiencing CSA, 69.5% met criteria for PTSD (a diagnosis of PTSD was assigned if individuals scored above a 40 on the Child Posttraumatic Stress Reaction Index-CTPS-RI and received a diagnosis of PTSD based on the DICA-R).

Clinical Child Population. McLeer, Deblinger, Henry, and Orvaschel (1992)

examined a clinical population of sexually abused children. Using a checklist approach (PTSD was assessed with a variety of measures that were considered comparable to a symptom checklist for PTSD) they found that 43.9% of their sample met the DSM-II criteria for PTSD.

McLeer, Callaghan, Henry, and Wallen (1994) also examined a clinical sample of sexually abused children. Of 26 children completing the Schedule for Affective Disorders and Schizophrenia for School-Age Children-Epidemiologic Version (K-SADS-E), they found that 42.3% met DSM-III criteria for PTSD. These children were matched to another sample (non-sexually abused children), of whom only 8.7% met criteria for PTSD.

Wolfe, Sas, and Wekerle (1994) examined a clinical population of children with a history of sexual abuse. Twenty-one boys and 69 girls, with a mean age of 12.4 years, were assessed using both a non-standardized 10-question index designed to reflect the underlying symptoms of PTSD (based on DSM-III criteria) as well as the Children's Impact of Traumatic Events Scale (CITES). The PTSD checklist was used in conjunction with the CITES to determine the presence of a PTSD diagnosis. Of their participants approximately 50% evidenced diagnosable PTSD by DSM-III-R standards (28.6% of the boys and 55.1% of the girls). The utilization of a non-standardized measure to help diagnose PTSD, as well as the use of DSM-III-R criteria, made it difficult to generalize these results to other populations.

Merry, Franzcp, Andrews, and Franzcp (1994) examined 95 children recruited from community agencies (clinical population) approximately 12 months after their disclosure of sexual abuse. CSA was defined as "the involvement of developmentally

(i.e., physically, intellectually and/or emotionally) immature children or adolescents in sexual activities which they do not fully comprehend, to which they are unable to give informed consent or which violate the culturally acceptable taboos of family roles or adult/child relationships...[including] sexual intercourse, fondling of the genital areas, breasts or other parts of the body perceived by the child as private, sexualized kissing, mutual masturbation and involving children in pornographic activities, all either with or without the use of force." They examined a variety of Axis I disorders utilizing the Diagnostic Interview Schedule for Children (DISC-2). Included in this examination was PTSD. They found that PTSD was a specific diagnosable response to rape and sexual abuse in 18.2% ($N = 12$; 10 girls and 2 boys) of children.

Rodriguez, Vande Kemp, and Foy (1998) presented a review of literature on PTSD in survivors of CSA and childhood physical abuse. Based on nine studies using clinical samples of sexually abused children, they concluded that there is preliminary support for diagnosable PTSD in approximately 40-50% of children experiencing sexual abuse who are also seeking treatment.

Community Adult Population. Prevalence of PTSD in CSA has also been examined in community samples. Kessler, Sonnega, Bromet, Hughes, and Nelson (1995) used a probability sample of 5887 persons aged 15-54 to explore the epidemiology of PTSD. Utilizing a revised version of the Composite International Diagnostic Interview (CIDI), they found that 2.8% of men and 12.3% of women experienced sexual molestation (this was not operationalized). Kessler et al. (1995) calculated the probability that CSA would result in PTSD. They predicted that 26.9% of men and 61.4% of women with a history of CSA would qualify for a diagnosis for PTSD. When

actual percentages for participants who reported CSA as their "most upsetting" trauma were examined, they found that 1.8% of men and 19.1% of women met criteria for PTSD. PTSD rates following CSA were therefore lower than expected. This study exemplifies the importance of requesting that individuals fill out PTSD questionnaires with a particular trauma in mind. It also suggests that PTSD rates may be lower when participants are not instructed to complete measures with a specific trauma (e.g., CSA) in mind.

Resnick, Kilpatrick, Dansky, Saunders, and Best (1993) examined a community sample of 4,008 adult women via a telephone interview to examine vulnerability-stress factors in the development of PTSD. This study utilized the Incident Report Interview (IRI) to assess for a variety criminal victimization experiences including rape. Since the IRI does not screen for CSA, they added one additional item: "not counting the incidents you have already told me about, has anyone ever touched your breasts or pubic area or made you touch his penis by using force or threat of force." To assess for PTSD, women were assessed using the National Women's Study (NWS) PTSD Module. They found that 14.32% of women experienced "other sexual assault" (CSA was included in this category and was not listed separately), and of these abused women 30.8% had lifetime PTSD and 13.0% had current PTSD.

Adult College Population. There has been less research examining PTSD symptomatology in college populations. The diagnosis/symptom assessment of PTSD usually requires an interview. Therefore it is not surprising that PTSD diagnoses have not been explored in many college populations of CSAS. Instead, these studies examine the symptom severity of PTSD. Research examining CSAS and PTSD in college

populations find higher levels of PTSD symptomatology. For example, Carlozzi, Shaw and Long (2001) examined PTSD and attributional style in a college sample of 743 women. Utilizing the Life Experiences Questionnaire (LEQ) and the Crime-Related PTSD Scale for the SCL-90-R, they found higher levels of PTSD symptomatology in CSAS than in participants without an abuse history.

Summary. Although there appears to be a general consensus for prevalence rates for CSA, the exact percentages for PTSD within CSAS are far from clear. It is also apparent that different measures and different defining criteria for PTSD will yield different prevalence rates. Regardless of consensus for these prevalence rates, it is clear that PTSD is associated with CSA. Some possible theories for this association are described below.

Childhood Sexual Abuse and Posttraumatic Stress Disorder Theory

There is currently not a consensus on what theoretically accounts for PTSD in individuals who were victims of CSA (for review see Koverola & Foy, 1993). While each theory presents its own unique approach for explaining PTSD in CSA, all of these theories need validation before they are accepted as truth. Theories including the psychodynamic, trauma-learning, social learning, psychosocial, cognitive/behavioral, developmental, and traumagenic dynamics models have been proposed to explain PTSD in CSA. In addition to these models, complex PTSD (for review see Herman, 1992) and biological models have also been proposed to explain this relationship.

The Psychodynamic Model. The psychodynamic model examines human behavior in a historical context. This model posits that CSA causes an "energy overload in which the individual's stimulus barrier became overloaded" (Morrissette, 1999). In

other words, traumatic events cause a surplus of energy that must be integrated with the self; CSA involves an over-integration of experience where the victim generalizes learned abusive behavior to multiple interpersonal situations that may later manifest itself as PTSD (Morrissette, 1999). For example, a child who was abused may experience nightmares of the abuse (e.g., PTSD symptomatology) until the child is able to integrate the trauma.

The Trauma-Learning Model. The trauma-learning model includes four phases that describe how the victim processes information about sexual abuse (pre-trauma, trauma encapsulation, disclosure, and post-trauma) (Hartman & Burgess, 1988). This model proposes that child personality, developmental stage, and coping/defense mechanisms contribute to the child's internal processing of the abuse experience. Therefore the development of PTSD will be contingent upon personality, developmental stages and coping mechanisms.

The Social Learning Model. The social learning model posits that CSAS have been exposed to social attitudes, beliefs and behaviors that are maladaptive, which are later incorporated into their beliefs (Bandura, 1969, 1977). This model argues that modeling, instruction, direction, reinforcement, and punishment are the primary processes through which a child learns to process information. Therefore, a child may be taught inappropriate coping mechanisms, or other inappropriate beliefs, through verbal and nonverbal messages (e.g., avoidance of painful memories). In addition, the child may be negatively reinforced for inappropriate behaviors regarding expression about abuse experiences (e.g., avoidance of "taboo" topics). Children with PTSD may have learned that talking about abuse experiences is stigmatizing. This connection is learned

through the observation of parental behavior (e.g., topic is only brought up in the context of emotional upheaval). Therefore the child learns to avoid discussing the abuse experience because he/she is afraid of generating negative emotions. The absence of discussion is negatively reinforced since the avoidance of the discussion of this topic allows for the escape from the expression of negative emotions.

The Psychosocial Model. The psychosocial model suggests that individual experiences and characteristics moderate psychological outcome (Green, Wilson, & Lindy, 1985). The general theory posits that individual characteristics interact with environmental characteristics to create "unique" outcomes. Specific individual characteristics, such as coping mechanisms, personality characteristics, and psychopathological traits, as well as environmental characteristics (e.g., social environment), combine to determine the child's adaptation. Therefore, the outcome of abuse experiences will be determined by the availability and type of coping mechanisms the child has to process the trauma (e.g., if the child's family was supportive and open about the abuse the child would have a healthier adjustment pattern than the child whose parent's were non-supportive).

Cognitive/Behavioral Models. Cognitive/behavioral models have also been used to conceptualize PTSD. Cognitive/behavioral theories include the behavioral model, the cognitive model, and the cognitive/behavioral model. The behavioral model posits that behavior is learned through either classical or operant conditioning. Therefore, behavior that is acquired through pairings with noxious stimuli, or through the experience of reward and punishment, would be included in this model. A child whose abuse took place after her father drew her a bath may experience fear every time she is near a

bathroom. This fear might even generalize to the child fearing all of the bathrooms in any house (Berliner & Wheeler, 1987). Likewise, a child whose abuse experience was very painful will react very differently than a child whose abuse experience was considered "special time with daddy." In operant conditioning, the child may learn that avoiding trauma-related cues (e.g., avoiding men in general) will lead to a reduction of anxiety. Therefore these pairings would determine how the child perceived the abuse experiences and whether or not the child later acquires PTSD.

The cognitive model stresses the impact of CSA on values, beliefs, and attitudes (Janoff-Bulman, 1985). In particular, there are three basic assumptions that may be challenged by an abuse experience: the belief of personal invulnerability, the belief that the world is a fair and just place, and the belief that individuals are decent and worthy (Janoff-Bulman, 1985). Therefore, the cognitive model posits that a child's cognitions (or beliefs) may be challenged by traumatic experiences, and such challenges may result in disorders such as PTSD.

Taylor (1983) also proposes a cognitive model for adaptation following traumatic events. An individual experiencing trauma searches for meaning in the traumatic experience, and if this search is successful, the individual exerts control over his or her environment and his/her self-esteem is thus enhanced. Therefore, an individual exhibiting PTSD has not been able to successfully attribute meaning to the CSA experience. The very symptoms that characterize PTSD (reexperiencing, avoiding, or arousal symptoms) serve to remind the individual that he/she has no mastery of their trauma.

Foa and Kozak (1991) present a cognitive processing model to explain the

presence of PTSD in CSAS. They propose that PTSD reflects the presence of impairment in emotional processing of a traumatic experience. This theory draws on Lang's (1977,1979) fear structure. A fear structure is a structural representation of fear found in an individual's memory consisting of the feared stimuli, physiological and emotional responses to fear, and interpretative information about fear. Foa and Kozak (1991) posit that PTSD reflects a pathological fear structure that contains inaccurate interpretations and associations of fear. In PTSD, the fear structure of the trauma experience (in this case CSA) is generalized to include a variety of inappropriate stimuli. Therefore, PTSD is an information-processing impairment.

Finally, the cognitive/behavioral model posits a combination of both the behavioral and the cognitive theories. It provides an overlap of behavioral and cognitive frameworks. This model recognizes the behavioral manifestations of PTSD (nightmares, fears, flashbacks, hypervigilance, aversive thoughts) maintaining that these behavioral manifestations influence cognitive thought (self-esteem, self-concept, trust, personal efficacy) and vice versa.

The Developmental Model. The developmental model stresses how developmental stages impact an individual's actions (Browne & Finkelhor, 1986). For example, if the same child were abused at different ages (age 4 and again at age 15), the child's perceptions and responses to the abuse may be very different and may therefore be more vulnerable to PTSD at different ages. For example, pre-school children experiencing sexual abuse are characterized by cognitive impairment and severe stress reactions, school-age children who have been sexually abused exhibit symptoms of fearlessness, aggression and destructiveness, and adolescents experiencing sexual abuse

displayed depression, anxiety and depressive thoughts (Gomes-Schwartz, Horowitz, & Sauzier, 1985). These age differences are then proposed to play a mediating role in the development of PTSD, with children who exhibit anxiety and stress reactions being more vulnerable to the development of PTSD.

The Traumagenic Dynamics Model. The traumagenic dynamics model combines developmental theory with a number of trauma dynamics (betrayal, stigmatization, powerlessness, and traumatic sexualization) and posits that PTSD is a specific distortion of these traumagenic dynamics (Finkelhor & Browne, 1985, p. 532). This model argues that these dynamics alter both emotional and cognitive orientation to the world. The child's perceptions of the self, the world, and of emotions are altered by these dynamics. The first dynamic, betrayal, is characterized by the discovery that an individual whom the child trusts and is dependent on has caused him/her harm. Since this dynamic might lead to impaired judgment of trustworthiness it may impair the production of healthy interpersonal relationships. The individual experiencing betrayal might therefore be more susceptible to developing PTSD because of inadequate interpersonal and emotional support.

The second dynamic, stigmatization, includes the incorporation of "negative connotations" into a child's self-perceptions (Finkelhor & Browne, 1985, p. 532). This demeaning of the victim may lead to feelings of shame and guilt, which in turn might impair the individual's ability to process the trauma. The failure to successfully process the trauma can in turn lead to the development of PTSD.

Powerlessness concerns the victim being rendered powerless. In other words, a child whose abuse experiences include coercion and manipulation learn that they are

unable to control, or prevent, the abuse from occurring. This in turn can lead to a state similar to that of learned helplessness. This child may experience a numbing of emotions, or depersonalization or the derealization symptoms associated with PTSD.

The fourth and final dynamic of this model is traumatic sexualization. This dynamic explains that sexual abuse can lead to developmentally inappropriate sexual behaviors and sexual feelings. The important proponent in this model is developmental impairment. In addition, this model has similar ties to the aforementioned developmental model in its association with PTSD.

Complex PTSD. Another explanation for PTSD in CSA survivors is that they present a unique symptomatic picture, which has been referred to as "complex PTSD" (Herman, 1992). Complex PTSD is a presentation of trauma and abuse symptoms that mimic comorbid Borderline Personality Disorder and PTSD. Dickinson, deGruy, Dickinson, and Candib (1998) utilize empirical evidence from a cluster analysis of their data to provide support for this theory: the most severely abused victims were more likely to present with complex PTSD. In this study, sexual abuse was evaluated based on a 14-item questionnaire based on Russell's (1982, 1986) work and PTSD was assessed utilizing the DIS. A cluster analysis of the results suggested that a true cluster structure is present, which argues against the current DSM continuum model of PTSD. While this theory presents a unique approach to explaining PTSD in CSA, it is problematic because it stresses a PTSD personality-type.

Biological Models. Many studies suggest that there is a strong link between biological factors and PTSD symptomatology. Bremner, Narayan, Staib, Southwick, McGlashan and Charney (1999) examined brain function in women survivors of CSA.

Although they didn't account for the severity of the trauma, Bremner et al. (1999) concluded that women CSA survivors with PTSD demonstrated a dysfunction of the medial prefrontal cortex, hippocampus and visual association cortex which might underlie PTSD symptoms that are prompted by traumatic reminders.

Stein, Koverola, Hanna, Torchia, and McClarty (1997) examined adult CSA survivors with PTSD. They found that adult women survivors of CSA, when compared to non-victimized women, had reduced hippocampal volume, and hippocampal volume appeared to be associated with dissociative symptom severity. Therefore it appears that reduced hippocampal volume might be a precipitant of PTSD, or that PTSD results in reduced hippocampal volume.

Children suffering from CSA and PTSD also demonstrated other autonomic nervous system (ANS) and central nervous system (CNS) disturbances. McPherson, Newton, Ackerman, Oglesby, and Dykman (1997) found evidence for two specific symptom clusters in children with CSA and PTSD as defined by a greater P2-N2 ERP intensity gradient (CNS activity): as PTSD symptom severity of these two symptom clusters increases (excessive arousal and reexperiencing of symptoms), so did CNS activity.

Summary. There is currently no clear model to explain the presence of PTSD in CSA. While general theory provide possible frameworks for conceptualizing PTSD, these theories need to be tested and modified to account for the diversity among CSAS suffering from PTSD. The aforementioned models provide a spectrum of explanations for the association of CSA with PTSD. While all of these models contain merit, none fully captures the complexity of this interrelationship. The theoretical models for PTSD

in CSA provide a framework for understanding the possible processes associated with the development of pathological symptomatology. The following section builds upon these frameworks and examines the relationship between CSA characteristics and PTSD.

Factors Influencing the Development of PTSD in CSAS

While there is no one unified theory for explaining PTSD in CSA, there is evidence to suggest that certain factors may influence the development of PTSD. When considering PTSD that develops from CSA, a number of different factors should be considered including abuse characteristics and the presence of other traumas.

The Role of Abuse Characteristic in the Development of PTSD. There is evidence that a number of abuse characteristics impact the severity of PTSD symptomatology in CSAS. These factors include the severity of the abuse, its duration, age of onset, abuse acknowledgement, relationship to the perpetrator, the nature of the physical contact with the perpetrator, whether force was involved, and feelings associated with the abuse.

The severity of abuse, and its relationship to PTSD, has been explored in a number of studies. To begin this section of the review it is important to recognize severity as a hypothetical construct. There is currently no consensus on the operationalization of severity, and studies conceptualize severity using a variety of different abuse characteristics. Carlson, Armstrong, Loewenstein, and Roth (1998) explored the relationship between the "extent" (severity) of abuse (an index that combines the frequency of force experiences with the intensity of the experiences) and later PTSD symptoms (using the Structured Interview for Posttraumatic Stress Disorder-SI-PTSD) in a clinical sample of CSAS. They found an extremely large correlation

between PTSD and the "extent" of sexual abuse, and the extent of physical abuse and PTSD symptoms. While they assessed for CSA and CPA, they did not control for additional types of trauma.

