

**ADJUSTMENT AND SOCIAL SUPPORT OF  
SEXUAL ASSAULT SURVIVORS**

By

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**ADJUSTMENT AND SOCIAL SUPPORT OF  
SEXUAL ASSAULT SURVIVORS**

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## ABSTRACT

The role of positive (i.e. growth) and negative (i.e. posttraumatic stress symptoms) adjustment following a sexual assault experience were examined using a standardized definition of abuse. These reactions were explored in association with positive and negative support from formal and informal providers. Finally, the collective impact of positive and negative, formal and informal, support was investigated in predicting positive and negative adjustment with standardized measures. Both forms of informal support were found to be associated with positive outcomes. Only negative informal support was associated with posttraumatic stress symptoms.

## CHAPTER I

### INTRODUCTION

Exposure to traumatic stress, either as a witness or a direct victim, is an unfortunately common occurrence in the United States. In fact, researchers have estimated that 90% of the United States population may experience 1 of 19 traumatic stressors as defined by the *Diagnostic and Statistical Manual (DSM IV-TR*; APA, 2001) in the course of their lives (Breslau, Chilcoat, Kessler, Peterson, & Lucia, 1999). Exposure to trauma may include interpersonal violence, motor vehicle accidents, environmental disasters and war/refugee traumas, all of which may seriously impact those affected (Norris et al., 2002; Norris, Friedman, & Watson, 2002). The *World Health Organization report on violence and health* (Krug, Dahlberg, & Mercy, 2000) underlines the heavy cost of violence and trauma in health effects, including financial losses, injury and decreased productivity, as well as psychological and behavioral problems that may extend to permanent physical and mental disability and cost countries billions of dollars each year. Although all forms of traumatic stress are associated with negative adjustment (Norris, 1992), exposure to interpersonal violence has been uniquely associated with increased risk for negative adjustment (Green et al., 2000).

Exposure to interpersonal violence is associated with both short-term and

long-term psychological and physical health problems (see for reviews Crome & McCabe, 1995; Resnick, Aceirno, & Kilpatrick, 1997; Steketee & Foa, 1987). Various psychological problems may ensue following a trauma including general distress, anxiety, depression, substance abuse disorders, and interpersonal difficulty (Kessler, Davis & Kindler, 1997; Kilpatrick, Acierno, Resnick, Saunders, & Best, 1997; Saunders, Kilpatrick, Hanson, Resnick, & Walker, 1999). Among the most commonly reported problems after a trauma are those characterizing posttraumatic stress disorder (PTSD; Kessler, Sonnega, Bromet, Hughes, & Nelson, 1995). In fact, consistently higher rates of PTSD are found among interpersonal violence survivors compared to survivors of other traumas (Kessler et al., 1995; Resnick et al., 1993). In particular, Breslau, Chilcoat, Kessler, and Davis (1999) found the risk of PTSD from assaultive violence to be more than ten times greater than from other forms of trauma. The effects of PTSD are especially pronounced for women (Resnick, Kilpatrick, Dansky, Saunders & Best, 1993). Although as many as 94% of those raped initially display PTSD symptoms two weeks postassault, this rate drops to 47% just 11 weeks later (Rothbaum, Foa, Riggs, Murdock, & Walsh, 1992). Thus, exposure alone does not doom a victim to a poor outcome. However, of those who do develop initial PTSD symptoms, a small group will experience chronic PTSD (Foa & Riggs, 1995).

Psychological, somatic and behavioral changes are common among those experiencing chronic PTSD (Crome & McCabe, 1995). The combination of depression and anxiety symptoms, with some form of reexperiencing of the trauma, makes PTSD commonly misdiagnosed (Davidson & Connor, 1999). Another

frequent problem among those with chronic PTSD are sleeping and eating disorders (Crome & McCabe, 1995). Enduring pain disorders, sexually transmitted diseases, as well as genital and nongenital physical injuries sustained in the assault are also possible sequelae for those assaulted (Koss, Goodman, Browne, Fitzgerald, Keita, & Russo, 1994). Given the tremendous impact sexual assault can have on a person, it is not surprising that behavioral changes may occur, especially among those who continue to experience other negative effects months after the trauma occurred (Frazier & Burnett, 1994). Living arrangements may be uncomfortable and a person may be unsure of resuming social and sexual activities, causing changes in the functioning of many relationships (Crome & McCabe, 1995).

Although research has largely focused on negative outcomes (e.g., Breslau et al., 2002; Norris et al., 2002), it is clear that some victims do not experience lasting problems with adjustment; in fact, some victims report little change. For example, in a study of sexual assault victims presenting at a hospital, as many as 41% reported no life change and an additional 36% reported only minor change (Ruch, Chandler, & Harter, 1980). Others report solely positive effects or, perhaps more often, a mixture of positive and negative effects (Linley, Joseph, Cooper, Harris, & Meyer, 2003; Tedeschi & Calhoun 1995). Reported positive changes include improved relationships, new possibilities for one's life, a greater appreciation for life, a greater sense of personal strength and spiritual development. As opposed to the pathogenic model, which focuses on those who evidence dysfunction, the salutogenic perspective suggests that there is much to be learned from those who, despite exposure to a pathogen, remain healthy. When considering a salutogenic

approach, it is important to note that these coping and appreciation for life are not positive outcomes of the trauma itself (Veronen & Kilpatrick, 1983), but rather a reaction to the trauma. This approach does not deny inherent risk factors, but includes the possibility of healthful benefits after exposure to a stressor.

Various studies have demonstrated that at least half of the survivors of various traumas endorse some form of growth or positive change (Tedeschi & Calhoun, 1995), including sexual assault survivors (Burt & Katz, 1987; Frazier, Conlon, & Glaser, 2001; Frazier, Tashiro, Berman, Steger, & Long, 2004; Thompson, 2000). Although, to date, only four studies have explored growth with sexual assault survivors, this is a growing body of literature as awareness of this possibility is raised. Positive outcomes, such as greater empathy and appreciation for life, as well as improvements in relationships, appear to be an inherent aspect of adjustment for many victims of trauma (Tedeschi & Calhoun, 1995; Thompson, 2000). Those who experience growth in the immediate aftermath of trauma, and are able to maintain the gains over time, report less distress than those who never experience growth or those who initially experience some gains but fail to maintain them (Linley & Joseph, 2004). Knowledge of both vulnerability and resilience factors is essential to understanding all trauma outcomes (Yehuda, 1998).

An ecological framework has been employed to explain the occurrence of sexual violence at several levels (Doe, 1990; Grauerholz, 2000; Harvey, 1996; Heise, 1998; Neville & Heppner 1999). Although originally considered to explain an exploitation process by which assault can occur, this model may also be useful to understand the aftermath of the assault and the interactions between a survivor and

her world at various levels. Central to the model is the victim, with her experience in increasingly broad realms of the microsystem (i.e. experience with perpetrator), exosystem (i.e. immediate social factors such as support and SES) and macrosystem (i.e. larger cultural system beliefs and institutions). Several researchers have applied an ecological model to help explain the aftermath of a trauma and justify intervention at each level in a survivor's environment (Heise, 1998; Neville & Heppner 1999). Although factors at each level may predict the occurrence of violence, perhaps the most modifiable level for prevention of negative adjustment following a trauma is the level of the exosystem.

In exploring the importance of exposure to interpersonal violence, a great deal of the established literature attempts to predict who will develop PTSD or other adjustment problems (Darves-Bornoz, Leine, Coquet, Berger, Degiovanni, & Gaillard, 1998). Factors from all levels of the ecological model have been examined and it has been found that adjustment may be affected by the nature of the trauma, duration and revictimization factors, victim factors such as gender and age, exposure to other stressors and the relationship to the perpetrator (Brewin et al., 2000; Fergusson, Swain-Campbell, & Horwood, 2002; Foa & Riggs, 1995; Ozer et al., 2003). Another commonly explored area, best fitting within the exosystem level of the model, is social support (Brewin et al., 2000; Ozer et al., 2003).

Research thus far indicates that support as a general construct is consistently and clearly related to outcomes following traumas (Ullman, 1999; Zoellner, Foa, & Brigidi, 1999), including growth (Cadell, Regehr, & Hemsworth, 2003; Tedeschi & Calhoun, 1995). More specifically for rape survivors, social support may be useful

in predicting negative adjustment (Kramer & Green, 1991). Social support is generally operationalized as helpful or accommodating reactions. However, recent authors reviewing social support (Linley & Joseph, 2004; Ullman, 1999) have noted that social support is broader than a single item can assess and may be experienced positively and/or negatively by different survivors of different traumas, or even the same trauma. Positive support consists of the reactions one would hope to receive in the wake of a trauma. Being believed, being told the victim was not at fault, and receiving information or tangible aid would all be forms of positive support. On the other hand, negative support includes reactions that, although well intentioned, are unresponsive to the victim's needs. Examples of this include telling the victim to move on with life and forget about the incident, blaming the victim for what happened, or taking control of the victim's decisions. Although most general studies show a positive relationship between support and adjustment, those studies that separate positive and negative support into different constructs report less consistent results (Campbell, Aherns, Self, Wasco, & Barnes, 2001; Ullman, 1996b). Positive support has been found to be negligible in predicting negative adjustment (Campbell et al., 2001; Ullman, 1996b), while negative social reactions have been shown to significantly hinder recovery following rape (Davis, Brickman, & Baker, 1991; Frank, Anderson, Stewart, Dancu, Hughes, & West, 1988; Ullman, 1996b; Ullman, 1996c).

One possible way this differential outcome of positive and negative support may be understood is that impact may vary according to the source of support (Ullman, 1996b; Ullman 1996c). Formal support sources include first responders,

such as police, fire and other emergency personnel, including workers in the medical and mental health systems that are called upon for services. Informal support may come from family members, friends, and/or romantic partners. Some have hypothesized that the impact of the response may be due to the importance of the support provider in the survivor's life (Ullman, 1996b) or, due to the nature of the relationship, the frequency of disclosure and the opportunity for support (Golding, Siegal, Sorenson, Burnam, & Stein, 1989). However, others have reported that negative reactions, regardless of source, are associated with adverse adjustment in survivors (Ullman, 1996c).

Formal support sources may differ in characteristic behavior and therefore have a different impact on adjustment compared to informal support sources. Although formal support sources are meant to be helpful to victims of assault, their efforts are not uniformly supportive (Golding et al., 1989; Popiel & Susskind, 1985; Ullman, 1996a). One particular negative support reaction, blame, is more often received from formal support sources after a sexual assault (Fillipas & Ullman, 2001; Ullman, 1996b). Blame and other negative reactions, when delivered by formal support sources, have been shown to be associated with greater impairment in the recovery process (Fillipas & Ullman, 1996).

Research has also been conducted examining the relationship between informal support sources and adjustment of survivors. Support in family and romantic partner relationships have been shown to be important in predicting stress response (Jackson, Sifers, Warren, & Velasquez, 2003; Moss, Frank & Anderson, 1990). Ullman (1996b) also explored the impact of reactions by support source.



She found that, beyond familial or partner relationships, emotional support from friends is more strongly related to recovery than any other source of emotional support, including formal support sources (Ullman, 1996b). There are no published studies examining the relationship between support and positive growth following a trauma.

To clarify, social support as a general construct is known to be associated with negative functioning after traumas and specifically sexual assault. Although there is a fairly clear association of negative support and negative outcomes for survivors, the relationship is less clear for positive support. It is currently unclear why at times positive support appears more beneficial (when studied generally) than at other times (when explicitly separated from negative support). Additionally, the role of the source of support in predicting adjustment has not been fully explored. Although it seems that social support is associated with posttraumatic growth, this area of research is far less developed. Positive and negative support received after traumas may be uniquely predictive of positive and negative adjustment and these factors that are present prior to, and in the aftermath of, a trauma may be more predictive of who will develop PTSD than the details of the trauma itself.

The present study examined the relationships among positive and negative support and positive and negative adjustment. Exploration of the potentially differential impact of formal and informal support providers was examined. Prior to discussion of the study hypotheses, a more complete review of the ideas presented above is presented.

## CHAPTER II

### REVIEW OF LITERATURE

#### Trauma

Exposure to traumatic stress may occur through various forms such as interpersonal violence in physical and sexual abuse, mass violence in terrorist attacks and war, common accidents such as motor vehicle crashes, serious illnesses such as cancer as well as other uncontrollable events such as natural disasters.

