HISTORY OF CHILDHOOD ABUSE AND POSTTRAUMATIC GROWTH’S EFFECTS ON REACTIONS TO SUBSEQUENT TRAUMATIC EVENTS

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Previous research indicates that those with a history of abuse have an increased risk to experience subsequent traumatic events. This study utilized a convenience sample of undergraduate students to examine the reaction of those with a history of abuse to subsequent traumatic experiences. In addition, the study assessed the level of posttraumatic growth an individual experiences following childhood abuse. The level of posttraumatic growth was examined to determine if the growth allowed for participants to better handle successive traumas. Those with a history of abuse experienced higher levels of symptomology following a successive traumatic event. Results did not support the hypothesis that among those with a history of abuse, lower levels of posttraumatic growth would predict higher levels of symptoms following a later trauma. Implications and limitations of the study, as well as directions for future research are discussed.
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INTRODUCTION

Child abuse and its resulting aftermath have been heavily researched areas of study over the years. The prevalence of some form of abuse during childhood is so high as to be virtually normative. Furthermore, the short term and long term consequences of such abuse are expressed in a multitude of symptomology. Despite all of the research that has focused on the various negative consequences and subsequent traumatic encounters experienced by those with a history of abuse, very little research has examined how those with a history of abuse respond to successive traumas.

Prevalence of Child Abuse

Briere and Elliott (2003) examined the prevalence of childhood physical and sexual abuse retrospectively among adults by utilizing a sample from the general population. Of the surveys returned, 14.2% of men and 32.3% of women reported a history of childhood sexual abuse. Twenty-two percent of males and 19.5% of females reported childhood experiences that indicated a history of physical abuse. Furthermore, those with a history of physical or sexual abuse were shown to be more likely to have experienced other types of abuse as well. Of those endorsing a history of abuse, 20.9% of participants met criteria for both a history of physical and sexual abuse. Males reported to have perceived their abuse experience as less upsetting than did females. A study performed in Ontario (MacMillan et al., 1997) investigated the prevalence of both physical and sexual childhood abuse in the general population. Results indicated a higher rate of childhood physical abuse in males (31.2%) than females (21.1%), whereas, 12.8% of females and 4.3% of males reported a history of childhood sexual abuse. In a similar study utilizing stratified probability sampling to Los Angeles County, Wyatt, Loeb, and Solis (1999)
found that 34% of the sample reported having experienced an unwanted sexual incident prior to the age of 18. Similarly, Anderson, Martin, Mullen, Romans, and Herbison (1993) surveyed a community sample in which nearly one in three women reported an unwanted sexual experience before the age of 16. Vogeltanz et al. (1999) found that the prevalence of childhood sexual abuse in women ranged from 15 to 32% depending on how childhood sexual abuse was defined. It appears that differences in prevalence of abuse experiences can be attributed to differences in how abuse is defined in the varying studies.

Long Term Correlates of Child Abuse

A wide body of literature indicates that a history of childhood abuse also increases the likelihood that an individual will experience later trauma, whether it be sexual revictimization, physical abuse, mental health problems or physical health related problems. Polusny and Follette (1995) reviewed articles published between 1987 and 1993 to ascertain a list of long-term correlates that had been found through research. Those with a history of abuse were found to have higher levels of psychological distress, higher prevalence of psychological and personality disorders, higher rates of substance abuse, increased levels of suicidal behavior, somatization and binge eating as compared to those without a history of abuse. In addition, those who had been abused as children were less apt in developing social and interpersonal relationships, and had higher rates of maladjustment. The research on these various correlates is reviewed below.

Increased Violent and Nonviolent Revictimization.

Those who have been abused as children appear to be at greater risk of being exposed to both
violent and nonviolent revictimization. Noll, Horowitz, Bonanno, Trickett, and Putnam (2003) utilized a group of individuals with a history of childhood sexual abuse, referred by protective services, to conduct a longitudinal study to assess revictimization and self-harm. They found that those who reported a history of abuse also reported two times as many successive rapes or sexual assaults than comparison participants who were recruited via advertising. In addition to the higher rates of subsequent rapes, those with a history of abuse were 1.6 times more likely to be victims of domestic abuse, were four times more likely to report self-inflicted harm, and had experienced over 20% more composite traumatic experiences than the comparison group.

Irwin (1999) also showed that a history of abuse increased the likelihood of an individual experiencing both violent and nonviolent victimization. He concluded that coping styles involving assuming responsibility and detaching oneself appear to weaken the association between childhood abuse and revictimization; however, the study did not reveal specifically how these factors acted as mediators or moderators. Messman-Moore and Long (2000) studied the phenomenon of revictimization in a college sample. They found higher rates of unwanted sexual experiences, physical abuse, and psychological maltreatment in those with a history of child abuse as compared to those without a history of abuse.

Gidycz, Coble, Latham, and Layman (1993) conducted a prospective analysis to gain further understanding of the pathways through which victimization experiences occur and become linked. Even when undergraduate students were assessed prior to the recent sexual victimization, there remained a relation between history of victimization and revictimization. Those with a history of abuse were almost twice as likely as those without a history of abuse to experience sexual assault during the study’s nine week duration. However, results may be affected by a 25% attrition rate between each of the data collections.
Mental Health Problems

In addition to having higher rates of revictimization, those with a history of abuse also experience higher rates of mental health problems. Williams-Sledge (1997) utilized a clinical sample to assess the role that history of abuse has upon current psychopathology. Fifty-six percent of those assessed indicated a history of abuse, and 29% of those surveyed had experienced both physical and sexual abuse during childhood. Furthermore, those acknowledging a history of abuse exhibited more severe psychopathology.

Molnar, Buka, and Kessler (2001) conducted a study with the general population and found that a history of childhood sexual abuse was found to be related to increased risk of psychopathology. Childhood sexual abuse was found to be related to increased risk of psychopathology, regardless of whether or not it was examined alone or within the broad range of negative childhood experience that often accompany childhood abuse. Those with childhood sexual abuse showed less ability to regulate reactions to stressful events and other interpersonal and emotional challenges, thus making psychiatric disorders more likely.

Rodriguez, Ryan, Vande Kemp and Foy (1997) compared posttraumatic stress disorder (PTSD) in adult outpatients with and without a history of childhood sexual abuse. They found much higher rates of PTSD in those with childhood sexual abuse in outpatient treatment as compared to those without such a history. Of those reporting childhood sexual abuse, 89% also reported a history of childhood physical abuse. In addition, of those who experienced childhood sexual abuse, 86.7% met criteria for PTSD, according to the *Diagnostic and Statistical Manual of Mental Disorders, 3rd Edition (DSM-III)*, whereas only 19.4% of the comparison group met criteria for PTSD. Furthermore, the previous experience of childhood sexual abuse among
participants accounted for a significant proportion of the PTSD symptom intensity.

Briere and Elliott (2003), using a sample from the general population, found that a history of childhood sexual abuse is more predictive of symptom variance than are childhood physical abuse or adult victimization. However, various aspects of both types of childhood abuse predicted scores on the Trauma Symptom Inventory.

Gladstone, Parker, Mitchell, Malhi, and Austin (2004) recently investigated the implications of a history of abuse in depressed women who had been referred to a mood disorders unit at a hospital. Women who reported a history of childhood sexual abuse were more likely to have made previous suicide attempts or have engaged in behaviors resulting in deliberate self-harm. Furthermore, these women were likely to become depressed at earlier ages, suffer from panic disorders, and report recent assaults.