Schwarz and Long (1995) also examined the severity of abuse and its relationship with PTSD in a college sample of 76 women. Higher severity ratings reflected of longer duration, earlier age of onset, the presence of penetration, an intrafamilial perpetrator, the presence of force or coercion, and perceptions of no control over abuse. Using the Life Experiences Questionnaire (LEQ), a modified version of the IES, and the severity index, they found that PTSD symptomatology was related to more severe abuse. It is important to note that there was a limited range of scores on the PTSD scale indicating low levels of PTSD in this sample.

In addition to the severity of abuse, the relationship between abuse duration and PTSD has also been explored. O'Neill and Gupta (1991) examined a clinical sample of adult women with a history of CSA using the Structured Interview for Post-Traumatic Stress Disorder (SIPTSD) and a semi-structured interview designed to quantify abuse experiences. They found that CSAS with diagnosable PTSD were more likely to have experienced a longer duration of abuse than CSAS without PTSD. While these results suggest that duration of abuse impacts PTSD severity, they did not assess/control for other types of trauma (e.g., physical abuse).

Schwarz and Long (1995) also examined duration of CSA and its relationship to PTSD in their college sample. Women were classified into four different groups based on their duration of their abuse experience: one incident, up to one month, one month to one year, and more than one year duration. They found that women with a longer

duration of abuse exhibited greater PTSD symptomatology (although it is important to note that this sample exhibited low levels of PTSD).

Wolfe et al. (1994) examined the duration of abuse and its association with PTSD in a community population of children who had experienced CSA. Using a checklist of PTSD-related symptoms, they concluded that the children with PTSD symptomatology experienced abuse over a longer period of time than children without PTSD. This study also neglected to control for other types of trauma.

The age of onset of abuse has also been related to PTSD. In a college sample, using the Sexual Experiences Survey (SES) and the Crime Related-Post Traumatic Stress Disorder Scale (CR-PTSD), Arata (1999) found that age of onset was associated with a greater likelihood of developing diagnosable PTSD (when onset was at a younger age there was an increase in the chance of developing PTSD).

Schwarz and Long (1995) also examined the relationship between age of onset for CSA and PTSD (in a college population). They were unable to find significant correlations between PTSD symptomatology and the age of onset for abuse. This may be due to a limited range of scores on the PTSD scales.

Age of offset also appears to be related to the development of PTSD. As cited earlier, O'Neill and Gupta (1991) examined an adult clinical population of female CSAS. A comparison of CSAS with PTSD and CSAS without PTSD yielded that the earlier the abuse ended (as a child), the longer the subsequent latent periods before the onset of PTSD. This finding suggests that the shorter the abuse experience, the longer it takes for PTSD to develop.

There is also a relationship between perpetrator acknowledgement of abuse and

PTSD symptomatology in children with a sexual abuse history. Morris, Lipovsky, and Saunders (1996), using the Parent Child Behavior Checklist (CBCL), found that children experiencing sexual abuse where the perpetrator did not acknowledge the abuse (versus perpetrators who acknowledged the abuse) had higher PTSD symptoms (this was based on composite scores). The measures utilized in this study were not able to diagnose PTSD, so while symptomatology may differ, the presence or absence of PTSD was not accounted for.

While perpetrator acknowledgement appears to be related to PTSD, the relationship of the victim to the perpetrator does not appear to be associated with PTSD. O'Neill and Gupta (1991) did not find a relationship between the victim's relationship to the abuser and development of comorbid diagnosable PTSD in their adult clinical sample. Schwarz and Long (1995) also failed to find a relationship between these two factors.

The presence of physical contact does appear to be associated with the development of PTSD. Arata (1999) explored the relationship between level of physical contact and PTSD in a sample of college women using the SES and the Structured Clinical Interview for the DSM-III-R (SCID-NP). For CSAS, an increase in physical severity (defined by more physical contact) was associated with a greater likelihood of developing PTSD. While this suggests that physical contact increases the likelihood of the development of PTSD, only CSA and revictimization experiences were assessed, limiting the conclusions that can be drawn.

There is mixed support for the role of the presence of penetration (as a specific qualification of physical contact) in the development of PTSD. O'Neill and Gupta (1991) examined a clinical sample of adult women. They found that CSAS with diagnosable

PTSD (based on information from the SIPTSD) were more likely to be victims of penetration than CSAS without PTSD. While these results suggest that abuse characteristics impact PTSD severity, they did not assess/control for other types of trauma (e.g., physical abuse). On the other hand, Schwarz and Long did not find a significant relationship between the presence of penetration and the development of PTSD symptomatology.

There is also mixed support for the association between force and coercion and PTSD in CSAS. Wolfe et al. (1994) examined the severity of abuse and its association with PTSD in a community population of children who had experienced CSA. Using a checklist of PTSD-related symptoms, they concluded that the children with PTSD symptomatology more often reported the use of force than children without PTSD. In contrast, Schwarz and Long (1995) were unable to find significant correlations between PTSD symptomatology and the presence of force and coercion in their college sample.

Mixed support is also evident for the relationship between feelings associated with trauma and the relationship of CSA and PTSD. These feelings include guilt, self-blame, anger, shame and perceived control. Wolfe et al. (1994) found that feelings of guilt were more likely to be reported by children with PTSD, than those without PTSD. They also found that children with PTSD experienced less self-blame than PTSD than children without PTSD.

Andrews, Brewin, Rose, and Kirk (2000) examined PTSD and feelings of shame in a crime sample using a semistructured interview and the Posttraumatic Stress Disorder Symptom Scale-Self-Report (PSS-SR). They found that shame was a significant predictor variable of PTSD symptomatology. This study is one of the few studies to

differentiate between physical and sexual abuse, adding to its empirical strength.

Schwarz and Long (1995) also examined perceived control of CSA experiences and the relationship with PTSD. They were unable to find significant correlations between PTSD symptomatology and perceived control over abuse (which again, may be due to a limited range of scores on the PTSD scales).

Summary. To summarize, it is apparent that abuse characteristics influence PTSD symptomatology. Exactly how these different abuse characteristics mediate and impact the developmental PTSD is still unclear. However, "severity," regardless of its definition, appears to be associated with less resiliency in CSAS, and accounts for a large amount of variance across a variety of samples (Rodriguez, Vande Kemp, & Foy, 1998). More research is needed to determine exactly what role the different abuse characteristics play in the development of PTSD. While the findings presented here suggest that abuse characteristics may play a role in the development of PTSD, none of these studies controlled for the presence of other traumas. Therefore, the assessment of multiple traumas when drawing conclusions about factors accounting for PTSD is important.

Role of Multiple Traumas in the Development of PTSD

In addition to the characteristics of CSA, another factor that may play a role in the occurrence/severity of PTSD is the presence of multiple traumatic experiences. Since the number of traumatic events experienced has been found to be the greatest risk factor for developing PTSD (Stretch, Durand, & Knudson, 1988), overlap between CSA and other traumas (e.g., physical abuse, revictimization, etc.) likely complicates the presentation of PTSD. The relationship of PTSD and comorbid trauma experiences is explored below.

Multiple Trauma Experiences. There is evidence that suggests that the more

traumas experienced, the greater the risk for PTSD. For example, Davidson and Smith (1990) explored PTSD in an adult clinical sample. Using the Trauma Questionnaire (TQ) they found that individuals with posttraumatic stress symptomatology experienced a greater number of traumatic events than nonsymptomatic groups.

Breslau, Chilcoat, Kessler, and Davis (1999) examined previous exposure to trauma and the effects of subsequent trauma on the development of PTSD. A community sample of adults ($N = 2,181$) completed an event interview (designed to assess for DSM-IV defined traumatic events), and the DIS. Results suggested that a history of exposure to traumatic events is associated with a greater risk for PTSD, that a history of two or more traumatic events in childhood (involving assaultive violence) was associated with five times greater risk that a traumatic event in adulthood would lead to PTSD, and that even a single traumatic event in childhood was associated with an increased risk for PTSD from trauma in adulthood.

Physical Abuse. Different trauma types also appear to play a role in the development of PTSD. One factor that is often comorbid with CSA is childhood physical abuse (CPA). Rodriguez, Vande Kemp, and Foy (1998) presented a review of the literature on PTSD in survivors of CSA and childhood physical abuse. They noted that there were particularly high rates of comorbid CSA and CPA (ranging from 35.6% to 83%). Comorbid CPA is often not assessed for in studies on prevalence rates of PTSD among CSAS (Brown & Anderson, 1991; Chu & Dill, 1990; Kirby, Chu, & Dill, 1993; Moeller, Bachman, & Moeller, 1993; Surrey, Swett, Michaels, & Levin, 1990; Swett & Halpert, 1993). These high comorbidity rates and their effects on the development and PTSD have only begun to be explored.

While many studies do not differentiate CSA and CPA when assessing for PTSD following childhood trauma, there are some exceptions. Roth, Newman, Pelcovitz, van der Kolk, and Mandel (1997) examined complex PTSD for both male and female survivors of abuse in a combined clinical and community sample. Utilizing the potential stressor events interview (PSEI), the SCID, the Diagnostic Interview Schedule (DIS) and the Structured Interview for Disorders of Extreme Stress, they identified a total of 287 individuals with an abuse history: 128 who were only sexually abused; 67 who were physically abused; and 39 who experienced both physical and sexual abuse. For sexual abuse, the subjects were disproportionately women. Roth et al. (1997) concluded that 50% of the sample met the diagnosis for complex PTSD and 19.2% of the entire sample met criteria for DSM diagnosable PTSD. They also found that 72% of those diagnosed with lifetime PTSD also met criteria for lifetime complex PTSD. When rates are examined separately by abuse type, they found that sexually abused women (especially ones with comorbid physical abuse) had a higher risk of developing complex PTSD than women experiencing only physical abuse. Subjects with comorbid CPA and CSA (regardless of gender) were 14.5 times more likely to have complex PTSD than controls. The presence of sexual abuse as a trauma resulted in a 4.4 times greater risk of developing PTSD.

Schaaf and McCanne (1998) also attempted to explore CSA and PTSD while controlling for CPA. Four-hundred-and-seventy-five female college students (27 reported only sexual abuse, 53 reported experiencing only physical abuse, 31 reported combined abuse, and 211 reported no abuse) completed the Childhood Sexual Abuse Questionnaire (CSEQ), the Adult Sexual Experiences Questionnaire (ASEQ), the

Childhood Physical Trauma Questionnaire (APTQ), the PTSD Interview, and the Trauma Symptom Inventory (TSI). Child abuse was defined as a number of specific sexual activities ranging from noncontact to contact experiences occurring before age 15 with someone at least 5 years older. Adult sexual abuse was operationalized identically as CSA except that victim was older than 15 years. CPA and adult physical abuse were defined by the same age cutoffs and assessed a variety of physical abuse experiences ranging from whipping to bone fractures. They found that about 50% of individuals who had experienced CSA also experienced CPA and that this combined abuse was a significant risk factor for adult victimization, PTSD, and trauma symptoms. It is important to note that although they utilized Chi-Squared analyses, the expected frequencies for several of the cells were less than 5, violating one of the primary assumptions of the chi-square model.

Revictimization. Another trauma that often co-occurs with CSA is adult sexual assault. Arata (1999) examined the relationship between PTSD and repeated victimization in a college sample. Forty-one identified victims of CSA (which was self-report questions based on Finkelhor's 1979 measure of childhood victimization) were evaluated on victimization history (SES). Utilizing the CR-PTSD scale of the SCL-90-R, she found that there was a relationship between sexual revictimization and the development of PTSD in female CSAS. Women who were revictimized were more likely to have a lifetime diagnosis of PTSD than women with histories of CSA only.

Summary. Although it would be premature to draw conclusions about the exact effect of multiple traumas on the development of PTSD, this preliminary literature suggests that multiple trauma experiences enhance an individual's risk for PTSD.

Therefore, future studies should be careful to assess for and explore the relationship of multiple traumas with the development of PTSD.

Gender Differences in Posttraumatic Stress Disorder

Another factor that may affect the presence of PTSD in CSAS is gender. While the current literature has examined both gender differences in PTSD and gender differences in CSA, much less has been done examining these three factors together. This section will begin with a review of each of the findings in these separate areas and provide suggestions for future directions for the examination of gender differences in CSAS experiencing PTSD.

Gender in PTSD.

Prior to the examination of this issue with specific reference to CSA, the general literature relevant to examining gender differences with PTSD will be reviewed. This will include a general review of findings on differences in the prevalence rates of PTSD, the impact of different types and frequencies of traumas experienced by males and females, differences in the symptomatology that males and females report, and the fact that the type of sample studied is often confounded with gender (e.g., studies of war trauma are disproportionately male).

Effect of Gender on the Prevalence of PTSD. Many studies report different prevalence rates for PTSD among males and females (for review see Seedat & Stein, 2000). In general, reviews suggest that there is great variability in the prevalence rates. It appears that women are twice to four times more likely than men to develop chronic PTSD (for a review see Saxe & Wolfe, 1999; Wolfe & Kimerling, 1997).

For example, Engel, Engel, Campbell, McFall, Russo, and Katon (1993)

examined the relationship between PTSD and gender with a sample of 297 Desert Storm Veterans (50 participants were dropped because of missing data; 28 of the 297 veterans were women). Utilizing the Mississippi Scale for Combat Related Posttraumatic Stress Disorder (M-PTSD) and the Combat Exposure Scale, Engel et al. concluded that female gender was associated with increased PTSD chronicity.

Kessler, Sonnega, Bromet, Hughes, and Nelson (1995) examined PTSD in a community sample of adults. Using a revised version of the DIS (which included additional questions about how soon symptoms developed after a trauma and questions designed to assess for DSM-II defined trauma), they found that of 5,877 participants, 7.8% experienced PTSD. They found that women were more than twice as likely as men to have lifetime PTSD.

Breslau, Davis, Andreski and Peterson (1991) explored PTSD in an urban sample of adult HMO recipients. Using a revised version of the DIS (which assesses for DSM-II traumatic events), 394 participants (out of 1200 participants) reported exposure to at least one traumatic event. They found a higher prevalence for PTSD for women (11.3% of women and 6% of men).

Breslau and Davis (1992) also explored PTSD in 1,200 adult HMO recipients. Using a revised version of the DIS, they found that 394 individuals had been exposed to traumatic events. Of these 394 participants, women were more likely to develop PTSD than men (even though men were more likely to be exposed to traumatic events).

Breslau, Kessler, Chilcoat, Schultz, Davis and Andreski (1998) explored PTSD in a community sample of 2,181 participants. Using the DIS-IV, the World Health Organization Composite International Diagnostic Interview (CIDI), and an interview

designed to assess for 19 DSM-IV defined traumas, they found that women were at higher risk for PTSD than men even after controlling for trauma type. However, neither the DIS-IV nor the CIDI had been validated.

Breslau, Chilcoat, Kessler, and Davis (1999) examined gender and PTSD in a community sample. Using a modified version of the DIS and an interview designed to assess 19 specific events meeting DSM-IV criteria, they found that women were two times more likely than men to acquire PTSD.

A community sample of 3,004 participants (1,094 men, and 1,569 women) was explored to examine PTSD and substance use (Cottler, Compton, Mager, Spitznagel, & Janca, 1992). They found that female gender and cocaine or opiate use were the strongest predictors for exposure to a traumatic event as well as the development of PTSD (diagnosis based on the DIS).

Gender and PTSD were also examined in a community sample of adults who experienced the violent death of their child (Murphy, Johnson, Chung, & Beaton, 2003). Fifty-eight men and 115 women were examined using the Traumatic Experiences Scale. Women exhibited higher prevalence of PTSD than men (27.7% versus 12.5% respectively).

Stretch, Durand and Knudson (1998) examined gender and PTSD in active duty soldiers. Utilizing the NWS PTSD Module and an algorithm to determine the possible risk for a potential PTSD diagnosis, they found that the potential PTSD and lifetime PTSD rates were higher for women than for men.

Norris (1992) also explored gender and its relation to PTSD. Using a community sample of 1000 participants, the Perceived Stress Scale (PSS), and the Traumatic Stress

Schedule (TSS), they found that women demonstrated a trend for higher rates of PTSD, although this finding did not reach statistical significance.

Even among adolescents, there is some evidence that girls are more likely than boys to develop PTSD. For example, Lipschitz, Winegar, Hartnick, Foote, and Southwick (1999) explored a clinical population of adolescents. Utilizing the Traumatic Event Questionnaire (TEQ-A) they found that girls were significantly more likely to develop PTSD than boys.

Using a clinical child population, Dykman, McPherson, Ackerman, Newton, Mooney, Wherry, and Chaffin (1997) examined multiple trauma types and PTSD. The Diagnostic Structured Interview for Children and Adolescents, Parent version (DICA-P) and the Diagnostic Structured Interview for Children and Adolescents (DICA) were utilized to determine PTSD diagnoses. Children with concordant DICA-P and DICA scores were labeled as PTSD positive. Children who had conflicting findings on the two measures needed the agreement of at least two of the three investigators to be labeled with a PTSD diagnosis. They found that sexually abused children exhibited higher rates of PTSD than physically abused children and that children with comorbid physical and sexual abuse exhibited the highest rates of PTSD. More specifically, they found that girls had higher rates of PTSD than boys (62% versus 33%).

Other studies find that there are no differences in PTSD rates across gender. For example, Davidson and Smith (1990) explored PTSD in a psychiatric sample of 54 adults. Using the Trauma Questionnaire (TQ) they found that an equal proportion of men and women developed Posttraumatic Stress Symptoms (PTSS) and PTSD.

McGruder-Johnson, Davidson, Gleaves, Stock, and Finch (2000) examined PTSD

and gender in 245 undergraduate students (82 men and 140 women). Using the Lifetime Involvement in Violent Events Survey, the Trauma Symptom Inventory and a self-report version of the Post-Traumatic Stress Disorder Inventory, they did not find gender differences in the frequency of PTSD.