#### *Prevalence and Incidence*

Prevalence estimates of exposure to traumatic stressors in a lifetime collected in the 1990s typically ranged from approximately 40% to 70% (e.g., Breslau, Davis Andreski & Peterson, 1991; Norris, 1992; Resnick et al., 1993). Breslau and colleagues' (1991) study of 1,007 members of health maintenance organizations (HMOs) revealed that 394 (39%) experienced traumatic events as measured by the National Institute of Mental Health's (NIMH) Diagnostic Interview Schedule. Higher rates were found with a national probability sample of 4,008 women using structured telephone interviews for assessment of specific crimes and traumatic events (Resnick et al., 1993). These earlier studies based inclusion of traumatic stressors on the American Psychiatric Association's (APA) *Diagnostic and Statistical Manual (DSM-III-R)* criteria that the experience be "outside the range of usual human experience and that would be markedly distressing to almost anyone"

(APA, 1987).

Revisions in the *DSM-IV* broadened criteria beyond the earlier definition, recognizing some common but stressful situations may also produce PTSD (e.g., car accidents, witnessing violence). The most recent nosology changes (APA, 2001) have resulted in a more stable prevalence rate of traumatic stress exposure of approximately 90%, an increase over previous prevalence rates by 20-50%. Most recently, using the Diagnostic Interview Schedule for *DSM-IV*, Breslau and colleagues (1999a) reported that in a community sample of 2,181 participants, 90% met criteria for experiencing 1 of 19 *DSM-IV* defined traumas in their lifetime. Exposure to traumas is higher in the United States than in other industrialized nations such as Germany where exposure has been found to be three times less using similar assessments and research methodology (Perkonig, Kessler, Storz, & Wittchen, 2000). Exposure to a trauma has significant implications, although it is fairly common.

Interpersonal traumas are a particularly important group of traumas because not only are they among the most frequent, but they also carry unique risk (Breslau et al., 1999b). However, interpersonal violence exists along a continuum of severity. Through subtle, unnoticed and unsanctioned actions, it is at times difficult to distinguish between what is normative and what is coercive and criminal (Grauerholz & Solomon, 1989). Interpersonal violence has been defined as “an event that threatens or manifests bodily or emotional harm,” (Gore-Felton, Gill, Koopman, & Spiegel, 1999). This includes domestic violence, physical, sexual and emotional abuse events that are witnessed, threatened or experienced.

The category of interpersonal violence comprises a large portion of overall exposure to traumatic stressors, with Caucasian women and college students reporting the highest frequencies of sexual violence (Acierno, Resnick, & Kilpatrick, 1997). Data from the National Women's Survey, a national household probability sample of women, reveal that 902 of the 2521 women ages 18-35 had experienced interpersonal violence through physical or sexual assault. Of the participants, 566 experienced trauma through sexual assault and 336 through other forms of physical violence (Acierno, Brady, Gray, Kilpatrick, Resnick, & Best, 2002). Using data collected in the National Violence Against Women's Survey, it is estimated that approximately 1.5 million women are raped and/or physically assaulted by an intimate partner annually in the United States (Tjaden & Thoennes, 2000).

Various definitions have been employed in the literature to define what constitutes an interpersonal trauma. This has affected the prevalence rates of these traumatic events. Part of the reason for multiple definitions is the difference in uses by various groups and agencies. Definitions used by law enforcement agencies exist only as constructs pertaining to narrowly defined parameters such as penile-vaginal penetration; whereas definitions used by service providers are meant to be encompassing of the continuum of violence and continuum of adjustment outcomes survivors experience. For example, one of the primary ways the United States government attempts to track criminal activity such as rape is through the Federal Bureau of Investigation's (FBI) annual Uniform Crime Report (UCR), which relies on the report of criminal activity by law enforcement agencies throughout the

country. This report (FBI, 2003) defines rape as “the carnal knowledge of a female forcibly and against her will” (p. 23). Thus, this definition only encompasses reported forcible rape against a woman. Other unwanted sexual contact, including forced and coerced assault against men, is counted elsewhere in the report. This does little to inform the actual crime rate. Another prominent report of the rates of sexual abuse in America is conducted with the Violence Against Women Study. This study (Tjaden & Thoennes, 2000) defines rape as “an event that occurs without the victim’s consent and involves the use of threat or force to penetrate the victim’s vagina or anus by penis, tongue, fingers, or object or the victim’s mouth by penis” (p. 16). This definition includes attempted and completed rape and is more encompassing of same-sex rape as well as males who are victimized.

Authors attempting to operationalize violence against women have struggled with the various definitions. Goodman, Koss, Fitzgerald, Russo and Kieta (1993) comment, “On the one hand, we did not want to veer from, or dilute the power of, the traditional and popular understanding of violence as the unjust or unwanted exercise of physical force. On the other hand, we recognized that men’s actual use of physical force against women lies on one end of a continuum of behaviors, all of which involve men’s abuse of power (physical strength, economic resources, or employment status) over women who have less power” (p. 1054).

### *Interpersonal Violence and Adjustment Outcomes*

Exposure to interpersonal violence is associated with both short-term and long-term psychological and physical health problems (for reviews see Crome & McCabe, 1995; Resnick, Aceirno, & Kilpatrick, 1997; Steketee & Foa, 1987). In

the days and weeks following an interpersonal trauma, initial difficulties may first manifest. Those assaulted may present to health care settings to receive aid for physical injuries. Negative health from the event itself such as physical wounds or broken bones as well as deterioration of functioning from stress may all be dealt with in the immediate aftermath of the trauma (Campbell, 2002). In the FBI's UCR, everyone who is forcibly raped is considered injured (FBI, 2002). Additionally, sexually transmitted diseases and pregnancy may emerge as concerns (Campbell, 2002).

There is also a wide range of anxiety symptoms experienced by those recently exposed to traumatic stress (Christopher, 2004). Most notably, posttraumatic symptomatology commonly appears acutely in the immediate aftermath of trauma and fades consistently with time (Gore-Felton et al., 1999; Rothbaum et al., 1992). These responses may be both adaptive and maladaptive at the same time on differing levels. On the extreme end of maladaptivity, anxiety may cause suppression of the immune system and neural damage. Simultaneously, anxiety may be beneficial allowing survival or heightened awareness to prevent future threats. A variety of other initial emotional reactions may also occur in those exposed to a traumatic stressor. Some survivors report feelings of emotional numbness (Bryant, 2003), depression (Koss, Bailey, Yuan, Herrera, & Lichter, 2003) or attempting to avoid thinking about the trauma (Frazier & Burnett, 1994)

Of all traumas, interpersonal traumas are associated with the most detrimental problems including PTSD, dysphoric mood and difficulty with self-regulation (Green et al., 2000). For those exposed to an interpersonal traumatic

stressor such as rape, the effects may endure for months and years following the assault. Enduring problems of interpersonal traumas encompass psychological, somatic, and behavioral changes (for review see Crome & McCabe, 1995). These victims may experience symptoms of depression, anxiety and reexperiencing the trauma both immediately and for months and years to come (Fergusson, Swain-Campbell, & Horwood, 2002; Hutchings & Dutton, 1997).

One study exploring enduring reactions to rape one to two and a half years postassault, showed victims who originally presented at a hospital emergency room continued to experience depression, elevated suspicion, restricted dating practices and sexual difficulties (Nadelson, Notman, Zackson, & Gornic, 1982). With a sample of middle-aged female veteran outpatients, the rate of depression was three times higher and substance abuse was two times higher among those sexually assaulted during active duty completed many years earlier compared to those who reported no assault history while on active duty service (Hankin, Skinner, Sullivan, Millen, Frayne, & Trip 1999). Social and sexual functioning may also be impaired (Burgess & Holmstrom, 1979). Victims additionally commonly continue to have trouble with somatic issues (Crome & McCabe, 1995; Kimerling et al., 1994).

In a review of seven general population surveys, those participants with sexual assault histories reported poorer subjective health (Golding, Cooper, & George, 1997). Clum, Calhoun, and Kimerling's (2000) study found PTSD to be an important factor in the development of health problems among sexual assault survivors. In the year following a sexual assault, 115 women who initially presented at an urban rape crisis center showed continued elevations in

psychological symptoms in contrast to a matched comparison group who had not experienced sexual assault but had presented for emergency services following some other sort of trauma (Kimerling & Calhoun, 1994). Recently, Ullman and Brecklin (2003) used data from the National Comorbidity Survey and found that among victims of adult sexual assault, traumatic events were associated with more chronic medical conditions. Thus, while medical treatment seeking behaviors may be equal, the reason for seeking services may be more complicated for survivors of sexual assault.

In one study, over half of the female cases of PTSD in a community sample were attributable to assaultive violence (Breslau, et al., 1999a). According to some experts, “being the victim of completed rape appears to be worse than being the victim of other attempted and completed crimes” (Kilpatrick, Best, & Veronen, 1985, p. 872). One area in which long-term adjustment difficulties are often seen is with the development of PTSD (Foa & Riggs, 1995).

### *Posttraumatic Stress Reactions*

PTSD is an anxiety disorder that follows exposure to a trauma in which fear, helplessness, or horror was experienced. Following exposure to trauma, the person faces persistent reexperiencing, avoidance, and/or increased arousal for at least a month following the trauma that causes clinically significant distress or impairment (APA, 2000). More acute reactions that occur within the first month after a traumatic event with the same symptomatology are characterized as Acute Stress Disorder (ASD; APA, 2000). This response is commonly seen in the initial weeks after a trauma but fades consistently with time for most survivors of traumatic



events (Rothbaum et al., 1992). Despite the emergence of symptoms of PTSD in the immediate aftermath of a traumatic event (within the first month), the diagnosis of ASD does not have adequate predictive power of who will go on to develop PTSD (Bryant, 2003). In fact, of those exposed to a traumatic event, only a few will go on to develop PTSD (Breslau, 2002). The decrease in frequency of PTSD slows considerably after three months (Blank, 1992; Foa & Riggs, 1995). Therefore, PTSD beyond three months is increasingly chronic in nature and even more so beyond one year (Foa & Riggs, 1995; Rothbaum et al., 1992).

### *Prevalence*

Because of the low predictive nature of ASD, research frequently explores PTSD prevalence at least one month after a trauma has occurred. In the largest study to date using a college nonclinical sample, Bernat, Ronfeldt, Calhoun and Arias (1998) found 12% of those exposed to a variety of traumas (4% of the full sample) met criteria for PTSD. The National Comorbidity Survey of 5,877 persons aged 15-54 found the prevalence rate of PTSD to be 7.8% (Kessler et al. 1995). Women have higher rates of PTSD than men in each of these studies by approximately two to one. The National Women's Study, a representative sample of women in the United States, found a similar prevalence rate, 12.3%, of the participants experiencing PTSD (NWS; Resnick et al., 1993).

As noted earlier, one of the most prevalent psychological disorders to follow the experience of a trauma is PTSD. Using 2,181 individuals from a representative community sample, Breslau et al. (1999b) demonstrated that assaultive violence carries unique risk for persistent PTSD. Despite PTSD being the most common

reaction to traumatic stress, it appears that those who do not develop PTSD are not at elevated risk for subsequent onset of depression or substance abuse compared to those not exposed to trauma (Breslau, 2002).

Exploring ten potentially traumatic events with 1000 adults, Norris (1992) found the highest rate of PTSD among those who were sexually assaulted. Foa and Riggs (1995) also found sexual assault traumas to have the highest rate of PTSD symptoms. In the Foa and Riggs' sample, 94% of those exposed to a sexual assault experience endorsed PTSD symptomatology when assessed two weeks after the experience. This group also maintained the highest levels of PTSD in follow-up assessments conducted as long as three months later. These studies were each large representative sample studies that did not allow for exploration between individuals' vulnerabilities, stressor dimensions and responses.

### *Posttraumatic Growth*

Although much research has been devoted to exploring negative adjustment problems such as posttraumatic stress reactions, less is known about another aspect of functioning following sexual assaults and other forms of interpersonal violence: posttraumatic growth. In previous literature, positive change has been labeled posttraumatic growth, stress-related growth, thriving, positive by-products, positive adjustment, and positive adaptation. For the purposes of this study, one term, posttraumatic growth was used to refer to significant beneficial change in cognitive and emotional life (Tedeschi & Calhoun, 1995). These changes include improved relationships, new possibilities for one's life, a greater appreciation for life, a greater sense of personal strength and spiritual development. Although negative events may

be associated with psychological vulnerability, the positive changes, which simultaneously occur, may encompass behavioral implications of a protective nature (Tedeschi & Calhoun, 1995).