Increased Physical Health Problems and Poor Health Related Behaviors

In addition to increased psychopathology, those with a history of abuse suffer from a wide range of physical health problems. Woods and Wineman (2004) utilized a convenience sample acquired via community advertisement to examine the relation between previous trauma and subsequent physical health symptoms in those with a history of abuse. Multiple regression analyses indicated that a history of childhood physical abuse and a history of childhood sexual abuse accounted for 16% and 9% respectively of the physical health symptoms among all of those having previously experienced violent trauma.

Wijma, Serquist, Bjklund, and Wijma (2000) investigated the prevalence of PTSD among those with a history of sexual and physical abuse. They found that the presence of PTSD was positively related to the amount and recency of the abuse experience. Furthermore, those
with PTSD symptoms reported more visits to the physician.

In addition to experiencing more health related problems, those with a history of abuse tend to have poorer health related behaviors than those without a history of abuse. Lang et al. (2003) found that, among women who had previously sought treatment at the Veteran’s Affairs primary care clinic, those with a history of sexual assault had increased substance use, higher rates of risky sexual behavior, and decreased levels of exercise when compared to those without a history of sexual assault. Smith, Davis, and Fricker-Elhai (2004) investigated the perception of unsafe behaviors held by those with a history of abuse as compared to those without a history of abuse. Individuals with a history of abuse reported perceptions of increased benefits and decreased risks in regards to risky sexual behavior, alcohol and drug abuse, and aggressive/illegal behavior.

Cognitive risk factors that are not health related (e.g., problematic beliefs/ schemas) may also be associated with a history of abuse. Ponce (2004) found that those with a history of violence, which included childhood abuse, were more likely to endorse unhealthy and maladaptive cognitive schemas more often than those without a history of violence. Additionally, those with maladaptive schemas were more likely to consider violence in a romantic relationship as being acceptable.

Experiential avoidance has been defined as “the phenomenon that occurs when a person is unwilling to remain in contact with particular private experiences (e.g., bodily sensations, emotions, thoughts, memories, behavioral predispositions) and takes steps to alter the form or frequency of these events and the contexts that occasion them” (Hayes, Wilson, Gifford, & Follette, 1996). Batten, Follette, and Aban (2001) examined the level of experiential avoidance in undergraduate students with and without a history of abuse and found that those with a history
of childhood sexual abuse had higher rates of experiential avoidance.

Brown (2000) found that those with a history of abuse or assault demonstrated higher levels of perceived vulnerability as compared to comparison participants. It appears that as schema-influenced beliefs about self and similar others are challenged due to the abuse or assault experience, the individual’s perceived vulnerability was also altered. Brown (2000) did not find a significant relation between distorted schemas and avoidance coping.

Clark, Lesnick, and Hegedus (1997) examined the relation between traumatic life events and alcohol abuse among teenagers. Those with alcohol abuse or dependence (recruited through alcohol treatment programs) were 6 to 12 times more likely to have a history of physical abuse and 18 to 21 times more likely to have a history of sexual abuse as compared to a control group of adolescents (recruited through community advertisement and random-digit telephone dialing).

Resiliency among Those with a History of Abuse

Not all of those with a history of abuse experience subsequent trauma. The concept of resiliency assesses the lack of pathology among those who have experienced traumatic experiences. Liem, James, O’Toole, and Boudewyn (1997) attempted to determine which factors could potentially augment or mitigate the likelihood of successive traumatic experiences within a sample of undergraduate students. By utilizing the Life Experiences Survey, they measured levels of depression as well as self-esteem in order to gain a better understanding of resilience among those with a history of abuse. Resiliency for this study was conceptualized as the ability of an individual to effectively manage themselves in the situations with known risk factors that could impair development. Resiliency was assessed via a combination of current levels of depression and self-esteem. Factors that appeared to distinguish resiliency from non-resiliency
included personality characteristics such as internal attribution style, early family environment, and coping strategies. However, it remains possible that these findings might reflect the impact of depression on self-report of personality and family characteristics, rather than the impact of a stable resiliency characteristic.

Reactions to Subsequent Traumatic Events

Although there has been much research conducted on the increased likelihood for future traumatic experiences, very little research investigates the reactions of those with a history of abuse to the subsequent traumatic events. Koopman, Gore-Felton, Classen, Kim, and Spiegel (2001) investigated childhood abuse survivors’ stress reactions to everyday events. They hypothesized that symptoms related to ASD (acute stress disorder) would be heightened in those participants with a background of childhood sexual abuse. Those with a reported history of childhood abuse experienced acute levels of stress response even to minute stressors that did not prove to be traumatic in the comparison sample.

Classen et al. (2002) investigated the impact of stressful events occurring within six months of the study as well as sexual revictimization in those with a history of childhood abuse. Those involved in the study had to have a history of childhood sexual abuse as well as meet diagnostic criteria for current PTSD as a response to their childhood experience. They hypothesized that the number of life stressors would predict trauma symptoms. They found that dissociation, anxiety, sleep disturbances, and sexual problems were all associated with recent traumatic events. In addition, recent life stress was also related to hypervigilence, avoidance, and re-experiencing of past traumatic events. Their findings support the concept of a sensitization effect that occurs in individuals as they are exposed to subsequent traumatic
experiences.

Posttraumatic Growth

The idea that adverse experiences can lead to positive outcomes is not new. For instance, German philosopher Friedrich Nietzsche once said, “what does not destroy me, makes me stronger.” In order to empirically evaluate the accuracy of this generally held belief, Calhoun and Tedeschi have worked to conceptualize and operationalize this constructive reaction to negative events. The name “posttraumatic growth” has been designated to signify the “experience of positive change that occurs as a result of a struggle with highly challenging life crises” (Tedeschi and Calhoun, 2004). Posttraumatic growth can be manifest in a variety of different domains. Domains of growth include an augmented appreciation for life, deeper and more meaningful interpersonal relationships, increased personal strength, recognition of new possibilities in life, and spiritual and existential development.

Milam, Ritt-Olsen, and Unger (2004) assessed the presence of posttraumatic growth (PTG) among adolescents. Through using a sample of primarily Hispanic adolescents, the study investigated the relation between PTG and demographic factors such as socioeconomic status as well as the relation between PTG and degree of religious practice, depression and substance use. Higher levels of PTG were associated with increased age and religiosity and with less substance use. They found that adolescents do experience PTG, and that age and substance abuse are related to the degree of PTG experienced by those after a traumatic event. Their study yielded some speculations into the process of posttraumatic growth. Milam et al. surmised that substance abuse may be a means through which adolescents self-medicate, thus inhibiting the self-exploration that could be essential for growth to occur.
In order to gain a comprehensive view of the literature on PTG, Linley and Joseph (2004) reviewed 39 empirical studies. They found that optimism, religion, cognitive processing, positive affect, and positive reinterpretation coping were among the variables increasing the likelihood of PTG. They found inconsistent associations between PTG and demographic variables. Some of the studies found that women showed higher levels of PTG than did males, whereas some studies showed no difference between males and females. Additionally, some studies indicated that younger participants were more likely to endorse PTG than were older participants. Notably, they found that those experiencing and maintaining PTG appear to experience less psychological distress following their growth, such as lowered levels of distress in bereaved persons.