Andrews, Brewin, Rose and Kirk (2000) examined PTSD in victims of violent crimes. Participants were 157 individuals who were victims of a violent crime (attempted physical or sexual assault, or purse snatching); 138 of the participants also participated in a follow-up study. Utilizing the Posttraumatic Stress Disorder Symptom Scale-Self-Report (PSS-SR), they did not find that that gender was a significant predictor of PTSD.

Springer and Padgett (2000) examined gender differences in exposure to violence and severity of PTSD symptoms in a school based sample of 621 adolescents (ages 11 to 14). They did not find differences in gender for acquiring PTSD.

Furthermore, Kuterovac-Jagodić (2003) examined PTSD in a population of Croatian children (128 girls, 124 boys) exposed to war. Children were assessed twice using the Questionnaire for Examination of Posttraumatic Stress Reactions in Children. Regression analyses suggested that gender did not provide a significantly unique contribution to PTSD symptoms at either assessment time.

Evidence of gender differences is seen when the severity of PTSD symptoms reported by men and women are examined (as opposed to diagnostic status). More specifically, Livanou, Başoğlu, Şalciğlu, and Kalender (2002) examined posttraumatic stress responses in earthquake survivors seeking treatment (237 men and 790 women). Using the Screening Instrument for Traumatic Stress (which is designed to assess demographic information, PTSD symptoms in accordance with the DSM-IV, depression

symptoms, and the severity of the distress related to the traumatic event) they found that female gender was significantly associated with more severe PTSD symptoms.

Murphy and colleagues (2003) also examined gender and PTSD. Fifty-eight men and 115 women that experienced the violent death of their child were examined using the Traumatic Experiences Scale. Results indicated that women had significantly higher initial rates of PTSD than males and that these levels remained significantly higher after a 5-year follow-up.

Springer and Padgett (2000) examined gender differences in exposure to violence and severity of PTSD symptoms in a school based sample of 621 adolescents (ages 11 to 14). Measures included the Exposure to Violence Checklist (EVC) and the Impact of Events Scale (IES). They found that there were significant gender differences in "severe" symptomatology (of individuals experiencing PTSD symptomatology, 58.9% of females reported severe symptomatology versus 44.2% of males).

Further, Duraković-Belko, Kulenović, and Đapić (2003) examined posttraumatic stress and gender among adolescents from Sarajevo who experienced war. Participants were 393 students attending secondary schools (202 boys and 191 girls). They found that female gender was associated with more severe PTSD (using the Posttraumatic Stress Reactions Questionnaire).

Green, Korol, Grace, Vary, Leonard, Gleser, and Smitson-Cohen (1991) explored gender and PTSD symptoms in a sample of 179 children (age 4-17) two years after experiencing the Buffalo Creek Dam Collapse. Utilizing a nonstandardized structured interview based on DSM-II criteria, approximately 37% of these children were assessed with "probable" PTSD (PTSD was not an official diagnosis at the time of this traumatic

event, so not all symptoms of PTSD were routinely assessed). They found that girls experienced higher symptom levels than boys.

Differential Trauma Rates. Complicating the understanding of gender differences in prevalence rates of PTSD is the fact that there may be differences in both the frequencies and types of traumas that are experienced by males and females. Some studies suggest that men are more likely to experience traumatic events than are women. For example, Breslau et al. (1998) examined trauma and gender in a community sample. Using the DIS and a model including participant sex, type of index trauma, and age at index trauma they found that men were at a higher risk for experiencing traumatic events than women (43% versus 37%).

While men may be more likely to experience traumatic events than women, there is also evidence to suggest that women are more likely to be revictimized (or experience repeated trauma) than men. In a review of CSA, PTSD, and substance abuse, Najavits, Weiss, and Shaw (1997) concluded that female substance abusers had significantly higher rates of repeated traumas (lifetime traumas) than male substance abusers.

National surveys also provide evidence to suggest that men are more likely to experience traumatic events than are women. For example, Breslau, Chilcoat, Kessler, Peterson, and Lucia (1999) examined trauma in a community sample of 2,181 persons aged 18 to 45 years in the Detroit Area Survey of Trauma. They found that the lifetime prevalence of exposure to traumatic events was lower in females than males (87.1% versus 92.2 % respectively). In addition, they found that women also experienced a significantly lower mean number of traumas than males (4.3 versus 5.3).

In the National Comorbidity Survey of 5,877 persons aged 15 to 54 years, Kessler

et al. (1995) explored lifetime prevalence rates for trauma in men and women. They found that 60.7% of men, and 51.2% of women reported at least one traumatic event, 14.5% of men and 13.5% of women reported at least two traumatic events, 9.5% of men and 5.0% of women reported experiencing at least three traumas, and 10.2% of men and 6.4% of women reported experiencing four or more traumas. More specifically, they found that 35% of men and 25% of women reported experiencing more than one traumatic event. In all cases, men reported experiencing a greater number of traumas than women.

In addition to possible differences in the frequencies of experienced traumas, there is also literature that suggests that men and women may be more susceptible to different types of traumas. For example, there is evidence to suggest that men are more likely to encounter combat experiences than women. Engel, Engel, Campbell, McFall, Russo, and Katon (1993) examined these issues in a study of PTSD and gender in combat veterans. Utilizing the Combat Exposure Scale (CES), Engel et al. found that female veterans had significantly lower combat exposure scores than males.

Whereas men may be more likely to encounter combat experiences than women, studies examining gender and trauma find that women are more likely than men to be sexually victimized (including rape, sexual assault and CSA). Stretch, Durand, and Knudson (1998) examined gender and traumatic experiences in active duty soldiers. Using the NWS PTSD Module they found significant gender differences in the types of trauma experienced with women experiencing more sexual types of trauma and men experiencing more nonsexual types of traumas. More specifically, Andrews, Brewin, Rose and Kirk (2000) examined trauma in 157 victims of violent crimes. They found that

women were more likely to report childhood sexual abuse than males (although rates of CPA were equal across gender).

Studies examining college populations have also found that women experience more sexual traumas than men. McGruder-Johnson, Davidson, Gleaves, Stock, and Finch (2000) examined trauma and gender in 245 undergraduate students (82 men and 140 women). Using the Lifetime Involvement in Violent Events Survey they concluded that women report more direct sexual experiences than men (as opposed to witnessing, hearing sexual or nonsexual violence, or experiencing direct nonsexual violence).

Not only do college populations find these differences, clinical populations also find these differences. Dansky, Brady, Saladin, Killeen, Becker, and Rooitzsch (1996) explored trauma and gender in an adult clinical sample. Using behaviorally specific questions (designed to assess DSM-III defined trauma) they examined rape, other types of sexual assault, aggravated assault, other types of physical assault, and direct assault. They found that women are more likely to have experienced completed rape than men. No significant differences were found between men and women for the other types of traumas.

While the previous studies suggests that women are more likely to be sexually victimized than men, there is currently a paucity of literature exploring gender differences with regard to childhood sexual assaults. General prevalence data suggests that the differences reviewed thus far may also extend to this population. Estimates for prevalence rates for CSA for females range from 15-33% and for males range from 13-16% (for reviews see Browne & Finkelhor, 1986; Polusny & Follette, 1995). This suggests that women are almost twice as likely to experience CSA than are men.

Differences in prevalence rates are also seen when the prevalence of CSA is examined in special populations. In clinical samples, female CSAS reported CSA in rates ranging from 35-75%, whereas males reported abuse at rates ranging from 13-23% (Polusny & Follette, 1995). This may indicate that women in clinical populations are up to three times more likely than men to experience CSA.

Finally, survey studies in the community also suggest that men and women experience different types of traumas. Using a revised version of the DIS, Kessler, Sonnega, Bromet, Hughes, and Nelson (1995) found that men were significantly more likely to report witnessing someone being badly injured or killed, being involved in a life-threatening accident, being involved in a flood, fire or natural disaster, physical attacks, combat experience, and being threatened with a weapon, held captive, or kidnapped than women. Women, on the other hand, were significantly more likely to experience rape, sexual molestation, childhood parental neglect, and CPA than men.

Breslau et al. (1999) also found that men and women differed in the types of traumas they experienced in their Detroit Area Survey of Trauma. More specifically they found that females had significantly lower prevalence of assaultive violence than males (32.4% versus 43.3% respectively). Females also had significantly higher rates of rape and sexual assault than males (9.4% versus 1.1% for rape; 9.4% versus 2.8% for other types of sexual assault). Males were more likely to be shot or stabbed, mugged/threatened with a weapon, be badly beaten, or experience military combat than women (8.2% versus 1.8% for shot/stabbed; 34.0% versus 16.4% for mugged/threatened with a weapon; 13.1% versus 9.8% for being badly beaten; 43.3% versus 32.4% for experiencing military combat).

Symptom Presentation. In addition to the different traumas and the different frequencies of trauma between men and women, the differences in the symptom presentation of PTSD for men and women must also be considered. Research suggests that men and women may experience different patterns of symptomatology, with women generally experiencing more reexperiencing symptoms than men.

For example, Zlotnick, Zimmerman, Wolfsdorf, and Mattia (2000) found gender differences in a clinical population of men and women with PTSD using the Structured Clinical Interview for the DSM-IV. Regardless of trauma experienced, they found that females experienced more reexperiencing symptoms than males. No differences were found for the other symptom clusters.

Symptom differences have also been suggested for combat veterans and CSAS. McNew and Abell (1995) compared Vietnam Veterans to CSAS on posttraumatic stress symptomatology (PTSS). Using the IES they found that veterans scored significantly higher on intrusion symptoms than CSAS. This suggests a possible difference between men and women since the veteran population explored was primarily male (49 males and 8 females) and the CSAS group was primarily female (62 females and eight males).

Studies examining child populations also suggest gender differences for PTSD symptomatology. Curle and Williams (1996) explored gender and symptom presentation in a group of children involved in a bus accident. Using the IES, they found that girls exhibited higher distress on the intrusion subscale (recurrent recollections, dreams, reexperiencing of the traumatic event, and/or psychological distress or reactivity at exposure to internal or external cues) and avoidance subscale than boys. They also found that the spread of scores on the IES was greater for girls than for boys.

Green, Korol, Grace, Vary, Leonard, Gleser, and Smitson-Cohen (1991) also explored gender and PTSD symptom presentation in a sample of children exposed to the Buffalo Creek dam collapse. Utilizing a nonstandardized worksheet designed to gather PTSD symptoms from an unstandardized structured interview they found that there were significant differences between boys and girls on overall PTSD symptoms with girls rated as having a greater number of symptoms. While gender differences for the symptom clusters did not reach statistical significance, girls evidenced somewhat higher average scores on the intrusion and denial subscales (the difference for intrusion approached statistical significance) than boys. Boys and girls exhibited the same average score for arousal symptoms. This study benefited from a larger sample size than its contemporaries, with the participation of 92 boys and 87 girls.

While some studies find significant gender differences in PTSS, there are some that do not. For example, Dansky, Brady, Saladin, Killeen, Becker, and Roitzsch (1996) examined gender and symptom presentation of PTSD in an adult clinical population. They did not find any significant gender differences in intrusive, avoidant or increased arousal symptoms (using the NWS). This study did not differentiate PTSD by trauma type (physical versus sexual assault), and the sample size they examined was relatively small (34 men and 61 women).

Trauma Confounds. In addition to the differential symptom presentation for men and women, it is also important to consider the potential confound of gender and trauma type in research samples. Since the majority of studies on CSA explore populations of women and the majority of studies examining war veterans examine men, it is plausible that gender and trauma type may be confounded in much of the available literature.

Studies examining PTSD among childhood sexual abuse survivors typically utilize female populations (e.g., Boudreaux et al., 1998; Bremner et al., 1999; Cloitre et al., 1997; Dickinson et al., 1998; Edwards & Donaldson, 1989; Epstein et al., 1997; Messman-Moore et al., 2000; O'Neill & Gupta, 1991; Schaff & McCanne, 1998). In addition, most of the adult rape/ sexual assault and PTSD literature also explores exclusively female populations (e.g., Arata, 1999; Boudreaux et al., 1998; Breslau et al., 1997; Cloitre et al., 1997; Messman-Moore et al., 2000; Schaff & McCanne, 1998). Finally, the majority of studies examining PTSD in combat survivors are typically confined to male samples (e.g., Crowson, Freuh, & Snyder, 2001; Elhai, Freuh, Gold, Gold, & Hamner, 2000; McLeod, Koenen, Meyer, Lyons, Eisen, True, & Goldberg, 2001; Roca & Freeman, 2001). Therefore, more research is needed examining a variety of different traumatic experiences in both men and women.

Since trauma is confounded with gender in the majority of the literature examining PTSD, it is difficult to draw conclusions that are generalizable to other traumatic experiences as well as to the opposite gender. Therefore, more research is needed that examines both genders within each trauma type and for all types of traumas.

Summary. While there is a generous amount of research devoted to PTSD, there is currently little consensus on what accounts for differences in the prevalence rates of PTSD across gender. Discrepancies might arise from the fact that men and women appear to experience different rates, as well as different types of traumas. In addition to this complication, the exposure to certain types of traumatic experiences might increase an individual's susceptibility to PTSD development regardless of gender. Experiencing multiple traumas may also increase the risk for the development of PTSD. Therefore, it

is imperative for future research to assess for multiple types of trauma as well as the presentation of PTSD associated with each of these traumas in order to tease apart the potential gender differences in PTSD development.

There is also evidence to suggest that men and women exhibit different symptom patterns of PTSD. Future research is needed to understand the "well-known difference between internalizing and externalizing symptoms between males and females" (Saxe & Wolfe, 1999) and the influence these coping strategies might have on the differential symptom presentation of PTSD in men and women. Finally, the confound of trauma type and gender severely limits conclusions that can be drawn from the current literature. More research is needed to examine both genders within each trauma type (e.g. men and women for CSA) and for all types of traumas.

It is clear that there is evidence to suggest gender differences in PTSD and that more research is needed to tease apart the aforementioned confounds (e.g., frequency, trauma type, symptom expression, and comorbid trauma). One area that deserves additional focus is male and female CSAS exhibiting PTSD.

Gender Differences for PTSD in CSA

More explicitly, men and women CSAS with PTSD deserve additional research attention. The confounds mentioned in the last section stress the need for additional research in this area. Since the majority of studies exploring CSA involve female populations and not male populations, and the few studies that examine male CSAS do not examine females, there are very few studies that examine gender differences in male and female childhood sexual abuse survivors. To date, there are only three studies that have attempted these comparisons.

Roesler and McKenzie (1994) examined gender differences and PTSD in a clinical sample of 168 females and 20 males with a history of CSA. No significant differences in the demographic characteristic of the men and women emerged, although men were significantly less likely to have reported disclosure of their abuse experiences. Using the Trauma Symptom Checklist-40 and the Posttraumatic Stress Disorder Syndrome and Dissociation Checklist, they found that men and women did not exhibit significant differences in trauma or PTSD symptoms. Although this study does not provide much support for gender differences in PTSD for CSAS, the small sample size of men may not provide ample power for detecting potential gender differences. Another limitation of this study was that the statistical analyses were conservative. Gender was the last factor entered into the regression model (this was after 11 other factors were included) providing for a very conservative estimate of the variance attributed to gender. Participants were also referred from a variety of different sources including clinical referrals, self-referrals, and conference attendees (the conference was on child abuse and neglect) making the population to which findings could be generalized unclear. While the limitations of this study limit its validity and generalizability, it does have the methodological strength of controlling for trauma types other than CSA.

Livingston, Lawson, and Jones (1993) examined psychopathology and gender in 26 (7 boys and 19 girls) children who had experienced CSA. Using the Diagnostic Interview for Children and Adolescents they concluded that gender was not a significant predictor of PTSD, but their sample size is too small to permit generalizability. In addition, this study did not use multiple measures to validate assessments. Another weakness is that all findings were based on the child's self-report (no collaborative data

were included). Therefore, additional research is needed to determine if such differences exist.

Wolfe, Sas, and Wekerle (1994) examined a clinical population of children with a history of sexual abuse. Twenty-one boys and 69 girls, with a mean age of 12.4 years, were assessed using both a non-standardized 10-question index designed to reflect the underlying symptoms of PTSD (based on DSM-III criteria) as well as the Children's Impact of Traumatic Events Scale (CITES). The PTSD checklist was used in conjunction with the CITES to determine the presence of a PTSD diagnosis. Of their participants, approximately 50% evidenced diagnosable PTSD by DSM-III-R standards (28.6% of the boys and 55.1% of the girls), with girls being significantly more likely to have PTSD than boys. The utilization of a non-standardized measure to help diagnose PTSD makes it difficult to generalize these results to other populations. The sample used also limits the generalizability of findings. More specifically, this sample is problematic because of the likelihood that court-referred cases are more severe and because of the potential effects associated with the child's knowledge that he/she will have to testify. Therefore, more research in needed to examine these relationships.

While the aforementioned studies do not provide strong evidence for gender differences in PTSD among CSAS, the evidence of gender differences for PTSD in general addressed earlier in this paper suggest that there is the need for additional research in this area.

Additional Reasons to Expect Gender Differences in CSAS with PTSD

The studies examining both gender and PTSD in CSAS have exhibited multiple methodological limits. These limitations have a negative impact on both the reliability

and the generalizability of findings. In addition, while these studies do not provide much evidence for gender differences among CSAS with PTSD, there are a variety of reasons why we might expect to see gender differences. For example, gender differences in abuse characteristics, coping strategies, the co-occurrence of other traumatic experiences and the occurrence of comorbid psychiatric difficulties with CSAS might impact the development of PTSD in this population.

The Potential Impact of Abuse Characteristics on CSAS with PTSD.