As opposed to the pathogenic model, which focuses on those who succumb to pathology, the salutogenic perspective suggests that there is much to be learned from those who, despite exposure to a pathogen, remain healthy. It is important to note that when considering a salutogenic approach, the positive ways of coping and creating higher levels of functioning or appreciation for life are not positive outcomes of the trauma itself (Veronen & Kilpatrick, 1983). This approach does not deny inherent risk factors, but includes the possibility of healthful benefits after exposure to a stressor.

Tedeschi and Calhoun's theory of benefit posits that different types of events are likely to yield different types of positive change (1995). For example, enhanced self-efficacy may arise in the aftermath of any stressor but other forms of change may be more closely related to the nature of the traumatic event. Tedeschi and Calhoun (1995) argue that the significance of these positive changes can be so great, that this growth may be truly transformative and preventative of mental illness. However, some have argued that the early perception of growth as an initial state of functioning is illusory and a part of a strategy of self-protection. Davis and McKearney (2003) argue that recall of traumatic events leads one to affirm his or her life is meaningful; reminders of death, in conjunction with traumatic recall, lead to exaggeration of the extent to which one sees life as meaningful. However, the authors further argue that, even if illusory, maintaining beliefs of the

meaningfulness of one's life may be part of a process of growth. Recognizing a sense of purpose or meaning in life has been shown to be a delayed product of growth after trauma, particularly rape (Frazier et al., 2001).

Initial investigations have shown that not all people who are exposed to a trauma will experience a solely negative reaction. Recent research examining positive and negative outcomes simultaneously reveals both outcomes can coexist as independent constructs, not portions of a bipolar continuum (Linley, Joseph, Cooper, Harris, & Meyer, 2003). Among various studies, regardless of assessment method, 50-60% of participants endorse growth or positive change (Tedeschi & Calhoun, 1995). Linley and Joseph (2004) reviewed 39 studies of various forms of trauma where some measure of positive outcome was included. They found that participants who were able to report some level of growth after the trauma and maintain this positive aspect over time were those who were least distressed (Linley & Joseph, 2004). In the first study of growth with women who were raped, Burt and Katz (1987) studied 113 victims using non-established original measures and found that women experience a variety of aspects of positive change such as understanding one's needs and getting them met, assertiveness, independence and autonomy, self-worth, political awareness, control, and self direction during their recovery period. Recently, among 60 women who were raped at least 3 years prior to the study, 95% reported some positive outcome (e.g., grown into stronger individuals who were more confident in their ability to cope with stress) and over half reported more than one positive outcome (Thompson, 2000). Although empirically valid and reliable measures were not used, these studies show potential

for positive gains following a sexual assault.

Frazier and colleagues (2001) conducted a longitudinal study to investigate timing and course of posttraumatic growth and negative life changes. As soon as two weeks after an assault, victims of sexual assault reported positive changes (more empathy, greater appreciation for life and improvements in relationships) and these changes generally increased over time while initial negative changes decreased. Building on Frazier et al. (2001), Frazier, Tashiro, Berman, Steger and Long (2004) used hierarchical linear modeling to explore factors related to positive change following sexual assault. They found social support to be related to self-reported positive change. This is similar to other studies of various traumas where social support was related to positive change and growth (Cadell, Regehr, & Hemsworth, 2003; Tedeschi & Calhoun, 1995).

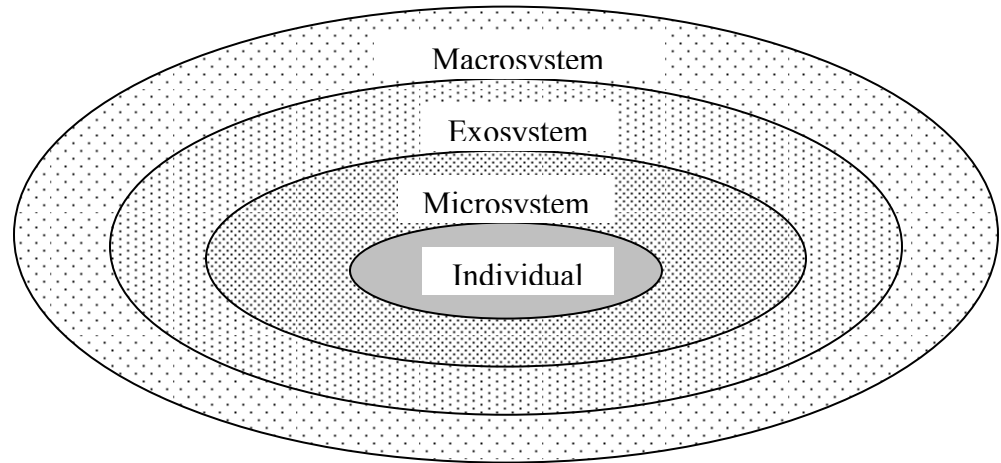
Despite these advances, research on positive adjustment is limited and has not yet explored the combined effects of positive change and negative adjustment specific to interpersonal trauma such as rape with reliable, specific measures of positive and negative adjustment. Previous studies have also largely used open-ended or single-item questions to assess gains. Finally, this literature has not considered possible protective factors that may act to buffer negative effects and may also enhance growth.

#### *Aftermath of Trauma: An Ecological Model*

Current research supports that there are both positive and negative reactions to a trauma such as sexual assault. One explanation for differential reactions is that each person's experience is not only influenced by the factors of the trauma itself,

but the larger environment in which the person lives. Bronfrenbrenner (1978) and later, Doe (1990) proposed an ecological model (see Figure 1) to understand the occurrence of a traumatic event at several levels. Although originally considered to explain an exploitation process by which assault can occur, this model may also be useful to understand the aftermath of adjustment and interactions between a survivor and her world at various levels.

*Figure 1.* Ecological model.



Following this framework to understand violence against women, several researchers have applied an ecological model to go beyond vulnerabilities of the individual that may predispose him or her to the experience of the trauma. Also explored is the aftermath of the assault to allow for the potential for intervention at all levels and stages both pre and post trauma (Heise, 1998; Neville & Heppner 1999). At the center of this model are the victim and the factors related to the victimization experience (e.g., psychological history, previous exposure). Beyond the individual who experiences the traumatic event, the first level or microsystem consists of the interaction between the survivor and the perpetrator. Both an individual's behavior, as well as factors associated with the assault (e.g., setting, use of force), comprises this level. Next is the Exosystem, which is the larger formal and informal social system of which the victim is a part (e.g., socioeconomic status, isolation from friends or family, available social support). The final level of consideration is the macrosystem or the cultural norms and institutions governing behavior (e.g., criminal justice system which says sexual assault is illegal and punishable, cultural tendency to blame the victim).

This model was expanded to include recovery from a multidimensional framework. Harvey (1996) suggested that trauma-focused interventions are effective to the extent that they enhance person-community relationships and achieve "ecological fit." This is to say that each individual exposed to trauma will experience both the trauma and the aftermath unique to that ecological context. Although two victims of rape may have similar characteristics (e.g., gender, age, ethnicity) other factors such as marital status or SES may predict the interaction



with the expanding context of their world. Over time, differences in the recovery environment available to a survivor will be expressed differently. The environmental degrees of vulnerability and resilience affect recovery domains and pathways to trauma recovery (Harvey, 1996).

Although factors at each level may predict the occurrence of violence, perhaps the most modifiable level to prevent negative adjustment once a traumatic event has occurred, however, is the level of the exosystem. Grauerholz (2000) recommended examining the level of the exosystem, where the immediate social network may be built or modified to provide a better fit for recovery. According to a multiagency government report on evidence-based early psychological intervention for victims of violence, mental health professionals should increasingly focus on the recovery environment for individuals in the week to two years following exposure to traumatic stressors to reduce or ameliorate symptoms or even improve overall functioning (NIMH, 2002)

#### *Factors to Help Explain Differential Adjustment*

In exploring the impact of interpersonal violence, a great deal of current literature attempts to predict who will develop PTSD and other adjustment problems (Darves-Bornoz, Leine, Coquet, Berger, Degiovanni, & Gaillard, 1998). Several studies have demonstrated the association of trauma exposure and diffuse elevated psychological problems (Acierno et al. 2002; Fergusson et al., 2002; Gore-Felton et al., 1999; Hutchings & Dutton, 1997). Several factors that may influence adjustment (all in the microsystem level of the ecological model) are trauma type and frequency, the relationship to the perpetrator, and time since assault.

### *Type and Frequency of Trauma*

Although all forms of traumatic stress are associated with negative adjustment (Norris, 1992), exposure to interpersonal violence has been uniquely associated with increased risk (Green et al., 2000). Given that experiencing posttraumatic symptoms is extremely common in the immediate wake after a trauma and PTSD is among the most prevalent and enduring problem for some who are exposed, it is important to know how to reduce the risk of chronic mental illness once exposure has occurred. Consistently higher rates of PTSD are found among interpersonal violence survivors compared to survivors of other traumas (Kessler et al., 1995; Resnick et al., 1993). Breslau and colleagues (1999b) found the risk of PTSD from assaultive violence to be more than ten times greater than from other forms of trauma.

The stereotype of a rape scenario often considered to be the “worst” would likely be described as a stranger assault with weapon and force, which would likely also be a single occurrence in nature. However, this scenario’s relationship with adjustment is not fully supported by the literature. Looking at 326 victims of completed rapes presenting at an urban hospital, Ruch and Chandler (1983) reported that all of these factors considered together accounted for less than 2% of the variance in victims’ emotional response. However, these factors may be predictive of adjustment in the long-term due to how the survivor is treated by others in the weeks and months following the assault. Various factors of the assault (e.g., weapon usage, degree of injury and relationship with the perpetrator) and the victim (education level, ethnic minority status) influence the reactions received (Ullman &

Fillipas, 2001).

It is known that a toxic dose-response relationship exists with repeat criminal victimization, especially when repeated exposure occurs in a relatively short period of time (Winkel, Blaauw, Sheridan, & Baldry, 2003). According to Green et al. (2000) trauma exposure rarely occurs through a single event and multiple or various exposures may reciprocally affect a survivor's outcome by reducing her ability to cope. However, Green et al., (2000) found that compared to all other types of trauma exposures, interpersonal trauma is associated with the highest risk for current symptom distress, whereas, noninterpersonal trauma is not associated with elevated current trauma-related symptoms as measured by the Trauma Symptom Inventory (Briere, 1995).

Additionally, Green et al. (2000) found those exposed to multiple interpersonal traumas experienced worse outcomes compared to those who had other multiple trauma exposures. Additionally, it was reported that most individuals who experience one traumatic event had experienced others as well. Further, Rosen (2000) also found that the number of assaults and traumas to which a person is exposed is related to long-term health problems. Thus, whereas persons exposed to any trauma may have previously experienced various other forms, the greatest risk is conferred when exposure to interpersonal trauma is present, especially when victimization is repeated.

#### *Relationship to the Perpetrator*

Relationship to perpetrator is another way that differential outcomes have been explored. Katz and Mazur (1979) reviewed the relationship to the perpetrator

and concluded that when the assailant is a stranger, the victim may have a heightened sense of danger and feel her life is more in danger. However, they also explain that when the offender is known to the victim, as someone she knows and trusts, she may be more devastated, losing faith in the friend or family member who has assaulted her and therefore be more likely to experience self blame (Katz & Mazur, 1979). Support for this theory however has been mixed.

Darves-Bornoz et al., (1998) found that assaults occurring within a family system were associated with more chronic PTSD. When looking at child sexual assault victims' adjustment as adults, those assaulted by a stranger have marginally higher health care seeking than those assaulted by someone known to them (Ullman & Brecklin, 2003). In another recent study, Culbertson and Dehle (2001) also found that perpetrator type influenced the PTSD symptoms experienced by the victims of sexual assault. Individuals in cohabitating, marital, or acquaintance relationships reported more hyperarousal than women assaulted by an acquaintance. Individuals sexually assaulted by a married or cohabitating partner reported more intrusive symptoms than those assaulted in the context of a dating or sexually intimate relationship. Finally, women in a sexually intimate relationship with the perpetrator reported lower intrusion symptoms than those assaulted by an acquaintance.

