# The Role of Perceived Social Support in the Relationship between Sexual victimization and Post-traumatic Stress Symptomatology among College Women

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## Abstract

Sexual victimization is an act of interpersonal violence that affects the lives of many college women. Such incidents are often characterized by women as traumatic experiences which also result forms of psychological distress, with the most common being posttraumatic stress disorder (PTSD). The relationship between sexual victimization and PTSD is strengthened by revictimization. Although perceived social support has been shown to play a protective role in the sexual victimization→psychological distress relationship, there is also evidence that the moderating effect of perceived social support diminishes with chronic distress. Therefore, the current study assumed that there would be a changing role of perceived social support, from a moderator to a mediator, in the relationship between sexual victimization and PTSD. Three hundred college females (mean age 19) completed questionnaires related to sexual victimization experiences, perceived social support, and PTSD symptoms in addition to other personality and socio-demographic factors. The hypotheses were not supported. However, as with previous findings, the results showed that sexual victimization significantly predicted PTSD symptom severity.

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## Introduction

Sexual victimization is undoubtedly a serious act of interpersonal violence that affects the lives of many college women (Koss, Gidycz, & Wisniewski, 1987; Combs-Lane & Smith, 2002; Banyard, Plante, Cohn, Moorhead, Ward, & Walsh, 2005; Gross, Winslett, Roberts, & Gohm, 2006). Although the definition of what acts constitute a sexual offense is somewhat debatable, the U.S. Department of Justice defines sexual victimization as involving "forced sexual intercourse including both psychological coercion as well as physical force. Forced sexual intercourse means vaginal, anal, or oral penetration by the offender(s). This category also includes incidents where the penetration is from a foreign object such as a bottle. This also includes attempted rapes, male as well as female victims, and both heterosexual and homosexual rape. Attempted rape also includes verbal threats of rape (NIJ, National College Women Sexual Victimization Study, 2000)."

Between February and May 1997, the United States Department of Justice surveyed a nationally representative sample of college women from various universities ($N$=4,446) for experiences of various types of sexual offenses (NIJ, 2000). Respondents reported their victimizations for a reference period where they responded to a question asking if they had experienced sexual victimization "since school began in fall 1996." On average, the reference period for the victimization covered almost 7 months. The victimization rate was 27.7 rapes per 1,000 females. Of the total sample, 2.8% had experienced either a completed or an attempted rape incident. In addition, of the 123 victims, 22.8% were multiple-rape victims (revictimization). Across the other 10 forms of sexual victimization other than completed rape,

the incident rate per 1,000 female students ranged from 9.5 (threat of rape) to 66.4 (attempted sexual contact without force). The researchers concluded that young college women are "at greater risk for rape and other forms of sexual assault than women in the general population or in a comparable age group."

In another study, Combs-Lane and Smith (2002) employed a longitudinal design where history of sexual victimization was assessed in a sample of college females. In that study, 26% of the sample reported experiencing a history of some type of sexual victimization at Time 1. At Time 2 (5 months later), 12.7% of the sample reported being victimized between Times 1 and 2 where 69% of this group were new cases but 31% also reported a history of sexual victimization at Time 1 (revictimization). In a more recent study, Gross and colleagues (2006) assessed unwanted sexual contact in a sample of 903 college females. The researchers found that 27.2% of the sample reported unwanted sexual experiences with 9.1% of the sample reporting experiencing unwanted sexual intercourse.

*Sexual victimization, Revictimization, and Posttraumatic Stress Disorder*

Sexual victimization experiences are often characterized as traumatic. Resick and Calhoun (2001) referenced the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV) in defining an event as traumatic "when it involves death or serious injury or the threat of death or injury, and when the individual experiences strong negative affect in response to the event." The DSM-IV also emphasizes that the traumatic event can involve a "direct or indirect threat to life or well-being," and that the "individual's response to that threat is specifically what makes an event traumatic (Resick & Calhoun, 2001)."

When an individual experiences a traumatic event (e.g., rape) they are more prone to subsequently develop some form of psychopathology in response to the event, particularly

posttraumatic stress disorder (PTSD). The characteristic symptoms of PTSD include persistent re-experiencing of the traumatic event, persistent avoidance of stimuli associated with the trauma and numbing of general responsiveness, and persistent symptoms of increased arousal (DSM-IV-TR, American Psychiatric Association, 2000).

Sexual victimization has been found to be significantly related to PTSD where the sexual offense is the reference trauma that eventuates in PTSD. Rothbaum, Foa, Riggs, Murdock, and Walsh (1992) conducted a study examining the development of PTSD in 95 rape victims over a period of 12 weeks. Ninety-four percent of the sample met criteria for PTSD at baseline and 47% continued to meet criteria 3 to 4 months after the trauma. In another study, Kessler, Sonnega, Bromet, Hughes, and Nelson (1995) reported on the prevalence of PTSD in the general population in a large epidemiological survey study consisting of 5, 877 individuals (2, 812 men and 3, 065 women). Results from this study showed that rape was the trauma most likely to eventuate in PTSD. In addition, 65% of men and 45.9% of women who had been raped reported developing PTSD.

The relationship between sexual victimization and PTSD tends to strengthen as sexual victimization is experienced repeatedly, for example sexual abuse occurring during childhood and subsequent adult revictimization (Norris & Kaniasty, 1994). Nishith, Mechanic, and Resick, (2000) conducted a study to assess the relationships between childhood sexual abuse, child physical abuse, adult physical victimization, adult sexual victimization, and PTSD symptom severity using a community sample of 117 adult rape victims within 1 month of a recent index rape. Results from the study showed that a history of childhood sexual abuse appeared to increase vulnerability for adult physical victimization and adult sexual victimization and appeared to contribute to current PTSD symptom severity. These researchers postulated that the

cumulative effect of childhood sexual abuse and subsequent adult revictimization likely results in increased PTSD symptom severity observed among adult survivors of childhood sexual abuse.

In another study, Arata (1999) used a sample of 41 college females with histories of child sexual abuse (childhood sexual abuse only = 16; childhood sexual abuse and adult revictimization = 25) to assess their current and past diagnoses of PTSD to determine factors associated with PTSD onset and whether PTSD was a precursor or effect of sexual revictimization. She found that women who experienced sexual revictimization were significantly more likely to have a lifetime diagnosis of PTSD than were women with histories of child sexual abuse only.

*The Role of Perceived Social Support*

Sexual victimization also has been found to be significantly related to social support (Golding, Wilsnack, and Cooper, 2002). Hobfoll and Stephens (1990) define social support as "those social interactions or relationships that provide *actual assistance* or a *feeling* of attachment to a person or group that is perceived as caring or loving." Emphasis on social connectedness and supportive interactions are inherent in this definition. Furthermore, social support can be categorized as either received or perceived. Received social support has mostly been studied in terms of intervention (Hobfoll and Stephens, 1990). Received social support is characterized as an exogenous variable that a person receives in times of need and is a transactional view of social support. The influence of received social support on psychological functioning following sexual victimization has shown mixed results. Specifically, Ullman (1999), in a review of the empirical literature regarding received social support and sexual victimization, found that received social support can have aversive aspects (e.g., negative social reactions such as blaming the victim) which subsequently can negatively influence psychological

adjustment. In a subsequent study by Ullman (2001), she found that negative social reactions upon disclosing an assault was related to greater PTSD symptom severity. In addition to negative reactions of supposed support networks, various other factors have been found to interact with received social support, for example perceived helpfulness of the tangible aid and informational support which may vary depending on type of support provider (e.g., physician, family, and friends).

In contrast to received social support, perceived social support (which is the focus of the present study) is characterized as a relationship schema and an endogenous and personality variable (Norris and Kaniasty, 1996). It focuses on one's cognitive appraisal of the availability and potential for utilization of interpersonal support. Basically, it concerns whether one believes that others will "be there" for them when needed, especially in times of distress. Or, as plainly put by Norris and Kaniasty (1996), "received social support is helping behavior that did happen and perceived social support is helping behavior that might happen."

In addition, perceived social support is most related to health outcomes (Sarason, Sarason, & Peirce, 1990). Golding, Wilsnack, and Cooper (2002) conducted a meta-analysis examining perceived social support in relation to sexual victimization across six epidemiological population surveys (pooled N = 9, 865). Across the various studies, they found that sexual assault histories were related to low perceived social support. The results of the six surveys were consistent across groups of community residents that differed in geographic location, across women and men, across three ethnic groups, and the methodology of the studies. The results of this study suggest that perceived social support may be an important factor to consider in regard to sexual victimization.

Perceived social support also has been found to play a functional role (mediator and moderator) in the relationship between sexual victimization and PTSD (Yap & Devilly, 2004). Perceived social support has been traditionally assessed in the sexual victimization and stress and trauma research for its moderating/ buffering effects. In this regard, social support has been viewed as a coping resource that can mitigate the adverse psychological effects of a given stressor. Moreover, individuals with high levels of perceived social support appear to be more resistant to the adverse psychological effects of stressors than do individuals with low levels of perceived social support (Lepore, Evans, & Schneider, 1991). In these studies, perceived social support is conceptualized as a stable, exogenous coping resource. It is also considered to be independent of the stressor and psychological distress.

When considering perceived social support as a mediator the nature of sexual victimization and PTSD symptomatology remains the same as described above; however, the conceptualization of perceived social support changes. In contrast to the moderator model, the mediator model posits that perceived social support functions as an intervening variable between the stressor and psychological distress, such that changes in perceived social support are a result of the level of the stressor and serve as an underlying process that explains changes in psychological distress (Lepore et al., 1991). In this regard, perceived social support is conceptualized as a dynamic, endogenous variable that can be affected by sexual victimization. Researchers who have tested this model have found that perceived social support eroded because of pervasive, chronic stressors, and individuals with lower perceived social support presented with higher distress levels (Lepore et al., 1991; Yap & Devilly, 2004). In this conceptualization, chronic stress exposure can actually have deleterious effects and cause the buffering effects of perceived social support to diminish. In addition, the diminishing perceived social support

significantly increases the PTSD symptom severity. This process is considered to occur especially when the stressor is experienced repeatedly and social networks become overburdened, thus the members of the networks slowly withdraw from the individual or are perceived to withdraw. This perceived lack of "someone to turn to" in times of stress likely exacerbates psychological distress (e.g., PTSD symptom severity). This is where the role of perceived social support in the stress→distress process qualitatively shifts from a moderator to mediator (Lepore et. al, 1991).

Lepore and colleagues (1991) tested whether perceived social support functioned as a moderator or a mediator in the relationship between chronic environmental stressors (residential overcrowding) and subsequent psychological distress. They utilized a sample of 173 college undergraduates who had moved into off-campus housing. Some students lived in more crowded conditions than others. The researchers measured the participants' levels of perceived social support, residential crowding (the stressor), and psychological distress over time in a longitudinal design, at 2 months and 8 months. A buffering effect of perceived social support was found after 2 months of exposure to the stressor. Crowded residents with low perceived social support had greater increases in psychological distress than did crowded residents with high perceived social support. However, after 8 months of exposure, the buffering effect disappeared. Moreover, greater crowding had become directly associated with lower perceived social support, which in turn was associated with greater increases in psychological distress. The researchers concluded that under some types of chronic stress, the buffering effects of perceived social support may be short-lived because the stressor eventually erodes perceived social support.