Previous literature with CSAS suggests that greater adjustment problems are associated with certain abuse characteristics (Carlson et al., 1998; O'Neill & Gupta, 1991; Schwarz & Long, 1995). For example, the identity of the perpetrator, the presence of penetration, disclosure or abuse, the presence or threat of force, age of onset, the presence of self-blame or guilt, and perceptions of life endangerment all appear to impact adjustment. More specifically, the more the severe the abuse, the more likely adjustment problems appear to be (e.g., the presence of penetration and the presence of force are frequently associated with greater adjustment problems; for review see Polusny & Follette, 1995). It seems likely then that certain abuse characteristics might make some CSAS more susceptible to PTSD.

It is also apparent from the examination of gender differences in the occurrence of sexual abuse, that abuse experiences are not the same for boys and girls. Findings suggest that boys are less likely to be abused by family members (e.g., Finkelhor et al., 1990) and are more likely to experience homosexual abuse (Dickstein, Hinz, & Eth, 1991). In addition, there is often a smaller age difference between boys and their offenders than girls and their offenders (Finkelhor et al., 1990). There is also evidence

that boys appear to experience significantly shorter durations of abuse than girls (Kendall-Tackett & Simon, 1992), that boys seem more likely to be abused by more than one person (Dickstein et al., 1990), and that boys may experience less extensive sexual abuse (Briere & Runtz, 1988). Boys also appear to be older at the time of first abuse (Dickstein et al., 1991). Women are also more likely to show more self-blame than men (Wolfe & Kimerling, 1997).

To summarize, there is evidence that the nature of abuse impacts a variety of different adjustment variables (e.g., depression, anxiety, relationship functioning), as well as evidence to suggest that male and female sexual abuse experiences differ. Therefore, it is possible that differences in abuse experiences may lead to gender difference in PTSD for male and female CSAS.

Forms of Coping.

Not only might the characteristics of abuse play a role in gender differences in the development of PTSD, gender differences in the coping strategies employed to deal with traumatic experiences may also have an affect.

While the coping strategies of men and women CSAS experiencing PTSD have not been explored, there is evidence from the general PTSD literature to suggest that males and females may differ in their coping strategies. For example, Curle and Williams (1996) explored PTSD and gender differences in a group of 25 children (11 boys and 14 girls) ages 6 to 18 years. These children were all in a bus accident together (the defined "trauma"). Utilizing the Kidcope, Curle and Williams (1996) found that there were gender differences in the use of coping strategies, with girls being more likely to distract or withdraw socially than males. Overall, girls were also found to use more

coping strategies than boys.

Further, Kuterovac-Jagodić (2003) examined gender and coping strategies for Croatian children exposed to war. Two hundred fifty two children (128 girls and 124 boys) in grades three through seven were assessed on two occasions 30 months apart. During the second assessment period, the Revised School-Agers' Coping Strategies Inventory was used to examine coping strategies among boys and girls. Results suggested that boys reported more frequent and efficient use of distraction and aggression strategies, but less use and efficiency of emotional expression than girls.

There is also evidence to suggest that girls are more likely to exhibit internalizing problems following CSA (e.g., depression and anxiety; Finkelhor, 1990), whereas boys are more likely to engage in externalizing behaviors (e.g., conduct problems and aggression; Finkelhor, 1990; Gomes-Schwartz et al., 1990; Tufts, 1984). Internalizing and externalizing behaviors may be viewed as differential coping strategies. For example, internalizing disorders (e.g., anxiety and depression) are thought to develop in response to the manner in which an event is processed. For example, a girl will be more likely to internalize/mentally process information and will be more likely to become isolated and depressed. Therefore, girls are more likely to engage in "internal" coping strategies such as self-blaming or rumination. On the other hand, boys are more likely to act out or externalize their feelings. In this respect, boys will be more likely to "act out" in response to a stressor, while girls will be more likely to "bottle up" their emotions and internalize the trauma.

There are several studies that have explored these differences in internalizing and externalizing behaviors with CSAS. For example, Dykman et al. (1997) examined a

clinical sample of 109 sexually and physically abused subjects (and 16 normal subjects) aged eight to twelve. Exact numbers of male and female subjects were not reported except that there were significantly more girls than boys. Utilizing the Diagnostic Structured Interview for Children and Adolescents For Caregivers (DICA-P), the Diagnostic Structured Interview for Children and Adolescents (DICA), and the Child Behavior Checklist (CBCL), they found that boys had more behavioral and externalizing symptoms than girls (overall they were also rated as more disturbed).

The evidence suggesting that coping strategies for abuse differ for boys and girls provides additional support for potential gender differences among CSAS with PTSD. Clearly, more research is needed to examine these relationships.

Comorbidity Issues in Traumatic Experiences.

In addition to the different coping strategies associated with trauma and their differential effects on the development of PTSD, it is also important to recognize gender differences in the types of additional traumas CSAS experience. More specifically, it is important to determine the presence of other traumas (in addition to CSA experiences) and how these additional traumas might differ for men and women. This next section will consider comorbid trauma.

CSA is associated with a high number of additional stressful life experiences (Porter, Long, & Fehrenbach, 2000). Included among these comorbid traumatic experiences is adult rape and sexual assault. For example, Russell (1986) found that 65% of her community sample experiencing CSA also had a history of adult rape. Clinical samples have found higher rates for comorbid rape among CSAS than nonvictims (Briere & Runtz, 1987). In addition, community samples also find high revictimization rates for

CSAS (e.g., Messman-Moore & Long, 1996). The comorbid experience of adult sexual revictimization is also associated with an increased risk for PTSD (Arata, 1999). In addition to these findings, there is also evidence to suggest that women are more likely to experience adult sexual assault than are men (Breslau et al., 1999). This suggests that there may be something about the comorbid experience of adult sexual assault that may account for the increased risk for PTSD among CSAS who are women.

Not only are there high rates of CSA and later sexual revictimization, there are also high rates of comorbid CSA and CPA (see earlier sections of the introduction for comorbidity rates). There is also evidence to suggest that CPA comorbid with CSA places an individual at increased risk for PTSD (Adam, Everett, & O'Neal, 1992; Schaaf & McCanne, 1998). Further, there is evidence that experiencing both physical and sexual abuse is a predictor for PTSD in women, but not in men (Roth, Newman, Pelcovitz, van der Kolk, & Mandel, 1997). In addition, there is also evidence to suggest that men and women differ in the rates of CPA. More specifically, women appear more likely to experience CPA than men (Kessler et al., 1995). Therefore, differences in prevalence rates for CPA for men and women may also play a role in the development of PTSD, making women potentially more susceptible for PTSD.

While there are high rates of comorbid CPA, very few studies exploring PTSD in CSAS have taken both CPA and gender into account (Rodriguez, Vande Kemp, & Foy, 1998). In addition, only one study examining gender differences among CSAS with PTSD has attempted to control for comorbid trauma (Roesler & McKenzie, 1994) even though comorbid trauma is common among CSAS. Elevated rates of CPA and revictimization among survivors highlight the importance of assessing and controlling for

comorbid trauma. In addition, comorbid trauma provides a potential confound in the literature examining CSAS with PTSD.

Summary. There is some evidence to suggest that multiple traumatic experiences are related to an increased risk for PTSD. In addition, there is also literature to suggest that women are more likely to experience different types of comorbid traumas than men, and that men are more likely to experience a greater number of overall traumatic experiences than women. Therefore it is likely that gender differences in comorbid trauma plays a role in the development of PTSD among CSAS.

Comorbidity of PTSD and Other Axis I Disorders.

In addition to high comorbidity rates between CSA and other traumatic experiences, there are also high comorbidity rates between PTSD and other Axis I disorders (Kessler, Sonnega, Bromet, Hughes, & Nelson, 1995). More specifically, depression often appears in conjunction with PTSD. It has been proposed that that depression may be associated with vulnerability for PTSD (Breslau, Davis, Andreski, & Peterson, 1991; Resnick, Kilpatrick, Best, & Kramer, 1992; Wolfe & Kimerling, 1997). In addition, PTSD appears to be a risk factor for the experience of depression (Breslau, Davis, Peterson, & Schultz, 1997). These findings are important because prevalence rates for depression differ for men and women. More specifically, women are more likely to experience depression (APA, 2001; Lipschitz, Winegar, Hartnick, Foote, & Southwick, 1999). Therefore, the differences in prevalence rates for depression in men and women may help to account for the different prevalence rates of men and women for PTSD, providing support for the fact that women may have an increased risk for the development of PTSD.

In addition to high rates of comorbid depression and PTSD, there are also high rates of comorbid anxiety and PTSD (Breslau & Davis, 1992; Lipschitz, Winegar, Hartnick, Foote, & Southwick, 1999). Preexisting anxiety, as well as a family history for anxiety, are also associated with an increased risk for PTSD (Breslau, Davis, Andreski, & Peterson, 1991). Again, since women appear more likely than men to experience anxiety disorders (APA, 2001), it is possible that this cooccurrence may make women more susceptible for developing PTSD symptomatology.

In addition to the high comorbidity rates for other anxiety disorders and PTSD, there are also high comorbidity rates for PTSD and substance abuse. Individuals with PTSD report high rates of comorbid substance use (Breslau, Davis, Peterson, & Schultz, 1997). There is also evidence to suggest that substance abuse may predispose an individual for experiencing traumatic events (Cottler, Compton, Mager, Spitznagel, & Janca, 1992). Since there is also evidence to suggest that men are more likely than women to have substance use disorders, this may also influence both the prevalence and the presentation of PTSS (APA, 2001).

Overall, the literature suggests that CSA is concurrent with a variety of different Axis I disorders. This comorbidity provides a potential confound in studies that examine gender differences in CSAS with PTSD. Once again, this stresses the need for assessment and evaluation of comorbid trauma.

Summary. In light of the gender differences in abuse characteristics, coping strategies, and the co-occurrence of other traumas and psychological disorders, it appears that gender differences in the prevalence rates of PTSD would be likely.

Summary and Statement of Purpose

Given the weaknesses and gaps in the existing literature it was the purpose of the present study to examine the relationship between CSA, gender, and the development of PTSD. To begin with, there is a paucity of research examining PTSD in CSA populations. In addition to the need for more research examining PTSD among CSAS, there is also a need for more methodologically sound research. In a review of literature on PTSD in survivors of CSA and CPA, Rodriguez, Vande Kemp, and Foy (1998) pointed out a number of weaknesses in the current literature. These weaknesses included a lack of a standard definition of CSA across studies, a lack of standardized measures to assess CSA and PTSD, the failure to account for the reliability of the measurements used, failure to consistently evaluate severity levels of CSA and/or PTSD (instead, many studies employ dichotomous variables), and failure to account for other traumas that might have caused/contribute to the onset of PTSD. Also, they noted the paucity of research concerning sexually abused men (only 4 of the 16 studies reviewed included men in their subject pool). This review clearly emphasizes the need for research examining gender differences for PTSD among CSAS, as well as the need for studies designed to examine all issues relevant to understanding gender differences in PTSD.

The first goal of the present study was to expand the previous literature examining CSA, PTSD and gender. This study was designed to replicate findings from past studies, including the findings that men and women experience different numbers and different types of traumatic experiences (with men experiencing more traumas in general, men being more likely to experience physical assaults than women, and women being more likely to experience sexual assaults than men). Analyses here attempted to demonstrate that women report greater PTSD symptomatology than men, and explored whether men

and women differed in the types of symptoms reported.

In addressing these issues, a number of strategies were employed in designing this study to insure sound findings and to improve upon previous studies in this area. In addition to being one of only a handful of studies examining these constructs, this study included a larger sample of male CSAS than previous studies, allowing for stronger statistical power for analyses. Further, this study employed clear definitions for CSA and standardized assessment of PTSD using reliable and valid instruments.

The present study further expanded upon previous research by exploring additional factors. These additional factors included controlling for the overall number of traumatic events experienced, as well as controlling for other types of traumatic experiences that may be comorbid with CSA, when examining these gender differences in PTSD. Studies examining trauma often do not do a thorough assessment of lifetime trauma, nor do they assess for the frequency of these traumatic experiences. Failure to assess for multiple traumas may be detrimental because different trauma types appear to be more likely to result in PTSD symptomatology. The additional failure to assess trauma frequency is also important because individuals with multiple traumatic experiences are also more likely to develop PTSD symptomatology.

Further, this study included information on overall trauma frequency for a variety of different traumas including CPA, adult sexual assault, natural disaster, motor vehicle accident, other accident causing serious injury, warfare or combat, sudden unexpected death of friend or loved one, life threatening illness, robbery, physical assault, death threat, witnessing family violence, domestic abuse, stalking, miscarriage, abortion, and other traumatic events. In addition, this study closely mimicked DSM-IV criteria for

PTSD by determining if the experience included intense fear, helplessness, or horror and only considering experiences traumatic if such factors were present.

To address questions raised throughout the introduction a series of specific hypotheses were formulated:

1. To replicate previous literature, it was hypothesized that men would report experiencing a greater number of traumas than women. A number of different traumas were considered including CSA, CPA, adult sexual assault, natural disaster, motor vehicle accident, other accidents causing serious injury, warfare or combat, sudden unexpected death of friend or loved one, life threatening illness, robbery, physical assault, death threat, witnessing family violence, domestic abuse, stalking, miscarriage, and abortion.
2. To replicate previous studies, it was hypothesized that men and women would differ in the frequencies of the types of traumas experienced. Each of the traumatic experiences described above was considered. It was expected that men would report a greater frequency of physical assaults than women, while women were expected to report a greater frequency of sexual assaults than men. More specifically, it was hypothesized that women would experience a greater frequency of CSA, adult sexual assault, domestic abuse, stalking, miscarriage and abortion experiences than men. Further, men were hypothesized to experience a greater frequency of CPA experiences, motor vehicle accidents, other accidents causing serious injury, warfare or combat experiences, robbery experiences, physical assaults, death threats, and witnessing family violence than women. No explicit hypotheses were proposed for the direction of differences with regards to

natural disasters.

3. To replicate previous literature, it was hypothesized that female CSAS would report greater PTSD symptomatology related to sexual abuse than male CSAS.
4. To improve upon previous studies, it was hypothesized that females would experience greater PTSD symptomatology related to sexual abuse than male CSAS even after controlling for trauma frequency.
5. To improve upon previous studies, it was hypothesized that female CSAS would experience greater PTSD symptomatology related to sexual abuse than male CSAS even after controlling for the presence of other types of traumas. Several trauma types were considered: the presence or absence of a sexual assault experience; the presence or absence of a childhood physical assault experience (including childhood physical assault and witnessing of family violence); the presence or absence of an adult physical assault (including adult physical assault, domestic violence, death threats, and robbery experiences); and the presence or absence of a natural disaster experience.
6. In addition, it was also hypothesized that men and women would differ in the expression of PTSD symptomatology, with women experiencing more intrusion symptomatology and men experiencing more avoidance symptomatology.
7. To improve upon previous studies, it was hypothesized that differences in symptom expression for male and female CSAS would be evident even after controlling for trauma frequency.
8. To improve upon previous studies, it was hypothesized that differences in symptom expression for male and female CSAS would be evident even after

controlling for other types of traumas experienced. Several trauma types were considered: the presence or absence of an adult sexual assault experience; the presence or absence of a childhood physical assault experience (including childhood physical assault and witnessing family violence); the presence or absence of an adult physical assault (including adult physical assault, domestic violence, death threats, and robbery experiences); and the presence or absence of a natural disaster experience.

Method

Participants

Data were collected from a total of 1,077 undergraduate participants including 533 women, 537 men, and 7 individuals who failed to report their gender. Those 7 individuals whose gender could not be identified, as well as 14 women and 12 men whose CSA history could not be accurately classified due to missing information, were excluded from further consideration. This resulted in a final sample of 525 male and 519 female participants (total $N = 1,044$). Students were recruited from the Psychology Department research participant pool and Introductory Counseling Psychology classes for a study examining the effects of life experiences on current functioning. Class credit was given for participation in this study.

Participants ranged in age from 17 to 56 years, with an average age of 20.31 years (SD=3.38). The majority of these participants reported that they were never married (93.0%), 3.9% indicated they were married, 1.6% reported that they were cohabitating, 1.1% indicated they were divorced or separated and 0.4% reported "other" responses (e.g., engaged). Of these participants, 84.6% were Caucasian, 3.5% were African

American, 1.2% were Hispanic, 5.3% were Native American, 3.3% were Asian/Asian American, and 2.2% indicated "other" responses (e.g., biracial or Pacific Islander). Socioeconomic status (SES) was assessed using father's occupation and education level (Myers & Bean, 1968). SES ranged from lower to upper class with the average participant falling within the middle class range.

For the purposes of this study, childhood sexual abuse was defined as contact abuse only and was assessed by the Life Experiences Questionnaire (LEQ; described below). In order to be considered sexual abuse, a participant's abuse experience must have met at least one of the following criteria: (a) abuse perpetrated by a relative, (b) greater than five years age difference between the victim and the perpetrator, or (c) if less than a five-year age difference between the victim and perpetrator, threat or force was involved. Employing this definition, a total of 94 CSAS were identified from the 1044 participants. Of these 94 CSAS, 74 were female and 24 were male. Therefore, overall CSA victimization rates were 14.26% for women and 3.81% for men.

Measures

Life Experiences Questionnaire (LEQ). The LEQ is a self-report questionnaire designed by Long (2001) that includes questions regarding demographics and childhood sexual experiences. Participants were instructed to report all sexual experiences occurring before the age of 17.

CSA was screened with a series of eight questions asking participants whether they had any sexual experiences, ranging from someone exposing himself or herself to the participant to having engaged in intercourse with someone. Participants were instructed to exclude any voluntary sexual activities between themselves and a dating

partner and any consensual sexual play with a peer as long as the partner, in either case, was no more than five years older than the participant. Information regarding specific sexual experiences was then assessed. CSA was defined as including contact abuse only and must have met at least one of the following criteria: (a) abuse perpetrated by a relative, (b) greater than five years age difference between the victim and the perpetrator, or (c) if less than a five-year age difference between the victim and perpetrator, threat or force was involved.