#### *Time Since Assault*

An additional way adjustment may be influenced is through the time since the assault. As noted earlier, acute stress reactions occur commonly in the first month following a traumatic event (Gore-Felton et al., 1999; Rothbaum et al., 1992). Foa and Riggs (1995) found 94% of those assaulted endorsed PTSD

symptomatology in the two weeks following the assault. Despite the large number of individuals initially experiencing acute stress reactions, few go on to develop PTSD (Breslau, 2002; Rothbaum et al., 1992). The frequency of PTSD has been shown to decrease considerably after three months and even more so at one year (Blank, 1992; Foa & Riggs, 1995). Those who endorse PTSD criteria beyond this point are experiencing a chronic response. As several researchers have reported (Bernat et al., 1998, Resnick et al., 1993) approximately 12% of those exposed to an assault will meet criteria for PTSD.

Time also may play a role in posttraumatic growth. Some researchers (Davis & McKearney, 2003 Frazier et al., 2001) argue that growth outcomes may accumulate or be a delayed response not seen immediately after a trauma. Although assault survivors may start reporting positive change as soon as two weeks after an assault, some constructs (sense of purpose or meaning in life) may not appear for more substantial amounts of time (Frazier et al., 2001).

### *Social Support*

One final and particularly salient factor that may predict both differential psychological and physical outcomes following assault is social support (e.g., Ozer et al., 2003; Ruch & Chandler, 1983). Brewin, Andrews and Valentine (2000) concluded from their meta-analysis that predicting who will experience PTSD after various traumatic exposure was not entirely random but that factors associated with greater vulnerability were only predictive for certain populations under certain circumstances. The strongest predictor overall however was social support. Social support was also the only factor explored that is modifiable in the aftermath of a

trauma. More recently, Ozer et al. (2003) explored the predictors of PTSD and symptoms in adults and found that prior characteristics were not as useful in predicting adjustment as factors that occurred after the trauma. In this study, social support was important only in the aftermath of the trauma when PTSD symptoms emerged.

Historically, social support has been studied as a single general construct typically using one or two items to assess its relationship to adjustment (e.g., “Do you have support”). As a general construct, social support has been conceptualized as a very broad and wide-ranging positive feeling of support. More recently, support has been considered in two domains of positive and negative that are most often mutually exclusive. Positive support can be conceptualized as all of the reactions one would hope to receive in the wake of a trauma. Being believed, told it was not your fault or receiving information or tangible aid would all be forms of positive support. On the other hand, negative support includes reactions that may be well intentioned, but are unresponsive to the victim’s needs and are self-serving to lessen one’s own vulnerability or discomfort in the situation. Examples of this would be telling the victim to move on with her life and forget about the incident, blaming the victim for what happened, or taking control of the victim’s decisions. In assessing what predicted negative responses, Campbell (1998) interviewed formal support persons from the legal, medical, and mental health systems and found support for the influence of both ecological factors and sexual assault characteristics in predicting the response received. It is possible that informal support sources would not be told as many details about the assault and therefore would not use this

information against the survivor in negative reactions.

Koss and Bukhart (1989) discuss the cognitive mediation that a rape survivor must navigate in today's culture where myths about rape are pervasive. Women who are raped may be faced with an unsupportive social environment. They explain that the survivor may only have the choices of taking responsibility and feeling self-blame for her assault or engaging in denial to avoid persecution. The first hypothesized path to poor outcomes (taking responsibility and experiencing self-blame) fits with some literature on social support and adjustment following other traumas (e.g., Burt & Katz, 1987; Frazier, 1990; Ullman & Siegel, 1994). Survivors choosing to disclose are likely in a position of vulnerability whereby they are more easily influenced by the negative blaming reactions that they receive.

#### *Social support and adjustment*

Social support has been widely researched as a broad undefined construct. When assessed generally, social support is often not specified or clarified as specific reactions. Instead, a single item has often been used to examine if a person "feels supported" or is satisfied with a social network. Intuitively, many researchers (and study participants) consider support as an exclusively positive domain of a relationship. A number of studies have examined the relationship between this general construct of social support and adjustment and found that when exposed to stress, a common and effective form of coping is to rely on social support to buffer the psychological impact (Thoits, 1984; 1986). Following a cruise ship disaster, Joseph, Dalglesien, Thrasher and Yule (1995) found that the presence or absence of support was most predictive of emotional reactions such as depression and anxiety.

Among participants from the United States Army who experienced sexual and nonsexual traumas, social support from military unit leaders moderated the relationship between psychological and physical health problems while unit cohesion was directly associated with fewer mental health problems (Rosen, 2000).

Across studies of adjustment following an interpersonal trauma, social support has consistently been associated with adjustment (Brewin et al., 2000; Ozer et al, 2003). In one study looking at risk and resiliency factors of PTSD with 53 battered women, social support was among the significant factors associated with PTSD symptomatology (Astin, Lawrence, & Foy, 1993). Seeking social support has also been shown to be an effective coping strategy for adult survivors of rape. Burgess and Holmstrom (1978) found that for victims of rape with social support, 45% felt recovered in months, but without social support, none felt recovered in that time. As part of structured interviews on physical health and sexual assault, 115 women presenting at an emergency facility, were asked about history of assault, somatic complaints and seeking social support. Social support was shown to effectively moderate somatic symptoms and subjective health ratings for sexual assault victims (Kimerling & Calhoun 1994). Kramer and Green (1991) assessed acute reactions of 100 sexually assaulted victims and found that using an informal support network was associated with fewer PTSD symptoms. Frazier and Burnett (1994) found that survivors frequently responded to open ended questions on “what helped them to feel better” that support was helpful as a coping strategy. Quantity and quality of support, after an assault were assessed by Atkeson, Calhoun, Resick, and Ellis (1982); the more people the victim told about the assault and the support



received predicted less depression at four and eight month follow-up assessments. However not all research has shown this relationship. Assessing support in general at three months post-assault, Popiel and Susskind (1985) found no relationship with psychological adjustment. However, assessment of support was only via perceptions of feeling supported, not a reliable or valid instrument.

In these studies that included analyses of social support, the construct was often measured with a single item. Researchers originally conceptualized support as a unidimensional construct, not considering that various reactions may be experienced differently than intended or even differently among different persons. Despite providing early insight into the area, they have limitations in providing information on what forms of support predict adjustment. Recently, authors reviewing social support (Linley & Joseph, 2004; Ullman, 1999) have noted that social support is broader than a single item may assess and may be interpreted positively and negatively by different survivors of different traumas, or even the same trauma. A further weakness in this existing literature as noted by Ullman (1999), is that most social support studies have used treatment-seeking populations and have not used standardized measures or have used single-item assessment. This methodology has not allowed for a full exploration of support or adjustment.

#### *Adjustment with negative support*

As noted above, few studies have explored the presence of negative supportive reactions related to adjustment. Ullman (1996a) assessed general negative reactions such as disbelief or blame over time from 155 rape victims' social networks and found that negative reactions were related to lower self-rated

recovery and increased psychological symptoms. When comparing psychological adjustment among sexual assault survivors, those with unsupportive social networks experience more psychological symptoms compared to survivors who receive neutral or positive support (West, Frank, Anderson, & Stewart, 1987 as cited in Ullman, 1999). Frank, Anderson, Stewart, Dancu, Hughes, and West (1988) found that women who are raped and who have an unsupportive network (presence of negative supportive behaviors) had more psychological symptoms as soon as two to four weeks after an assault. In exploring more long-term effects of the impact of partners' reaction on survivors' psychological symptoms, Davis, Brickman and Baker (1991) found that negative partner behaviors were also related to increased psychological symptoms at two months post assault. Thus, negative support has acute and long-term implications for the psychological adjustment of sexual assault survivors.

#### *Adjustment with positive and negative support*

Few studies have examined both positive and negative support sources simultaneously. Ullman (1996b) looked at both positive and negative social reactions received by survivors of sexual assault and, as noted previously, found negative reactions to be a strong predictor of poor adjustment. However, positive social reactions were found to be unrelated to adjustment. The researchers hypothesized that the positive reactions measured in the study may not have been wanted or what the survivors needed at the time at which they were given (Ullman, 1996b). Campbell et al. (2001) also separated positive and negative support using the Social Reactions Questionnaire, which measures specific support reactions

commonly received after an assault. Survivors were asked if they felt the reactions were positive or negative. Results suggested that the effects of positive support were negligible in predicting adjustment; negative social reactions hindered recovery. This result was explained that few survivors in the study agreed on what constituted a positive reaction.

This more complex picture of support provides evidence that support is not universally positive. Additionally, explicitly positive support as it is currently measured in terms of specific reaction is not always predictive of adjustment. Further, neither of the currently available studies explored positive adjustment or growth as a potential measure of adjustment. Future research should consider the possibility of gains, especially from the domain of positive support, which may influence negative adjustment.

#### *Explaining the effects of social support*

Several studies have sought to explain these mixed findings regarding the impact of support (e.g., Campbell, Aherns, Self, Wasco, & Barnes, 2001; Ullman, 1996c; Zoellner, et al., 1999). In conceptualizing the adjustment outcomes of positive and negative social support, some have suggested that differences may be due to more agreement as to what constitutes positive and negative reactions. Campbell et al., (2001) found that survivors largely agreed on which reactions were negative, but there was less agreement about what reactions were positive.

A further hypothesis is that the time at which support is measured in relation to the trauma may affect the results. Sales et al. (1982) found the effects of support not to be evident in the immediate aftermath of a trauma, but to become more

pronounced over time. This early study was conducted from the premise that all support is positive. The presence of supportive behaviors potentially may not be as important in the acute period after the assault, but may be shown to be more significant over time. In a review of 2,647 studies on PTSD, 476 were used in a meta-analysis of predictors of PTSD (Ozer et al., 2003). Social support was found to be most predictive three years after the trauma. This supports the idea that the role of support may be most useful over time. Alternatively, the potency of social support may accumulate over time and explain this later more robust effect. Finally, positive and negative support may be most predictive of positive and negative adjustment differentially.

*Formal vs. Informal support after a trauma.*

Another factor to consider in understanding the relationship between support and adjustment is from whom the support is received. Formal support sources include responding authorities, such as police, fire and other emergency personnel, as well as workers in the medical and mental health systems that are called upon for services. Informal support may come from family members, friends, and/or romantic partners. Some have hypothesized that the impact of the response may be due to importance of the support provider in the survivor's life (Ullman, 1996b) or, due to the nature of the relationship, the frequency of disclosure and opportunity for support (Golding, Siegal, Sorenson, Burnam & Stein, 1989). However, others have reported that negative reactions, regardless of from whom they are received are associated with survivors' adverse adjustment (Ullman, 1996a).

*Characteristics and function of formal support sources.*

Formal support sources may differ in their characteristic behavior and also have a different impact on adjustment from informal support sources. Although formal support sources have the unique job to be helpful to victims of assault, their efforts are not uniformly supportive. Golding et al., (1989) explored social support sources following an assault with randomly selected community women. They found that among the survivors who had told someone about the assault, rape crisis centers and legal professionals were among those least utilized for support, but were rated highly helpful. In this same study, however, other formal support sources were not rated as positively. Police were least likely to be seen as helpful and physicians as well as clergy were seen as helpful by only half the sample (Golding et al., 1989). Popiel and Susskind (1985) reported that physician support was associated with psychological adjustment. Ullman (1996a) found that only 11% of the women who sought support from rape crisis centers found them helpful (as assessed by 15 possible emotional and behavioral responses). Sadly, in the same study, less than 5% of survivors reported that clergy, police, or physicians were helpful. Although occasionally these support sources are found to be helpful, the majority of the time for most survivors, they are not helpful.

One particular negative support reaction, blame, is most often received from formal support sources after a sexual assault (Filipas & Ullman, 2001; Ullman 1996a). Despite the greater likelihood of blame, some survivors report that formal support sources such as rape crisis centers and legal professionals are the most helpful (Golding et al., 1989); although this does not speak to how blame influenced these survivors' adjustment. However, elsewhere, blame and other negative

reactions most often received from formal support sources have been shown to be associated with greater impairment (Filipas & Ullman, 1996). The majority of studies exploring formal support sources do not look at the impact on survivor's adjustment, but instead focus on who the survivor feels was helpful. Although this is certainly an important aspect of understanding how to best care for those who are assaulted, it falls short of informing how to best predict adjustment.

*Characteristics and impact of informal support sources.*

More is known about the relationship between informal support sources and adjustment for survivors of sexual assault than is known about formal support sources. According to Ruch and Chandler (1983), after an assault, victims tend to rely on either their friends or family members, and those living with family members tended to rate them as more helpful than friends. Additionally, those relying on family members reported less emotional trauma overall. Ullman and Fillipas (2001) found that informal support is sought more often than formal support after a sexual assault. With the greater disclosure to informal support sources, closeness of those relationships, and potential benefits from this group, support from informal providers is important to examine more closely.