Despite the satisfactory reliability and validity levels found in PTG research, a study by Smith and Cook (2004) indicates that current assessment measures of posttraumatic growth may underestimate growth. They concluded that those completing such measures may be cautious in attributing growth to the specific traumatic events. These results directly contradict previous notions of a potential positive bias of current assessment measures of posttraumatic growth.

Summary and Hypotheses

Given the prevalence of childhood abuse and the wide range of both short term and long term consequences often experienced by those who are abused, is it reasonable to assess their reactions to successive traumas. It is important to consider the differential reactions potentially experienced by those with a history of abuse to subsequent traumas. It is posited that this potential for varying reactions to successive traumas may be a function of the amount of posttraumatic growth an individual has experienced following their childhood abuse experiences.
For this particular study, it was hypothesized that those with a history of abuse would experience more symptoms from a subsequent trauma than those without a history of abuse. It was also hypothesized that among those with a history of abuse, the level of posttraumatic growth would be inversely related to levels of symptomology following a subsequent stressful event.
METHODS

Participants

The present study utilized a quasi-experimental design using a convenience sample of undergraduate students from the University of North Texas. Data were collected from 135 participants. One participant’s data was not utilized due to complete omission of the Impact of Events Scale. One participant’s data was omitted due to her being age 17, thus resulting in 133 total participants. Participants were given extra credit for their participation in the study.

Materials

Participants in the study were administered five instruments: the Survey of Traumatic Childhood Events (STCE; Council & Edwards, 1987), the Posttraumatic Growth Inventory (PTGI; Tedeschi & Calhoun, 1996), the Life Events Checklist (LEC; Johnson & McCutcheon, 1980), the Impact of Events Scale-Revised (IES-R; Weiss & Marmar, 1997), and a demographics questionnaire.

The Survey of Traumatic Childhood Events (STCE) was developed in 1987 by Council and Edwards in order to assess for the presence of childhood trauma. The measure consists of 30 items answered on a 5-point Likert scale. The scale measures for 11 factor-analytically derived types of childhood trauma including: intrafamilial sexual abuse, extrafamilial sexual abuse, intrafamilial physical abuse, extrafamilial physical abuse, loss related to a friend, loss related to the family, isolation, personal illness or accident, parental divorce/separation and abortion/miscarriage, assault, loss of the home, and robbery. “The STCE is the most broadly based and professionally constructed measure of childhood trauma yet developed” (Irwin, 1995). Irwin successfully used the STCE to support the idea that proneness to dissociation is linked to
traumatic childhood experiences. He found that dissociative experiences in adults are partially predictable by a history of abuse. Dorahy, Irwin, and Middleton (2002) found an overall alpha of .87. Thalbourne and Houran (2003) obtained an alpha of .71. Scales detecting intrafamilial sexual abuse, extrafamilial sexual abuse, intrafamilial physical abuse, and extrafamilial physical abuse were utilized in this study to assess for the presence of a history of childhood abuse among participants.

The number of abuse occurrences endorsed by participants on the various subscales and overall Survey of Traumatic Childhood Events was used to produce a continua, ranging from none at all to a high amount of abuse. Subscales were scored independently to allow for exploration of the different types of abuse experienced by participants. The question regarding physical abuse was used to assess for history of childhood physical abuse. The question asked if the participant had experienced “being spanked by your parent or other caregivers (e.g., older sibling, babysitter, etc.) severely enough to cause bruises or other injuries.” (STCE) The questions regarding sexual abuse, both intrafamilial and extrafamilial, were used to assess for a history of childhood sexual abuse. In addition, the level of overall endorsement of abuse was tabulated by adding items across all subscales.

The Posttraumatic Growth Inventory (PTGI) was developed by Tedeschi and Calhoun (1996) in order to assess for positive outcome following traumatic events. The PTGI is comprised of 21 positively worded questions, each followed by a 0-5 response choice with a score of 0 indicating, I did not experience this change as a result of my crisis; a 3 signifying I experienced this change to a moderate degree as a result of my crisis; and a 5 indicating I experienced this change to a great degree as a result of my crisis. The 21-item scale encompasses various factors including: New Possibilities, Relating to Others, Personal Strength,
Spiritual Change, and Appreciation of Life. The internal reliability of the full scale was .90 and the separate subscales ranged from 0.67 to 0.85. When using a sample of college students who had experienced a traumatic event within the past five years, the measure’s test-retest reliability was 0.71 (Cohen, Cimbolic, Armeli, & Hetler, 1998). Bates, Trajstman, and Jackson (2004) also found high internal consistency (Cronbach $\alpha = .91$) and adequate test-retest reliability ($r = .78$) among Australian undergraduate students. Milam, Olson, and Unger (2004) successfully used the PTGI to assess levels of posttraumatic growth in Hispanic adolescents, finding that age and religiosity were positively associated with posttraumatic growth and substance use was negatively associated with posttraumatic growth. Responses to the Posttraumatic Growth Inventory scale were scored by adding items within the subscales to produce a continuum of level of posttraumatic growth within the various subscales as well as overall posttraumatic growth. The question “What experience are you considering while completing this survey?” followed the instructions on the PTGI in order to help participants focus on a specific event while completing the survey. Participants were provided a space to indicate the event they were considering.

The Life Events Checklist (LEC) was developed at the National Center for Posttraumatic Stress Disorder in order to measure exposure to traumatic events and subsequently aid in diagnosis of posttraumatic stress disorder (PTSD). Gray, Litz, Hsu, and Lombardo (2004) investigated the psychometric qualities of the LEC using a sample of college undergraduates. Results indicated that the measure had adequate psychometric qualities in the college population. The mean kappa for the various items on the LEC was 0.61, and the test-retest reliability was 0.82. The LEC was successfully used to show a positive correlation between negative life events and depression in children and adolescents (Rice, Harold, & Thapar, 2003)
Weiss and Marmar developed the Impact of Events Scale-Revised (IES-R; 1997) to assess for symptoms associated with PTSD. The 22-item scale assesses the presence of intrusive thoughts, avoidance, and hyperarousal. Each item is rated on a 4-point scale. When using family members of adolescent cancer survivors, Kazak et al. (2004) found high internal consistency ranging from 0.91 to 0.95. Ljubotina and Muslic (2003) assessed the convergent validity of the IES-R by comparing it with three other instruments including the Mississippi Combat Related Scale (M-PTSD), the short version of the Mississippi Combat Related Scale (Short M-PTSD), and the Watson PTSD Interview (PTSD-I). Results indicated that the measures had high convergent validity. High correlations, ranging from 0.86 to 0.90, were found between the overall scores of the IES-R, the M-PTSD and the PTSD-I. Furthermore, the internal consistency within the IES-R was 0.91. The Impact of Events Scale-Revised allows participants to endorse varying degrees of symptomology. Level of intrusive thoughts, avoidance, and hyperarousal as well as overall level of symptomology were assessed using the subscales and the overall score. Additionally, the question “What experience are you considering while completing this survey?” followed the instructions on the IES-R in order to help participants focus on a specific event while completing the survey. Participants were provided a space to indicate the event they were considering.