In order to calculate the number of times that a participant experienced CSA, questions were included in the LEQ that asked the participant to indicate the total number of times such experiences occurred and during how many of the experiences they felt fear, helplessness or horror using a scale of seven different responses: never, once, twice, three times, four times, five times, and more than 6 times. The number of times such events were experienced with fear, helplessness, or horror was used as the CSA frequency for inclusion in the creation of a total trauma frequency score (with a response of "more than 6 times" translated into 10 times).

The LEQ is a revised version of the Past Experiences Questionnaire (PEQ) (Messner et al., 1988). Internal consistency for the eight questions used to screen for childhood sexual abuse in the LEQ was calculated with a sample of 648 college women and is good, Chronbach's alpha = .89 (Messman-Moore, Long, & Siegfried, 2000). Two-week test-retest reliability has also been examined previously with a sample of 145 women and is good (Long, 2001). Kappas and percentage agreement on items related to the identity of the perpetrator (intrafamilial vs. extrafamilial, .86, 94%), duration of abuse (less or greater than one year, 1.0, 100%), the nature of the sexual abuse (penetration vs.

no penetration, .91, 97%), and presence or absence of force (.39, 69%) all indicate a reliable scale. Similar results are seen in interclass correlation coefficients for items such as the age of onset of abuse (.99), the age of the perpetrator (.96), and the age difference between the victim and the perpetrator (.95) also indicate a reliable scale.

Modified Sexual Experiences Survey (MSES). The MSES (Messman-Moore & Long, 2000) is an expanded version of the 10-item Sexual Experiences Survey (SES) (Koss & Gidycz, 1985) and was used to assess adult sexual assault status. The MSES asks a series of yes/no questions assessing whether specific types of sexual activities have been attempted or completed with a participant since the age of 17.

The MSES includes three sets of 24 questions assessing for the presence of unwanted sexual activities in a participant's history with boyfriends/girlfriends, dates, or acquaintances, strangers, and spouse. The original SES contains four questions regarding unwanted vaginal or anal intercourse (due to continual arguments or pressure, authority, alcohol or drugs, and physical force) and two questions regarding attempted vaginal or anal intercourse (due to alcohol or drugs and physical force). These six items were maintained in the MSES, but phrasing of questions regarding alcohol and drug use were modified and modeled after those used by Muehlenhard, Powch, Phelps, and Giusti (1992). Additional questions were added to the instrument to assess sexual contact, oral-genital contact, and penetration by objects. Questions were administered three times to assess assault by boyfriends/girlfriends, dates, or acquaintances; strangers; and spouses. In addition to the three sets of specific activity questions, overall summary questions were included in the MSES to assess the total number of times each participant experienced various types of sexual contact and the number of times such experiences

included feelings of intense fear, helplessness, or horror. These questions used a scale of seven different responses: never, once, twice, three times, four times, five times, and more than 6 times.

In order to be classified as having a sexual assault experience, a participant must have indicated that: (1) he or she experienced unwanted vaginal or anal intercourse completed by any perpetrator by any method of coercion (continual arguments and pressure, authority, alcohol or drugs, or physical force), and (2) the experience was accompanied by intense fear, helplessness or horror. The number of times the participant indicated that he or she experienced this type of adult sexual assault with either fear, helplessness, or horror was used as the sexual assault frequency for inclusion in the creation of a total trauma frequency score (with a response of "more than 6 times" translated to 10 times).

An internal consistency reliability of .74 (for women) has been reported for the original SES with a one-week test-retest reliability of 93% (Koss & Gidycz, 1985). The correlation between a woman's level of victimization based on self-report and her level of victimization based on responses related to an interviewer several months later was .73 (Koss & Gidycz, 1985). Internal consistency for the modified version of the SES employed in this study was assessed across all items and all perpetrators in a sample of 648 women and was .90 (Messman-Moore et al., 2000).

The Conflict Tactic Scale Parent-to-Child (CTS-PC). The CTS-PC (Straus, Hamby, Finkelhor, Moore, & Runyan, 1998) is a 45-item questionnaire designed to assess the presence and extent of violence in parental behavior directed at children. Participants were asked to indicate the frequency of each item with any caretaker (male

or female) using seven categories: this has never happened (0), this happened once (1), twice (2), 3-5 times (3), 6-10 times (4), 11-20 times (5), and more than 20 times (6). The CTS-PC provides information on five dimensions of behavior: Nonviolent Discipline, Psychological Aggression, Physical Assault, Neglect, and Sexual Abuse. Only responses on the seven items comprising the Severe Physical Assault subscale were examined for this study. Additional items were added to the CTS-PC to assess the frequency of physically abusive experiences for each participant as well as whether intense fear, helplessness, or horror accompanied these events using a scale of seven different responses: never, once, twice, three times, four times, five times, and more than 6 times.

Individuals indicating scores greater than one on any one of the seven items characteristic of severe physical assault (e.g., punching or kicking a child) and reporting intense fear, helplessness, or horror during at least one such event, were classified as having experienced CPA. The number of times such events were experienced with fear, helplessness, or horror was used as the CPA frequency score for inclusion in the total trauma frequency score (with a response of "more than 6 times" translated to 10 times.

The CTS-PC is a modified version of the original Conflict Tactic Scale (CTS) (Straus, 1979; Straus & Gelles, 1990; Straus, Hamby, Boney-McCoy, & Sugarman, 1996). While the original version of the CTS has a large body of literature to support its reliability and validity, psychometric support for the CTS-PC is less available. Preliminary studies suggest relatively low internal consistencies for the subscales of the CTS-PC (Physical Assault = .55). Straus et al. (1998) argue that while this measure appears to lack reliability, it does not necessarily lack validity. Many items measure rare events that may skew the response distribution and therefore lower alpha. Test-retest

data are not yet available for the CTS-PC. Straus et al. (1998) provide support for discriminant and construct validity as evidenced by high intercorrelations among the various CTS-PC Scales (ranging from .04 to .56).

The Modified Traumatic Life Events Questionnaire (MTLEQ). The MTLEQ is an 18-item expanded version of the Traumatic Life Events Questionnaire (TLEQ; Kubany, Leisen, Kaplan, Watson, Haynes, & Owens, 2000). Participants were asked to indicate the number of times they experienced a number of events (over their lifetimes) and to complete additional questions about each trauma as appropriate. Traumas that were assessed on the MTLEQ included natural disasters, motor vehicle accidents, other accidents causing serious injury, warfare or combat experiences, the sudden unexpected death of friend or loved one, life threatening illnesses, robberies, physical assaults, death threats, childhood physical abuse experiences, witnessing family violence, CSA experiences, adult sexual assault experiences, domestic abuse, stalkings, miscarriages, abortions, and" other" traumatic events. Follow-up questions might have included, for individuals experiencing a robbery, mugging, or hold-up, questions about the number of times they have experienced the event, the types of injuries they received, how old they were when this happened, and whether or not they experienced intense fear, helplessness or horror during the event. All trauma screening questions were modeled after those found in Kubany, Leisen, Kaplan, Watson, Haynes, and Owens (2000) and probe questions were modeled after those utilized by Norris (1990).

For the purposes of this study, the MTLEQ was utilized to screen for presence and frequency of natural disasters, motor vehicle accidents, other accidents causing serious injury, warfare or combat, sudden unexpected death of friend or loved one, life

threatening illness, robbery, physical assault, death threats, witnessing family violence, domestic abuse, stalking, miscarriage, and abortion. Participants were asked to report the number of times each of these 14 events occurred with fear, helplessness, or horror using a scale of seven different responses: never, once, twice, three times, four times, five times, and more than 6 times. For each event, in order to be qualified as a traumatic event the individual must have specified that: (1) they experienced the event within their lifetime (this eliminated several reported incidents of traumas occurring for someone the participant knew prior to the participants' birth), and (2) they experienced "intense fear, helplessness, or horror" when the event occurred. The number of times each event occurred with fear, helplessness, or horror, was used as the frequency of that event for inclusion in the creation of a total trauma frequency score (with a response of "more than 6 times" translated to 10 times.

While information on the reliability and validity of the TLEQ are not yet available, research suggests that the TLEQ (upon which this scale is based) has adequate psychometric properties. Test-retest reliability at one week intervals was examined for both men and women. Percent of occurrence agreements ranged from 33% to 92%, with an average of 68% for each of the 16 items on the original TLEQ. Percentage of nonoccurrence agreements ranged from 78% to 100%, with an average of 91% for each of the 16 items on the original TLEQ. The authors of the TLEQ report adequate to excellent temporal stability for the majority of items (all items had kappa coefficients of greater than .4) on this scale when examined in a group of individuals being treated for drug and alcohol abuse (Kubany et al., 2000). Support was also found for convergent validity (by comparison against a structured interview; Kubany et al., 2000).

Posttraumatic Stress Diagnostic Scale (PDS). The PDS (Foa, Cashman, Jaycox, & Perry, 1997) is a 49-item self-report measure designed to assess the severity of PTSD symptoms and to provide diagnostic information on the presence of PTSD. The PDS includes a checklist of traumatic events, a series of follow-up questions designed to examine the nature of the traumatic events, questions to assess PTSD symptomatology, and questions that investigate impairment in several life areas (e.g., work, family relationships). For the purposes of this study, only the PTSD symptomatology items were examined. More specifically, PTSD symptomatology included 17 items designed to assess the three different DSM-IV-TR PTSD symptom clusters/subscales: five items to measure reexperiencing, seven to measure avoidance, and five to measure arousal. Participants were asked to rate the frequency of each symptom on a four-point scale (0 = not at all or only one time; 3 = five or more times a week/almost always). Symptom severity was determined by summing the scores of the 17 symptom items. Individual subscale scores were also calculated by summing the totals of the items for each scale (items for each scale are based on questions that mirror the diagnostic criteria for each of the symptom clusters for PTSD).

For the purposes of this study, the PDS was attached to the LEQ and individuals were instructed to complete this questionnaire "keeping their most severe CSA experience in mind." Higher scores on the PDS total score and each subscale score reflect greater problems with PTSD related to CSA. A clinical sample of individuals with PTSD reported average symptom severity scores of 33.59, average reexperiencing subscale scores of 8.95, average avoidance subscale scores of 13.63, and average arousal subscale scores of 11.02 (Foa, Cashman, Jaycox, & Perry, 1997). This can be contrasted

with a sample of individuals without PTSD who exhibited average symptom severity scores of 12.54, average reexperiencing subscale scores of 3.64, average avoidance subscale scores of 4.54, and average arousal subscale scores of 4.36 (Foa at al., 1997).

Foa and colleagues (1997) report high internal consistency and test-retest reliability, good sensitivity and specificity, and good support for the validity of the PDS. Internal consistency is good for the total PTSD score and for the three symptom cluster scores (α = .92 for total symptom severity, α = .78 for reexperiencing, α = .84 for avoidance, and α = .84 for arousal symptoms). Test-retest reliability for PTSD diagnosis was assessed using kappa as a chance-corrected measure of agreement and was found to be good (.74; time interval ranged from 1 ½ to 3 weeks with a mean of 16 days). Test-retest reliability (again over a time interval ranging from 1 ½ to 3 weeks with an average of 16 days) for symptom severity scores all indicated a reliable scale (Total Symptom Severity = .83, Reexperiencing = .77, Avoidance = .81, and Arousal = .85). Kappas and percentage agreements between the PDS and the SCID (.65, 85%) support the validity of the PDS. The PDS also demonstrates adequate sensitivity and specificity for PTSD diagnoses when compared to scores obtained from the SCID (.89 and .75 respectively).

Procedure

All questionnaire data were obtained in group sessions conducted by psychology graduate students. After informed consent was obtained, participants completed the aforementioned questionnaires and others not included in this study. Questionnaires were ordered randomly with several exceptions. To ensure that sexual victimization was assessed chronologically, the LEQ always preceded the MSES. In addition, the PDS was attached directly to the LEQ to allow the assessment of PTSD symptomatology in

response to CSA for those respondents endorsing the occurrence of this experience.

Responses to all questionnaires were assessed after study participation to identify the presence and frequency of each of the 17 types of trauma, as described previously. In addition, a trauma frequency score was created to indicate the total number of times the 17 traumas were experienced by each participant. This sum was created using the CSA frequency score from the LEQ, the sexual assault frequency score from the MSES, the CPA frequency score from the CTS-PC, and the frequency scores for natural disasters, motor vehicle accidents, other accidents causing serious injury, warfare or combat experiences, sudden unexpected death of friend or loved one, life threatening illnesses, robbery, physical assault, death threats, witnessing family violence, domestic abuse, stalking, miscarriage, and abortion from the MTLEQ.

Results

Demographic Comparisons

Prior to the examination of the proposed hypotheses, the interrelationships of demographic factors and other study variables were explored. Comparisons of men and women did not yield and significant differences for race (Caucasian vs. non-Caucasian), $\chi^2(1, N = 1029) = 3.03, p = .08$, marital status (never married vs. ever married), $\chi^2(1, N = 992) = 3.30, p = .07$, age, $t(976) = 0.37, p = .71$, or SES, $t(914) = 1.14, p = .26$. (Please note that *df* for the analysis examining age was corrected for unequal variances). Although no differences reaching conventional levels of significance were found between men and women on these demographic factors, given previous literature suggesting possible relationships between some demographic factors and both trauma frequency and posttraumatic stress symptomatology, correlations between these variables were

examined (see Table 1). Age (r = .20, p = .0001), marital status (r = .14, p = .0001), and race (r = .09, p = .009) were significantly correlated with trauma frequency, but not with overall posttraumatic stress symptomatology (r = .06, p = .51; r = .007, p = .94; r = -.06, p = .49, respectively). SES was not correlated with trauma frequency or PTSD symptomatology.

Given that a substantial portion of proposed analyses included only CSAS, demographic variables were also explored within this subgroup. Results did not indicate differences between male and female CSAS for race (Caucasian vs. non-Caucasian), $\chi^2(1, N = 90) = 0.99$, p = .32, marital status (never married vs. ever married), $\chi^2(1, N = 91) = 1.55$, p = . 21, age, $t(58.6) = 0.94$, p = .35, or SES, $t(74) = 0.96$, p = .34. (Please note that *df* for the analysis examining age was corrected for unequal variances).

Intercorrelations between these demographic variables and the variables of interest were also examined for CSAS (see Table 2). Age was significantly correlated with trauma frequency (r = 0.35, p = .004) but not with posttraumatic stress symptomatology (r = .03, p = .76). Marital status, race and SES were not correlated with either the trauma frequency or PTSD symptomatology for CSAS.

The use of covariance procedures are often recommended when variables of interest in a study are systematically related, as appears to be the case here with some of the demographic variables and trauma frequency. Therefore, the most conservative examination of the data would be to control for the variables that are related. In addition to the planned analysis of the data, analyses were also conducted including demographic covariates. Analyses that examine the entire sample included age, race, and marital status as covariates, whereas analyses examining CSAS only included age as a covariate.

Gender and Trauma Frequency

To test Hypothesis 1, that men would report experiencing a greater frequency of traumas than women, an independent samples *t*-test was conducted. Data from all participants were examined. The dependent variable was the total trauma frequency that an individual reported experiencing, while gender (male/female) served as the independent variable. The total number of times the participant reported experiencing each of 18 events, with a reaction of intense fear, helplessness, or horror, was summed to create the trauma frequency score. Events included in the trauma frequency score were CSA (assessed by the LEQ), CPA (assessed by the CTS-PC), adult sexual assault (assessed by the MSES), natural disaster (assessed by the MTLEQ), motor vehicle accident (assessed by the MTLEQ), other accident causing serious injury (assessed by the MTLEQ), warfare or combat (assessed by the MTLEQ), sudden unexpected death of friend or loved one (assessed by the MTLEQ), life threatening illness (assessed by the MTLEQ), robbery (assessed by the MTLEQ), physical assault (assessed by the MTLEQ), death threat (assessed by the MTLEQ), witnessing family violence (assessed by the MTLEQ), domestic abuse (assessed by the MTLEQ), stalking (assessed by the MTLEQ), miscarriage (assessed by the MTLEQ), abortion (assessed by the MTLEQ), and other traumatic events (assessed by the MTLEQ).

Analyses indicated men and women differed on total trauma frequency scores, $t(684) = 6.38$, $p = .001$. Unexpectedly, women ($M = 6.81$, $SD = 8.28$) reported experiencing more traumatic events than men ($M = 3.76$, $SD = 5.14$). (Please note that *df* were corrected for unequal variances).

In order to control for possible relationships between age, race, and marital status

with trauma frequency, Hypothesis 1 was reexamined employing an Analysis of Covariance (ANCOVA). For this analysis, gender served as the independent variable, trauma frequency was the dependent variable, and age, race, and marital status were entered as covariates. Results indicated that even after controlling for these demographic factors, men and women continued to differ in overall trauma frequency, $F(1, 787) = 44.71$, $p = .0001$. Women (corrected $M = 6.93$, $SE = 0.34$) reported experiencing more traumatic events than men (corrected $M = 3.72$, $SE = 0.33$) even after controlling for age, race, and marital status.

Gender and the Frequency of Different Trauma Types

To test Hypothesis 2, that men and women would differ in the frequency of different types of traumas, seventeen independent samples *t*-tests were conducted. Gender served as the independent variable (male/female), while the frequency of each individual trauma was the dependent variable. Given the large number of comparisons that were conducted, a Bonferroni correction was employed to control for error rate across the 17 analyses. Therefore, the Bonferroni correction lowered the acceptable level of alpha to $p = .003$ (.05/17 comparisons = .003). Comparisons meeting corrected alpha levels were examined; however, analyses meeting only conventional levels of alpha are also discussed to ensure that important differences are not overlooked.