Support in family relationships has been shown to be important in predicting stress response. In one study of stressful events, the family context of support predicted reactions; whereby those exposed who had greater support also experienced less distress (Jackson, Sifers, Warren & Velasquez, 2003). Extending the work of Ruch and Chandler (1983), Moss, Frank and Anderson (1990) looked at marital status and relationship quality for survivors of sexual assault. Marital status

without consideration of support received did not appear to affect outcomes. However, poor spousal support, especially when unexpected, was related to increased psychological symptoms (Moss et al., 1990). Ullman (1996b) explored the impact of reactions by support source. She found that beyond familial and a partner relationship, emotional support from friends is related to better recovery more so than emotional support from any other source, including formal support sources.

#### *Summary*

Some survivors report certain sources of support as more helpful, but research has shown that regardless of who is unsupportive, there may be negative adjustment implications for the survivor. Research has established that support in one's life following a trauma is important, but the mere presence of people may not suffice. Support must be given when needed and expected. Further, it appears that those closest to the survivor of the trauma have the greatest potential to aid in adjustment. Further, researchers have not examined the contributions of positive and negative support to predict pathology and growth in a unified study.

#### *Summary of entire review*

Despite the grim picture outlined by much of the literature on sexual violence outcomes, trauma does not equate simply and consistently to complex psychopathology. Although up to 90% of all Americans are experiencing traumatic stressors, only 5-12% of those exposed develop PTSD (Breslau et al., 1998; Lee & Young, 2001). Further, approximately half of those exposed to a traumatic stressor report some degree of growth or positive change (Tedeschi & Calhoun, 1995). Thus, while “fear, helplessness, or horror” may occur, this reaction does not doom a

person to a poor outcome. Those who have no impairment or who actually experience some positive reaction may have unique features that may help identify those most at risk. Potentially, features promoting growth could be fostered in those most at risk to inoculate against future impairment. The literature indicates that specific sources of social support may be important in predicting positive and negative responses following trauma exposure.

Although gaining a better understanding of variables related to the prevention of sexual violence is paramount, the current culture of violence requires that research also focus on prevention of long-term mental health impairment for those who are assaulted. This may best be achieved by more closely examining those significantly distressed and evidencing psychopathology as well as those more resilient individuals who experience positive outcomes despite exposure to trauma (Yehuda, 1998). It is now clear that a group of individuals who are assaulted will have chronic problems, while others experience only briefer impairment, and still others report no significant impairment.

### *Objectives*

The literature documents that traumatic events are common, a variety of reactions occur, and social support plays a role in the adjustment of survivors, especially for women victimized by men. Although a relationship has been established between social support and adjustment, the role of certain positive support reactions is not as clear. Additionally, although negative outcomes have been consistently explored, only recently has research begun to explore positive growth following trauma. The few available studies indicate that this is a promising



area of research. Additionally, there is a relative dearth in the literature on the importance of the source of support and the implications of different reactions in predicting adjustment for survivors.

Given the status of the literature, one purpose of the present study was to explore both positive (i.e., growth) and negative (i.e., posttraumatic stress symptoms) adjustment following a sexual assault experience. A second purpose was to explore type of social support in relationship to adjustment following an adult sexual assault. Third, positive and negative support reactions were explored by source type (formal or informal) to see if there were differential impacts of these on the adjustment of the survivor. A final purpose of this study was to investigate the collective impact of positive and negative formal and informal support in predicting positive and negative adjustment in survivors. To improve upon previous studies, a standardized definition of abuse was used to identify survivor status. In addition, standardized measures of support, growth and posttraumatic stress symptomatology (PTSS) were used.

### *Hypotheses*

1. A negative relationship was hypothesized between positive and negative adjustment. Specifically, it was hypothesized that greater growth would be associated with lower levels of PTSS.
2. It was hypothesized that support (positive and negative) from formal and informal support sources would be related to adjustment (positive and negative).

- a. It was hypothesized that higher levels of positive informal support would be associated with increased growth.
  - b. It was hypothesized that higher levels of negative informal support would be associated with higher levels of PTSS.
  - c. It is hypothesized that higher levels of negative support from formal support sources would be associated with higher levels of PTSS.
  - d. No directional hypotheses were made regarding the relationship between positive informal support and PTSS, negative informal support and growth, negative formal support and growth, positive formal support and PTSS, and positive formal support and growth.
3. In an exploratory analysis, the collective impact of positive and negative formal and informal support was explored. It was anticipated that not all factors would contribute equally in the prediction of adjustment.
- a. An exploratory analysis was conducted to investigate the collective impact of formal and informal positive and negative support in predicting negative adjustment. Both forms of negative support were expected to be the stronger predictors, although both forms of positive support were thought likely to influence adjustment.
  - b. An exploratory analysis was conducted to investigate the collective impact of formal and informal positive and negative support in predicting positive adjustment. Informal positive

support was thought likely to have an important impact on positive adjustment whereas formal positive support as well as formal and informal negative support were not expected to predict growth.

## CHAPTER III

### METHODOLOGY

Participants were 517 female college students recruited from the Department of Psychology research participant pool. Class credit was awarded to all participants in this study. Appendix A contains a copy of the informed consent narrative that was presented prior to data collection. All participants and their data were treated in accordance with the “Ethical Principles of Psychologists and Code of Conduct” (American Psychiatric Association, 2002) and the Oklahoma State University’s Institutional Review Board (See Appendix B). For the purposes of this study, participants were included in analyses if they met criteria for experiencing a sexual assault experience as identified on the Modified Sexual Experiences Survey (MSES). In short, in order to be considered adult sexual assault, the experience must have been either forced or coerced vaginal or anal intercourse, forced or coerced penetration by objects, or forced oral-genital contact perpetrated by an acquaintance or stranger after the age of 17. Further details on sexual assault status classification are presented in the results section.

#### *Materials*

Participants completed the “Adjustment and Social Support of Sexual Assault Survivors” study via an online survey hosted by Oklahoma State University. The survey as it appeared on the World Wide Web is in Appendix C (note: extra web screen space between pages has been removed).

The survey was comprised of four non-randomized components. The first component of the survey collected demographic information about the participants using the Life Events Questionnaire (Long, 2000). The second component of the survey was the 24-item Modified Sexual Experiences Survey (Messman-Moore & Long, 2000). This measure was administered three times to assess sexual assault experiences of participants by each of three perpetrator types: strangers, boyfriends/acquaintances, and husbands. Only participants who endorsed sexual assault by one or more of these perpetrator types were asked to complete the remaining measures.

The 38-item Perceived Benefits Scale (PBS; McMillen & Fisher, 1998) was then administered to measure positive life changes after sexual assault. This was followed by the 49-item Posttraumatic Stress Diagnostic Scale (PDS; Foa, Cashman, Jaycox, & Perry, 1997) to measure symptomatology commonly associated with posttraumatic stress disorder (PTSD). Finally, the 48-item Social Reactions Questionnaire (SRQ; Ullman, 2000) was administered to measure positive and negative reactions received from *formal* support providers who learned about the sexual assault experience. The SRQ was then administered a second time to measure the same reactions from *informal* support sources.

### *Procedure*

The recruitment script, posted to OSU's Experimetrix system, used to advertise the survey to undergraduates appears in Appendix D. This script provided a basic overview of the nature of the study and invited participation. By following the provided Internet link, interested students could proceed to the consent page,

which provided additional details about the study and ensured participants of the confidentiality of their responses. No link was established between participants' completed surveys and their identity. Data submitted from the World Wide Web by participants were stored in a private data spreadsheet under the faculty advisor's control. The introduction of the survey invited women 18 years of age or more to participate in the study.

Participants, who completed the survey over the World Wide Web, submitted data directly to the researcher by clicking on a "submit" button at the conclusion of the survey. Submitted Internet data were stamped with the time and date of completion so that duplicate responses (from activating the submit button multiple times in rapid sequence) could be deleted. No data were submitted to the examiner until the participant engaged the "submit" button. Participants were able to discontinue participation at any time by closing their browser without activating the "submit" button. Alternatively, participants could choose to answer only selected questions and submit only part of the survey by activating the submit button. Upon completion of the questionnaires, participants were given a debriefing form (Appendix E) that outlined the purpose of the study and provided information regarding counseling services available in the community. Contact information to counseling services was also available via a link provided on every page of the survey. The primary investigator is not aware of any adverse consequences to participants as a function of their participation.

#### Measures

##### *Life Experiences Questionnaire (LEQ)*

The LEQ (Long, 2000) is a self-report measure used to gather information on demographic variables as well as childhood sexual experiences. Although the LEQ was developed to primarily screen for child sexual abuse experiences, it was used solely to gather demographic information. Specifically, each participant's age, race, socioeconomic status and marital status were assessed with the LEQ.

*Modified Sexual Experiences Survey (MSES)*

The MSES (Messman-Moore & Long, 2000) is a modified version of the ten-item Sexual Experiences Survey (SES; Koss & Gidycz, 1985) used to assess unwanted adult sexual assault experiences occurring after the age of 17. The MSES asks a series of questions assessing whether specific types of sexual activities have been attempted or completed by the participants since the age of 17.

The SES was modified for this study by extending the number of questions from 10 to 24. The original SES contains four questions regarding unwanted intercourse (due to arguments, misuse of authority, alcohol/drug use by the respondent and physical force) and two questions regarding attempted intercourse (due to alcohol/drugs and physical force). These six questions were maintained unaltered.

The SES contains only three questions regarding unwanted sexual contact (including kissing, fondling, and petting) and one question regarding other unwanted sexual acts (including anal or oral intercourse and penetration by objects). For the purpose of this study, these additional forms of sexual contact were categorized into the following three areas: (a) kissing and fondling, (b) oral-genital contact, and (c) penetration by objects. Each method of coercion (alcohol/drugs and

physical force) was assessed for each completed activity, and two methods of coercion (alcohol/drugs and physical force) were assessed for each attempted activity, resulting in a total of 24 questions. Phrasing of questions regarding alcohol and/or drug use was modified and modeled after those used by Muehlenhard, Powch, Phelps and Giusti (1992).

The set of 24 questions was administered three times to assess unwanted sexual contact perpetrated by (1) girlfriend/boyfriend, dates or acquaintances; (2) spouses; and, (3) strangers. Language in the SES was gender neutral. For the sake of brevity, assaults by boyfriend/girlfriend, dates or acquaintances were referred to as assaults by acquaintances. Only assaults by strangers or acquaintances were considered here given the anticipated low frequency of married women in the sample.

Additional questions were added for the purpose of this study to assess for time elapsed since the victimization as well as the number of times a sexual assault has occurred. Overall summary questions were included in the MSES to assess the total number of times each participant experienced various types of sexual contact. These questions used an ordinal scale of seven possible responses: never; once; twice; three times; four times; five times; more than six times. Following these questions, each participant was asked to calculate how long ago, in months, the most recent incident of victimization occurred.

An internal consistency reliability of .74 (for women) has been reported for the original SES with a 1-week test-retest reliability of 93% (Koss & Gidycz, 1995). The correlation between a woman's level of victimization based on self-report and



her level of victimization based on responses related to an interviewer several months later was .73 (Koss & Gidycz, 1985). Internal consistency for the MSES across all items has been examined with a sample of 640 college women and was .84 for experiences with acquaintances and .87 for experiences with strangers (Messman-Moore & Long, 2000). Chronbach's Alpha was calculated for 109 participants in the present study resulting in an  $\alpha$  of .81 for the complete measure.

#### *Perceived Benefits Scale (PBS)*

The PBS is a 38-item measure that uses a Likert-type scale ranging from 0 (not at all like my experience) to 4 (very much like my experience) to measure subjective positive life changes after negative traumatic events (McMillen & Fisher, 1998). Six factor analytically derived subscales are included: enhanced self-efficacy; increased community closeness; increased spirituality; increased compassion; enhanced family closeness; material gain. Example items intended to measure gains include "Because of this event, I show more caring to others" and "This event taught me I can handle anything." Following McMillen and Fisher's recommendations (1998), some items in this measure were slightly modified to be more directionally specific. For example, the item "a sense of closeness with others" was modified to read "an increased sense of closeness with others." A composite perceived benefits score (ranging from 0 to 152) was obtained by summing the individual item responses. Higher scores indicate more benefits gained following the trauma.