A demographics questionnaire (Appendix A), developed by the examiner, was given to the participants in order to obtain information not assessed via the other measures. The questionnaire ascertained information regarding age, ethnicity, level of education, level of their parent’s education, their parent’s occupation, as well as other key information.
Procedure

Participants were recruited via an online experiment management system and gained class credit for their participation in the study. Group assignment (child abuse history, no history of child abuse) was made on the basis of the STCE. Questions asking if the participant had experienced “being spanked by your parent or other caregivers (e.g., older sibling, babysitter, etc.) severely enough to cause bruises or other injuries,” as well as those regarding sexual abuse, both intra-familial and extra-familial, were used to determine group placement.

Times were scheduled for those who signed up to participate in the study to complete the surveys. Upon arrival, participants were given a packet that contained an informed consent form (Appendix B) and instructions (Appendix C). Sixty-eight of the participants received the other measures described above in the following order: Survey of Traumatic Childhood Events, Posttraumatic Growth Inventory, Life Events Checklist, and then the Impact of Events Scale-Revised. The remaining sixty-five participants received the following order: Life Events Checklist, Impact of Events Scale-Revised, Survey of Traumatic Childhood Events, and Posttraumatic Growth Inventory. Instructions indicated that the Posttraumatic Growth Inventory was to be completed while considering their childhood experiences of abuse. It also stated that those without a history of abuse should complete the survey while considering their most traumatic childhood experience. A question asking the participant to specify the event they were considering followed the instructions. In regards to the Impact of Events Scale-Revised, the instructions directed the participant to consider the most traumatic event during or after age 16. A question asking the participant to specify the traumatic experience they were considering followed the instructions. Once questionnaires were completed, the participants were instructed
to return the packet. Due to the sensitive nature of the information being gathered, all identifying information was kept separate from the surveys.
RESULTS

Descriptive Statistics

Data were collected from 135 participants, two of which were excluded from analyses; one participant did not complete the Impact of Events scale and one participant was too young (age 17). Descriptive statistics of the participants are provided in Table 1.

Table 1
Demographic Statistics

<table>
<thead>
<tr>
<th>Demographic Variable</th>
<th>History of Abuse (n= 65)</th>
<th>No History of Abuse (n= 68)</th>
<th>Total (N=133)</th>
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</thead>
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<tr>
<td></td>
<td>Mean SD</td>
<td>Mean SD</td>
<td>Mean SD</td>
</tr>
<tr>
<td>Age</td>
<td>21.52 4.5</td>
<td>20.42 4.53</td>
<td>20.95 4.53</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>46 70.80%</td>
<td>65 95.60%</td>
<td>95 71.40%</td>
</tr>
<tr>
<td>Male</td>
<td>19 29.20%</td>
<td>19 29.20%</td>
<td>38 28.60%</td>
</tr>
<tr>
<td>Caucasian</td>
<td>38 58.50%</td>
<td>38 55.90%</td>
<td>76 57.10%</td>
</tr>
<tr>
<td>Asian/Pacific Islander</td>
<td>8 12.30%</td>
<td>11 16.20%</td>
<td>19 14.20%</td>
</tr>
<tr>
<td>Ethnicity</td>
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<tr>
<td>African American</td>
<td>10 15.40%</td>
<td>6 8.80%</td>
<td>16 11.90%</td>
</tr>
<tr>
<td>Hispanic</td>
<td>7 10.80%</td>
<td>8 11.80%</td>
<td>15 11.20%</td>
</tr>
<tr>
<td>American Indian</td>
<td>1 1.50%</td>
<td>1 1.50%</td>
<td>2 1.50%</td>
</tr>
<tr>
<td>“other”</td>
<td>1 1.50%</td>
<td>4 5.90%</td>
<td>5 3.70%</td>
</tr>
<tr>
<td>Freshmen</td>
<td>19 29.20%</td>
<td>26 38.20%</td>
<td>45 33.60%</td>
</tr>
<tr>
<td>Sophomores</td>
<td>18 27.70%</td>
<td>19 27.90%</td>
<td>37 27.60%</td>
</tr>
<tr>
<td>Juniors</td>
<td>12 18.50%</td>
<td>17 25.00%</td>
<td>29 22.40%</td>
</tr>
<tr>
<td>Seniors</td>
<td>16 24.60%</td>
<td>4 5.90%</td>
<td>20 14.90%</td>
</tr>
<tr>
<td>Classification</td>
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</tr>
<tr>
<td>Graduate Students</td>
<td>0 0%</td>
<td>2 2.90%</td>
<td>2 1.50%</td>
</tr>
<tr>
<td>Marital Status</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single</td>
<td>59 90.80%</td>
<td>65 95.60%</td>
<td>124 93.30%</td>
</tr>
<tr>
<td>Married</td>
<td>6 9.20%</td>
<td>3 4.40%</td>
<td>9 6.70%</td>
</tr>
</tbody>
</table>
Socio-economic status was ascertained through utilizing Hollingshead’s Occupational Scale (1958). Participants were provided with an open-ended question about their mother and father’s occupations. Occupations were ranked according to seven rankings, with a ranking of one representing “executives and proprietors of large concerns, and major professionals,” and seven representing “unskilled workers.” The higher ranking between the participant’s mother and father was used to assess the participant’s socio-economic status (SES). The mean score among the participant’s was 2.80, with a standard deviation of 1.29. A univariate analysis of variance (ANOVA) was utilized to determine if there were relations between SES and major study variables. Results were non-significant between SES and presence or absence of abuse, $F(6,126) = 1.25, p = .284$, between SES and posttraumatic growth, $F(6,126) = 0.42, p = .87$, and between SES and IES-R Total Scores, $F(6,126) = 0.99, p = .43$.

Participants were assigned to groups based on the presence of a history of childhood abuse, as well as type of abuse. History of abuse was determined by participants’ answers to questions regarding physical and sexual abuse on the Survey of Traumatic Childhood Events (STCE). Responses varied from never having experienced a specific type of childhood abuse to having experienced it more than ten times. Frequencies of responses are shown in Table 1.
Table 2

*Frequencies for Number of Reported Occurrences of Child Abuse*

<table>
<thead>
<tr>
<th>Abuse Experience</th>
<th>None</th>
<th>1 Time</th>
<th>2-5 Times</th>
<th>6-10 Times</th>
<th>&gt;10 Times</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spanked hard enough to cause bruises</td>
<td>95</td>
<td>9</td>
<td>15</td>
<td>3</td>
<td>11</td>
</tr>
<tr>
<td>Family member exposed sex organs</td>
<td>118</td>
<td>7</td>
<td>6</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Another person exposed sex organs</td>
<td>106</td>
<td>17</td>
<td>8</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Family member touched participant in a sexual way</td>
<td>119</td>
<td>6</td>
<td>5</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Another person touched participant in a sexual way</td>
<td>105</td>
<td>16</td>
<td>10</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Family member made/asked participant to engage in sexual activity</td>
<td>127</td>
<td>2</td>
<td>3</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>Another person made/asked participant to engage in sexual activity</td>
<td>110</td>
<td>13</td>
<td>9</td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>

*Note: Frequencies from Survey of Traumatic Childhood Events Questions 16, 23, 24, 25, 26, 27, and 28.*

Considered together, a total of 65 (48.9%) participants of the overall sample had a positive history of some type of child abuse (physical and/or sexual), whereas 68 (51.1%) reported no such history. Among those participants with a history of childhood abuse, 38 individuals (28.6%) indicated having a history of physical abuse and 48 individuals (36.1%) reported having a history of sexual abuse. Of those reporting a history of abuse, 21 participants indicated (15.8% of the total sample) having a history of both physical and sexual childhood abuse.