Results (See Table 3) revealed significant differences for men and women for the frequency of CSA experiences ($p = .0001$), sexual assault ($p = .0001$), motor vehicle accidents ($p = .0002$), experiencing the death of a loved one ($p = .0001$), having a life threatening illness ($p = .0001$), domestic violence ($p = .0005$), and stalking ($p = .0001$). Several analyses, while not meeting Bonferroni levels of significance, did meet

conventional levels of significance. More specifically, women reported a greater frequency of natural disasters (p = .05), other accidents (p = .04), robberies (p = .02), death threats (p = .01), witnessing family violence (p = .004), and miscarriages (p = .04) than men. Men and women did not differ in frequency for the experiences of CPA, war, adult physical assault, or abortion.

In order to control for possible relationships between age, race, and marital status with trauma frequency, Hypothesis 2 was reexamined employing an ANCOVA. For this analysis, gender served as the independent variable (male/female), the individual trauma frequencies (for the 17 aforementioned traumatic events) served as the dependent variables, and age, race, and marital status were entered as covariates. Results were identical to the previous paragraph with two exceptions (See Table 3). For the comparison of men and women on witnessing family violence, differences met Bonferroni corrected alpha levels, with women reporting a greater frequency than men (p = .002), and for the comparison of men and women experiencing natural disasters, differences met conventional levels of significance, with women reporting a greater frequency than men (p = .05).

Gender and Overall Posttraumatic Stress

The rest of the proposed analyses were confined to individuals reporting a history of CSA. In each case PTSD symptomatology was assessed with regard to the CSA experience. Hypothesis 3 proposed that female CSAS would experience greater PTSD symptomatology than male CSAS. In order to test this hypothesis, an independent samples t-test was utilized. The dependent variable was the total PTSD symptom score from the PDS, and the independent variable was gender (male/female). Consistent with

the hypothesis, men and women differed on overall posttraumatic stress symptomatology, $t(82) = 2.54$, $p = .01$. More specifically, women ($M = 12.51$, $SD = 10.99$) reported greater posttraumatic stress symptomatology than men ($M = 5.68$, $SD = 7.34$).

In order to control for the possible relationships between age and trauma frequency for CSAS, Hypothesis 3 was reexamined employing an ANCOVA. For this analysis, gender was the independent variable (male/female), the total PTSD symptom score on the PDS was the dependent variable, and age was entered as a covariate. Results were consistent with the previous findings: men and women differed on overall posttraumatic stress symptomatology, $F(1, 81) = 6.30$, $p = .01$, with women (corrected $M = 12.50$, $SE = 1.29$) reporting greater posttraumatic stress symptomatology than men (corrected $M = 5.70$, $SE = 2.38$), even after controlling for age.

Gender and Posttraumatic Stress While Controlling for Trauma Frequency

Hypothesis 4 proposed that female CSAS would experience higher rates of PTSD symptomatology than male CSAS even after controlling for trauma frequency. This hypothesis was analyzed using an ANCOVA. The dependent variable was the total PTSD symptom score from the PDS, the independent variable was gender (male/female), and a covariate representing trauma frequency was included. Results indicated that men and women differed in overall posttraumatic stress symptomatology, $F(1, 59) = 6.35$, $p = .01$, with women (corrected $M = 13.04$, $SE = 1.46$) reporting greater posttraumatic stress symptomatology than men (corrected $M = 5.28$, $SE = 2.71$), after controlling for trauma frequency.

In order to control for the possible relationships between age and trauma frequency for CSAS, Hypothesis 4 was reexamined employing an ANCOVA including

both trauma frequency and age as covariates. For this analysis, gender was the independent variable (male/female), the total PTSD symptom score on the PDS was the dependent variable, and both trauma frequency and age were entered as covariates. Results indicated that men and women differed in overall posttraumatic stress symptomatology, $F(1, 58) = 5.88$, $p = .02$, with women (corrected $M = 12.98$, $SE = 1.46$) reporting greater posttraumatic stress symptomatology than men (corrected $M = 5.51$, $SE = 2.71$), even after controlling for trauma frequency and age.

Gender and Posttraumatic Stress While Controlling for Trauma Types

Hypothesis 5, that female CSAS would experience higher rates of posttraumatic stress symptomatology than male CSAS even after controlling for specific types of trauma experiences, was examined with four ANCOVAs. For each ANCOVA, the dependent variable was the total PTSD symptom score from the PDS and the independent variable was gender (male/female). The covariate, trauma type, varied across the four ANCOVAs: 1) the presence or absence of a sexual assault experience (as assessed by the MSES); 2) the presence or absence of childhood physical violence (including childhood physical assault as assessed by the CTS-PC and witnessing of family violence as assessed by the MTLEQ); 3) the presence or absence of adult physical assault (including adult physical assault as assessed by the MTLEQ, domestic violence as assessed by the MTLEQ, a death threat as assessed by the MTLEQ, and a robbery experience as assessed by the MTLEQ); or 4) the presence or absence of a natural disaster (as assessed by the MTLEQ). Given the number of comparisons that were conducted, a Bonferroni correction was employed to control for error rate across the four ANCOVAs. Therefore, the Bonferroni correction lowered the acceptable level of alpha to $p = .0125$ (.05/4

comparisons = .0125). Comparisons meeting corrected alpha levels were examined; however, conventional levels of alpha are also included to ensure that significant differences are not overlooked.

The first ANCOVA included the presence or absence of a sexual assault experience as the covariate. Results (see Table 4) indicated differences between men and women for total posttraumatic symptomatology, $F(1, 70) = 6.89$, $p = .01$, with women reporting greater posttraumatic stress symptomatology than men even after controlling for the presence/absence of a sexual assault experience (Please note that means and standard deviations for all analyses testing Hypothesis 5 appear in Table 4).

The second ANCOVA included the presence or absence of childhood physical violence as a covariate. Results indicated that men and women differed on total posttraumatic symptomatology, $F(1, 73) = 6.53$, $p = .0127$, with women reporting greater posttraumatic stress symptomatology than men even after controlling for the presence/absence of childhood physical violence. Please note that while this finding reached conventional levels of significance, it did not meet the criterion for significance after the Bonferroni correction was applied.

The third ANCOVA included the presence or absence of adult physical assault as the covariate. Results indicated that men and women differed in total posttraumatic symptomatology, $F(1, 74) = 6.43$, $p = .013$, with women reporting greater posttraumatic stress symptomatology than men, even after controlling for the presence/absence of an adult physical assault. Please note that while this finding reached conventional levels of significance, it did not meet the criterion for significance after the Bonferroni correction was applied.

The fourth ANCOVA included the presence or absence of a natural disaster as the covariate. Results indicated that men and women differed in total posttraumatic symptomatology, $F(1, 75) = 6.45$, $p = .013$, with women reporting greater posttraumatic stress symptomatology than men, even after controlling for the presence/absence of a natural disaster experience. Again, please note that while this finding reached conventional levels of significance, it did not meet the criterion for significance after the Bonferroni correction was applied.

In order to control for the possible relationships between age and trauma frequency for CSAS, the same four analyses were reexamined with the addition of age as a covariate (See Table 4 for corrected means and standard errors for each of these four analyses). Bonferroni corrections were also applied to these four analyses resulting in a criterion of $p = .0125$ for significance. For the first analysis, gender was the independent variable (male/female), the total PTSD symptom score on the PDS was the dependent variable, and sexual assault status and age were entered as covariates. Results indicated differences between men and women for total posttraumatic symptomatology, $F(1, 69) = 6.78$, $p = .01$, with women reporting greater posttraumatic stress symptomatology than men, even after controlling for the presence/absence of a sexual assault experience and age.

For the second analysis, gender was the independent variable (male/female), the total PTSD symptom score on the PDS was the dependent variable, and childhood physical violence and age were entered as covariates. Results also indicated differences between men and women on total posttraumatic symptomatology, $F(1, 72) = 6.82$, $p = .01$, with women reporting greater posttraumatic stress symptomatology than men, even

after controlling for the presence/absence of childhood physical violence and age.

For the third analysis, gender was the independent variable (male/female), the total PTSD symptom score on the PDS was the dependent variable, and adult physical violence and age were entered as covariates. Results indicated that men and women reported differences in total posttraumatic symptomatology, $F(1, 73) = 6.56$, $p = .0125$, with women reporting greater posttraumatic stress symptomatology than men, even after controlling for the presence/absence of adult physical assault and age.

Finally, for the fourth analysis, gender was the independent variable (male/female), the total PTSD symptom score on the PDS was the dependent variable, and natural disaster and age were entered as covariates. Results indicated differences between men and women for total posttraumatic symptomatology, $F(1, 74) = 6.50$, $p = .0129$, with women reporting greater posttraumatic stress symptomatology than men, even after controlling for the presence/absence of a natural disaster experience and age. Please note that while this finding reached conventional levels of significance, it did not meet the criterion for significance after the Bonferroni correction was applied.

Gender and Symptom Expression

To test Hypothesis 6, that men and women would differ on the expression of PTSD symptomatology (with women expected to report more intrusion symptomatology and men expected to report more avoidance symptomatology), a Multivariate Analysis of Variance (MANOVA) was conducted. The dependent variables for this analysis were the three subscales of PTSD (reexperiencing, avoidance, and arousal) from the PDS and the independent variable was gender (male/female).

Results of the MANOVA, Pillai's Trace, $F(3, 80) = 2.45$, $p = .07$, revealed a trend

for gender differences for PTSD symptomatology. Although differences were not significant, univariate ANOVAs were examined in order to ensure that important differences were not overlooked (please see Table 5 for means and standard deviations for each of these three analyses). Significant gender differences were found for reexperiencing symptomatology, $F(1, 82) = 6.14$, $p = .02$, and avoidance symptomatology, $F(1, 82) = 6.10$, $p = .02$, with women reporting greater symptom severity for both reexperiencing and avoidance symptomatology than men. No gender difference was found for arousal symptomatology, $F(1, 82) = 2.78$, $p = .10$.

In order to control for the possible relationships between age and trauma frequency for CSAS, Hypothesis 6 was reexamined with the addition of age as a covariate. For this analysis, gender was the independent variable (male/female), the three subscales of PTSD (reexperiencing, avoidance, arousal) from the PDS were the dependent variables, and age was entered as a covariate. Results of the MANCOVA, Pillai's Trace, $F(3,79) = 2.44$, $p = .07$, revealed a trend for gender differences for PTSD symptomatology. Again, although differences were not significant, univariate ANCOVAs were examined in order to ensure that important differences were not overlooked (see Table 5 for corrected means and standard errors for each of these three analyses). Further examination revealed differences between men and women for reexperiencing symptomatology, $F(1, 81) = 6.40$, $p = .01$, and avoidance symptomatology, $F(1, 81) = 5.85$, $p = .02$, with women reporting greater symptom severity for both reexperiencing and avoidance symptomatology than men, even after controlling for age. No difference was found between men and women for arousal symptomatology, $F(1, 81) = 2.68$, $p = .11$.

Gender and Symptom Expression While Controlling for Trauma Frequency

Hypothesis 7 proposed that male and female CSAS would differ on the expression of PTSD even while controlling for trauma frequency. A MANCOVA was conducted. The dependent variables for this analysis were the three subscales of PTSD (reexperiencing, avoidance, and arousal) from the PDS, gender (male/female) was the independent variable, and trauma frequency served as the covariate.

Results of the MANCOVA, Pillai's Trace, $F(3, 57) = 3.30$, $p = .03$, revealed significant differences between men and women for PTSD symptomatology. Univariate ANOVAs revealed significant gender differences for reexperiencing symptomatology, $F(1, 59) = 8.54$, $p = .005$, and avoidance symptomatology, $F(1, 59) = 6.50$, $p = .01$, with women reporting higher levels of reexperiencing and avoidance symptomatology than men, even after controlling for trauma frequency (See Table 6 for corrected means and standard errors for each of these three analyses). No difference was found between men and women for arousal symptomatology, $F(1, 59) = 1.67$, $p = .20$.

In order to control for the possible relationships between age and trauma frequency for CSAS, Hypothesis 7 was reexamined with the addition of age as a covariate. For this analysis, gender was the independent variable (male/female), the three subscales of PTSD (reexperiencing, avoidance, arousal) from the PDS were the dependent variables, and trauma frequency and age were covariates. Results of the MANCOVA, Pillai's Trace, $F(3, 56) = 3.10$, $p = .03$, revealed significant differences between men and women for PTSD symptomatology while controlling for age and trauma frequency. Further examination of univariate ANCOVAs indicated significant gender differences for reexperiencing symptomatology, $F(1, 58) = 7.96$, $p = .007$, and

avoidance symptomatology, $F(1, 58) = 6.10$, $p = .02$, with women reporting greater symptom severity for reexperiencing and avoidance symptomatology than men, even after controlling for age and trauma frequency (See Table 6 for corrected means and standard errors for each of these three analyses). No gender difference was found for arousal symptomatology, $F(1, 58) = 1.49$, $p = .23$.

Gender and Symptom Expression While Controlling for Trauma Types

Finally, for Hypothesis 8, four MANCOVAs were conducted to determine if male and female CSAS would differ on the expression of PTSD while controlling for the experience of four different types of traumas. Gender served as the independent variable (male/female) and the three symptom clusters of PTSD (reexperiencing, arousal and avoidance from the PDS) served as the dependent variables. The covariate, trauma type, varied across the four MANCOVAs and included either: 1) the presence or absence of a sexual assault experience (as assessed by the MSES); 2) the presence or absence of childhood physical violence (including childhood physical assault as assessed by the CTS-PC and witnessing family violence as assessed by the MTLEQ); 3) the presence or absence of an adult physical assault (including adult physical assault as assessed by the MTLEQ, domestic violence as assessed by the MTLEQ, a death threat as assessed by the MTLEQ, and a robbery experience as assessed by the MTLEQ); or 4) the presence or absence of a natural disaster (as assessed by the MTLEQ). Given the number of comparisons that were conducted, a Bonferroni correction was employed to control for error rate across the four MANCOVAs. Therefore, the Bonferroni correction lowered the acceptable level of alpha to $p = .0125$ (.05/4 comparisons = .0125). Comparisons meeting corrected alpha levels was examined; however, conventional levels of alpha

were also included to ensure that significant differences are not overlooked.

Results from the first MANCOVA, Pillai's Trace, $F(3, 68) = 2.91, p = .04$, indicated differences between men and women for PTSD symptomatology, while controlling for the presence/absence of a sexual assault experience. Please note that while this finding reached conventional levels of significance, it did not meet the criterion for significance after the Bonferroni correction was applied. Although Bonferroni levels of significance were not met, univariate ANCOVAs were examined in order to ensure that important differences were not overlooked (see Table 7 for corrected means and standard errors for each of these three analyses). Results indicated that there were significant differences between men and women for reexperiencing symptomatology, $F(1, 70) = 7.58, p = .008$ and avoidance symptomatology, $F(1,70) = 6.66, p = .01$, with women reporting higher levels of reexperiencing and avoidance symptomatology than men, even after controlling for the presence/absence of a sexual assault experience. No difference was found between men and women for arousal symptomatology, $F(1, 70) = 2.49, p = .12$.

Results from the second MANCOVA, controlling for the presence/absence of childhood physical violence, only approached conventional levels of significance, Pillai's Trace, $F(3, 71) = 2.65, p = .06$. In addition, results from the third MANCOVA, controlling for the presence/absence of adult physical violence, only approached conventional levels of significance, Pillai's Trace, $F(3, 72) = 2.36, p = .08$. Further, results from the fourth MANCOVA, controlling for the presence/absence of a natural disaster experience, only approached conventional levels of significance, Pillai's Trace, $F(3,73) = 2.36, p = .08$. Detailed information on univariate analyses including these three

covariates appears in Table 7.

In order to control for the possible relationships between age and trauma frequency for CSAS, Hypothesis 8 was reexamined employing four MANCOVAs with age as an additional covariate. For these analyses, gender served as the independent variable, the three symptom clusters of PTSD (reexperiencing, arousal and avoidance from the PDS) served as the dependent variables, and trauma type and age were included as covariates. Bonferroni corrections were also applied to these four analyses resulting in a criterion of .0125 for significance.

Results from the first MANCOVA, controlling for the presence/absence of a sexual assault experience and age, only reached conventional levels of significance indicating differences between men and women for PTSD symptomatology (Pillai's Trace, $F(3, 67) = 2.84$, $p = .05$). Although Bonferroni levels of significance were not met, univariate ANCOVAs were examined in order to ensure that important differences were not overlooked (see Table 7 for corrected means and standard errors for each of these three analyses). Results indicated that there were significant differences between men and women for reexperiencing symptomatology, $F(1, 69) = 7.39$, $p = .009$, and avoidance symptomatology, $F(1, 69) = 6.67$, $p = .01$, with women reporting higher levels of reexperiencing and avoidance symptomatology than men, after controlling for a sexual assault experience and age. Univariate analysis did not indicate a difference between men and women for arousal symptomatology, $F(1,69) = 2.48$, $p = .12$.

Results from the second MANCOVA, controlling for the presence/absence of childhood physical violence and age, reached only conventional levels of significance indicating differences between men and women for PTSD symptomatology (Pillai's

Trace, $F(3, 70) = 2.84, p = .04$). Please note that while this finding reached conventional levels of significance, it did not meet the criterion for significance after the Bonferroni correction was applied. Although Bonferroni levels of significance were not met, univariate ANCOVAs were examined in order to ensure that important differences were not overlooked (see Table 7 for corrected means and standard errors for each of these three analyses). Results indicated significant differences between men and women for reexperiencing symptomatology, $F(1, 72) = 7.39, p = .008$, with women reporting higher levels of reexperiencing symptomatology than men, after controlling for childhood physical violence and age. Results of the univariate ANCOVA for avoidance also indicated a difference between men and women for this type of symptomatology, $F(1, 72) = 6.29, p = .01$, with women reporting higher levels of avoidance symptomatology than men after controlling for childhood physical violence and age. Univariate analysis did not indicate a significant difference between men and women for arousal symptomatology, $F(1, 72) = 2.71, p = .10$.