Although reliability from previous use of this measure is not available on the PBS composite score, subscale reliability is available. Alpha coefficients for the

subscales range from adequate (.73 for lifestyle changes) to excellent (.93 for increased spirituality). Test-retest reliability, administered over a two-week period, was also reasonably strong with a range from .66 for increased compassion to .97 for material gain. Several similar scales of the Posttraumatic Growth Inventory (Tedeschi & Calhoun 1995) are highly correlated with the PBS (McMillen & Fisher, 1998). Composite internal reliability in the current study was found to be excellent ( $\alpha = .94$ ).

#### *Posttraumatic Stress Diagnostic Scale (PDS)*

The PDS is a 49-item self-report measure developed to measure symptoms of posttraumatic stress disorder (PTSD) symptomatology (Foa, et al. 1997). The PDS begins with a checklist of traumatic events followed by a series of follow-up questions examining the nature of the traumatic events. Questions to assess PTSD symptomatology and questions that investigate impairment in several life areas (e.g., work, family relationships) conclude the measure. The PDS corresponds directly to *DSM-IV* criteria supporting a diagnosis of PTSD. Characteristics of the trauma, the duration of symptoms, and the resultant dysfunction in daily living are operationalized by the PDS. For the purposes of this study, only the items assessing PTSD symptomatology were examined (17 items). These items target seventeen symptoms measured on a four-point Likert scale (0= not at all or only one time, 3= five or more times a week/almost always) with items such as "Having bad dreams or nightmares about the traumatic event," "Trying not to think about, talk about, or have feelings about the traumatic event," and "Being jumpy or easily startled (for example, when someone walks up behind you)." A symptom severity score (ranging

from 0 to 147) was obtained by summing the individual item responses. According to the measure's authors, scores greater than 10 indicate moderate or greater symptom severity.

The PDS shows good stability over time; in a study of test-retest reliability, a kappa of .74 was obtained and agreement between diagnoses two to three weeks apart was 87% (Foa et al., 1997). Internal consistency is good for the total score ( $\alpha = .92$ ) and for the three symptom cluster scores ( $\alpha = .78$  for reexperiencing,  $\alpha = .84$  for avoidance, and  $\alpha = .84$  for arousal symptoms). For the sample included in the current investigation, internal consistency was calculated on data available from 54 participants and resulted in an  $\alpha$  of .91 for the symptom severity scale.

The PDS shows adequate agreement with the Structured Clinical Interview for *DSM-III* Disorders (SCID; Foa et al., 1997). A kappa of .65 between the PDS and the SCID has been reported, with 82% agreement between the two measures (Foa et al., 1997). Further, the sensitivity of the PDS has been reported at .89 with specificity of .75 (Foa et al., 1997).

#### *Social Reactions Questionnaire (SRQ)*

The SRQ is a 48-item self-report instrument developed to measure specific types of positive and negative reactions received from those told about a sexual assault experience (Ullman, 2000). Items load onto seven social reaction subscales including two positive support scales (emotional support/belief, and tangible aid/informational support) and five negative support scales (treat differently, distraction, take control, victim blame, and egocentric behavior). Example items include, "Told you it was not your fault" and, "Told others about your experience

without your permission.” Items are rated on a Likert-type scale ranging from 0 (never) to 4 (always), indicating how often they received each reaction from others to whom they disclosed the assault.

This measure has been used previously to assess responses from formal and informal social networks of sexual assault victims in clinical, college, and community settings (Ullman, 2000).

Internal consistency using Cronbach’s alpha for the seven subscales has been reported as follows: .93 for emotional support/belief, .86 for treat differently, .80 for distraction/ discourage talking, .83 for taking control, .84 for tangible aid/ information support, .80 for victim blame, and .73 for egocentric reactions (Ullman, 2000). Among the seven subscales, test-retest coefficients over eight weeks are .74, .75, .73, .64, .81, .78, and .80 respectively. There is no information on the reliability of the positive and negative composite scales from previous use. However, data from 55 participants used in the current study was used to calculate internal consistency of the formal scale ( $\alpha$  of .96). Based on data from 58 participants, internal consistency of the informal scale was similarly high ( $\alpha$  of .95).

Concurrent validity has also received some support by correlating the composite positive or negative closed-ended social reaction scores from the SRQ with the corresponding positive or negative open-ended composite social reaction coded from open-ended questions on helpful and unhelpful responses from others told about the assault (Ullman, 2000). Although the relationship between positive open-ended questions and the positive composite closed-ended questions was not found to be significant, the relationship between the negative open-ended questions

and the negative composite close-ended questions was significant.

Consistent with previous use of this measure (Ullman, 2000), for the purposes of this study, mean scores were calculated across all positive support items and across all negative support items. Higher positive mean scores indicate more positive reactions whereas higher negative mean scores indicates receiving more negative reactions.

This measure was administered twice to each participant endorsing a sexual assault experience. As part of the instructions, one administration instructed, “*We would like to know about your experiences with formal support providers. These are people who are often not well known to you but with whom you may have been in contact to seek help or information following your assault. Examples of these people are counselors, rape crisis advocates, the police, nurses and doctors.*” The other administration stated, “*We would like to know about your experiences with those people to whom you feel the closest. These would be people who are well known to you and with whom you may have been in contact to seek help or information following your assault. Examples of these people are a significant other, best friend, or family member.*”

## CHAPTER IV

### RESULTS

#### Participants

Data were collected from 517 female participants. All analyses were conducted using an alpha level of .05 (unless otherwise stated) in statistical tests using the Statistical Package for the Social Sciences version 12.0 (SPSS, 2004). Of the 517 participants, 11 chose not to complete any portion of the survey. Of the remaining 506 participants, 115 participants met criteria to be considered adult sexual assault victims (forced or coerced vaginal or anal intercourse, forced or coerced penetration by objects, or forced oral-genital contact perpetrated by an acquaintance or stranger). The assault victim sample reported an average of 2.45 ( $SD = 2.66$ ) assaults by acquaintances, with the most recent assault occurring an average of just over 17 months ago ( $M = 17.35$ ,  $SD = 17.26$ ). No participants in this sample reported an assault by husband / spouse or by stranger.

The majority of women with a sexual assault history reported that they had never been married (84.3%). Only 11.3% reported they were married or cohabitating, whereas an additional 0.9% was divorced and 1.7% identified themselves in the “other” category. There were no significant differences for marital status between women with an assault history and those with no history of victimization. Similarly, there were no significant differences between groups on the basis of ethnicity/racial status. Socio-economic

Status (SES) was assessed using the two-factor index of social position (Myers & Bean, 1968) and ranged from lower to upper class, with the average participant falling in the middle class; significant differences were not found with respect to socioeconomic status between assault status groups.

Nearly half of the women who met criteria for experiencing an adult sexual assault did not complete further measures of support or adjustment. No significant differences existed between the women who participated fully and those who discontinued the study on any demographic variables ( $n = 49$ ; see Figure 2).

Because not all participants completed all survey items, the number of participants varies in analyses ( $n$  ranges from 56-64 due to partial missing data, e.g., a single missing measure). With respect to child sexual assault, latency, and number of assaults, the only significant difference between those who completed fully and those who discontinued the survey was with respect to the number of assaults. Women who participated fully ( $n = 63$ ) reported more assaults ( $M = 3.25$ ,  $SD = 2.85$ ) than women who discontinued the survey ( $n = 51$ ;  $M = 1.45$ ,  $SD = 2.03$ ;  $t(112) = -3.80$ ,  $p = .00$ ). Table 1 provides frequencies for the categorical demographic variables for the overall sample, the full sexual assault sample, as well as the sample of survivors who completed all measures.

*Figure 2.* Participants used throughout project.

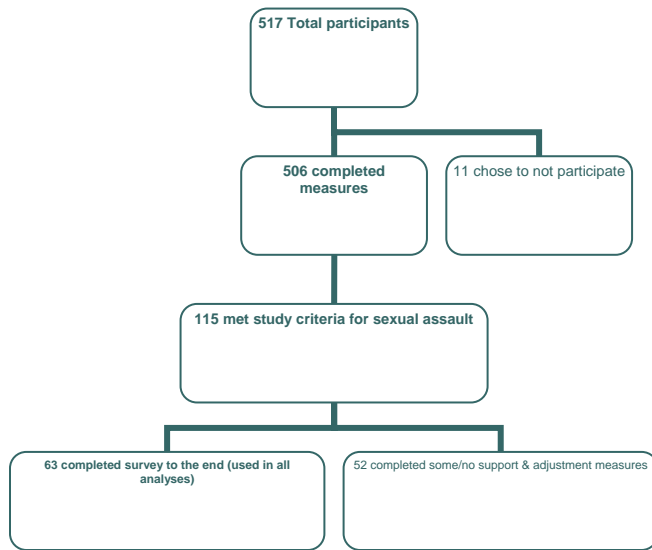




Table 1

*Demographic Frequencies of Categorical Data*

Marital Status						
	Overall Sample		Sexual Assault Sample		Survivors Included in Analyses	
	<i>n</i>	Percent	<i>n</i>	Percent	<i>n</i>	Percent
Never Married	432	85.0	97	84.3	55	83.3
Married	27	5.3	6	5.2	3	4.5
Cohabiting	19	3.7	7	6.1	3	4.5
Divorced/Separated	8	1.6	1	0.9	1	1.5
Other	17	3.3	2	1.7	2	3.0
Race						
Caucasian	411	80.9	93	80.9	53	80.3
African American	22	4.3	6	5.2	3	4.5
Hispanic	9	1.8	6	5.2	4	6.1
Native American	32	6.3	6	5.2	4	6.1
Asian	21	4.1	2	1.7	1	1.5
Other	10	2.0	2	1.7	1	1.5
Socioeconomic Status by class						
Upper	4	.8	0	0	0	0
Upper-Middle	62	12.8	16	13.9	10	15.2
Middle	140	28.8	35	30.4	21	31.8
Lower-Middle	208	42.8	45	39.1	22	33.3
Lower	61	12.6	17	14.8	11	16.7

Significant differences between victimized and nonvictimized women were found for both the age and sexual orientation variables. Specifically, fewer women with an assault ( $n=147$ ) experience classified themselves as heterosexual than women without such an experience ( $n=350$ ;  $t(489) = -2.10, p = .04$ ). Also, sexually assaulted women were significantly older ( $M = 21.68, SD = 6.71$ ) than women without an assault history [ $(M = 20.04, SD = 2.89)$ ;  $t(490) = -3.79, p < .01$ ].

To control for the aforementioned significant differences between groups, data from nonheterosexual women ( $n = 9$ ) were eliminated from further analyses. Similarly, data from women whose reported age was more than two standard deviations from the mean (i.e. 29 years old or more;  $n = 13$ ) were excluded from further analyses. Independent samples  $t$ -tests were rerun on all demographic characteristics of the sexual assault and nonsexual assault samples and no significant differences remained.

Initial analyses were conducted to examine the relationships among latency since victimization, frequency of victimization, history of child sexual assault (see Table 2 for descriptive data) and the dependent measures (PBS and PDS). Posttraumatic Stress Diagnostic Scale (PDS) scores were found to be significantly associated with the number of assaults ( $r = .50, p < .01$ ). No other significant relationships were revealed in analyses.

A partial correlation analysis was conducted to examine whether an inverse relationship exists between positive and negative adjustment in the test of the first hypothesis. Using the composite benefits score from the PBS and the symptom severity score from the PDS (see Table 2 for descriptive data), the test demonstrated no

Table 2

*Descriptive Data of Variables of Interest*

	<i>n</i>	<i>M</i>	<i>SD</i>
PBS composite score	63	36.00	24.69
PDS symptom severity score	54	35.04	12.35
Latency since victimization (in months)	62	17.85	15.73
Frequency of victimization	63	3.25	2.85
History of child sexual victimization	63	.49	.50

*Note:* PBS: Perceived Benefits Scale (McMillen & Fisher, 1998); PDS: Posttraumatic Stress Diagnostic Scale (Foa, et al., 1997).

significant relationship ( $r = .12$ , NS). Mean scores from each type of support on the Social Reactions Questionnaire (formal positive; formal negative; informal positive; and informal negative) were used in conjunction with the composite Perceived Benefits Scale (PBS) score and the PDS symptom severity score.