In another study by Quittner, Glueckauf, and Jackson (1990), the mediating and moderating effects of perceived social support was assessed in relation to difficulties associated

with parenting as a chronic versus acute stressor. In this study, ongoing parenting stress was assessed in 96 mothers of deaf children and 118 matched controls. The authors found no moderating effects of perceived social support, yet perceived social support was found to mediate the relationship between stressor and outcome where chronic parenting stress was associated with lowered perceptions of emotional support and greater symptoms of depression and anxiety.

*Aim of Present Study*

The studies reported above have shown that relationships exist between sexual victimization, perceived social support, and PTSD; however, there is a lack of literature examining how the role of perceived social support qualitatively shifts as sexual victimization is repeatedly experienced (revictimization). The aim of the present study is to test the changing role of perceived social support in the relationship between sexual victimization and PTSD. Whether perceived social support functions as a mediator or a moderator is expected to vary depending on the frequency of sexual victimization experiences. More specifically, when sexual victimization occurs once, perceived social support is expected to function as a moderator; however, as sexual victimization increases, perceived social support is expected to function as a mediator (Yap and Devilly, 2004).

In support of the moderator hypothesis, a significant positive relationship should be observed between single-event sexual victimization and PTSD symptom severity, yet this relationship will exist only at low levels of perceived social support. At high levels of perceived social support, the significant relationship between sexual victimization and PTSD symptom severity will diminish and be non-significant.

In regard to perceived social support as a mediator, the increasing frequency of sexual victimization is expected to be related to PTSD symptom severity, and this relationship is expected to be accounted for by decreased perceived social support. As such, frequency of sexual victimization will be negatively related to perceived social support, which in turn will be positively related to PTSD symptom severity. Furthermore, the moderator relationship is expected to disappear.

*Personality and socio-demographic factors*

Several personality or socio-demographic factors will be considered in the present study because of their relationship to sexual victimization and PTSD in extant literature, namely interpersonal problems, self-efficacy, locus of control, and minority status. In regard to interpersonal problems, Classen, Field, and Koopman (2001) have suggested that the interpersonal nature of sexual victimization makes it reasonable to consider whether certain types of interpersonal difficulties are associated with a greater likelihood of being sexually revictimized. In this research, interpersonal problems are defined as difficulties in relating to others and which the individual identifies as causing distress. In Classen and colleagues' treatment intervention study, which included 52 college females diagnosed with PTSD, they examined relationships between child sexual abuse, sexual revictimization, and interpersonal problems. Sexually revictimized participants reported overall greater interpersonal problems compared with non-revictimized participants. Also, revictimized women were generally rated as being more overly nurturing, less assertive, and socially avoidant.

As mentioned above, self efficacy is another important factor that has been considered in this area of research. Bandura (1997) defines self-efficacy as "people's beliefs in their capability to exercise some measure of control over their own functioning and over environmental events."

In Marx, Calhoun, and Wilson's (2001) intervention treatment study, they were interested in how their program to reduce sexual revictimization could influence self-efficacy beliefs regarding the participants' perception of their ability to resist forceful sexual advances. They found that individuals in the control group had higher self-efficacy scores than the experimental group prior to treatment. However, at the 2-month follow-up, participants in the prevention treatment program reported significantly greater increases in self-efficacy from pre-intervention to follow-up than did those in the control group.

Locus of control has also been assessed in this area of research. According to Rotter (1989), locus of control refers to one's general, cross-situational beliefs about what determines whether or not they get reinforced in life. People can be classified along a continuum from very internal to very external. People with internal locus of control believe that success or failure is due to their own efforts. Those with external locus of control see little impact of their own efforts on the amount of reinforcement they receive. Bolstad and Zinbag (1997) examined relationships between sexual victimization, locus of control, and PTSD symptom severity in a sample of 117 female undergraduates. They found a significant relationship between PTSD symptom severity and external locus of control for individuals who experienced sexual victimization on one occasion, but this relationship was not found for individuals who had experienced revictimization. In addition, they found that sexual revictimization was related to greater PTSD symptom severity when compared to sexual victimization experienced on one occasion. Also, they found that diminished internal locus of control was significantly related to PTSD symptom severity following sexual victimization experienced on one occasion.

Ethnic minority status is also an important socio-demographic factor that should be assessed when considering this area of research, especially as it relates to perceived social

support. Bender, Cook, and Kaslow (2003), using a sample of 362 low-income African-American women, found that perceived social support mediated the relationship between different forms of childhood maltreatment (sexual, physical, and emotional abuses) and adult maltreatment (physical interpersonal violence and non-physical interpersonal violence), which was considered revictimization. In addition, for the study by Gross et al. (2006) mentioned previously, significantly more African-American women reported having engaged in sexual intercourse because they felt it was useless to try to stop their partners or as a result of emotional pressure.

*Additional risk factors*

In addition to the personality and socio-demographic variables mentioned above, there are additional risk factors which will be assessed in the present study because of their importance in empirical studies regarding sexual victimization. For example, child sexual abuse has been identified as a strong predictor of adult sexual victimization as implied by the studies mentioned earlier and numerous other studies (Rich, Comb-Lane, Resnick, and Kilpatrick, 2004). Roodman and Clum (2001), in a meta-analytic study assessing child sexual abuse and adult sexual victimization rates among 19 empirical studies, found a moderate effect size of .59, suggesting a significant relationship between child sexual abuse and adult sexual victimization. In addition to the relationship between child sexual abuse and adult sexual victimization, child sexual abuse has also been found to be significantly related to PTSD. For example, in a study by Feerick and Snow (2005) where they assessed the relationship between child sexual abuse, social anxiety, and PTSD severity symptoms in a sample of 313 undergraduate women, they found that women with a history of child sexual abuse reported more symptoms of anxiety, distress in social situations, and PTSD symptom severity than women without child sexual abuse histories.

Nevertheless, there is a lack of literature examining how non-sexual interpersonal victimization (e.g., being mugged, attacked) and non-interpersonal victimization (e.g., natural and technical disasters) may function as risk factors that influence the relationships described above, namely between sexual victimization and PTSD, sexual victimization and perceived social support, and perceived social support and PTSD, but these factors appear to have relevance for college samples. For example, Scarpa (2001) found among a sample of 476 college university students that 82% reported being victimized by some sort of violence. In a replication study (Scarpa, 2002) consisting of 518 university students, it was found that 76.4% reported being victims of violence. Moreover, the groups in this study that were characterized as "high-exposure" to violence scored higher on measures of psychological distress including PTSD symptom severity.

## Method

### *Participants*

The data used for this study were retrieved from an archival dataset where researchers examined various forms of community violence (e.g., being chased, attacked, slapped/ punched, mugged, etc.) and related sequelae (e.g., PTSD, depression, anxiety, anger and interpersonal problems) in a convenience sample of college students. Only females who endorsed some form of victimization were used (N=300) for this study. Their ages ranged from 17 to 22 ($M$ = 19, $SD$ = 1.19). Eighty-three percent were Caucasian, 5% were African-American, 7% were Asian, 3% were Hispanic, 2% classified themselves as "other," and one individual did not indicate an ethnicity. The ethnic group variable was dichotomized to reflect minority versus non-minority.

*Measures and Procedures*

*Sexual victimization and traumatic events.* Lifetime exposure to trauma was measured using the Traumatic Events Scale-Revised (Vrana & Lauterbach, 1994), which asked respondents if they had ever experienced the following 11 types of events: (1) serious industrial accident, farm accident, car accident, large fire, or explosion, (2) natural disaster, (3) violent crimes such as rape, robbery, or assault, (4) physical abuse or sexual abuse as a child, (5) unwanted sexual experiences involving the threat or use of force (6) dating relationship involving physical abuse or otherwise, (7) witnessing or (8) hearing about someone being mutilated, seriously injured, or violently killed, (9) personally being in serious danger of being killed or seriously injured, (10) an unspecified trauma, (11) and a trauma that one does not desire to report. For this measure, respondents were able to indicate their specific age when a given trauma was experienced and the frequency that they experienced that type of event (i.e., never, once, twice, and three or more times). In addition, respondents rated on a 7-point Likert-type scale their perceived personal injury from the event, degree of life threat, trauma appraisal when it occurred (how traumatic the event was perceived to be at the time), and trauma appraisal in the present (how traumatic the event is perceived to be now).

Item #5 from the Traumatic Events Scale-Revised (i.e., frequency of adult unwanted sexual experiences involving threat or use of force) was of particular interest to this study and is referred in the analyses as "sexual victimization." There were originally four groups created from this variable which reflect frequency of sexual victimization (or SV) experiences, never SV, once SV, twice SV, and three or more SV. The group sizes for this variable were as follows: never SV = 246, once SV = 40, twice SV = 8, and three or more SV = 6. To increase statistical power and applicability of inferential statistics for this data, the twice SV group and three or

more SV group were combined to form a “revictimized” group. So, the analyses included the never SV group (n=246), once SV group (n=40), and revictimized group (n=14). Additional items from the Traumatic Events Scale-Revised used for the study were #1 (serious accident), #2 (natural disaster), and #4 (child abuse). These variables are answered in a yes or no format.

*Non-sexual victimization*. Non-sexual forms of victimization were assessed using the Survey of Exposure to Community Violence - Self-Report Version (Richters & Saltzman, 1990). The Survey of Exposure to Community Violence - Self-Report Version is a 54-item questionnaire in which the respondent reports the frequency of having directly experienced or witnessed the following violence-related events: being chased by gangs or individuals, being in an accident, experiencing a forced residential entry while at home, experiencing a forced residential entry while not at home, threatened with serious physical harm, being punched or hit by a family member or non-family member, being mugged, being sexually assaulted, exposed to a weapon, seriously wounded by violence, being stabbed with a knife, shot with a gun, and exposed to a dead body. Respondents were asked to rate "how many times have *you yourself*" and "how many times have you *seen someone else*" experience each violent event.

The eight items referring to non-sexual interpersonal victimization where respondents indicated that they had experienced (1) being chased, (2) forced entry while at home, (3) forced entry while not at home, (4) being threatened, (5) being slapped or punched, (6) being mugged, (7) being attacked with a knife, and (8) being shot with a gun were used for analyses. These eight items were summed together to obtain a composite score for non-sexual victimization ranging from 9 to 40. Items 1, 2, 3, 4, 5, and 6 were rated according to the following scale to reflect increasing frequency: 1 = never, 2 = one time, 3 = two times, 4 = three to four times, 5 = five to six times, 6 = seven to eight times, 7 = once per month, 8 = once per week and 9 = almost

every day. The items referring to being attacked with a knife or shot with a gun were rated according to the following scale to reflect increasing frequency: 1 = never, 2 = one time, 3 = two times, 4 = three to four times and 5 = five or more times. Internal consistency for these 8 items was calculated at Cronbach's $\alpha = .48$.

*Post-traumatic stress disorder symptom severity*. PTSD was measured with the revised version of the Purdue Posttraumatic Stress Disorder Revised scale (Lauterbach & Vrana, 1996), a 17-item questionnaire that assesses PTSD symptoms resulting from the highest rated traumatic event on the Traumatic Events Scale Revised (Vrana & Lauterbach, 1994). The respondent reports how often during the previous month specific symptoms have occurred on a 5-point Likert-type scale ranging from "not at all" to "often," based on criteria from the Diagnostic and Statistical Manual of Mental Disorders, Third Edition Revised (DSM-III-R; American Psychiatric Association, 1987) for reexperiencing, avoidance, and arousal symptoms[1]. Continuous scores on the Purdue Posttraumatic Stress Disorder Revised scale can range from 17 to 85, with higher scores corresponding to more severe symptomatology.