Given that only one question from the STCE ascertained information relating to childhood physical abuse, and given its positive skew, the variable was dichotomized into either presence or absence of physical abuse (38 with a positive history of physical abuse and 95 without such history). There was variation in the presence of sexual abuse, in that there were
differences in the type and number of experiences; however, the variable was highly positively skewed (skewness = 3.122). Therefore, the variable of sex abuse was dichomized into the presence versus absence of a history of childhood sexual abuse (36.1% with a positive history of some type of childhood sexual abuse, and 63.9% without such history).

In order to determine if those with a history of sexual abuse have differential reactions than those without a history of sexual abuse, inter-correlations among major study variables for those with a history of childhood sexual abuse were compared with the inter-correlations for those with a history of non-sexual abuse to determine if type of abuse provokes differential reactions. A test of equivalence of covariance matrices was utilized in order to make a global comparison. The difference between the covariance matrices were non-significant (Box’s $M = 52.56$, $F(36, 3182) = 1.17$, $p > .20$), indicating that differential relations among variables are not produced depending upon types of abuse. Given this pattern and the overlap in the groups, sexual abuse and physical abuse were combined for the primarily analysis.

Posttraumatic Growth was measured by the PTGI. Descriptive statistics are provided in Table 3. Prior to beginning the PTGI, participants were asked to indicate the experience they were considering while completing the survey. The question was open-ended, and answers varied greatly. Examples of responses include: car accident, moving, parent’s divorce, and being abused.
Table 3

*Descriptive Statistics for PTGI*

<table>
<thead>
<tr>
<th>Variable</th>
<th>History of Abuse (n=65)</th>
<th>No History of Abuse (n=68)</th>
<th>Total (N=133)</th>
<th>Significance Testing</th>
<th>Effect Size</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
<td>Mean</td>
<td>SD</td>
<td>Mean</td>
</tr>
<tr>
<td>PTGI Factor 1 (Relating to Others)</td>
<td>12.69</td>
<td>7.76</td>
<td>16.22</td>
<td>9.58</td>
<td>14.5</td>
</tr>
<tr>
<td>PTGI Factor 2 (New Possibilities)</td>
<td>12.58</td>
<td>6.08</td>
<td>9.97</td>
<td>6.75</td>
<td>11.25</td>
</tr>
<tr>
<td>PTGI Factor 3 (Personal Strength)</td>
<td>12.05</td>
<td>5.06</td>
<td>10.78</td>
<td>5.56</td>
<td>11.4</td>
</tr>
<tr>
<td>PTGI Factor 4 (Spiritual Change)</td>
<td>4.66</td>
<td>3.6</td>
<td>4.72</td>
<td>3.58</td>
<td>4.69</td>
</tr>
<tr>
<td>PTGI Factor 5 (Appreciation of Life)</td>
<td>7.34</td>
<td>4.34</td>
<td>7.91</td>
<td>4.4</td>
<td>7.26</td>
</tr>
<tr>
<td>PTGI Total Score</td>
<td>49.51</td>
<td>21.66</td>
<td>49.96</td>
<td>25.59</td>
<td>49.74</td>
</tr>
</tbody>
</table>

*Note:* Tests are two-tailed; significant at the 0.05 level.

On the Life Events Checklist-Revised, questions answered “Happened to Me” by participants were used to determine if participants had experienced traumatic or stressful events past the age of 16. Of the participants, only 15 (11.3%) indicated that they had not experienced any of the post-age-16 traumatic experiences included in the STCE. The average number of traumatic experiences endorsed by participants was 2.64, with a standard deviation of 1.93, and ranged from zero to 11 stressful experiences.

Prior to completing the IES-R, participants were presented with an open-ended question asking them to record the event they were considering while completing the questionnaire. Examples of responses include: losing a job, family member’s suicide, death of grandparent, and being raped. Descriptive statistics for the IES-R subscales and overall Total Score in Table 4.
Table 4

Descriptive Statistics for IES Total and Subscales

<table>
<thead>
<tr>
<th>Variable</th>
<th>History of Abuse (n=65)</th>
<th>No History of Abuse (n=68)</th>
<th>Total (N=133)</th>
<th>Significance Testing</th>
<th>Effect Size</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
<td>Mean</td>
<td>SD</td>
<td>Mean</td>
</tr>
<tr>
<td>IES Avoidance Scale</td>
<td>1.58</td>
<td>0.96</td>
<td>1.22</td>
<td>0.91</td>
<td>1.39</td>
</tr>
<tr>
<td>IES Intrusions Scale</td>
<td>1.72</td>
<td>1.02</td>
<td>1.38</td>
<td>1.02</td>
<td>1.54</td>
</tr>
<tr>
<td>IES Hyperarousal Scale</td>
<td>1.11</td>
<td>1.02</td>
<td>0.8</td>
<td>0.85</td>
<td>0.95</td>
</tr>
<tr>
<td>IES Total Score</td>
<td>4.41</td>
<td>2.72</td>
<td>3.4</td>
<td>2.47</td>
<td>3.89</td>
</tr>
</tbody>
</table>

Note: Tests are two-tailed; significant at the 0.05 level.

Hypothesis Testing

It was hypothesized that those without a history of abuse would have less symptomology following later trauma than those with a history of abuse. This was tested via univariate analysis of variance (ANOVA) with the presence or absence of a history of abuse as the independent variable, and the level of symptomology endorsed on the Impact of Events Scale as the dependent variable.

When considering the level of overall symptomology by using the IES total score, results were significant, $F(1, 131) = 5.02, p = .014$. Those with a history of child abuse demonstrated significantly higher levels of symptomology. IES subscales were also tested using an ANOVA to determine if group differences existed between those with a history of abuse and those without. Results for the Avoidance Scale yielded a significant result, $F(1, 131) = 4.97, p = .014$. Results utilizing the both the Intrusive thoughts scale on the IES, $F(1, 131) = 3.66, p = .029$, as well as the results for the Hyperarousal Scale, $F(1, 131) = 3.63, p = .030$, were significant. Those with a history of childhood abuse exhibited higher levels of avoidance, intrusive thoughts,
and hyperarousal following a subsequent traumatic event. One-tailed tests of significance were used.

It was also hypothesized that, among those with a history of abuse, posttraumatic growth would predict less symptomology following a subsequent trauma. To test this, a linear regression analysis was used with the posttraumatic growth scores as the independent variable, and the level of symptomology endorsed on the Impact of Events Scale as the dependent variable. Results from the regression using the IES Total Score were non-significant, $r^2 = .010$, $F(1, 63) = 0.64$, $p = .43$. Subscales of the IES were also examined via similar regressions. Analyses yielded non-significant when predicting the IES Avoidance Scale, $r^2 = .002$, $F(1, 63) = 0.15$, $p = .70$, the IES Intrusive thoughts scale, $r^2 = .02$, $F(1, 63) = 0.95$, $p = .33$, and the IES hyperarousal scale, $r^2 = .01$, $F(2, 62) = 0.64$, $p = .43$.