To explore hypothesis two, that support (positive and negative) from both formal and informal support sources would be related to adjustment (again, positive and negative), a series of eight Pearson correlation coefficients were calculated. Although these analyses could be considered two sets of familywise procedures, a more conservative approach was taken by applying a modified Bonferroni correction. This correction essentially raises the standard needed to establish significance to offset the alpha inflation that occurs when multiple correlations are performed simultaneously. Given a mean correlation in this hypothesis of .38 and 41 degrees of freedom, alpha was lowered to .0137 for significance. Mean scores (see Table 3) from each type of support on the Social Reactions Questionnaire (formal positive; formal negative; informal positive; and informal negative) were used in conjunction with the composite Perceived Benefits Scale (PBS) score and the PDS symptom severity score, controlling for number of assaults by acquaintances. Cases were excluded listwise if participants were missing information on any variable, lowering degrees of freedom for this analysis to 41. Growth was found to be significantly correlated with both formal positive support ( $r = .61$ ,  $p < .01$ ) and informal positive support ( $r = .64$ ,  $p < .01$ ). Symptom distress (PTSS) was significantly correlated with negative informal support ( $r = .40$ ,  $p < .01$ ; see Table 4).

Table 3

*Mean Support by Type and Provider*

	<i>n</i>	<i>M</i>	<i>SD</i>
Positive Formal	57	1.09	1.11
Positive Informal	58	1.60	1.00
Negative Formal	57	0.37	0.51
Negative Informal	62	0.60	0.56

Table 4

*Correlations Among Source and Type of Support with Personal Growth and Symptoms of Distress*

		Positive		Negative	
Variable		Formal	Informal	Formal	Informal
PTSS	Correlation	.25	.10	.34	<b>.40*</b>
	Significance (2-tailed)	.04	.51	.03	<.01
	df	41	41	41	41
Growth	Correlation	<b>.68*</b>	<b>.66*</b>	.28	.32
	Significance (2-tailed)	<.01	<.01	.07	.04
	df	41	41	41	41

*Note.* Correlations controlled for frequency of adult victimization experience.

Cases missing any information are deleted listwise resulting in lower degrees of freedom.

\*  $p < .0137$  (modified Bonferroni Correction)

A logistical stepwise regression was performed using the PBS composite score as the criterion. Frequency of assault ( $\beta = .21$ ) was entered first as the control variable and accounted for less than 5% of the variance in PBS scores. The following support variables were then permitted to enter into the equation (through stepwise probability criteria): informal positive, formal positive, formal negative, and informal negative. Informal positive support ( $\beta = .41$ ) and formal positive support ( $\beta = .38$ ) significantly increased the predictability of SRQ composite scores by accounting for an additional 49% of the variance to form a good model of predictive factors of growth,  $F(3, 44) = 16.65, p < .01$ .

A second logistical stepwise regression was then performed using the PDS symptom severity score as the criterion. Frequency of assault ( $\beta = .57$ ) was again entered first as the control variable. This variable accounted for 33% of the variance in PDS scores,  $F(1, 43) = 20.98, p < .01$ . As in the first analysis, the following support variables were then permitted to enter into the equation (through stepwise probability criteria): informal negative, formal negative, formal positive, informal positive, and. Only informal negative support ( $\beta = .34$ ) significantly increased the predictability of the PDS symptom severity scores by accounting for an additional 9% of the variance,  $F(2, 42) = 16.12, p < .01$ .

## CHAPTER V

### DISCUSSION

The purpose of this study was to examine personal growth and distress sequelae as related to a history of adult sexual victimization. Consistent with the proposed hypotheses, this study demonstrated that some women experience positive change following sexual victimization. The lack of the hypothesized inverse relationship between growth and distress may be interpreted to suggest that these forms of adjustment are not bipolar opposites along a single continuum, and is perhaps better conceptualized as independent constructs. A study by Linley and colleagues (2003) in which unique factors were found to be contributive to each form of adjustment supports this interpretation. The simultaneous experience of growth and distress was previously displayed following vicarious exposure to terrorist events. Given the results presented here, it appears that this relationship may also be seen in women who are sexually assaulted. Although growth is typically considered inherently good, it does not appear that such growth is effective at buffering victims completely from the experience of distress as was posited by Thoits (1986, 1988).

A second purpose in this study was to explore the relationships among positive and negative support and positive and negative adjustment. As hypothesized, informal positive support from family and friends in the aftermath of trauma was associated with benefits. Exploratory analyses revealed that, in addition to informal positive support, formal support sources' positive assistance was



associated with gains. Additionally, contrary to previous literature that measured social support more globally (Davis et al., 1991; Frank et al., 1988; Kramer, et al., 1991; Ullman, 1996; West et al., 1987), only informal negative support was associated with distress in the current investigation. However it should be noted that low levels of negative support were reported by this sample. It is unknown if power was reached (Cohen, Cohen, West, & Aiken, 1983). Blame, disbelief, or selfish reactions by support providers remain contraindicated in the wake of an assault.

A final purpose of this study was to investigate the collective impact of positive and negative formal and informal support in predicting positive and negative adjustment. For growth, again, both informal and formal positive support were predictive of positive adjustment. Similar to previous findings, only negative informal support imparted a collective impact beyond control variables on the measure of distress. However, it should be noted that negative support from formal support providers was infrequently reported in this sample. Given the novelty of measuring negative support, it is unknown if there is a threshold beyond which negative adjustment is seen. While this is not to say that formal providers' negative reactions are irrelevant, informal support providers' reaction to victims may be more predictive of distress.

To improve upon previous studies, a standardized definition of abuse was used to identify survivor status. Further, all measures used to assess assault, adjustment, and support were both reliable and valid. In addition, support was measured not only as a single broad construct to allow for the potential of negative

reactions. These reactions were further explored according to categories of providers to present a more complete picture of the potential relationships.

Taken together, the results indicate that social support is a complex construct. This construct is not always indicative of broad positive support, but rather may include prominent negativity, regardless of intentions. As the only modifiable variable post trauma predictive of PTSD (Ozer et al., 2003), social support remains an important area for research, primary care, and clinical settings. Researchers, first responders, and mental health professionals should take care in their own responses and monitor survivor's environments for the presence of both positive and negative support. Those encountering survivors, particularly mental health workers, should monitor the survivor's environment for the presence of positive support and ensure a lack of negative support reactions. Dissemination of services may be best focused on those at greatest risk. Those who receive negative support or who lack positive support may be more vulnerable.

Future research should consider exploring these results with more diverse samples including women of varying ages, ethnicities, sexual orientations, and other demographic characteristics as well as with men. Researchers may also consider a longitudinal design to explore the occurrence of change specific to support received after a trauma as opposed to reactions typically received in a lifetime. Other traumas may also be explored as positive and negative support as well as support from formal and informal providers may have differential outcomes based on the nature of the trauma. Persons exposed to natural disasters, for example, are less likely to receive blame and certain other negative reactions. Finally, researchers

may also consider exploring the experience of social support across the lifespan. Participants who are in early adulthood may experience support very differently than those who are middle or older adults.

A number of explanations might account for the association of growth and positive forms of support. One possible explanation is that those who have established positive support networks may possess skills to elicit these reactions from a variety of others. They may also be more successful in creating a personal, positive meaning in the aftermath of the trauma. Those who are creating positive meaning may, in turn, garner more positive reactions from their sources of support. Finally, those who experience positive adjustment may possess a broadly optimistic and positive outlook. Such individuals may interpret the support they receive as more positive and remember receiving such reactions more vividly (Updegraff & Marshall, 2005). The significant relationship of growth with both informal and formal providers may be attributed to the collective impact on a survivor's life. While survivors may expect formal providers, who are trained or paid, to be supportive, reactions of belief, comfort, and reassurance still foster growth. There may be uncertainty about the reactions from friends and family who likely know both the victim and the perpetrator. When informal support providers react with positive responses, this may help the survivor to recreate meaning.

When considering negative social support (both formal and informal), a number of explanations for the association between support and adjustment are also possible. One, those who are experiencing more distress may recall and be more sensitive to negative reactions (Gotlib, 1983). Alternatively, it is possible that

others may view those with greater posttraumatic symptoms as coping more poorly with the trauma and, unfortunately, receive more negative feedback. Finally, opinions or responses of those closest to the survivor (usually informal support sources) may be more trusted and valued by assaulted women. When reactions from such people are insensitive, and/or inadvertently unsupportive, this may be particularly damaging.

As noted in the introduction of this manuscript, several theoretical models may explain why such findings emerge. Tedeschi & Calhoun's theory of benefit (1995) proposes that different types of events are likely to lead to different types of positive change (e.g., enhanced self efficacy may come from any stressor but others would only arise from certain stressors). It is possible that interpersonal violence, such as sexual assault, may lead to greater awareness of community resources or newfound sources of support that are captured in the growth construct. The prediction of growth from social support is clearly confounded with this domain. The same relationship may not be true with other traumatic experiences such as those encountered by victims of severe motor vehicle accidents or refugees of war.

Researchers considering the ecological model's exosystem, posit that the recovery environment plays a particularly important role in predicting adjustment for survivors of trauma (e.g., Heise, 1998; Neville & Heppner 1999). Results presented here suggest that first responders should ensure support resources are appropriate for individuals. Prior research (see for a review NIMH, 2002) has demonstrated that even in the initial stages of recovery, dissemination of efforts and early interventions may be of great benefit to those at risk (i.e., those with negative

support networks or those for whom informal positive support is lacking).

Findings in this study should be considered in light of the participants' reports of distress and growth as specific only to sexual victimization. This study did not examine distress or growth in response to other potentially traumatic events. Therefore, it is not known whether survivors of other traumatic events would describe similar levels or kinds of distress and / or growth. Nevertheless, understanding the role of social support in predicting adjustment of sexual assault survivors is important in the prevention and treatment of distress.

Although not a goal of this study, the online methodology raises a number of important observations. Similar research using paper and pencil in-person formats have found lower rates of drop-outs but also lower rates of endorsement of sexual assault (N. Carlozi, personal communication, April 14 2004). It is possible that there is greater pressure in-person to complete a survey in its entirety. However, completion in-person may also carry greater stigma when participants endorse sexual assault experiences, and unintentionally encourage participants to minimize assaultive experiences (e.g. there may be concerns that a neighbor will observe endorsement of sexual assault). Also, completion of additional measures is often based on sexual assault status (as was the case in this survey). Participants may not want to endorse sexual assault in-person for fear that the additional participation time would reveal their sexual assault status to other participants or the researcher in the room. Participation online provides greater anonymity and less pressure around responding. However, the online nature of this survey prevented randomization, with all measures of sexual assault status presented first. Future research may

consider exploring method variance in victimization acknowledgement.

In this study, within the total sexual assault sample, participants who completed all of the measures did not differ on any demographic characteristics from those who withdrew after the sexual assault questionnaires. The two groups did differ on the number of assaults. However, theoretically, it does not appear that those who would be most distressed withdrew. There was a significant difference with regard to the number of assaults experienced, but those who completed all measures reported more assaults than those who withdrew.

Another consideration related to the online format was that a button was provided on each screen view to direct participants feeling distressed to a list of available counseling resources. This continuous prompt regarding distress may have heightened participants' subjective awareness of distress and future research utilizing an online design may consider making that information available only at the end of the survey, as part of standard debriefing.

### Conclusions

In sum, victims of adult sexual assault may experience a range of outcomes including both negative and positive changes. Support from various providers appears to play an important role not only in predicting who will experience distress, but also those who will experience positive changes after an adult sexual assault experience. Monitoring the environment of survivors for support is essential in ensuring optimal processing of the trauma.

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## APPENDIX A

### *Informed Consent Narrative*

Project Title: Adjustment and Life Events of College Women Survey

Researcher: Susan Borja, Trish Long, Ph.D.

I, \_\_\_\_\_, hereby authorize and direct Trish Long, Ph.D., Susan Borja, or associates or assistants of her choosing, to perform the procedures listed here.

A. Purpose: This study is designed to investigate current adjustment, childhood sexual experiences, and adult sexual experiences in order to gain a better understanding of the relationship between these factors.

B. Procedures: In participating in this research, you will be asked to complete a series of questionnaires about your current adjustment and your life experiences. After completion of these questionnaires, the purposes of the study will be discussed with you and any questions you may have will be answered.

C. Length of Participation: It is estimated that your participation will require 45 minutes to 1 hour. Your participation is entirely voluntary; you can withdraw your consent at any time and discontinue participation without penalty. You may also choose to not answer certain questions, yet continue to complete the remaining questions.

D. Confidentiality and Privacy: All the answers to survey material will be identified only by numerical codes. Information containing your name (collected at the end through a separate page) will be kept separate from numbered materials. Therefore, all information provided will be anonymous.