Results from the third MANCOVA, controlling for the presence/absence of adult physical violence and age, only approached conventional levels of significance (Pillai's Trace, $F(3, 71) = 2.44, p = .07$). Finally, results from the fourth MANCOVA, controlling for the presence/absence of a natural disaster experience and age, only approached conventional levels of significance (Pillai's Trace, $F(3, 72) = 2.42, p = .07$). Detailed information on univariate analyses including these two covariates appear in Table 7.

Discussion

The purpose of this study was to examine gender, trauma, and posttraumatic stress symptomatology for CSAS. This study began by examining the relationship between

gender and both trauma frequency and trauma type. Results indicated that college men and women experience both a diverse set and a high number of traumas. Contrary to hypotheses, women reported experiencing a greater number of traumatic events than men. With regards to specific events, women reported a greater number of CSA experiences, adult sexual assaults, motor vehicle accidents, sudden deaths of loved ones, life-threatening illnesses, domestic violence experiences, and stalkings. Furthermore, trends were exhibited for women to report a greater number of natural disasters, other accidents causing injury, robberies, death threats, incidents of witnessing family violence, and miscarriages than men. When analyses controlled for age, marital status, and race, women were still found to report a greater number of the aforementioned traumas and were found to report a significantly greater frequency of witnessing family violence than men.

The finding that women experienced more traumatic events overall than men was not in accordance with proposed hypotheses. Furthermore, the finding that women also reported a greater number of specific traumatic experiences than men was only in partial support of proposed hypotheses. More specifically, while it was not surprising that women experienced more sexual victimization experiences (e.g., CSA and sexual assault), domestic violence experiences, and stalkings than men, the finding that women reported experiencing more motor vehicle accidents, sudden deaths of a loved one, and life-threatening illnesses than men is not supported by current literature.

A number of explanations might account for our findings. One explanation is that women are truly more likely to encounter such life events, regardless of trauma type. Improvements in methodology made in this study over prior literature may account for

the ability to detect these differences. Such differences may also reflect a greater tendency for college women to experience traumas as compared to college men. Most previous studies (e.g., Breslau et al., 1998; Breslau et al., 1999; Kessler et al., 1995) have examined clinical and community samples in addressing this issue.

Alternatively, findings may reflect a more specific experience than typically investigated—the presence of life events experienced as traumatic. For the purposes of this study, events were considered as present if they occurred at least once with fear, helplessness, or horror. The majority of studies finding that men report a greater number of traumas than women do not include fear, helplessness, or horror as a component of their trauma definition. For example, Kessler and colleagues (1995) examined trauma and gender in a national comorbidity study. Their trauma assessment consisted of one question asking about the occurrence of each of 12 different traumas. Their total frequency score was based on the sum of those individual traumas. On the basis of this type of assessment, they concluded that men reported a greater number of traumatic events overall than did women.

Findings that women experience a greater number of events than men may reflect the possibility that women are more likely to experience fear, helplessness, or horror in the face of traumatic events than men. Such a possibility may be supported by cultural values: it is more socially acceptable in the United States for women to experience emotions that suggest vulnerability (e.g., fear, helplessness, or horror) than men. It is less socially acceptable for men to experience such emotions. Thus, the employment of fear, helplessness, or horror in our definition of trauma may reduce the number of events experienced for men more than for women. This methodological approach, and

meaningful difference, may explain the discrepancy in findings of this study from previous literature, and could still support the idea that women are actually experiencing a greater frequency of traumatic events than men.

Further, since traumatic events in this study included self-experienced events, as well as experiences of individuals close to the participant, it is possible that trauma frequency scores were further elevated for women relative to men. More specifically, cultural values would provide support for women endorsing a greater number of vicariously experienced traumatic events than men, since women are typically valued for their role as nurturers and as emotional empathizers. Therefore, the inclusion of vicarious trauma in the trauma frequency might explain the discrepancy of this study's findings from previous literature.

Another possible explanation of findings is not that women experience more traumas, but that women report more traumas. As noted above, it is more culturally acceptable for women to experience and report negative emotions than men. Men are less encouraged in our culture to either feel negative emotions such as fear, hopelessness or horror, or to express these emotions. Therefore, it is plausible that women are more forthcoming with information regarding such emotionally laden issues on questionnaires than men. Previous literature does suggest that women are more likely to divulge information regarding fear on self-report measures than men (e.g., Katkin & Hoffman, 1976). Discussions regarding the prevalence of certain emotional problems (e.g., anxiety, depression) have also noted the tendency for women to report more of these types of symptoms than men (APA, 2001; Lipschitz et al., 1999).

Related to this general reporting issue, another factor that might potentially

complicate the clarity of findings was that a number of participants in this study had missing data regarding trauma experiences. For example, if participants did not provide responses on all of the 18 traumatic events included in the trauma frequency score, a frequency score was not created for them and they were not included in analysis. It is possible that men and women had differential rates of missing data, accounting for what appears to be gender differences. Perhaps men were less likely to complete questions on traumatic events because of cultural factors and therefore their missing data led to their exclusion from analysis.

In addition to exploring gender differences in the occurrence of traumas in general, this study also examined gender differences in posttraumatic stress symptomatology for CSAS. As hypothesized, female CSAS reported higher overall levels of posttraumatic stress symptomatology than male CSAS. This finding held even after controlling for age and trauma frequency. Such differences, for the most part, were also evident when controlling for specific types of traumas and age. Results indicated that female CSAS reported greater overall PTSD symptomatology than male CSAS when controlling for age and sexual assaults, age and childhood physical violence, and age and adult physical assault. Even differences between men and women in overall PTSD symptomatology seemed likely when controlling for the experience of natural disasters.

This study also examined gender differences in the symptom expression of PTSD. The idea that women report more reexperiencing and avoidance symptomatology as compared to men was somewhat supported, but less strongly so than gender differences in overall PTSD symptomatology. Female CSAS reported higher reexperiencing and avoidance symptomatology than male CSAS when controlling for trauma frequency and

age. Such differences were not as strong when the presence of individual trauma types was controlled. Interestingly, findings only partially support hypothesized differences. While women were hypothesized to exhibit more reexperiencing symptomatology, men were hypothesized to exhibit more avoidance symptomatology. Here women were found to report more of both types of problems.

Thus, the finding that female CSAS experienced greater overall PTSD symptomatology than male CSAS appears to be both robust and consistent with previous research. Differences in symptom expression were somewhat supported, but less robust. It should be noted, however, that the levels of PTSD reported by the survivors in this sample, on average, are relatively low. CSAS mean scores are below clinical and non-PTSD norms (average scores on total PTSD severity of 33.59 and 12.54, respectively; Foa, Cashman, Jaycox, & Perry, 1997). Given that college students are thought to be healthier and to have a higher SES than community and clinical samples, such a finding may not be unexpected. Nevertheless, differences between men and women in this symptomatology should be considered in this context.

Findings of greater PTSD symptomatology in women as compared to men are consistent with previous studies on this topic and as expected. Previous evidence suggests that women exhibit greater PTSD symptomatology than men in response to a variety of different traumatic events including earthquake survivors (Livanou et al., 2002), the violent death of a child (Murphy et al., 2003), war survivors (Durakovic-Belko et al., 2003), and a dam collapse (Green et al., 1991). Further, women have been found to report more severe PTSD among both child (Green et al., 1991), adolescent (Durakovic-Belko et al., 2003; Springer & Padgett, 2000), and adult populations (Livanou et al.,

2002; Murphy et al., 2003; Roth et al., 1997). Findings are also consistent with evidence suggesting that a greater number of traumatic experiences increases the risk for PTSD (Breslau et al., 1999; Davidson & Smith, 1990) and that women who are revictimized are at greater risk for developing PTSD (Arata, 1999).

Findings are also not inconsistent with previous literature on symptom expression of PTSD. For example, Curle and Williams (1996) found that girls exhibited higher distress for reexperiencing and avoidance symptoms than boys. Further, Green et al. (1991) found a trend for girls to experience somewhat higher average scores on reexperiencing symptoms than boys, but no differences between boys and girls for hyperarousal symptoms.

As noted in the introduction of this manuscript, several reasons and theoretical models help to explain why such findings might be expected. For example, the social learning model provides a framework for explaining gender differences in symptom expression. CSAS may be taught inappropriate coping mechanisms, or other inappropriate beliefs, through verbal and nonverbal messages (e.g., avoidance of painful memories). Girls may be reinforced for conformity to more female stereotypical behavior (e.g., to be more in need of caretaking, less independent) and this may lead to greater symptomatology. Furthermore, since society is more likely to conceptualize girls as victims than boys, girls may be encouraged to avoid discussing a "stigmatizing" abuse experience, whereas boys might be encouraged to discuss their "first sexual conquest."

Nevertheless, given unexpected findings regarding trauma frequency (women reporting a higher frequency of traumas as compared to men), the possibility that findings may be influenced by unexplored factors should also be considered. Not only is it

possible that how we defined a traumatic event influenced the differences in frequency of these events, but this methodological choice may also have increased differences between men and women on PTSD symptomatology. Men who failed to label an event as having involved fear, helplessness, or horror were not considered to have experienced that traumatic event. Analyses controlling for frequency of events (which may have been reduced in value due to the inclusion of this criterion more so for men than women) may therefore have undercorrected for differences between men and women. Also, differences in symptoms, like trauma frequency, may reflect reporting differences between men and women. It is possible that women are simply more likely to endorse these symptoms than men. Justification for this might be found in socialization theory. More specifically, it is more socially acceptable for female CSAS to report emotional distress than it is for male CSAS.

Findings in this study should also be considered in light of the fact that participants were asked to report PTSD symptoms specific to their CSA experience. This study did not examine PTSD in response to the participants' most distressing event. Therefore, although females in this sample may be reporting greater PTSD than male CSAS, it is possible that findings would be different if PTSD were not examined in response to this one specific type of trauma. Nevertheless, findings specific to CSA are important. Only three prior studies have examined gender differences in PTSD with regard to CSA. One found that female survivors reported more symptoms of PTSD (Wolfe et al., 1994), whereas two others failed to find differences between girls and boys (Livingston et al., 1993; Roesler & McKenzie, 1994). Methodological strengths here, including a greater sample size, better assessment of PTSD, and examination of

potentially confounding factors, make the present findings an important addition to that literature.

Results should also be interpreted with specific consideration of aspects of the CSA trauma itself in mind. It is possible that female CSAS experienced more severe abuse than male CSAS in this sample. Abuse characteristics were not examined here and could account for the symptom severity discrepancy between genders. More specifically, research suggests that abuse severity is correlated with adjustment, with more severe abuse being associated with greater adjustment problems (e.g., the presence of penetration and the presence of force are frequently associated with greater adjustment problems; for review see Polusny & Follette, 1995). It is possible that women in this sample experienced more severe abuse than men and this led to the finding of greater PTSD in women.

Related, this sample of CSAS may not be representative of all CSAS. More specifically, the overall prevalence rates of CSA found for both male and female in this sample were lower than those typically found in the literature and in studies conducted at the same university. This study found that 14.26% women and 3.81% men reported a history of CSA. Previous literature finds rates ranging from 15-33% for women and 13-16% for men (for review see Browne & Finkelhor, 1986; Polusny & Follette, 1995). Research conducted at Oklahoma State University in recent years using similar methodology has also found higher victimization rates (e.g., 6.6% of males and 20.1% of females; Burlingame, 2002; Messman-Moore & Long, 2000, respectively). Thus, it appears as if men were even less likely to report CSA than women based on visual comparison of rates in this sample versus past samples. Perhaps those men with high

PTSD symptom levels were less likely to disclose CSA and therefore were not included here.

Finally, the large number of participants that had missing data further complicates interpretation. More specifically, up to 6 male and 26 female CSAS were not included in analyses examining posttraumatic stress symptomatology due to missing data. This indicates a maximum 30% male subject loss and a 35.14% female subject loss for certain analyses. Again, if there were differential loss across gender related to symptom severity, findings might overstate differences between men and women.

Despite these caveats, this study exhibits a number of methodological strengths that deserve recognition and make findings regarding trauma frequency and PTSD symptomatology important. First, in addition to being one of only a handful of studies examining these constructs, this study included a larger sample of male CSAS than previous investigations, allowing for stronger statistical power for analyses. Further, this study employed clear definitions for CSA and standardized assessment of PTSD using reliable and valid instruments.

Studies examining trauma and PTSD often do not thoroughly assess lifetime trauma, nor do they assess for the frequency of these traumatic experiences. This study is among only a handful of studies that controls for the overall number of traumatic events experienced, as well as for other types of traumatic experiences that may be comorbid with CSA. This is important because different trauma types appear more likely to result in PTSD symptomatology. In addition, the more stringent definitions of trauma utilized in this study closely mimicked DSM-IV criteria for PTSD by including the criterion that the experience must have included intense fear, helplessness, or horror. Use of such an

approach provides a somewhat different perspective on trauma frequency, PTSD symptomatology, and gender differences in these.

While this study offers clear contributions to the current literature, it is also important to acknowledge its limitations. One drawback is the use of retrospective self-report of traumatic experiences. This may be problematic given that participants may inaccurately recollect or be unable to remember specific traumatic experiences. Further, the use of a college sample limits the generalizability of findings since college students tend to be from a high socioeconomic status, predominantly Caucasian, and high-functioning psychologically. Overall PTSD symptom levels for these college students appeared to be less severe than in the general population. Since the majority of symptom levels reported by both male and female CSAS were very low, differences in symptom cluster expression might not be generalizable to individuals reporting clinical levels of PTSD. Future studies might wish to target both clinical and community samples, including more diverse samples, in order to enhance validity and generalizability to clinical settings (where therapeutic interventions are most likely to take place).

Another weakness in this study is that a number of participants were not included in analyses because of missing data. In addition, there is no way to determine if missing data were due to error, discomfort with question content, or to memory impairment (which is a characteristic of PTSD). More specifically, studies have suggested that peritraumatic dissociation (dissociation occurring at the time of the traumatic event) is a risk factor for PTSD (Ozer, Best, Lipsey, & Weiss, 2003), and that dissociation is also associated with higher levels of memory disturbances for the trauma (Bremner, Vermetten, Southwick, Krystal, & Charney, 1998). Therefore, memory disturbances for

traumatic events might be a potential confound.

Another limitation of this study was that comorbidity of CSA, PTSD, and other mental health problems were not assessed. Given that CSA is associated with a variety of adjustment problems (Kessler, Sonnega, Bromet, Hughes, & Nelson, 1995), that such problems (e.g., depression) may be associated with greater levels of PTSD (Breslau, Davis, Andreski, & Peterson, 1991; Resnick, Kilpatrick, Best, & Kramer, 1992; Wolfe & Kimerling, 1997) and that women are more likely to experience some of these problems than men (e.g., depression; APA, 2001; Lipschitz, Winegar, Hartnick, Foote, & Southwick, 1999), then gender differences in PTSD may be due to gender differences in the occurrence of these additional problems. Future examination of this issue appears warranted. Finally, as noted before, this study did not examine the relationship between abuse severity and PTSD for CSAS. Investigation of abuse characteristics as an explanatory factor in gender differences also appears warranted.

Regardless of the aforementioned limitations, this study provides a variety of important implications for future research and treatment development. Findings from this study might aid in the development of more appropriate treatment packages for male and female CSAS experiencing posttraumatic stress symptomatology. For example, three different treatment approaches for PTSD, prolonged exposure alone (PE), prolonged exposure plus cognitive restructuring, and prolonged exposure plus stress inoculation training, have been suggested for use with clients with PTSD (Foa & Rothbaum, 1998). Foa and Rothbaum (1998) have made suggestions for choosing between these treatments. They indicate that prolonged exposure alone is most appropriate for clients that exhibit uncomplicated PTSD characterized mainly by anxiety and avoidance symptoms. They

suggest that PE plus cognitive restructuring be used with clients whose PTSD is characterized not only by anxiety, but also by guilt, shame or debilitating anger. Therefore, since the findings of this study suggest that women may express more avoidance and reexperiencing symptomatology, the combined therapeutic treatments may be more appropriate for them, particularly if emotions such as guilt, shame, and anger might be underlying these symptom expression differences. Further, this study has important implications for clinical assessment of PTSD and traumatic events. Clinicians should be aware that men might not experience more traumatic events than women; women appear to be more likely than men to experience a number of traumatic events in the context of fear, helplessness, or horror. It is important for clinicians to assess for all forms of traumatic events when examining PTSD, not just with men, but also with women.

Findings from the present study also offer implications for future research. Female CSAS appear to experience a greater number of traumatic events and greater PTSD symptomatology than male CSAS regardless of comorbid trauma and trauma frequency. In order to gain a better understanding of the relationship of these factors, it is recommended that future research examine these issues among individuals that are at high risk for experiencing traumatic events. More specifically, future studies should assess multiple trauma types in more ethnically, socioeconomically, and clinically diverse populations, in order to better determine the relationship between trauma type and posttraumatic stress symptomatology. Findings of studies with such samples should have important implications for enhancing both prevention policies and treatment packages offered in clinical settings. Attempts should also be made to encourage full disclosure of

all events by participants to reduce the impact of missing data and underreporting.

Future studies examining PTSD in CSAS may wish to examine the role that abuse severity plays in the development of posttraumatic stress symptomatology. There is a limited amount of research examining the impact that abuse characteristics (e.g., severity of the abuse, its duration, age of onset, abuse acknowledgement, relationship to the perpetrator, feelings associated with the abuse) have on the adjustment of CSAS. More specifically, the "severity" of the abuse, regardless of its definition, appears to be associated with less resilience in CSAS (Rodriguez, Vande Kemp, & Foy, 1998). Therefore, while more severe abuse experiences are related to poorer adjustment in general, more research is needed to determine the specific relationship between different abuse characteristics and the development of PTSD among CSAS.