In a study by Lauterbach and Vrana examining the reliability and validity of the Purdue Posttraumatic Stress Disorder scale using a sample of 440 undergraduate students, the internal consistency of the measure was .91 for the total score. For this study, the Purdue Posttraumatic Stress Disorder Revised scale was strongly correlated with specific measures of stress-related symptomatology and less strongly related with measures of anxiety and depression. The researchers of the study concluded that their results provided preliminary support for convergent and discriminant validity of the Purdue Posttraumatic Stress Disorder scale. Internal consistency for these 17 items in the present study was calculated at Cronbach's $\alpha = .92$.

*Social support*. Perceived social support was assessed using the Multidimensional Scale of Perceived Social Support (Zimet, Dahlem, Zimet, & Farley, 1988). Participants reported the general level of support they perceived as being available to them from their families (four items), friends (four items) and significant others (four items) on a 7-point Likert-type scale ranging from "very strongly disagree" to "very strongly agree." Friend perceived social support subscale, family perceived social support subscale, and significant other perceived social support subscale scores can be obtained, in addition to a total score. The friend perceived social support subscale, family perceived social support subscale, and significant other perceived social support subscale scores can range from 0 to 48, while the total the total perceived social support score can range from 0 to 72 with higher scores indicating increasing levels of perceived social support.

Zimet and colleagues (1988) assessed the reliability and validity of the Multidimensional Scale of Perceived Social Support using data from a sample of 136 female and 139 male college students (N=275). Internal consistencies were .91, .87, and .85 for the significant other perceived social support subscale, family perceived social support subscale, and friend perceived social support subscale, respectively. The reliability of the total perceived social support scale was .88. Sixty-nine of the 275 students were retested 2 to 3 months after the initial assessment, and test-retest reliabilities were .72, .85, and .75 for the significant other perceived social support subscale, family perceived social support subscale, and friend perceived social support subscale, respectively. The test-retest reliability of the total perceived social support scale was .85. The researchers also examined the construct validity of the measure by assessing correlations between the Multidimensional Scale of Perceived Social Support and measures of anxiety and depression. They found that all three scales and the total scale showed inverse relationships with

the measures of anxiety and depression. Internal consistency for the total scale 12 items in the present study was calculated at Cronbach's $\alpha$ = .93, for the significant other perceived social support subscale 4 items Cronbach's $\alpha$ =.95, family support perceived social support subscale 4 items Cronbach's $\alpha$ =.92, and friend support perceived social support subscale 4 items Cronbach's $\alpha$ =.95.

*Self-efficacy.* The Self-efficacy scale (Sherer, Maddux, Mercandante, Prentice-Dunn, Jacobs, & Rogers, 1983) is a 30-item questionnaire that was used to assess self-efficacy expectancies. Although self-efficacy traditionally has been viewed as a situation-specific belief that one holds regarding his or her ability to successfully perform a given behavior, the authors of the Self-efficacy scale desired to create a measure of self-efficacy expectancy that could generalize to actions other than a given target behavior. The Self-efficacy scale consists of two subscales, general self-efficacy (17 items) and social self-efficacy (6 items). Items contained within the general self-efficacy subscale measure self-efficacy without reference to any specific behavioral domain, for example (e.g., When unexpected problems occur, I don't handle them well), whereas items contained within the social self-efficacy subscale assess efficacy expectances in social situations (e.g., I do not handle myself well in social gatherings). Respondents are asked to rate how much an item was true regarding themselves using a 5-point Likert-type scale ranging from "disagree strongly" to "agree strongly." Increasing scores reflect higher self-efficacy. Fourteen items are recoded (11 items from general self-efficacy and 3 items from social self-efficacy) in the direction of lower scores reflecting higher self-efficacy. For example, the item that states, "I give up easily" is recoded so that a given individual who rated the item as 1 (strongly disagree) would receive a score of 5 (strongly agree) whereas a given individual who rated the item with 5 would receive a score of 1. The Self-efficacy scale has

shown good construct validity and significant relationships with other measures of personal efficacy (locus of control, social desirability, interpersonal competence, and self-esteem). Sherer and Adams (1983) also found that positive expectancies of self-efficacy were associated with personal adjustment. Internal consistencies for the general self-efficacy 17 items in the present study was calculated at Cronbach's $\alpha = .87$ and for the social self-efficacy 6 items at Cronbach's $\alpha = .70$.

*Locus of Control.* The adult form of the Nowicki-Strickland Locus of Control Scale for Adults (Duke & Nowicki, 1973; Nowicki & Duke, 1974) is a 40 item questionnaire that was used to assess the perception that outcomes in life are due primarily to forces within one's control (internal) or beyond one's control (external). The items are answered as either yes or no. Higher scores reflect more internal locus of control orientation. The scale includes questions pertaining to problem-solving style (e.g. "Do you believe that most problems will solve themselves if you just don't fool with them?"), the role of luck or fate versus hard work and persistence (e.g. "Do you think it is better to be smart or to be lucky?"), and general perception of futility and helplessness versus control and choice (e.g. "Do you feel you have a lot of choice in deciding who your friends are?"). The original studies conducted by Nowicki and Duke assessing the psychometric properties of the Nowicki-Strickland Locus of Control Scale indicated that it has good reliability (split-half reliability ranging from .74 to .86; test-retest reliability over a 6-week period, $r = .83$; internal consistencies ranged from .66 to .75) and validity (significantly positive correlations with other measures of locus of control, neuroticism, and anxiety). Internal consistency for these 40 items was calculated in the present study at Cronbach's $\alpha = .59$.

*Interpersonal problems.* Interpersonal problems were assessed using a modified version of the Inventory of Interpersonal Problems (Horowitz, Rosenberg, Baer, Ureno, & Villasenor, 1988), called the IIP-PD and the IIP-C (described below). The original version is a 127 item measure with two sections, the first consisting of 78 items with the phrase "it is hard for me to," and the second consisting of 49 items that began with the phrase "these are things I do too much." The instructions asked respondents to consider each problem and to rate how distressing that problem had been with respect to any significant person in their lives on a scale ranging from "not at all" to "extremely." The participants consisted of 103 psychotherapy patients. After factor analysis of the scores, the authors arrived at six subscales associated with "hard to" statements (Assertive, Sociable, Intimate, and Submissive) and "too much" statements (Responsible and Controlling). The internal consistency values ranged from .82 to .94, and the test-retest coefficients over a 10-week period ranged from .80 to .90.

Pilkonis, Kim, Proietti, & Barkham (1996) factor analyzed Inventory of Interpersonal Problems scores collected from individuals diagnosed with DSM-III-R (American Psychiatric Association, 1987) personality disorders and individuals without personality disorders with intentions of creating a brief, screener questionnaire to use in initial stages of personality disorders assessment. The analyses showed that 28 items demonstrated the ability to discriminate individuals with personality disorders from individuals without personality disorders. These items formed the IIP-PD total and subsequent analysis showed three factors in the scale reflecting interpersonal sensitivity, interpersonal ambivalence, and aggression. An additional 19 items from the Inventory of Interpersonal Problems where shown to reflect symptoms associated with the cluster C personality disorders of the DSM-III-R. Further analyses of the items associated with the IIP-C total yielded two factors reflecting a need for

social approval and lack of sociability. Scarpa and colleagues (1999) were able to demonstrate strong test-retest reliability, internal consistency, and factorial, convergent, and external validity for the IIP-PD and IIP-C totals in a non-clinical college sample. Internal consistency for these scales for the current study were as follows, aggression (7 items, Cronbach's $\alpha = .84$), interpersonal ambivalence (10 items, Cronbach's $\alpha = .88$), interpersonal sensitivity (11 items, Cronbach's $\alpha = .81$), need for approval (9 items, Cronbach's $\alpha = .86$), lack of sociability (10 items, Cronbach's $\alpha = .90$), IIP-PD total (Cronbach's $\alpha = .72$), and IIP-C total (Cronbach's $\alpha = .78$).

## Results

### *Preliminary Analyses*

All continuous variables were examined to ensure they met the assumptions of the primary analytic procedures, including absence of missing data points, normality of distributions, absence of outliers, linearity, multicollinearity, and homescedasticity. Also, descriptive statistics (frequencies, means, standard deviations, and ranges) were obtained for each variable (see Tables 1 and 2). In addition, to assess for spurious relationships and alternative explanations for the possible findings in the primary analyses, differences on personality variables were assessed between the sexual victimization groups. Zero-order correlations were also conducted between all of the variables (see Table 3). Lastly, hierarchical regressions were performed as the primary analyses.

There were no significant differences between the three groups (i.e., never SV group, once SV group, and revictimized group) for the Inventory of Interpersonal Problems scales (need for approval, interpersonal ambivalence, interpersonal sensitivity, lack of sociability, aggression, IIP-PD total, and IIP-C total), implying that interpersonal relationship problems of sexually

victimized women may be similar to women who have never been sexually victimized. However, significant group differences did emerge for general self-efficacy, $F(2, 291) = 5.52$, $p < .01$. To examine group mean differences a post hoc test had to be used that was applicable for an unbalanced design (unequal group sizes). Specifically, the group sizes between the sexual victimization groups were considerably different. For example, the size of the once SV group (n=246) was 17 times as large as the revictimized group (n=14). Therefore, the Hochberg's GT2 test[2], which is a pairwise multiple comparison procedure for unbalanced designs, was used (Field, 2005). A major assumption of this test is homogeneity of variances between groups, and the present data meet this assumption (Levene's statistic for the three groups on self-efficacy p=.311). Post hoc Hochberg's GT2 test revealed that the mean of the revictimized group ($M$=66 $SD$=10.34) was significantly greater than the once SV group ($M$=58 $SD$=7.84). In addition, the mean difference between the never SV group and the once SV group approached significance, $p$=.06, where the never SV group reported higher self-efficacy ($M$=61 $SD$=8.38). Also, the mean difference between the never SV group and the revictimized group approached significance, $p$=.09. The findings show that although generally women victimized once report decreased self efficacy than women without histories of sexual victimization, revictimized women may perceive themselves as more capable than women victimized once and women without sexual victimization histories.

In addition, significant differences for the sexual victimization groups also were observed for nonsexual victimization, $F(2, 294) = 6.11$, $p < .01$. Again, because of the unbalanced design Hochberg's GT2 was used as a post hoc multiple comparison procedure and revealed that the never SV group reported significantly lower non-sexual victimization experiences ($M$=11.86 $SD$=3.61) than the once SV group ($M$=13.80 $SD$=3.99). However, observation of the means

revealed that the once SV group and the revictimized group (*M*=13.79 *SD*=3.09) had means that were virtually the same. In this way, women who experience sexual victimization may encounter more overall violent interpersonal victimization than their peers without histories of sexual victimization. There were no significant group differences for social self-efficacy or locus of control.

Since child abuse, minority status, natural disaster, and serious accident are categorical variables statistical procedures using Chi-square analyses were used to determine whether the proportions of those falling into each category of these variables differed significantly by sexual victimization grouping. Since the cells of the contingency tables for several of these variables did not meet the assumptions of the Pearson $\chi^2$ test (expected frequency must be greater than 5 for each cell) the Yates' continuity correction was applied. In addition, since Yates' continuity correction can only assess 2 x 2 contingency tables, the once SV group and revictimized group were combined, resulting in a never SV group and SV group. The results indicated that individuals who experienced sexual victimization as adults were more likely to have a history of child abuse in comparison to individuals without sexual victimization histories, $\chi^2$ (1, *N*= 299) = 4.12, $p < .05$, two-tailed test with Yates's continuity correction. However, there were no significant differences between the groups for minority status or experiencing a natural disaster or serious accident.