**Exploratory Analyses**

Reliability statistics were utilized to examine the reliability of the measures used within the study. For the Survey of Traumatic Childhood events, Cronbach’s alpha was .75, and the mean of the corrected item-total correlation was .25. The Life Events Checklist yielded a Cronbach’s alpha of .78, and mean corrected item-total correlation of .38. Given that the STCE and the LEC are measuring the presence or absence of varying difficulties, low correlation between items would be expected. The Cronbach’s alpha for the Posttraumatic Growth Inventory was .93, and the mean item-total correlation was .59. The Cronbach’s alpha for the Impact of Events Scale-Revised was .94, with a mean item-total correlation of .62.

To assess if a few factors could account for the variance found within the PTGI, a principal component analysis with varimax rotation was conducted. All solutions with Eigen
values of 1.0 and above were considered. The solution with the fewest cross loadings and the highest interpretability was a five factor model, which is consistent with the construction of the measure. The first factor was comprised primarily of items relating to the appreciation of others, and was composed of five strongly loaded items. The first factor accounted for 15.62% of the variance after rotation (Eigen value = 3.28). The second factor was largely characterized by personal strength and appreciation of life. Four strongly loaded items composed the second factor, which accounted for 14.79% of the variance (Eigen value = 3.12). The third factor, which accounted for 14.76% of the total variance, primarily consisted of concepts relating to spiritual change (Eigen value = 3.10). Five items composed the third factor. The fourth factor was comprised of questions relating to new possibilities, and was composed of three strongly loaded items. The fourth factor accounted for 11.72% of the overall variance (Eigen value = 2.46). The fifth factor consisted of three strongly loaded items, and accounted for 11.04% of the variance. The fifth factor was composed of items relating to investing more energy into relationships. The five factor solution accounted for 67.93% of the overall variance (Eigen value = 2.32). Table 5 contains the rotated factor loading from the principal component analysis.

Table 5

<table>
<thead>
<tr>
<th>PTGI Item</th>
<th>Factor 1</th>
<th>Factor 2</th>
<th>Factor 3</th>
<th>Factor 4</th>
<th>Factor 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Changed my Priorities</td>
<td>0.154</td>
<td>0.131</td>
<td><strong>0.614</strong></td>
<td>0.321</td>
<td>0.133</td>
</tr>
<tr>
<td>2. Greater appreciation for life</td>
<td>0.353</td>
<td>0.404</td>
<td><strong>0.65</strong></td>
<td>0.077</td>
<td>0.131</td>
</tr>
<tr>
<td>3. Developed new interests</td>
<td>0.102</td>
<td>0.139</td>
<td>0.213</td>
<td><strong>0.828</strong></td>
<td>0.086</td>
</tr>
<tr>
<td>4. Greater feeling of self-reliance</td>
<td>0.069</td>
<td>0.33</td>
<td>0.249</td>
<td><strong>0.743</strong></td>
<td>0.103</td>
</tr>
<tr>
<td>5. Better understanding of spiritual matters</td>
<td>0.181</td>
<td>0.132</td>
<td><strong>0.808</strong></td>
<td>0.083</td>
<td>0.144</td>
</tr>
<tr>
<td>6. Can count on people in times of trouble</td>
<td><strong>0.79</strong></td>
<td>0.005</td>
<td>0.257</td>
<td>0.12</td>
<td>0.131</td>
</tr>
<tr>
<td>7. New path for life</td>
<td>0.17</td>
<td>0.199</td>
<td><strong>0.568</strong></td>
<td>0.44</td>
<td>0.231</td>
</tr>
<tr>
<td>8. Greater sense of closeness with others</td>
<td><strong>0.774</strong></td>
<td>0.101</td>
<td>0.27</td>
<td>0.059</td>
<td>0.101</td>
</tr>
<tr>
<td>9. More willing to express emotions</td>
<td><strong>0.576</strong></td>
<td>0.25</td>
<td>0.218</td>
<td>0.12</td>
<td>0.196</td>
</tr>
<tr>
<td>10. Can handle difficulties</td>
<td>0.108</td>
<td><strong>0.777</strong></td>
<td>0.179</td>
<td>0.149</td>
<td>0.256</td>
</tr>
</tbody>
</table>

*(table continues)*
Table 5 (cont.)

<table>
<thead>
<tr>
<th>PTGI Item</th>
<th>Factor 1</th>
<th>Factor 2</th>
<th>Factor 3</th>
<th>Factor 4</th>
<th>Factor 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>11. Do better things with life</td>
<td>0.161</td>
<td><strong>0.653</strong></td>
<td>0.384</td>
<td>0.16</td>
<td>0.203</td>
</tr>
<tr>
<td>12. Accept the way things work out</td>
<td>0.293</td>
<td><strong>0.671</strong></td>
<td>0.15</td>
<td>0.206</td>
<td>0.059</td>
</tr>
<tr>
<td>13. Better appreciate each day</td>
<td>0.428</td>
<td><strong>0.552</strong></td>
<td>0.404</td>
<td>0.051</td>
<td>0.058</td>
</tr>
<tr>
<td>14. New opportunities available</td>
<td>0.188</td>
<td>0.149</td>
<td>-0.059</td>
<td><strong>0.669</strong></td>
<td>0.06</td>
</tr>
<tr>
<td>15. Compassion for others</td>
<td>0.215</td>
<td>0.16</td>
<td>0.198</td>
<td>0.088</td>
<td><strong>0.784</strong></td>
</tr>
<tr>
<td>16. More effort into relationships</td>
<td>0.267</td>
<td>0.084</td>
<td>0.26</td>
<td>-0.016</td>
<td><strong>0.785</strong></td>
</tr>
<tr>
<td>17. Likely to change things needing change</td>
<td>-0.01</td>
<td>0.303</td>
<td>0.193</td>
<td>0.31</td>
<td><strong>0.734</strong></td>
</tr>
<tr>
<td>18. Stronger religious faith</td>
<td>0.214</td>
<td>0.194</td>
<td><strong>0.688</strong></td>
<td>-0.059</td>
<td>0.258</td>
</tr>
<tr>
<td>19. Stronger than once thought</td>
<td>0.064</td>
<td><strong>0.763</strong></td>
<td>0.076</td>
<td>0.309</td>
<td>0.132</td>
</tr>
<tr>
<td>20. Learned how wonderful people are</td>
<td><strong>0.788</strong></td>
<td>0.225</td>
<td>0.144</td>
<td>0.115</td>
<td>0.056</td>
</tr>
<tr>
<td>21. Better accept needing others</td>
<td><strong>0.608</strong></td>
<td>0.261</td>
<td>-0.133</td>
<td>0.354</td>
<td>0.389</td>
</tr>
</tbody>
</table>

*Note:* Factor loadings of .50 and above.

Possible group differences were explored between participants who received the STCE and the PTGI first initially, and those who first received the LEC and the IES-R. T-tests were calculated for the PGI total and subscale scores, IES total and subscale scores, and the number of traumas reported. No significant differences were found. Chi squared analyses were calculated for the reporting of physical abuse, sexual abuse and subsequent trauma to test for group differences between the different orders in which the participants received the questionnaires. Results were non-significant.