More research is also needed to determine why men and women may demonstrate differences in posttraumatic stress symptomatology. A number of different factors warrant further study to help explain why gender differences in PTSD may exists. First, findings from this study suggest that it is important to examine trauma frequency and trauma type when examining PTSD. Further, more research is needed to establish the relationship that coping and/or attributional styles play in the development of PTSD for CSAS. Furthermore, the role that emotions such as guilt, shame and anger might play in symptom expression in men and women deserves further exploration.

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Table 1.

Simple intercorrelations of demographic variables with trauma frequency and PTSD symptomatology for entire sample

Variable	1	2	3	4	5	6	7	8	9
1. Age	—	.52 (991) $p = .001$	.02 (1027) $p = .58$	.14 (914) $p = .001$	.20 (839) $p = .001$	06 (123) $p = .51$	-.05 (123) $p = .62$	.10 (123) $p = .27$	.07 (123) $p = .47$
2. Marital status		—	.03 (977) $p = .34$	.16 (870) $p = .001$	.14 (804) $p = .001$	007 (121) $p = .94$	-.05 (121) $p = 62$	03 (121) $p = .74$	.01 (121) $p = 90$
3. Race			—	.11 (901) $p = .001$	.09 (830) $p = .009$	-.06 (119) $p = .49$	04 (119) $p = .68$	-.06 (119) $p = .50$	-.11 (119) $p = .21$
4. SES				—	.05 (745) $p = .16$	.08 (103) $p = .43$	-.02 (103) $p = .87$	.11 (103) $p = .25$	.08 (103) $p = .45$
5. Trauma total					—	.29 (88) $p = .007$	.20 (88) $p = .06$	22 (88) $p = .04$	33 (88) $p = .002$
6. Total PTSD						—	.83 (123) $p = .001$	.93 (123) $p = .003$	88 (123) $p = .001$
7. Reexperiencing							—	.72 (123) $p = .001$	.60 (123) $p = .001$
8. Avoidance								—	.70 (123) $p = .001$
9. Arousal									—

Note. Numbers in parentheses are the sample sizes. Marital status was examined as a dichotomy (never married vs. ever married); Race was examined as a dichotomy (Caucasian vs. non-Caucasian); SES = Socioeconomic Status; Trauma total = Trauma frequency total; Reexperiencing = Reexperiencing symptomatology; Avoidance = Avoidance symptomatology; Arousal = Arousal symptomatology.

Table 2.

Simple intercorrelations of demographic variables with trauma frequency and PTSD symptomatology for CSAS

Variable	1	2	3	4	5	6	7	8	9
1. Age	—	.61 (91) $p = .001$	-.18 (90) $p = .09$	.17 (76) $p = .14$	.35 (65) $p = .004$	.03 (84) $p = .76$	-.09 (84) $p = .44$	.08 (84) $p = .45$	.04 (84) $p = .71$
2. Marital status		—	-.06 (87) $p = .60$	.23 (75) $p = .05$	.18 (64) $p = .16$	-.03 (82) $p = .78$	-.10 (82) $p = .36$	.007 (82) $p = .95$	-.02 (82) $p = .87$
3. Race			—	.03 (72) $p = .81$	.09 (63) $p = .48$	-.12 (80) $p = .30$	.04 (80) $p = .72$	-.11 (80) $p = .32$	-.17 (80) $p = .12$
4. SES					.10 (56) $p = .43$	.13 (69) $p = .27$	.01 (69) $p = .92$	.18 (69) $p = .14$	.11 (69) $p = .38$
5. Trauma total					—	.22 (62) $p = .09$	.13 (62) $p = .33$	.14 (62) $p = .27$	.28 (62) $p = .03$
6. Total PTSD						—	.78 (84) $p = .001$	.91 (84) $p = .001$	.86 (84) $p = 001$
7. Reexperiencing							—	.65 (84) $p = .001$	.50 (84) $p = 001$
8. Avoidance								—	.64 (84) $p = .001$
9. Arousal									—

Note: Numbers in parentheses are the sample sizes. Marital status was examined as a dichotomy (never married vs. ever married); Race was examined as a dichotomy (Caucasian vs. non-Caucasian); SES = Socioeconomic Status; Trauma total = Trauma frequency total; Reexperiencing = Reexperiencing symptomatology; Avoidance = Avoidance symptomatology, Arousal = Arousal symptomatology.

Table 3.

Average Frequencies of Individual Traumas for Males and Females

Traumatic Event	Males			Females				
	N	*M*	*SD*	*N*	*M*	*SD*	*t* (*df*)	*p*
CSA	524	0.05	0.50	515	0.48	1.86	5.09 (586)[a]	.0001*
CPA	506	0.83	2.44	498	0.99	2.64	0.98 (1002)	.33
Rape	498	0.006	0.10	493	0.37	1.51	5.35 (496)[a]	.0001*
Natural disaster	511	0.38	0.93	497	0.50	1.08	1.97 (974)[a]	.05
Motor accident	513	0.37	0.76	501	0.59	1.06	3.75 (908)[a]	.0002*
Other accident	500	0.11	0.35	501	0.19	0.76	2.06 (706)[a]	.04
Warfare	506	0.05	0.48	499	0.10	0.68	1.2 (892)[a]	.23
Sudden death	511	0.53	0.95	504	1.00	1.60	5.66 (816)[a]	.0001*
Illness	512	0.41	0.70	504	0.65	0.90	4.75(945)[a]	.0001*
Robbery	515	0.17	0.49	505	0.24	0.52	2.35(1018)	.02
Physical assault	512	0.13	0.71	505	0.13	0.57	0.24(975)[a]	.81
Death threat	514	0.16	0.64	506	0.30	1.05	2.51(828)[a]	.01

Table 3. (Cont)

Traumatic Event	Males			Females				
	N	*M*	*SD*	*N*	*M*	*SD*	*t* (*df*)	*p*
Family violence	509	0.34	1.53	505	0.68	2 26	2.86 (883)*	.004
Domestic abuse	515	0.07	0.66	506	0.32	1 46	3.52 (703)*	.0005*
Stalking	513	0.05	0 28	509	0.38	1.34	5.53 (551)*	.0001*
Miscarriage	513	0.01	0.10	506	0 03	0.16	2 11 (824)*	.04
Abortion	515	0.04	0.23	510	0.04	0.22	0.17 (1023)	87

Traumatic Event with Age, Marital Status and Race as Covariates	Males			Females				
	N	Corrected *M*	*SE*	*N*	Corrected *M*	*SE*	*F* (*df*)	*p*
CSA	492	0.06	0.06	480	0.48	0.06	23.33 (1,967)	.0001*
CPA	476	0.82	0.11	464	0 99	0.12	1.06 (1, 935)	.30
Rape	469	-0.001	0.05	458	0.38	0.05	32.33 (1,922)	.0001*
Natural disaster	480	0.39	0.05	465	0.50	0.05	3.05 (1,940)	.08
Motor accident	481	0.37	0.04	468	0.61	0.04	16 13 (1,944)	.0001*

Table 3. (Cont.)

Traumatic Event with Age, Marital Status and Race as Covariates	Males			Females				
	N	Corrected *M*	*SE*	*N*	Corrected *M*	*SE*	*F* (*df*)	*p*
Other accident	477	0.16	0.02	468	0 22	0 02	4 64 (1,940)	.03
Warfare	476	0 05	0.02	467	0.08	0 02	0.52 (1,938)	47
Sudden death	480	0.52	0 06	472	1 01	0 06	33.44 (1,947)	0001*
Illness	482	0 41	0.04	470	0.65	0 04	20.84 (1,947)	.0001*
Robbery	484	0.16	0.02	472	0.24	0 02	6.05 (1,951)	01
Physical assault	481	0.13	0.03	472	0.13	0.03	0 02 (1,948)	.89
Death threat	483	0 15	0.04	472	0.31	0 04	7.96 (1,950)	.005
Family violence	478	0.32	0.09	471	0.70	0 09	9.43 (1,944)	.002*
Domestic abuse	484	0.07	0.05	472	0.31	0 05	12.04 (1,951)	0005*
Stalking	483	0.05	0.04	475	0.37	0 04	28.97 (1,953)	.001*
Miscarriage	482	0.008	0.006	472	0 03	0.006	6 35 (1,949)	.01
Abortion	484	0.04	0.01	476	0.04	0 01	0 04 (1,955)	.84

Note. * = *df* for this analysis was corrected for unequal variance

* = Bonferroni levels of significance p < .003

Table 4.

Corrected Means and Standard Errors for Male and Female CSAS on Total PTSD Symptomatology Controlling for Individual Trauma Types or Individual Trauma Type and Age

Covariate(s)	Males		Females				
	M^a	*SE*	M^a	*SE*	df	*F*	*p*
Sexual Assault	4.99	2.52	12.51	1.33	1,70	6 89	.01*
Sexual Assault and Age	5.00	2.54	12.51	1 34	1,69	6 78	01*
CPV	5.86	2.41	12 92	1 34	1,73	6.53	.0127
CPV and Age	5 75	2.41	12.96	1.34	1,72	6 82	.01*
Adult PV	5.93	2.41	12.90	1 33	1,74	6.43	.013
Adult PV and Age	5.85	2 42	12.93	1.33	1,73	6 56	.0125*
Natural D.	5.91	2.36	12.83	1.33	1,75	6.45	013
Natural D and Age	5.86	2 38	12.84	1.34	1,74	6 50	.0129

Note CPV = Childhood physical violence; PV = Physical violence, Natural D. = Natural Disaster, Sample sizes for analyses including the specified covariates were: sexual assault, male N = 16, female N =57, childhood physical assault, male N = 18, female N = 58; adult physical assault, male N = 18, female N = 59; and natural disaster, male N =19, female N = 59

^{a} = Means corrected for referenced covariates

* = Bonferroni levels $p < .0125$

Table 5.

Means/Corrected Means and Standard Deviations/Standard Errors for Male and Female CSAS on PTSD Symptom Expression

Symptom Cluster	Males (*N* = 19)		Females (*N* = 65)				
	M	*SD*	*M*	*SD*	*df*	*F*	*p*
Reexperiencing	2.53	3.37	5.63	5.16	1,82	6 14	02
Avoidance	1.32	1 80	3.07	2.93	1,82	6 10	.02
Arousal	1.84	3.44	3.80	4.76	1,82	2.78	.10
Symptom Cluster with Age as a Covariate	Males (*N* = 19)		Females (*N* = 65)				
	M[a]	*SE*	*M*[a]	*SE*	*df*	*F*	*p*
Reexperiencing	1.28	0 63	3.09	0.34	1,81	6.40	.01
Avoidance	2.56	1.11	5.62	0.60	1,81	5 85	.02
Arousal	1 86	1.04	3.80	0.56	1,81	2 68	.11

[a] = Means corrected for referenced covariates

Table 6.

Corrected Means and Standard Errors for Male and Female CSAS on Reexperiencing, Avoidance, and Arousal Symptomatology, Controlling for Trauma Frequency or Trauma Frequency and Age

Symptom Cluster with TRFREQ as Covariate	Males ($N = 14$)		Females ($N = 48$)				
	M^a	*SE*	M^a	*SE*	*df*	*F*	*p*
Reexperiencing	0.76	0.74	3.22	0.40	1,59	8.54	.005
Avoidance	2.31	1.23	5.87	0 66	1,59	6.50	.01
Arousal	2.21	1.19	3.96	0.64	1,59	1.67	20
Symptom Cluster with TRFREQ and Age as Covariates	**Males ($N = 14$)**		**Females ($N = 48$)**				
	M^a	*SE*	M^a	*SE*	*df*	*F*	*p*
Reexperiencing	0.85	0.73	3.19	0.39	1,58	7 96	.007
Avoidance	2 38	1.24	5 85	0.66	1,58	6.10	.02
Arousal	2.27	1 20	3.94	0 64	1,58	1.49	.23

Note: TRFREQ = Trauma frequency

^{a} = Means corrected for referenced covariates

Table 7.

Corrected Means and Standard Errors for Male and Female CSAS on Reexperiencing, Avoidance, and Arousal Symptomatology, Controlling for Various Types of Trauma or Various Types of Trauma and Age

Included Covariate(s)	Males		Females				
	M[a]	*SE*	*M*[a]	*SE*	*df*	*F*	*p*
			Reexperiencing				
Sexual Assault	0.92	0 67	3.02	0.35	1,70	7 58	.008
Sexual Assault and Age	0.95	0.67	3 01	0.35	1,69	7.39	.009
CPV	1.31	0.64	3 21	0.36	1,73	6.68	01
CPV and Age	1.27	0.63	3.23	0.35	1,72	7.39	.008
APV	1.33	0 65	3.14	0.36	1,74	5.86	02
APV and Age	1 30	0.65	3.15	0.36	1,73	6 23	.01
Natural D.	1 34	0.64	3 13	0.36	1,75	5 99	.02
Natural D. and Age	1 31	0.63	3 14	0 36	1,74	6.33	.01

Table 7. (Cont.)

Included Covariate(s)	Males		Females				
	M^a	*SE*	M^a	*SE*	*df*	*F*	*p*
			Avoidance				
Sexual Assault	2.17	1.15	5.55	0.61	1,70	6.66	.01
Sexual Assault and Age	2.15	1.16	5.55	0.61	1,69	6.67	.01
CPV	2.63	1.11	5.79	0.62	1,73	6.17	.02
CPV and Age	2.60	1.12	5.80	0.62	1,72	6.29	.01
APV	2.66	1.12	5.71	0.62	1,74	5.73	.02
APV and Age	2.64	1.12	5.72	0.62	1,73	5.75	.02
Natural D.	2.71	1.09	5.65	0.61	1,75	5.53	.02
Natural D. and Age	2.70	1.09	5.66	0.62	1,74	5.50	.02

Table 7. (Cont.)

Included Covariate(s)	Males		Females				
	M^a	*SE*	M^a	*SE*	*df*	*F*	*p*
			Arousal				
Sexual Assault	1.90	1.14	3.94	0.60	1,70	2.49	.12
Sexual Assault and Age	1.89	1.15	3.94	0.60	1,69	2.48	.12
CPV	1.92	1.08	3 92	0.60	1,73	2.63	.11
CPV and Age	1.89	1.08	3.93	0.60	1,72	2.71	.10
APV	1.93	1.07	4.05	0.59	1,74	3.01	.09
APV and Age	1.91	1.08	4.06	0 59	1,73	3.05	.09
Natural D.	1.86	1.06	4 05	0.60	1,75	3.21	.08
Natural D. and Age	1.85	1 07	4.05	0.60	1,74	3.19	.08

Note. CPV = Childhood physical violence; APV = Adult physical violence; Natural D. = Natural Disaster; Sample sizes for the covariates were as follows: sexual assault, male $N = 16$, female $N = 57$; childhood physical assault, male $N = 18$, female $N = 58$; adult physical assault, male $N = 18$, female $N = 59$; and natural disaster, male $N = 19$, female $N = 59$

APPENDIX

(INSTITUTIONAL REVIEW BOARD)

Oklahoma State University
Institutional Review Board

Protocol Expires: 5/14/03

Date: Wednesday, May 15, 2002 IRB Application No AS0263

Proposal Title: LIFE EXPERIENCES OF COLLEGE MEN AND WOMEN

Principal Investigator(s):

Trish Lang
215 N Murray
Stillwater, OK 74078

Noelle Cataldi
215 N. Murray
Stillwater, OK 74078

Reviewed and Processed as: Expedited

Approval Status Recommended by Reviewer(s): Approved

Dear PI :

Your IRB application referenced above has been approved for one calendar year. Please mark note of the expiration date indicated above. It is the judgment of the reviewers that the rights and welfare of individuals who may be asked to participate in this study will be respected, and that the research will be conducted in a manner consistent with the IRB requirements as outlined in section 45 CFR 46.

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

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

Please note that approved projects are subject to monitoring by the IRB. If you have questions about the IRB procedures or need any assistance from the Board, please contact Sharon Bacher, the Executive Secretary to the IRB, in 203 Whitehurst (phone: 405-744-5700, sbacher@okstate.edu).

Sincerely,

Carol Olson

Carol Olson, Chair
Institutional Review Board

Very good responses
+ well done !!

VITA

Noelle Carlozzi

Candidate for the Degree of

Master of Science

Thesis: CHILDHOOD SEXUAL ABUSE, POSTTRAUMATIC STRESS DISORDER, AND GENDER

Major Field: Psychology

Biographical:

Education: Graduated from Northport High School, Northport, NY in June 1995; received Bachelor of Arts degree in Psychology and Music from Vassar College, Poughkeepsie, NY in May 1999. Completed the Requirements for the Master of Science degree at Oklahoma State University in May 2003.

Clinical Experience: Practicum Student: Oklahoma City Crisis Intervention Center, Department of Mental Health and Substance Abuse Services, OKC, OK, 2002 - Present; Psychological Associate: Psychological Services Center, Oklahoma State University, 2000 to Present.

Research Experience: Graduate Research Assistant: Life Experiences Research Lab, Oklahoma State University, 2000 to Present; Research Assistant, Independent student, New Paltz, NY, 1998.

Teaching Experience: Graduate Instructor: Undergraduate Introductory Psychology, Oklahoma State University, 2001 to 2002; Graduate Teaching Assistant: Undergraduate Abnormal Psychology, Oklahoma State University, 2000 to 2001 and Summer 2002; Graduate Teaching Assistant: Undergraduate Statistics, Oklahoma State University, Summer 2001.

Professional Memberships: Association for Advancement of Behavior Therapy, American Psychological Association, Division of Clinical Psychology, The Honor Society of Phi Kappa Phi.