*Point biserial and Zero-order Correlations*

Zero-order correlations were performed for all of the variables. However, only the variables that were entered in the regression analyses (reported below) are reported here. All correlations were performed as Pearson's r, two-tailed tests. Sexual victimization had significant positive relationships with child abuse, $r(299)=.14$, $p<.05$, PTSD symptoms, $r(300)=.35$, $p<.01$,

and non-sexual victimization, $r(297)=.19$, $p<.01$. Child abuse had significant positive relationships with PTSD symptoms, $r(299)=.23$, $p<.01$, serious accident, $r(299)=.13$, $p<.05$, and non-sexual victimization, $r(296)=.25$, $p<.01$. Minority status had a significant negative relationship with perceived social support $r(292)=-.14$, $p<.05$. Perceived social support had significant negative relationships with PTSD symptoms, $r(293)=-.29$, $p<.01$, IIP-PD total, $r(287)=-.28$, $p<.01$, and IIP-C total, $r(292)=-.31$, $p<.01$, and significant positive relationships with locus of control, $r(287)=.27$, $p<.01$, general self-efficacy, $r(287)=.35$, $p<.01$, and social self-efficacy, $r(286)=.36$, $p<.01$. Finally, general self-efficacy had a significant positive relationship with social self-efficacy, $r(291)=.41$, $p<.01$. For all other relationships see Table 3.

*Perceived Social Support as a Moderator*

Baron and Kenny (1986) have indicated that a significant moderator effect exists when a given variable affects the direction and/ or the strength of the relation between a predictor variable and a criterion variable. Statistically speaking, the moderator effect is evidenced by a significant interaction effect between the moderator variable and the predictor variable (e.g., sexual victimization x perceived social support) that holds when the main effects for the predictor and the moderator are controlled. The authors also state that the appropriate statistical procedure to test the moderator hypothesis is dependent upon the level of measurement of the predictor variable and moderator variable. In the present case, the predictor variable (sexual victimization) is a three-level categorical variable, whereas the moderator (perceived social support) is a continuous variable. Baron and Kenny (1986) have noted that the appropriate analytic procedure in this case is regression analysis.

In addition, Aiken and West (1991) outline the specific procedures that should be used to test for interactions between categorical and continuous variables where the first step consists of

dummy coding the categorical variable. The dummy coding procedure involves designating one of the levels of the categorical variable as a comparison group. In the present case, the once SV group was chosen as the comparison group and the rationale for this decision was based on the a priori hypotheses assumption that perceived social support would function differently after single and multiple victimizations in that high social support would no longer buffer the effects of PTSD symptoms. Therefore, the sexual victimization dummy variables needed to be coded so that one could observe the changes in perceived social support after one victimization experience and again after two or more experiences.

Furthermore, when creating dummy variables from a categorical predictor, Aiken and West also indicate that G - 1 dummy variables are needed, where G is the number of groups. In the present case there are three groups, the never SV group, once SV group, and revictimized group. Therefore, two dummy variables were created. When examining the effect of one victimization experience, the never SV group was assigned a code of 0 and the once SV group was assigned a code of 1. In the analyses this dummy variable is referred to as "victimized once." In the analyses examining the effects of multiple SV experiences the once SV group was assigned a code of 0 and revictimized group a code of 1. In the analyses this dummy variable is referred to as "revictimized."

Also, to eliminate problematic multicollinearity effects between the first-order terms (i.e., the independent variable and the moderator) and the higher order terms (i.e., the interaction terms), Holmbeck (1997) and Aiken and West (1991) recommended that the continuous moderator variable be centered before testing the significance of the interaction term. To center a variable, scores are put into deviation score form by subtracting the sample mean from all individual's scores on the variable, thus producing a revised sample mean of zero. In the present

case, overall perceived social support was centered by subtracting each individual's scores on this variable from the variable mean.

The next step involved creating the interaction term. As noted by Aiken and West, the interaction between a continuous and categorical variable is formed by multiplying the continuous variable by each of the dummy variables. Therefore, in the present case this step involved multiplying perceived social support by the victimized once variable and then by revictimized variable, thereby creating victimized once x perceived social support and revictimized x perceived social support interaction terms.

Two hierarchical regression analyses were performed. In the first analysis, the main effects for victimized once, perceived social support and interaction effect for victimized once x perceived social support were tested. In the second analysis, the main effects for revictimized, perceived social support, and the interaction effect for revictimized x perceived social support were tested. In both analyses PTSD symptom severity was entered as the dependent variable. Since child abuse, non-sexual victimization, and general self-efficacy were significantly related to PTSD symptom severity, they were controlled in each regression equation.

The steps for the performing the first regression were as follows: PTSD symptom severity was set as the dependent variable. Then child abuse, non-sexual victimization, and general self-efficacy were entered in block one. Next, the main effect for victimized once was entered in block two. After that, the main effect for perceived social support was entered in block three. Finally, the victimized once x perceived social support interaction term was entered in block four. After the first regression for using the victimized once variable was complete, the same regression procedure was performed except the revictimized variable was used in place of the victimized once variable (see Tables 5 and 6).

The overall model testing for moderating effects of perceived social support with the victimized once variable was significant, $F(2, 266)=13.624$, $p < .01$. There was a significant main effect for victimized once, $t(269)=4.414$, $p<.01$, where the once SV group ($M=38.02$, $SD=14.51$) reported significantly more PTSD symptom severity than the never SV group ($M=27.76$, $SD=11.15$). However, there was not a significant interaction effect for the victimized once x perceived social support variable. The overall model testing for moderating effects of perceived social support with the revictimized variable was not significant, $F(6, 45)=1.065$, $p=.40$ and none of the main effects were significant.

Overall, the effect of sexual victimization was not contingent upon level of perceived social support. Thus, the buffering effect of perceived social support was not supported. In addition, the multiple SV group did not report significantly more PTSD symptom severity than the once SV group. The hierarchical regression analyses were performed a second time without the inclusion of the control variables and the same results occurred.

*Perceived Social Support as a Mediator*

In order for a variable to be considered a mediator, Baron and Kenny (1986) have indicated that the independent variable and the mediator must be correlated. In the present case, sexual victimization was not related to perceived social support and therefore the criteria for mediation were not met.

*Supplementary Analyses*

Five sets of additional analyses were conducted to assess whether or not the results of the study changed if certain parameters were altered. The first set of analyses involved testing the perceived social support subscales to examine if effects differed according to whether support was perceived from friends, family, or significant others. As in the initial analyses for total

perceived social support, PTSD symptom severity was set as the dependent variable. Then child abuse, non-sexual victimization, and general self-efficacy were entered in block one. Next, the main effect for victimized once was entered in block two. After that, the main effect for the perceived social support subscales was entered in block three of their respective regression analyses. Finally, the victimized once x perceived social support subscale interaction term was entered in block four. After the first regression using victimized once was complete, the same regression procedure was performed using revictimized in place of victimized once.

The overall model testing for moderating effects of friend perceived social support with victimized once was significant, $F(6, 277)=16.05$, $p < .01$, as well as with revictimized, $F(6, 277)=12.096$, $p < .01$. However, there were no significant main effects for victimized once, revictimized, or the interaction effects of the victimized once x friend perceived social support variable or the revictimized x friend perceived social support variable.

The overall model testing for moderating effects of family perceived social support with victimized once was significant, $F(6, 277)=16.05$, $p < .01$, as well as with revictimized, $F(6, 277)=12.096$, $p < .01$. The main effect for victimized once was significant $t(299)=-2.872$, $p<.01$; however, the main effect for revictimized only approached significance, $t(299)=1.847$, $p=.07$. The victimized once x family perceived social support variable and revictimized x family perceived social support variable were not significant.

The overall model testing for moderating effects of significant other perceived social support with victimized once was significant, $F(6, 278)=14.681$, $p < .01$, as well as with revictimized, $F(6, 278)=11.758$, $p < .01$. The main effect for victimized once was significant $t(299)=-5.628$, $p<.01$, and the main effect for revictimized was also significant, $t(299)=3.865$,

$p<.01$. However, the victimized once x significant other perceived social support variable and revictimized x significant other perceived social support variable were not significant.

The second set of additional analyses involved performing regression analyses in the same manner as the initial analyses, however, only the revictimized group and the once SV group were included. Plainly put, the never SV group was removed from these analyses resulting in a dichotomized categorical predictor variable for sexual victimization. Zero-order correlations were also performed again for the variables that were used in the regressions of the initial analyses, namely child abuse, non-sexual victimization, general self-efficacy, the dichotomized sexual victimization variable, PTSD symptom severity, and total perceived social support. Non-sexual victimization had a positive significant relationship with child abuse, (54)=.39, $p<.01$. General self-efficacy had significant positive relationships with sexual victimization, (53)=.40, $p<.01$, and total perceived social support, (52)=.33, $p<.05$. Lastly, PTSD symptom severity had a significant negative relationship with total perceived social support, (53)=-.30, $p<.05$. All other relationships were non-significant. Child abuse, general self-efficacy, and non-sexual victimization were not included in the analyses because they were not significantly related to PTSD symptom severity. One regression analysis was performed where the dichotomized sexual victimization variable was entered in block one, total perceived social support was centered and entered in block two, and the sexual victimization x total perceived social support variable was entered in the block three. The overall model was non-significant. The analyses were repeated with the family perceived social support subscale, friend perceived social support subscale, and significant other perceived social support subscale where each subscale was used in a separate regression analyses in place of total perceived social support. For each of the analyses, the overall models were non-significant.

The third set of additional analyses involved performing a regression where the revictimized group and the sexually victimized once group were combined to form an overall sexual victimized category, which was compared with the never SV group. Simply, the resulting variable was a dichotomized categorical predictor variable consisting of a SV group and never SV group. Again, zero-order correlations were also performed for the variables that were used in the regressions of the initial analyses, namely the dichotomized sexual victimization variable, child abuse, total perceived social support, PTSD symptom severity, non-sexual victimization, and general self-efficacy. The sexual victimization variable had significant positive relationships with child abuse, (299)=.13, $p<.05$, PTSD symptoms, (300)=.35, $p<.01$, and non-sexual victimization (297)=.20, $p<.01$. Child abuse had significant positive relationships with PTSD symptoms, (299)=.23, $p<.01$, and non-sexual victimization, (296)=.25, $p<.01$. Total perceived social support had a significant negative relationship with PTSD symptom severity, (293)=-.29, $p<.01$, and a significant positive relationship with general self-efficacy, (287)=.35, $p<.01$. PTSD symptom severity had a significant positive relationship with non-sexual victimization, (297)=.28, $p<.01$, and a significant negative relationship with general self-efficacy, (294)=-.22, $p<.01$. All other relationships were non-significant. Non-sexual victimization was not included in the analyses because it was not significantly related to PTSD symptom severity.

One regression analysis was performed where child abuse, general self-efficacy was entered in block one, the dichotomized sexual victimization variable was entered in block two, total perceived social support was centered and entered in block three, and the sexual victimization x total perceived social support variable was entered in the block four. The overall model testing for the moderating effect of perceived social support with the dichotomized sexual victimization variable was significant, $F(6, 276)=15.743$, $p < .01$. In addition, there was a

significant main effect for the dichotomized sexual victimization, $t(299)=5.812$, $p<.01$, where the SV group ($M=39.02$, $SD=13.54$) reported significantly more PTSD symptom severity than the never SV group ($M=27.76$, $SD=11.15$). However, there was no significant interaction effect for the sexual victimization x perceived social support variable. The analyses were repeated with the family perceived social support subscale, friend perceived social support subscale, and significant other perceived social support subscale. Each subscale was used in separate regression analyses in place of total perceived social support. All of the perceived social support subscales performed similar to the total perceived social support subscale where their main effects were significant, but their interactions were non-significant, excluding family perceived social support, which did not have a significant main effect.