A Pearson product moment correlation was calculated to determine if age was related to posttraumatic growth endorsed by participants. Results were not significant (r(129) = -.07, p = .39). Univariate analyses of variance were utilized to assess if the other demographic factors were related to posttraumatic growth endorsed by the participants. Gender did not show a significant relation with posttraumatic growth, F(1, 131) = 0.04, p = .84. Given the small sample sizes within the various ethnic minority groups, participants were grouped into majority (Caucasian) or minority ethnicity (Hispanic, American Indian, Asian/Pacific Islander, African American, and “other”). Results yielded a significant relation between ethnicity (majority or
minority) and total posttraumatic growth, \( F(1, 131) = 5.63, p = .02 \). The minority group showed higher levels of posttraumatic growth (Majority: \( m = 45.59, SD = 23.06 \), Minority: \( m = 55.26, SD = 23.53 \)). Specific ethnicity group means and standard deviations for total posttraumatic growth scores are as follows: Caucasian (\( m = 45.59, SD = 23.06 \)), Hispanic (\( m = 56.67, SD = 17.36 \)), American Indian (\( m = 69.00, SD = 8.49 \)), Asian/Pacific Islander (\( m = 49.42, SD = 30.93 \)), African American (\( m = 57.69, SD = 18.89 \)), and other (\( m = 60.00, SD = 26.88 \)).

Relations between ethnicity (majority or minority) and specific subscales on the Posttraumatic Growth Inventory were examined using univariate analyses of variance. There was no relation between ethnicity and PTGI Factor 1 \( F(1, 131) = 1.25, p = .27 \), PTGI Factor 2 \( F(1, 131) = 1.65, p = .20 \), or the PTGI Factor 3 \( F(1, 131) = 3.11, p = .08 \). There were significant relation between ethnicity and the PTGI Factor 4 \( F(1, 131) = 7.79, p = .01 \) and the PTGI Factor 5 \( F(1, 131) = 6.62, p = .01 \). Participants within the minority ethnicity group reported higher levels on PTGI Factor 4 (Spiritual Change) and PTGI Factor 5 (Appreciation of Life).

Pearson product moment correlations and univariate analyses of variance were also used to assess possible relations between demographic variables and IES-R scores. No relations were evident between age \( (r(129) = -.07, p = .43) \), gender \( F(1, 131) = 0.43, p = .51 \), or ethnicity (majority or minority) \( F(1, 131) = 0.08, p = .78 \).

Correlations were used to assess if there was a relation between childhood abuse and later sexual assault. Significant relations were evident both between later sexual assault and history of childhood sexual abuse specifically \( (r(133) = .212, p = .014) \), as well as between later sexual assault and a history of any childhood abuse experiences, physical or sexual \( (r(133) = .171, p = .049) \).

Univariate analyses of variance were utilized to determine if a relation exists between
history of childhood sexual abuse and reaction to a subsequent trauma that is similar in nature to the initial trauma. Only those who indicated that they had experienced sexual assault post-age-16 were included in the analyses. Means and standard deviations of those with a history of childhood sexual abuse and those without a history of childhood sexual abuse on the IES-R Total and subscales are presented in Table 6. Those who had a history of childhood sexual abuse exhibited higher levels of symptomology following a later sexual assault compared to those without a history of childhood sexual abuse. Subscales of the IES-R were also examined. Those with a history of childhood sexual abuse indicated significantly higher levels of avoidance, intrusive thoughts and hyperarousal following a later assault experience than did those without a history of childhood sexual abuse.

Table 6

Descriptive Statistics for IES Scale among Those who Experienced Sexual Assault

<table>
<thead>
<tr>
<th>Variable</th>
<th>History of Abuse (n=11)</th>
<th>No History of Abuse (n=9)</th>
<th>Total (N=20)</th>
<th>Significance Testing</th>
<th>Effect Size</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
<td>Mean</td>
<td>SD</td>
<td>Mean</td>
</tr>
<tr>
<td>IES Avoidance Scale</td>
<td>2.36</td>
<td>0.88</td>
<td>1.43</td>
<td>0.79</td>
<td>1.94</td>
</tr>
<tr>
<td>IES Intrusions Scale</td>
<td>2.41</td>
<td>0.79</td>
<td>1.39</td>
<td>1.01</td>
<td>1.95</td>
</tr>
<tr>
<td>IES Hyperarousal Scale</td>
<td>1.82</td>
<td>1.1</td>
<td>0.74</td>
<td>0.84</td>
<td>1.34</td>
</tr>
<tr>
<td>IES Total Score</td>
<td>6.59</td>
<td>2.5</td>
<td>3.56</td>
<td>2.43</td>
<td>5.23</td>
</tr>
</tbody>
</table>
DISCUSSION

The first hypothesis of the present study proposed that those without a history of abuse would experience less symptomology following later trauma than those with a history of abuse. This hypothesis was supported by the present findings. Those with a history of childhood abuse experienced significantly higher levels of overall symptomology following a subsequent traumatic experience. Specific areas of symptomology were also considered. Those with a history of childhood abuse reported higher levels of avoidance behaviors, intrusive thoughts, and hyperarousal following a subsequent traumatic event than did those without a history of abuse.

The finding of higher symptomology among those with a history of childhood abuse is consistent with previous research. Koopman, Gore-Felton, Classen, Kim, and Spiegal (2001) found that those with a history of childhood sexual abuse experienced acute levels of stress responses even to minute stressors that did not prove to be traumatic in the comparison sample. Classen et al. (2002) found that among those with a history of childhood sexual abuse, experiences of dissociation, anxiety, sleep disturbances, and sexual problems were all associated with recent traumatic events. In addition, recent life stress was also related to hypervigilence, avoidance, and re-experiencing of past traumatic events. It is possible that the reason for higher levels of symptoms following subsequent negative experiences among those with a history of abuse is that these individuals may have dysfunctional or less well-developed coping skills than individuals how did not experience abuse in childhood.

For this study, it was also hypothesized that, among those with a history of abuse, posttraumatic growth would predict less symptomology following a subsequent trauma. No relation was evident between posttraumatic growth overall scores or subscales and symptomology following a later trauma. Cryder, Kilmer, Tedeschi, and Calhoun (2006)
explored the concept of posttraumatic growth among children who were displaced due to flooding. Results indicated that children did experience posttraumatic growth. However, the children were assessed only one year after the flooding occurred. The present study required participants to consider growth they experienced during childhood after they were in adulthood. It is possible that the present study participants’ retrospections were influenced by subsequent experiences. Therefore, although the posttraumatic growth may have had an impact on the participants’ reactions to subsequent traumas, their report of their reactions may have been highly influenced by the experiences they had after childhood.

Another explanation for the results not yielding a relation between posttraumatic growth and future symptomology following a trauma may be due to the nature of the measure with which posttraumatic growth was assessed. The Posttraumatic Growth Inventory consists of only positively worded items. Additionally, it is possible that the factors assumed to compose the construct of posttraumatic growth may not be an accurate conceptualization of growth following negative experiences (Sheikh and Marotta, 2005). Nonetheless, the factor structure revealed in the current analysis does suggest some construct validity.