E. Risks: The risks in this study are minimal and do not exceed those ordinarily encountered in daily life. Some individuals may experience mild discomfort in providing the information requested in questionnaires about functioning and life experiences. Contact information for the researchers and other supports will be available throughout the study in case you experience discomfort or have questions or concerns. Information about services available in the community will also be made available to you throughout and at the end of participation.

F. Benefits: As a research participant, you will be exposed to the conduct of scientific psychological research and may gain insight into your own adjustment and life experiences. In addition, you will receive 1 credit for each hour or partial hour of participation. Comparable credit is offered through colloquia attendance or report writing. If you wish to obtain credit for class and not participate in a research project, your professor may discuss the other options which are available to you. Through

research like this, assessments and treatments can be developed to help people with psychological problems.

\*\*\*\*\*

I have been fully informed about the procedures listed here. I am aware of what I will be asked to do and of the risks and benefits in this study. I also understand the following statements:

I certify that I am between 18 and 55 years of age.

My participation today is part of an investigation entitled " Adjustment and Life Events of College Women Survey."

The purpose of these procedures is to investigate current adjustment, childhood sexual experiences, and adult sexual experiences in order to gain a better understanding of the relationship between these factors.

I understand that participation is voluntary, that there is no penalty for refusal to participate, and that I am free to withdraw my consent and participation in this project at any time without penalty after notifying the project director.

I may contact Trish Long, Ph.D., Department of Psychology, 215 North Murray, Oklahoma State University, Stillwater, OK 74078-3064, phone number (405) 744-7575, should I wish further information about the research. I may also contact Beth McTernan, Research Compliance Specialist, 415 Whitehurst, Oklahoma State University, Stillwater, OK 74078; telephone number (405) 744-5700 or Sue Jacobs, Institutional Review Board Chair, 415 Whitehurst Hall, (405) 744-1676.

I have read and fully understand the consent form. I consent freely and voluntarily.

## Appendix B

### *Institutional Review Board Approval*

#### Oklahoma State University Institutional Review Board

Date: Monday, April 04, 2005  
IRB Application No AS0562  
Proposal Title: Adjustment and Life Events of College Women Survey

Reviewed and Processed as: Expedited

Status Recommended by Reviewer(s): Approved Protocol Expires: 4/3/2006

Principal Investigator(s)

Patricia J. Long  
215 N. Murray  
Stillwater, OK 74078

Susan Borja  
215 N. Murray  
Stillwater, OK 74078

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

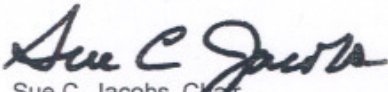
☒ The final versions of any printed recruitment, consent and assent documents bearing the IRB approval stamp are attached to this letter. These are the versions that must be used during the study.

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

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

Please note that approved protocols are subject to monitoring by the IRB and that the IRB office has the authority to inspect research records associated with this protocol at any time. If you have questions about the IRB procedures or need any assistance from the Board, please contact Beth McTernan in 415 Whitehurst (phone: 405-744-5700, emct@okstate.edu).

Sincerely,

  
Sue C. Jacobs, Chair  
Institutional Review Board



## Appendix C

### *Recruitment Script*



**Adjustment & Life Events Survey**  
life events research lab  
oklahoma state university

We are investigating adjustment of **college women** following life experiences. This survey is intended for college women at Oklahoma State University, **age 18 years or older**, participating in the Oklahoma State University Research Participant Pool. Participation should require approximately 45 minutes to one hour of your time. If you would like to participate, there are two steps:

<b>Step 1:</b>	Read information about the study and make an informed decision about participation.
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**Step 2:** Complete the survey.

If you encounter any technical problems, please email us ([susan.borja@okstate.edu](mailto:susan.borja@okstate.edu)) or call 405-744-9362.

If you are interested in participating in this study, click on "go to consent" below:

**[go to consent](#)**

**[no thanks](#)**

## Appendix D

### *Debriefing Form Narrative*

#### Debriefing

Recently there has been much research done on the problem of childhood sexual abuse. While the rates of abuse vary depending on how the information is collected, our best estimates suggest that between 25% and 45% of all women and between 15% and 25% of all men have been sexually abused as children. In addition, approximately 25% to 45% of women and 5% to 15% of men are sexually abused as adults. Even the lowest of these rates suggest that abuse is a far reaching problem.

Research on victimization has provided some information about this problem. It is known that victimization is more common among girls, with 4 to 5 girls experiencing sexual abuse to every boy victim. For girls, there are two ages when abuse occurs most frequently: ages 7 and 11. For boys, the average age of onset is 7. Regarding adult sexual assault, approximately 1 in every 4 women and 1 in every 10 men will experience adult sexual assault. A review of studies suggests that sexual abuse by relatives accounts for between one-quarter to one-half of all abuse experiences and sexual assaults occurring between acquaintances accounts for 85% of all adult sexual assaults.

Studies have also noted that a variety of problems can be associated with a history of abuse, including depression, anxiety, fear, anger, and low self esteem. However, not all individuals with a history of childhood sexual assault or adult sexual assault experience these types of problems. Some people (who do and don't experience problems) report some gains from dealing with the experience. Positive changes include improved relationships, new possibilities for one's life, a greater appreciation for life, a greater sense of personal strength and spiritual development.

The purpose of this study was to explore the various reactions that people have to sexual abuse experiences and the ways people find to cope. Participants' reactions to the questions regarding social support will be examined to help predict the ways in which individuals adjust to traumatic experiences.

\*\*\*\*\*

If you have any questions regarding this project, please feel free to email Susan Borja at [susan.borja@okstate.edu](mailto:susan.borja@okstate.edu) or to call Trish Long, Ph.D., 744-7575

Counseling services are also available locally:  
Psychological Services Center  
118 North Murray Hall  
744-5975  
Fee based on income

University Counseling Center  
310 Student Union  
744-5472  
For OSU students only

Student Mental Health Clinic  
002 Student Hospital  
744-7007  
For OSU students only

Edwin Fair Community Mental Health  
712 Devon Road  
372-1250  
Fee based on income

## VITA

Susan Eileen Borja

Candidate for the Degree of

Master of Arts

Thesis: ADJUSTMENT AND SOCIAL SUPPORT OF SEXUAL ASSAULT  
SURVIVORS

Major Field: Clinical Psychology

Education	<b>Oklahoma State University</b>	Stillwater, Oklahoma
	Completed the Requirements for the Master of Arts degree at Oklahoma State University in December, 2005	
	<b>Emory University</b>	Atlanta, Georgia
	Bachelor of Arts in Psychology and Sociology	<i>December 2002</i>

### Clinical Experience

2004-2005	<b>Psychological Associate.</b> Psychological Services Center. Oklahoma State University. Supervisor: Jennifer Callahan, Ph.D. This team primarily focuses on the development of assessment skills, exposure to neuropsychological assessment and problems, and treatments for individuals with long-standing or comorbid problems. Dr. Callahan provides supervision in an individual and group format. Responsibilities include maintaining a caseload of 3-5 clients, writing weekly progress notes, writing intake and termination reports, individual therapy, psychodiagnostic assessment and reporting writing, and conducting co-therapy or peer supervision with junior therapists.
2003-2004	<b>Psychological Associate.</b> Psychological Services Center. Oklahoma State University. Supervisor: Thad Leffingwell, Ph.D. This team primarily focuses on use of empirically supported treatments for adult clients with substance use, mood, or anxiety disorders. Dr. Leffingwell provides supervision in an individual and group format. Responsibilities include maintaining a caseload of 1-3 clients, writing weekly progress notes, writing intake and termination reports, and conducting individual therapy.
2001-2003	<b>Sexual Assault Hospital and Court Companion</b> Dekalb Rape Crisis Center. Decatur, Georgia. Supervisor: Anne Smith, Ph.D. Responsibilities include

answering crisis hotline and hospital accompaniment for survivors of sexual assault in the immediate aftermath of the trauma. Court and police interview accompaniment is also provided. Victims from diverse demographic backgrounds are from the metropolitan Atlanta area.

- 2001      **Community Intervention Intern** Hillside Hospital. Atlanta, Georgia. Supervisor: Gloria Choo, Ph.D. Responsibilities include in-home counseling and crisis management for youths and their families who were at risk of [re]entering an inpatient psychiatric facility or were participating in therapeutic foster care. As an intervention specialist, I focused on sexual abuse cases and the efficacy of various programs.

#### Research Experience

- 2005-Current      **Center for Applied Clinical Research:** Oklahoma State University. Supervisor: Jennifer L. Callahan, Ph.D. This laboratory focuses on the role of social cognition in those experiencing psychopathology or receiving psychological treatments (e.g., assessments; psychotherapy). Responsibilities include collaborative preparation of manuscripts for publication and weekly meetings to discuss new and ongoing projects.
- 2003-2005      **Master's Thesis Research:** Positive and negative adjustment and social support following sexual assault. Oklahoma State University. Thesis Chair: Jennifer Callahan, Ph.D. This project explores the role of positive and negative social support in predicting positive and negative adjustment in a sample of 500 female college students.
- 2003-2005      **Sexual Victimization Lab Research:** Oklahoma State University. Supervisor: Patricia J. Long, Ph.D. Responsibilities have included generating project ideas, running analyses, writing submissions for presentations and publications, creating posters and handouts for conferences, data collection, data entry, and supervision and training of undergraduate research assistants on various projects pertaining to sexual violence.
- 2003      **Deputy Chief of the Traumatic Stress Program** National Institute of Mental Health, Division of Mood Disorders and Behavior Science and AIDS. Bethesda, Maryland. Supervisor: Farris Tuma, Sc.D. Responsibilities primarily included organization of multiagency preparation for terrorist response. Additional time was devoted to grant review, review of recent research, and contributing to publications from ethics in trauma research conference held in 2003
- 2002      **Summer Undergraduate Research Experience Fellow** Center for Science Education, Emory University. Supervisor: Sherryl Goodman, Ph.D. This research experience explored transmission of depression from mother to infant using Clark's Early Relational Assessment coding technique with repeated measures from infancy 4 years of age. Results suggested that mothers with and without depression did not vary significantly in most domains of relating to their children. However, mothers with depression were significantly different from mothers without in relating to their children during feeding.

## Teaching Experience

2004-2005      **Graduate Instructor.** Introduction to Psychology. Oklahoma State University. Supervisor: William Scott, Ph.D. This position involved full responsibility for teaching two sections (40 students each) for two semesters. Specifically, duties included grading, lectures, activities, and testing.

2004      **Teaching Assistant.** Psychology of Parenting discussion leader. Oklahoma State University. Supervisor: Douglas Scambler, Ph.D. This position involved teaching three sections (20 students each) once a week in a small group discussion setting. Duties included facilitating discussion, test reviews, grading papers and tests, and weekly supervision meetings with the course instructor.

2003      **Teaching Assistant.** Psychology of Women discussion leader. Oklahoma State University. Supervisor: Patricia J. Long, Ph.D. This position involved teaching three sections (20 students each) once a week in a small group discussion setting. Duties included facilitating discussion, grading papers, and weekly supervision meetings with the course instructor.

## Professional Memberships:

International Society for Traumatic Stress Studies  
Association for Advancement of Behavior Therapy

## Awards

2004	<b>Phi Beta Kappa Honor Society</b>
2003	<b>Unsung Heroine presented by Emory University</b>
2002	<b>Alpha Kappa Delta Honor Society</b>
2002	<b>Emory University Unsung Heroine</b>
2002	<b>Emory University Representative to American Association of University Women Student Leaders National Conference</b>

Name: Susan Borja

Date of Degree: December, 2005

Institution: Oklahoma State University

Location: Stillwater, Oklahoma

Title of Study: ADJUSTMENT AND SOCIAL SUPPORT OF SEXUAL ASSAULT  
SURVIVORS

Pages in Study: 90

Candidate for the Degree of Master of Science

Major Field: Clinical Psychology

Scope and Method of Study: Survey research of 500 undergraduate women

Findings and Conclusions: The role of positive (i.e. growth) and negative (i.e. posttraumatic stress symptoms) adjustment following a sexual assault experience were examined using a standardized definition of abuse. These reactions were explored in association with positive and negative support from formal and informal providers. Finally, the collective impact of positive and negative, formal and informal, support was investigated in predicting positive and negative adjustment with standardized measures. Both forms of informal support were found to be associated with positive outcomes. Only negative informal support was associated with posttraumatic stress symptoms.

ADVISER'S APPROVAL:

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Jennifer L. Callahan