The fourth set of additional analyses involved normalizing the total perceived social support variable and performing the initial analyses again. The total perceived social support scores were transformed according to procedures outlined by Tabachnick and Fidell (2001) for negatively skewed data. Specifically, two different transformations were applied to the data separately, one was square root transformation, New X=SQRT(K-X), and the other was a logarithmic transformation, New X=Lg10(K-X). The findings for total perceived social support remained the same as in the initial analyses in that no moderating effects were found.

The fifth set of analyses involved removing the outliers for total perceived social support and performing zero-order correlations and regression analyses in the same manner as the initial analyses. The "explore" function of SPSS 14.0 was used to identify scores that were outliers in the distribution of the total perceived social support variable. Through this procedure, 64 cases were identified as outliers in the left and right tails of the distribution of total perceived social support scores. These 64 scores were removed, and the resulting sample consisted of 236

participants (a reduction of 21.33%). The final set of groups consisted of 192 in the never SV group, 32 in the once SV group, and 12 in the revictimized group. Zero-order correlations included the variables in the initial regression analyses, namely child abuse, sexual victimization, total perceived social support, non-sexual victimization, general self-efficacy, and PTSD symptom severity. Child abuse had a significant negative relationship with total perceived social support, (236)=-.14, $p<.05$, significant positive relationships with non-sexual victimization, (233)=.21, $p<.01$, and PTSD symptom severity, (236)=.17, $p<.01$. Sexual victimization had significant positive relationships with non-sexual victimization, (233)=.16, $p=.01$, and PTSD symptom severity, (236)=.34, $p<.01$. Total perceived social support had a significant negative relationship with non-sexual victimization, (233)=-.13, $p<.05$, a significant positive relationship with general self-efficacy, (233)=.39, $p<.01$, and a significant negative relationship with PTSD symptom severity, (236)=-.29, $p<.01$. Non-sexual victimization had a significant negative relationship with PTSD symptom severity, (233)=.24, $p<.01$. Finally, general self-efficacy had a significant negative relationship with PTSD symptom severity, (233)=-.26, $p<.01$. All other relationships were non-significant.

As in the initial analyses, the overall model testing for moderating effects of total perceived social support with victimized once was significant, $F(6, 223)=11.587$, $p < .01$. Also, the model testing for moderating effects of total perceived social support with revictimized was significant, $F(6, 223)=9.525$, $p < .01$. The main effect for victimized once approached significance, $t(299)=-1.843$, $p=.07$, and the main effect for revictimized was not significant. Finally, the effects for the victimized once x perceived social support variable and revictimized x perceived social support variable were non-significant.

## Discussion

At the outset of this study, it was predicted that there would be a changing role of perceived social support in the relationship between sexual victimization and PTSD symptom severity where the function of perceived social support as a moderator or mediator was expected to vary depending on the frequency of sexual victimization experiences. Consistent with previous research, sexual victimization significantly predicted PTSD symptom severity and the relationship between these variables became stronger as the frequency of sexual victimization experiences increased. In fact, sexual victimization accounted for more variability in PTSD than any other variable assessed for this study. This finding supports the premise that PTSD is a significant outcome associated with sexual victimization.

In addition, high levels of perceived social support significantly predicted decreased PTSD symptom severity. This is consistent with a large body of research showing the beneficial effects of perceived social support on psychosocial adjustment (Hobfoll & Stephens, 1990; Sarason & Sarason, 1985). Nevertheless, the moderation hypothesis was not supported in that the combination of sexual victimization experience(s) with perceived social support did not result in a differential outcome in PTSD symptom severity. In other words, perceived social support did not buffer victims of sexual victimization from the effects PTSD symptoms. The main effect and lack of moderation suggests that sexual victimization increases PTSD symptoms regardless of the level of social support these individuals perceived as being available to them or whether sexual victimization was experienced once or twice or more times. Furthermore, sexual victimization had no relationship with perceived social support, thereby not meeting the assumptions of the mediator hypothesis.

A personality variable that had an important role in this study was generalized self-efficacy. Specifically, although women with one sexual victimization experience reported lower

self-efficacy compared to the never victimized group, sexually revictimized women reported higher self-efficacy than both women victimized once or women who had never been victimized. This suggests that women who are repeatedly victimized may view themselves as being generally more competent and capable than they are in reality. This personality characteristic could cause these women to place themselves in unsafe or risky situations. On the other hand, it may be that these women obtained services or help after their repeated experiences that increased their level of perceived self-efficacy.

Another important finding was that women with any history of sexual victimization evidenced more encounters with non-sexual victimization and child abuse than women without histories of sexual victimization. This cumulative effect of victimization may have important implications for the exacerbation of PTSD (Nishith et al., 2000). It also underscores the importance of recognizing that women who experience sexual abuse have many other violent traumas that affect their adjustment and need to be addressed. On the other hand, the fact that all these women were attending college and showed no group differences on locus of control, interpersonal problems, or perceived social support also attests to a certain level of successful adaptation that can be used to identify their strengths (see below for further discussion).

As with previous research, child abuse significantly predicted PTSD and had a significant relationship with sexual victimization such that individuals with histories of child abuse were more likely to experience adult revictimization and report more PTSD-related symptoms. This finding confirms that child abuse is a significant variable when considering adult victims of sexual victimization and their psychological functioning.

*The Absence of Relationship between Sexual Victimization and Perceived Social Support*

Undoubtedly, the lack of a significant association between sexual victimization and perceived social support appears to be the most prominent finding from this study. There are a couple of possible explanations for this outcome. Inspection of the distribution of perceived social support for this convenience sample of female college students revealed that most individuals had relatively high perceived social support and the distribution was negatively skewed. In addition, those individuals with extremely low perceived social support appeared to be outliers in the distribution and 26% of the sample endorsed the most extreme high score that was possible on the social support measure. Nevertheless, most individuals continued to have high social support even when the outliers were removed and also when the data were transformed. These findings could imply that college women may be similar in the amount of social support they perceive as being available to them. What is more, low perceived social support could be an exception for this population. If one considers that the college years are typically viewed as a time to develop social skills and build social networks and attachments outside the family base, this assumption appears plausible. For example, many young adult college women find emotional and listening supports through sorority organizations (Woodward, Rosenfeld, & May, 1996). Also, during this time, many young adults experience conjoint living arrangements outside the family for the first time (e.g., roommates, dormitories, sorority houses), which may also provide opportunities for social networking. Nonetheless, these individuals are also likely to maintain connectedness to their families who typically provide financial support and familiarity. To further explore the dynamics of perceived social support and its possible influence on sexual victimization and extend this study, a more representative and diverse sample should be employed where comparisons can be made across various ages and in different contexts.

Researchers should also examine the effects of received social support on perceived social support, in relation to sexual victimization and PTSD symptom severity, particularly in a longitudinal design (see limitations section). Specifically, Norris and Kaniasty (1996) suggest that there is an implied interaction between received social support and perceived social support, which they have proposed as a Social Support Deterioration Deterrence Model. Under this assumption received social support (received after a stressor is experienced) has an indirect effect on and temporally precedes perceived social support which subsequently affects psychological distress. Under this hypothesis, perceived social support is vulnerable to post-event deterioration. In addition, these researchers believe that the most proximal consequence of support mobilization after a stressful event is the maintenance of perceived social support. In their study, they examined the impact of received social support on perceived social support and psychological distress in two independent samples of victims of natural disasters (Hurricanes Hugo and Andrew) in a longitudinal design. They found support for the Social Support Deterioration Deterrence Model as hypothesized.

*Limitations*

From a theoretical standpoint, one limitation of this study may be the focus on support providers. However, different types of support may be differentially effective under different types of circumstances. For example, although the majority of this sample reported generally high perceived social support, the results for support may have been different if participants were queried about perceived availability of support following a sexual victimization experience.

In addition, another major limitation of this study is its cross-sectional design. Moreover, the ideal way to assess the change in a variable (e.g., perceived social support) is over time, through a longitudinal design. For example, in the current cross-sectional design past levels of perceived

social support could not be assessed. Specifically, causal relationships cannot be inferred when reporting on past sexual victimization and current perceived social support (Golding et al., 2002). A final limitation, from a statistical standpoint, is the small sample sizes per cell (in this case sexual victimization groups) which subsequently constrains statistical power.

Overall, if the field of mental health treatment is to be effective in addressing sexual victimization and how such experiences affect women, risk and protective factors must continue to be explored. This study suggests that perceived social support may not have a buffering effect for adverse outcomes in college women who have been sexually victimized, but nonetheless may be an important variable in reducing risk for PTSD severity regardless of sexual victimization.

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Footnotes

[1]It should be noted that the diagnostic criteria are not drastically different between the DSM-III-R to the more recent DSM-IV.

> "The principal changes in DSM-IV included 1) addition of a requirement for an emotional response to the traumatic event (supplement of criterion A), 2) transfer of the symptom of physiological hyperactivity from the hyperarousal symptom cluster to the intrusion cluster (transfer from criterion D to criterion B), 3) addition of a requirement that both avoidance and numbing symptoms must be present (extra requirement in criterion C), and 4) the requirement that the disturbance must cause clinically significant distress or impairment in functioning (a severity criterion) (Wang, Gao, Shinfuku, Zhang, Zhao, & Shen, Y. (2000)."

[2]Hochberg's GT2 is a multiple comparison procedure that is available through SPSS 14.0. It is based on Tukey's T-method (Stoline & Ury, 1979). However, where Tukey's is only valid for balanced (equal sample size) ANOVA designs, Hochberg's GT2 was developed to preserve the significance level and be applicable to unbalanced (unequal sample size) one-way ANOVA designs. The formula for Hochberg's GT2 is ($Mean_y - Mean_y \pm SMM_{\alpha, k^*, \nu} S (ni\text{-}1 + nj\text{-}1)\ ½$), where $SMM_{\alpha, \kappa^*, \nu}$ is the $\alpha$ point of the Studentized maximum modulus (or multivariate *t* with common correlation coefficient $\rho=0$) distribution and $k^* = k(k\text{-}1)/2$. Tables for $\alpha$ = .01, .05, .10, .20, and $k$=3(1)20 are available in Stoline and Ury (1979).

Table 1: *Descriptive Statistics and Categorical Variables*

| | Sexual victimization | | |
|---|---|---|---|
| | Never | Once | Revictimized |
| Ethnic minority | | | |
| Non-minority | 201 (82%) | 33 (82.5%) | 13 (92.9%) |
| Minority | 44 (18%) | 7 (17.5%) | 1 (7.1%) |
| Child abuse | | | |
| Yes | 17 (6.9%) | 6 (15%) | 3 (21.4%) |
| No | 228 (93.1%) | 34 (85%) | 11 (78.6%) |
| Serious accident | | | |
| Yes | 71 (28.9%) | 15 (37.5%) | 7 (50%) |
| No | 175 (71.1%) | 25 (62.5%) | 7 (50%) |
| Natural disaster | | | |
| Yes | 89 (36.2%) | 11 (27.5%) | 3 (21.4%) |
| No | 157 (63.8%) | 29 (72.5%) | 11 (78.6%) |

*(N=300)*

Table 2: *Descriptive Statistics and Univariate Analysis of Variance for Sexual Victimization groups on Continuous Variables*

| Measure | N | Range | Mean | SD | Sig. of F |
|---|---|---|---|---|---|
| Perceived Social Support | 293 | 14.00-72.00 | 60.38 | 11.32 | *Ns* |
| Family Support | 296 | 00.00-24.00 | 19.51 | 05.17 | *Ns* |
| Friend Support | 294 | 00.00-24.00 | 20.03 | 04.48 | *Ns* |
| Significant Other Support | 295 | 02.00-24.00 | 20.66 | 04.69 | *Ns* |
| PTSD symptoms | 300 | 17.00-65.00 | 29.79 | 12.38 | $p < .05$ |
| Interpersonal Sensitivity | 298 | 00.00-03.45 | 01.39 | 00.67 | *Ns* |
| Interpersonal Ambivalence | 297 | 00.00-03.30 | 00.88 | 00.71 | *Ns* |
| Aggression | 298 | 00.00-03.00 | 00.77 | 00.70 | *Ns* |
| Need for Approval | 300 | 00.00-03.67 | 01.59 | 00.80 | *Ns* |
| Lack of Sociability | 299 | 00.00-03.80 | 01.08 | 00.83 | *Ns* |
| IIP-PD Total | 294 | 00.03-03.07 | 01.02 | 00.55 | *Ns* |
| IIP-C Total | 299 | 00.10-07.47 | 02.68 | 01.48 | *Ns* |
| Locus of Control | 293 | 06.00-29.00 | 18.90 | 04.00 | *Ns* |
| Non-sexual victimization | 297 | 09.00-40.00 | 12.22 | 03.71 | $p < .05$ |
| General Self-efficacy | 294 | 29.00-84.00 | 61.89 | 09.56 | $p < .05$ |
| Social Self-efficacy | 293 | 09.00-30.00 | 20.90 | 03.98 | *Ns* |

*Ns*= non-significant

Table 3: *Point-biserial and Zero-order Correlations*

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Sexual victimization | — | | | | | | | | | | | | |
| 2. Child Abuse | 0.14* | — | | | | | | | | | | | |
| 3. Minority Status | -0.05 | -0.02 | — | | | | | | | | | | |
| 4. Perceived Social Support | -0.01 | -0.10 | -0.14* | — | | | | | | | | | |
| 5. PTSD symptoms | 0.35** | 0.23** | 0.09 | -0.29** | — | | | | | | | | |
| 6. Serious Accident | 0.11 | 0.13* | 0.05 | -0.05 | 0.05 | — | | | | | | | |
| 7. Natural Disaster | -0.09 | 0.00 | -0.05 | 0.07 | -0.02 | 0.00 | — | | | | | | |
| 8. IIP-PD total | 0.08 | 0.08 | 0.05 | -0.28** | 0.27** | 0.08 | 0.04 | — | | | | | |
| 9. IIP-C total | 0.05 | 0.02 | 0.00 | -0.31** | 0.21** | -0.01 | 0.08 | 0.59** | — | | | | |
| 10. Locus of Control | -0.01 | -0.06 | -0.08 | 0.27** | -0.20** | -0.04 | -0.07 | -0.34** | -0.38** | — | | | |
| 11. Non-sexual victimization | 0.19** | 0.25** | 0.04 | -0.10 | 0.28** | 0.12* | 0.05 | 0.14* | 0.06 | -0.08 | — | | |
| 12. General Self-efficacy | 0.01 | -0.07 | -0.08 | 0.35** | -0.22** | -0.16** | 0.04 | -0.42** | -0.44** | 0.26** | -0.10 | — | |
| 13. Social Self-efficacy | 0.03 | -0.01 | 0.01 | 0.36** | -0.11* | -0.03 | -0.01 | -0.25** | -0.53** | 0.15* | 0.00 | 0.41** | — |

*Note.* * $p < .05$ (2-tailed) , ** $p < .01$ (2-tailed). $N$=300

Table 4: *Hierarchical Regression Analysis Predicting PTSD Severity: Testing for Moderation Effect of Perceived Social Support with the Victimized Once Variable*

| Variable | B | SE B | β | $\Delta R^2$ |
|---|---|---|---|---|
| **Block 1** | | | | .162 |
| Child abuse | 7.238 | 2.554 | .167** | |
| Non-sexual victimization | .678 | .189 | .211** | |
| General self-efficacy | -.328 | .080 | -.232** | |
| **Block 2** | | | | .050 |
| Child abuse | 6.667 | 2.485 | .153** | |
| Non-sexual victimization | .564 | .185 | .176** | |
| General self-efficacy | -.286 | .079 | -.202** | |
| Victimized once | 7.854 | 1.905 | .231** | |
| **Block 3** | | | | .024 |
| Child abuse | 6.179 | 2.457 | .141** | |
| Non-sexual victimization | .501 | .183 | .169** | |
| General self-efficacy | -.200 | .083 | -.141** | |
| Victimized once | 8.303 | 1.886 | .244** | |
| Perceived social support | -.181 | .063 | -.167** | |
| **Block 4** | | | | .001 |
| Child abuse | 6.154 | 2.461 | .141** | |
| Non-sexual victimization | .535 | .184 | .167** | |
| General self-efficacy | -.202 | .083 | -.143** | |
| Victimized once | 8.348 | 1.891 | .246** | |
| Perceived social support | -.169 | .068 | -.156** | |
| Victimized once x Perceived social support | -.077 | .162 | -.028 | |

*Note.* * $p < .05$ , ** $p < .01$, $N$=286

Table 5: *Hierarchical Regression Analysis Predicting PTSD Severity: Testing for Moderation Effect of Perceived Social Support with the Revictimized Variable*

| Variable | B | SE B | β | $\Delta R^2$ |
|---|---|---|---|---|
| **Block 1** | | | | .054 |
| Child abuse | 3.935 | 5.513 | .109 | |
| Non-sexual victimization | .595 | .558 | .165 | |
| General self-efficacy | -.104 | .214 | -.069 | |
| **Block 2** | | | | .025 |
| Child abuse | 3.061 | 5.552 | .085 | |
| Non-sexual victimization | .678 | .561 | .188 | |
| General self-efficacy | -.221 | .237 | -.147 | |
| Revictimized | 5.560 | 4.932 | .176 | |
| **Block 3** | | | | .045 |
| Child abuse | 3.048 | 5.475 | .084 | |
| Non-sexual victimization | .382 | .586 | .106 | |
| General self-efficacy | -.039 | .262 | -.026 | |
| Revictimized | 3.570 | 5.034 | .113 | |
| Perceived social support | -.293 | .192 | -.246 | |
| **Block 4** | | | | .000 |
| Child abuse | 3.052 | 5.534 | .085 | |
| Non-sexual victimization | .383 | .592 | .106 | |
| General self-efficacy | -.048 | .271 | -.032 | |
| Revictimized | 3.669 | 5.130 | .166 | |
| Perceived social support | -.306 | .211 | -.256 | |
| Revictimized x Perceived social support | .059 | .390 | .025 | |

*Note.* * $p < .05$ , ** $p < .01$, $N = 54$

# Appendix

## VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY
*Informed Consent for Participants of Investigative Projects*

**Title of the Project**: Community Violence Victimization in University Students
**Investigator**: Dr. Angela Scarpa

Purpose: The purpose of this project is to examine the prevalence and effects of community violence that university students may have experienced in their lifetime.

Procedures: Approximately 250-300 undergraduates enrolled in psychology courses will be asked to complete a battery of questionnaires. This will be used to determine cutoff criteria for groups that will be asked to return for further testing later this semester. During this screening, participants will fill out questionnaires that assess exposure to community violence and other stressful experiences, possible risk and protective factors, and related behaviors. This should take approximately 2 hours. You must be at least 18 years old to participate in this study.

Risks: There are no risks with this project. Some people may feel uncomfortable revealing personal information in the questionnaires, and some may express thoughts of suicide specifically asked about on one of the questionnaires. If this occurs for you, you may wish to speak to a counselor at Virginia Tech's Counseling Center (231-6557) or Psychological Services Center (231-6914). If so, you may contact them yourself or we would be happy to help you contact them.

Benefits: There is no guarantee of benefits made to encourage participation. Participation is completely voluntary. The benefit of the study will be furthering the understanding of the effects of community violence and the needs of its victims.

Anonymity/Confidentiality: All information is coded with a number after it is obtained so there is no way to associate you by name with the information. The consent form you are reading does have your name, but will be separated from the questionnaires and kept in locked files. Only designated personnel will have access to this. Results may be published or presented for scientific purposes, but your identity will not be revealed in descriptions of publication of this research. At no time will information obtained from this study be released to anyone without your written consent, with one exception. If you express intent to harm or kill yourself or someone else, we are legally obliged to inform an authority. In this case, we will attempt to inform you of the need to do so, and we encourage you to contact with us either the Counseling Center (231-6557) or the Psychological Services Center (231-6914).

Compensation: Introductory Psychology students will receive one extra credit point per hour of participation. You may not receive credit in more than one course for participation in one experiment. Students enrolled in all other psychology courses will receive extra credit if your professor allows.

Freedom to Withdraw: You are free to withdraw from this study at any time without penalty. You are free not to answer any questions that you choose without penalty. Withdrawal from this study will in no way affect your grade in your psychology courses and you will still receive one extra credit point for every hour of participation. There may be circumstances under which the investigator may determine that you should not continue as a subject.

Approval of Research: This research project has been approved, as required by the Institutional Review Board for Research Involving Human Subjects at Virginia Polytechnic Institute and State University and the Department of Psychology.

Subject's Responsibilities: I voluntarily agree to participate in this study. My only responsibility is to complete the battery of questionnaires distributed.

Permission: I have read and understand the Informed consent and conditions of this project. I have had all my questions answered. I hereby acknowledge the above and give my voluntary consent for participation in this project. If I participate, I may withdraw at any time without penalty. I agree to abide by the rules of this project. A copy of this consent form will be given to me.

Should I have any questions about this research or its conduct, I may contact:

| | |
|---|---|
| Principal Investigator: Dr. Angela Scarpa | 231-2615 |
| Chair, Human Subjects Committee: Dr. David Harrison | 231-4422 |
| Chair, IRB, Research Division: Dr. David Moore | 231-4991 |

| _____ | _____ | _____ |
|---|---|---|
| Subject's Signature | Subject's Name (Printed) | Date |

VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY
*Informed Consent for Participants of Investigative Projects*

**Title of the Project**: Community Violence Victimization in University Students
**Investigator**: Dr. Angela Scarpa

Purpose: The purpose of this project is to examine the relationship between community violence experienced by university students in their lifetime and their current responses to emotions. Approximately 250-300 undergraduates enrolled in psychology courses will go through a screening. Approximately 150 students with varying degrees of violence exposure will be asked to return for interviewing and measurement of physiological responses. You must be at least 18 years old to participate in this study.

Procedures: As a returning participant, you will be interviewed for emotional and behavioral symptoms that some victims or witnesses of violence could experience. You will also be asked to recall a stressful experience and a neutral experience that you have had in your lifetime, and to discuss these with a trained experimenter. Physiological responses of heart rate,

respiration, skin conductance, blood pressure, and cortisol will be obtained throughout the recall tasks. Electrodes will be attached on the skin over your collarbone and ribs for measurement of heart rate and on your fore- and middle- fingertips for measurement of skin conductance. A cuff will be placed over your wrist to measure blood pressure. An expandable band will be placed over your chest to measure respiration. Saliva will be sampled for the measurement of cortisol by filling a small tube with saliva three times, once before and twice after the recall tasks. The recall tasks are designed to induce negative and neutral moods. These physiological measures are all known to vary with mood. In addition, you will be asked to refrain from nicotine, caffeine, eating, exercise, and the drinking of liquids (other than water) for one hour prior to your scheduled session.

Benefits: There are no risks with this project. However, you may be uncomfortable discussing or revealing personal information during the interviews. If this occurs, you may wish to speak to a counselor at Virginia Tech's Counseling Center (231-6557) or Psychological Services Center (231-6914). If so, we would be happy to help you contact them. Also, there is no guarantee of benefits made to encourage participation. Participation is completely voluntary. The benefit of the study will be furthering the understanding of the effects of community violence on individual emotional responses.

Anonymity/Confidentiality: All information is coded after it is obtained so there is no way to associate you by name with identifying information. Such information that will carry identifying material will be kept in locked files. Only designated research personnel will have access to this information. Results may be published or presented for scientific purposes, but your identity will not be revealed in any description of publication of this research. Your interview responses will be videotaped and reviewed by a designated and carefully trained research assistant who does not know you. This videotape is necessary to ensure the reliability of ratings across interviewers. The tape will be stored in a locked file and immediately erased upon review and data coding. At no time will information obtained from this study be released to anyone without your written consent, with one exception. If you express intent to harm or kill yourself or someone else, we are legally obliged to inform an authority. In this case, we will attempt to inform you of the need to do so, and we encourage you to contact with us either the Counseling Center (231-6557) or the Psychological Services Center (231-6914).

Compensation: Introductory Psychology students will receive one extra credit point per hour of participation in this study. You may not receive credit in more than one course for participation in one experiment. Students enrolled in all other psychology courses will receive extra credit if your professor allows.

Freedom to Withdraw: You are free to withdraw from this study at any time without penalty. You are free not to answer any questions or participate in the experimental situations without penalty. Withdrawal from this study will in no way affect your grade in your psychology courses and you will still receive one extra credit point for every hour of participation. There may be circumstances under which the investigator may determine that you should not continue as a subject.

Approval of Research: This research project has been approved, as required by the Institutional Review Board for Research Involving Human Subjects at Virginia Polytechnic Institute and State University and the Department of Psychology.

Subject's Responsibilities: I voluntarily agree to participate in this study. I have the following responsibilities:

1) Answer questions given in a videotaped verbal interview.
2) Verbally recall a stressful and a neutral event in my life.
3) Allow attachment of electrodes for measuring heart rate and skin conductance.
4) Allow placement of a cuff for measuring blood pressure.
5) Allow placement of an extractable band for measuring respiration.
6) Provide three saliva samples.
7) Refrain from nicotine, caffeine, eating, exercise, and the drinking of liquids (other than water) for one hour prior to your scheduled session.

Permission: I have read and understand the informed consent and conditions of this project. I have had all my questions answered. I hereby acknowledge the above and give my voluntary consent for participation in this project. If I participate, I may withdraw at any time without penalty. I agree to abide by the rules of this project. A copy of this consent form will be given to me.

Should I have any questions about this research or its conduct, I may contact any of the persons named below:

| | |
|---|---|
| Investigator: Dr. Angela Scarpa | 231-2615 |
| Chair, Human Subjects Committee: Dr. David Harrison | 231-4422 |
| Chair, IRB, Research Division: David Moore | 231-4991 |

| | |
|---|---|
| _____ | _____ |
| Subject's Name (Printed) | Experimenter's Name (Printed) |
| _____ | _____ |
| Subject's Signature | Experimenter's Signature |
| _____ | _____ |
| Date | Date |

*Traumatic Events Scale Revised*

Instructions: This questionnaire is comprised of a variety of very stressful events which you may have experienced. For each of the following "numbered" questions, indicate whether or not you experienced the event. If you have experienced one of the events, circle "Yes" and complete the lettered items immediately following it that ask more details. If you have not experienced the event, circle "No" and go to the next numbered item.

**No Yes** **1. Have you been in or witnessed a <u>serious</u> industrial, farm, or car accident, or a large fire or explosion?**

a. How many times? Once ____ Twice____ Three + ____
b. How old were you at the time(s)? 1st____ 2nd ____ 3rd____
c. Were you injured?

Not at all Severely
1 2 3 4 5 6 7

d. Did you feel your life was threatened?

Not at all Extremely
1 2 3 4 5 6 7

e. How traumatic <u>was</u> this for you at the time?

Not at all Extremely
1 2 3 4 5 6 7

f. How traumatic <u>is</u> this for you now?

Not at all Extremely
1 2 3 4 5 6 7

g. What was the event? _____

**No Yes** **2. Have you been in a natural disaster such as a tornado, hurricane, flood, or major earthquake?**

a. How many times? Once ____ Twice ____ Three + ____
b. How old were you at the time(s)? 1st____ 2nd ____ 3rd____
c. Were you injured?

Not at all Severely
1 2 3 4 5 6 7

d. Did you feel your life was threatened?

Not at all Extremely
1 2 3 4 5 6 7

e. How traumatic <u>was</u> this for you at the time?

Not at all Extremely
1 2 3 4 5 6 7

f. How traumatic <u>is</u> this for you now?

Not at all Extremely
1 2 3 4 5 6 7

g. What was the event? _____

**No Yes** **3. Have you been a victim of a violent crime such as rape, robbery or assault?**

a. How many times? Once ____ Twice____ Three + ____
b. How old were you at the time(s)? 1st____ 2nd ____ 3rd____

c. Were you injured?

Not at all Severely

1 2 3 4 5 6 7

d. Did you feel your life was threatened?

Not at all Extremely

1 2 3 4 5 6 7

e. How traumatic was this for you at the time?

Not at all Extremely

1 2 3 4 5 6 7

f. How traumatic is this for you now?

Not at all Extremely

1 2 3 4 5 6 7

g. What was the event? _____

h. What was the degree of force that was used?

None Extreme

1 2 3 4 5 6 7

**No Yes** **4. As a child, were you the victim of either physical or sexual abuse?**

a. How old were you when it began? _____

b. How old were you when it ended? _____

c. Were you injured?

Not at all Severely

1 2 3 4 5 6 7

d. Did you feel your life was threatened?

Not at all Extremely

1 2 3 4 5 6 7

e. How traumatic was this for you at the time?

Not at all Extremely

1 2 3 4 5 6 7

f. How traumatic is this for you now?

Not at all Extremely

1 2 3 4 5 6 7

g. Was the assailant male or female? Male Female

h. Check all categories that describe the experience…

_____ physical abuse

_____ there was sexual penetration of the mouth, anus or vagina

_____ there was *no* sexual penetration, but the assailant attempted to force you to complete such an act

_____ there was some other form of sexual contact (e.g., touching your sexual organs or you were forced to touch the assailants sexual organs)

_____ no sexual contact occurred, however, the assailant attempted

to touch your sexual organs, or to make you touch his sexual organs.

i. What was the degree of force that was used?

None Extreme

1 2 3 4 5 6 7

j. How regular was the abuse?

1. daily
2. weekly
3. monthly
4. yearly
5. less than yearly (e.g., once or twice)

k. What was the duration of the abuse? _____

l. How many times did the abuse occur? _____

m. Was there anyone who you could tell, right after the incident, who was supportive of you? No Yes

n. If you answered yes to m, who was it that you could tell? Circle all that applies. (one or more)

1. clergy
2. teacher
3. health care professional (i.e., counselor, physician, etc.).
4. stranger
5. acquaintance
6. friend
7. family member living with you
8. family member not living with you
9. other _____

**No Yes** **5. Outside of the events from #4, did you have any unwanted sexual experiences that involved the threat or use of force?**

a. How many times? Once ____ Twice____ Three + ____

b. How old were you at the time(s)? 1st____ 2nd ____ 3rd____

c. Were you injured?

Not at all Severely

1 2 3 4 5 6 7

d. Did you feel your life was threatened?

Not at all Extremely

1 2 3 4 5 6 7

e. How traumatic <u>was</u> this for you at the time?

Not at all Extremely

1 2 3 4 5 6 7

f. How traumatic <u>is</u> this for you now?

Not at all Extremely

1 2 3 4 5 6 7

g. Was the assailant male or female? Male Female

h. Check all categories that describe the experience…

_____ physical abuse

_____ there was sexual penetration of the mouth, anus or vagina

_____ there was *no* sexual penetration, but the assailant attempted to force you to complete such an act

_____ there was some other form of sexual contact (e.g., touching your sexual organs or you were forced to touch the assailants sexual organs)

_____ no sexual contact occurred, however, the assailant attempted to touch your sexual organs, or to make you touch his sexual organs.

i. What was the degree of force that was used?

None Extreme

1 2 3 4 5 6 7

j. How regular was the abuse?

1. daily
2. weekly
3. monthly
4. yearly
5. less than yearly (e.g., once or twice)

k. What was the duration of the abuse? _____

l. How many times did the abuse occur? _____

m. Was there anyone who you could tell, right after the incident, who was supportive of you? No Yes

n. If you answered yes to m, who was it that you could tell? Circle all that applies. (one or more)

1. clergy
2. teacher
3. health care professional (i.e., counselor, physician, etc.).
4. stranger
5. acquaintance
6. friend
7. family member living with you
8. family member not living with you
9. other _____

**No Yes** **6. Were you in a dating relationship in which you were physically abused or otherwise?**

a. How old were you when it began? _____

b. How old were you when it ended? _____

c. Were you injured?

Not at all Severely

1 2 3 4 5 6 7

d. Did you feel your life was threatened?

Not at all Extremely

1 2 3 4 5 6 7

e. How traumatic was this for you at the time?

Not at all Extremely

1 2 3 4 5 6 7

f. How traumatic is this for you now?

Not at all Extremely

1 2 3 4 5 6 7

g. What was the degree of force that was used?

None Extreme

1 2 3 4 5 6 7

h. What kind of abuse was it?

1. physical
2. sexual
3. emotional
4. other _____

**No Yes** **7. Have you ever witnessed someone who was mutilated, seriously injured, or violently killed?**

a. How many times? Once ____ Twice____ Three + ____

b. How old were you at the time(s)? 1st____ 2nd ____ 3rd____

c. Were you injured?

Not at all Severely

1 2 3 4 5 6 7

d. Did you feel your life was threatened?

Not at all Extremely

1 2 3 4 5 6 7

e. How traumatic was this for you at the time?

Not at all Extremely

1 2 3 4 5 6 7

f. How traumatic is this for you now?

Not at all Extremely

1 2 3 4 5 6 7

**No Yes** **8. Have you ever been in serious danger of losing your life or of being seriously injured?**

a. How many times? Once ____ Twice____ Three + ____

b. How old were you at the time(s)? 1st____ 2nd ____ 3rd____

c. Were you injured?

Not at all Severely
1 2 3 4 5 6 7

d. Did you feel your life was threatened?
Not at all Extremely
1 2 3 4 5 6 7

e. How traumatic <u>was</u> this for you at the time?
Not at all Extremely
1 2 3 4 5 6 7

f. How traumatic <u>is</u> this for you now?
Not at all Extremely
1 2 3 4 5 6 7

g. What was the event? _____

**No Yes** **9. Have you received news of mutilation, serious injury, or the violent unexpected death of someone close to you?**

a. How many times? Once ____ Twice____ Three + ____
b. How old were you at the time(s)? 1st____ 2nd ____ 3rd____
c. Were you injured?
Not at all Severely
1 2 3 4 5 6 7

d. Did you feel your life was threatened?
Not at all Extremely
1 2 3 4 5 6 7

e. How traumatic <u>was</u> this for you at the time?
Not at all Extremely
1 2 3 4 5 6 7

f. How traumatic <u>is</u> this for you now?
Not at all Extremely
1 2 3 4 5 6 7

**No Yes** **10. Have you ever had any other <u>very traumatic</u> event like these?**

a. How many times? Once ____ Twice____ Three + ____
b. How old were you at the time(s)? 1st____ 2nd ____ 3rd____
c. Were you injured?
Not at all Severely
1 2 3 4 5 6 7

d. Did you feel your life was threatened?
Not at all Extremely
1 2 3 4 5 6 7

e. How traumatic <u>was</u> this for you at the time?
Not at all Extremely
1 2 3 4 5 6 7

f. How traumatic <u>is</u> this for you know?
Not at all Extremely

1 2 3 4 5 6 7

g. What was the event? _____

**No Yes** **11. Have you had any experiences like these that you feel you can't tell about? (Note: You do not have to describe the event)**

a. How many times? Once ____ Twice____ Three + ____
b. How old were you at the time(s)? 1st____ 2nd ____ 3rd____
c. Were you injured?
Not at all Severely
1 2 3 4 5 6 7
d. Did you feel your life was threatened?
Not at all Extremely
1 2 3 4 5 6 7
e. How traumatic was this for you at the time?
Not at all Extremely
1 2 3 4 5 6 7
f. How traumatic is this for you know?
Not at all Extremely
1 2 3 4 5 6 7

**12. If you answered "Yes" to one or more questions above, which is the most traumatic thing that has happened to you? Fill in the number of the question (e.g., #2 for natural disaster)**

**_____**

**13. Did you answer *Yes to more than one question* while thinking about the same event?**

**_____**

**If so, which items refer to the same event? _____**

*Purdue Post-traumatic Stress Disorder Revised*

Instructions: These questions ask about your reactions to the event listed at the bottom of the previous page. Please answer each question for how often each reaction occurred during the previous month. Fill in the appropriate circle on your computer answer sheet for each question

| **In the last month**, how often… | not at all ↓ A | | sometimes ↓ C | | often ↓ E |
|---|---|---|---|---|---|
| 1. were you bothered by memories or thoughts of the event(s) when you didn't want to think about it? | A | B | C | D | E |
| 2. have you had upsetting dreams about the event(s)? | A | B | C | D | E |
| 3. have you suddenly felt as if you were experiencing the event(s) again? | A | B | C | D | E |
| 4. did you feel very upset when something happened to remind you of the event(s)? | A | B | C | D | E |

| | | | | | |
|---|---|---|---|---|---|
| 5. did you avoid activities or situations that might remind you of the event(s)? | A | B | C | D | E |
| 6. did you avoid thoughts or feelings about the event(s)? | A | B | C | D | E |
| 7. did you have difficulty remembering important aspects of the event(s)? | A | B | C | D | E |
| 8. did you react physically (heart racing, breaking out in a sweat) to things that reminded you of the event(s)? | A | B | C | D | E |
| **Since the event** … | | | | | |
| 9. did you lose interest in one or more of your usual activities (e.g. work, hobbies, entertainment)? | A | B | C | D | E |
| 10. did you feel unusually distant or cut off from people? | A | B | C | D | E |
| 11. did you feel emotionally "numb" or unable to respond to things emotionally the way you used to? | A | B | C | D | E |
| 12. were you been less optimistic about your future? | A | B | C | D | E |
| 13. did you have more trouble sleeping? | A | B | C | D | E |
| 14. were you more irritable or angry? | A | B | C | D | E |
| 15. did you have more trouble concentrating? | A | B | C | D | E |
| 16. did you find yourself watchful or on guard, even when there was no reason to be? | A | B | C | D | E |
| 17. were you more jumpy or easily startled by noises? | A | B | C | D | E |

*Inventory of Interpersonal Problems*

Instructions: Here is a list of problems that people report in relating to other people. Please read the list below, and for each item, consider whether that problem has been a problem for you with respect to any significant person in your life. Indicate your answer in the space provided.

1 = Not at all
2 = A little bit
3 = Moderately
4 = Quite a bit
5 = Extremely

Part I. The following are things you find hard to do with other people.

It is hard for me to…

1._____ trust other people.
2._____ say "no" to other people.
3._____ join in groups.
4._____ introduce myself to new people.
5._____ be assertive with another person.
6._____ do what another person wants me to do.
7._____ get along with people who have authority over me.
8._____ make reasonable demands of other people.
9._____ socialize with other people.

10._____ feel comfortable around other people.
11._____ express my feelings to other people directly.
12._____ be supportive of another person's goals in life.
13._____ really care about other people's problems.
14._____ maintain a working relationship with someone I don't like.
15._____ set goals for myself without other people's advice.
16._____ accept another person's authority over me.
17._____ ignore criticism from other people.
18._____ feel like a separate person when I am in a relationship.
19._____ put somebody else's needs before my own.
20._____ take instructions from other people who have authority over me.
21._____ feel good about another person's happiness.
22._____ get over the feeling of loss after a relationship has ended.
23._____ ask other people to get together socially with me.
24._____ be assertive without worrying about hurting the other person's feelings.
25._____ be self-confident when I am with other people.

Part II. The following are things that you do too much.
26._____ I fight with other people too much.
27._____ I am too sensitive to criticism.

28._____ I get irritated or annoyed too easily.
29._____ I am too sensitive to rejection.
30._____ I am too aggressive toward other people.
31._____ I try to please other people too much.
32._____ I feel attacked by other people too much.
33._____ I criticize other people too much.
34._____ I am affected by another person's moods too much.
35._____ I am too afraid of other people.
36._____ I worry too much about other people's reactions to me.
37._____ I am influenced too much by another person's thoughts and feelings.
38._____ I worry too much about disappointing other people.
39._____ I lose my temper too easily.
40._____ I tell personal things to other people too much.
41._____ I am too easily bothered by other people making demands of me.
42._____ I argue with other people too much.
43._____ I am too envious and jealous of other people.
44._____ I feel competitive even when the situation does not call for it.
45._____ I feel embarrassed in front of other people too much.
46._____ I feel too anxious when I'm involved with another person.
47._____ I want to get revenge against people too much.

*Nowicki-Strickland Locus of Control Scale for Adults*

Instructions: Please read the following statements about your beliefs and feelings. Answer yes or no in the space provided.

1. _____Do you believe that most problems will solve themselves if you don't fool with them?
2. _____Do you believe that you can stop yourself from catching a cold?
3. _____Are some people just born lucky?
4. _____Most of the time, do you feel that getting good grades means a great deal?
5. _____Are you often blamed for things that just aren't your fault?
6. _____Do you believe that if somebody studies hard enough he or she can pass any subject?
7. _____Do you feel that most of the time it doesn't pay to try hard because things never turn out right away?
8. _____Do you feel that if things start out well in the morning that it's going to be a good day no matter what you do?
9. _____Do you feel that most of the time your parents listen to what you have to say?
10. _____Do you believe that wishing can make good things happen?
11. _____When you get punished, does it usually seem it's for no good reason?
12. _____Most of the time, do you find it hard to change a friend's (mind) opinion?
13. _____Do you think that cheering more than luck helps a team to win?
14. _____Do you feel that it was nearly impossible to change your parents' minds about anything?
15. _____Do you believe that parents should allow children to make most of their own decisions?
16. _____Do you feel that when you do something wrong, there is very little you can do to make it right?
17. _____Do you believe that people are just born good at sports?
18. _____Are most of the other people your age stronger than you are?
19. _____Do you feel that one of the best ways to handle most problems is just to not think about them?
20. _____Do you feel that you have a choice in deciding who your friends are?
21. _____If you find a four leaf clover, do you believe that it might bring you good luck?
22. _____Did you often feel that whether or not you did your homework had much to do with what kind of grades you got?
23. _____Do you feel that when a person your age is mad at you, there is little you can do to stop him or her?
24. _____Have you ever had a good luck charm?
25. _____Do you believe that whether people like you or not depend on how you act?
26. _____Did your parents usually help you if you asked them too?
27. _____Have you felt that when people were angry with you it was usually for no reason?
28. _____Most of the time, do you feel that you can change what might happen tomorrow by what you do today?
29. _____Do you believe that when bad things are going to happen that they are just going to happen no matter what you try to do to stop them?
30. _____Do you think that people can get their own way if they keep trying?
31. _____Most of the time, do you think it is useless to try to get your own way at home?
32. _____Do you feel that when good things happen, they happen because of hard work?

33. _____Do you feel that when somebody your age wants to be your enemy there is little you can do to change matters?
34. _____Do you feel that it's easy to get friends to do what you want them to do?
35. _____Do you usually feel that you have little to say about what you get to eat at home?
36. _____Do you feel that when someone doesn't like you there is little you can do about it?

37. _____Do you usually feel that it is almost useless to try in school because most of your peers are just plain smarter than you are?
38. _____Are you the kind of person who believes that planning ahead makes things turn out better?
39. _____Most of the time, do you feel that you have little to say about what your family decides to do?
40. _____Do you think it is better to be smart that lucky?

*Self-efficacy Scale*

This questionnaire is a series of statements about your personal attitudes and traits. Each statement represents a commonly held belief. Read each statement and decide to what extent it describes you. There are no right or wrong answers. You will probably agree with some of the statements and disagree with others. Please indicate you own personal feelings about each statement below by choosing the number that best describes your attitude and feeling. Please be very truthful and describe yourself as you really are, not as you would like to be.

1 = disagree strongly
2 = disagree moderately
3 = neither agree nor disagree
4 = agree moderately
5 = agree strongly

1._____ I like to grow house plants.
2._____ When I make plans, I am certain I can make them work.
3._____ One of my problems is that I cannot get down to work when I should.
4._____ If I can't do a job the first time, I keep trying until I can.
5._____ Heredity plays the major role in determining one's personality.
6._____ It is difficult for me to make new friends.
7._____ When I set important goals for myself, I rarely achieve them.
8._____ I give up on things before completing them.
9._____ I like to cook.
10._____ If I see someone I would like to meet, I go to that person instead of waiting for him or her to come to me.
11._____ I avoid facing difficulties.
12._____ If something looks too complicated, I will not even bother to try it.
13._____ There is some good in everybody.
14._____ If I meet someone interesting who is very hard to make friends with, I'll soon stop trying to make friends with that person.
15._____ When I have something unpleasant to do, I stick to it until I finish it.

16._____ When I decide to do something, I go right to work on it.
17._____ I like science.
18._____ When trying to learn something new, I soon give up if I am not initially successful.
19._____ When I'm trying to become friends with someone who seems uninterested at first, I don't give up very easily.
20._____ When unexpected problems occur, I don't handle them well.
21._____ If I were an artist, I would like to draw children.
22._____ I avoid trying to learn new things when they look too difficult for me.
23._____ Failure just makes me try harder.
24._____ I do not handle myself well in social gatherings.
25._____ I very much like to ride horses.
26._____ I feel insecure about my ability to do things.
27._____ I am a self-reliant person.
28._____ I have acquired my friends though my personal abilities at making friends.
29._____ I give up easily.
30._____ I do not seem capable of dealing with most problems that come up in life.

*Multidimensional Scale of Perceived Social Support*

Instructions: We are interested in how you felt about the following statements. Read each statement carefully. Indicate how you felt about each statement by filling in the correct number according to the following scale:

1 = Very strongly disagree
2 = Strongly disagree
3 = Mildly disagree
4 = Neutral
5 = Mildly agree
6 = Strongly agree
7 = Very strongly agree

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