Although relations were not evident between age or gender and posttraumatic growth, there was a significant relation between ethnicity and posttraumatic growth. Those indicating minority ethnicity reported higher levels of overall posttraumatic growth. The relation between ethnicity and posttraumatic growth was evident within overall posttraumatic growth as well as in spiritual change and appreciation of life. Participants of minority ethnicity reported higher levels of both spiritual change as well as appreciation of life. There was no significant relation between posttraumatic growth scales Relating to Others, New Possibilities, or Personal Strength.
A relation between ethnicity and posttraumatic growth was not seen in a study investigating levels of posttraumatic growth among cancer patients following bone marrow transplants (Widows, Jacobsen, Booth-Jones, & Fields, 2005). However, Milam (2004) noted a relation between ethnicity and posttraumatic growth among HIV and AIDS patients. Of the total sample, 54% reported experiencing positive changes in their lives following their diagnosis. Ethnicity was shown to be a factor affecting posttraumatic growth levels, with African American participants endorsing significantly higher levels of posttraumatic growth than European American participants. Given that different contexts appear to yield different ethnicity results, further research is necessary. However, it is possible that individuals from minority ethnicities may be more prone to turn a negative experience into a growth experience because of adversities that they may experience collectively among their ethnicity group. Some people in ethnic minority cultures may value turning negative experiences into positive experiences due to high levels of negative experiences.

A significant correlation was found between childhood abuse and later sexual assault, between both those with a history of childhood sexual abuse as well as among those with a history of any childhood abuse, physical or sexual. This finding is consistent with previous research (Noll, 2003; Irwin, 1999; Messman-Moore and Long, 2000; Gidycz, Coble, Latham, & Layman, 1993). Those with a history of childhood abuse may develop a self concept that allows them to be more vulnerable. Additionally, given their adverse childhood experiences, they may not have learned how to set healthy boundaries within a variety of different relationships. It is also possible that given their experiences in childhood, they are unaware of social cues that would indicate that their boundaries are being violated, allowing for them to be more susceptible to vulnerable situations. From a cognitive behavioral standpoint, these individuals may not view
themselves as deserving to be treated well, or may consider themselves an object for someone else’s needs. For instance, Ponce (2004) concluded that individuals with a history of violence maintain unhealthy and maladaptive cognitive schemas with regards to interpersonal relationships as compared to those without a history of violence.

Those with a history of childhood sexual abuse, when victimized during a sexual assault, have significantly higher levels of symptoms than those without a history of childhood sexual abuse. These individuals also experience higher levels of avoidance, intrusive thoughts, and hyperarousal following the sexual assault than those without a history of abuse who had been sexually assaulted. Results further support the findings of Classen et al. (2002), which indicated that a sensitization effect occurs among those with a history of childhood abuse, thus creating high levels of negative symptomology among those who have a history of childhood sexual abuse and who are sexual assaulted as adults. Although Koopman, Gore-Felton, Classen, Kim, and Spiegel (2001) did not specifically address childhood abuse and later sexual victimization, their research suggests that a history of childhood abuse can potentiate negative symptomology even in response to minor stressors. Given that minor stressors have been shown to produce negative symptomology, it stands to reason that an experience as traumatic as sexual assault would yield greater negative symptomology among those with a history of childhood abuse. The results of the present study provide further validity to the previous findings. It is likely that those with a history of childhood abuse show greater symptom levels following a later sexual assault than those without a history of childhood abuse, due to poorly developed coping skills that resulted following their childhood abuse experiences. Those who did not experience childhood abuse perhaps have developed more effective coping skills due to their more positive childhood experiences.
Clinical Implications

There are many implications for the findings within the present study. Those with a history of childhood abuse were shown to have higher symptomology following a subsequent traumatic experience, and yet these individuals are more prone to experience later traumas (Noll, 2003; Irwin, 1999; Messman-Moore, 2000; Gidycz, Coble, Latham, & Layman, 1993). It would be important for clinicians to be aware of the difficulties experienced by this population in order for them to have a greater conceptualization of their clients as well as provide direction toward important areas in which to focus during therapy. For instance, clinicians would likely want to focus on helping the client establish appropriate boundaries, assess nonverbal cues, and reframe how they are interpreting their interpersonal experiences. Likewise, clients with a history of abuse might benefit by becoming aware of the behavioral patterns that might increase their risk of experiencing later traumatic experiences, as well as their coping strategies following negative experiences. It would likely be beneficial for clients with a history of abuse to develop strategies for minimizing stressful events in their lives as well as developing the skills and resources to better handle their reactions to traumatic events, thus likely minimizing their symptomology.

The finding that there is a correlation between childhood abuse and later sexual assault has clear implications for clinicians. Clinicians should be aware of the propensity for those who were abused as children to be revictimized later in their lives. Clinicians should work with their clients to help identify problematic behaviors which could lead them to be further susceptible to victimization. Clinicians should help clients to develop the skills to set clear boundaries within relationships as well as say “no” when an unwanted sexual encounter is about to occur. Clinicians should also assist clients in developing behaviors and resources to better deal with further stressful or traumatic situations. Helping clients to develop the skills for anticipating
negative reactions would allow them to better process situations ranging from daily stressors to highly traumatic experiences.

The present research demonstrated a relation between ethnicity and posttraumatic growth. After further exploration of this relation, clinicians may be able to utilize various aspects of posttraumatic growth within the therapeutic relationship with differing client populations. For instance, given that results indicated that those in minority ethnicity groups report higher levels of spiritual change and appreciation of life, it may be beneficial for clinicians to help minority clients to work through traumatic experiences by focusing on the spiritual change that they may experience or the greater appreciation for life that they may subsequently develop.

Limitations of the Study

There were several limitations to the present study. First, due the nature of the sample used, the results may not be generalizable to the general population. Those included in the study were undergraduate students at a state university; therefore, they were likely relatively highly functioning. The resources that these students have to deal with stressful situations may be quantitatively or qualitatively different from the general population. Additionally, the ages of the study participants were primarily in their late teens and early 20’s. Reactions of those within this age range may not be representative of those of other ages.

Another limitation of the study involves having participants think retrospectively about growth they experienced following a childhood trauma, and symptoms they experienced following a subsequent traumatic experience. Although there were no statistical differences in responses depending upon the ordering of the surveys, requiring the participants to separate reactions to previous trauma and more recent trauma may have caused confusion. It may have
been difficult for participants to keep the separate timeframes in mind in order to accurately distinguish reactions to the separate experiences. Additionally, participants may have had difficulty distinguishing posttraumatic growth that occurred specifically in reaction to their childhood experiences.

A major limitation when considering posttraumatic growth is that the Posttraumatic Growth Inventory is positively biased. All 21 questions included in the inventory are positively worded, only allowing for participants to endorse an answer of “I did not experience this change,” but not allowing for participants to endorse negative experiences (i.e. statements of non-growth) they had following a traumatic event.

Another possible limitation of the study is the conceptualization of the factors included in posttraumatic growth. Sheikh and Marotta (2005) examined the validity of the Posttraumatic Growth Inventory by utilizing a sample of middle-aged to old-aged cardiovascular patients. Their findings do not support the five-factor model proposed by Tedeschi and Calhoun and utilized in the Posttraumatic Growth Inventory (Tedeschi & Calhoun, 1996). Also in contrast to Tedeschi and Calhoun’s assertion, Sheikh and Marotta’s study yielded only one component of the PTGI that subsumed the five scales and accounted for 56.2% of the total variance.

Directions for Future Research

Future research is warranted to investigate the construct of posttraumatic growth and the factors comprising it. Research should investigate the differing factors that constitute posttraumatic growth to determine if the five factor model is applicable among differing populations. Specifically, research could examine relation between ethnicity and posttraumatic growth. Research could assess the use of the concept of posttraumatic growth within therapeutic
relationships, assessing if posttraumatic growth can be encouraged through therapeutic intervention. This research could also assess if different areas of growth are more effective with specific ethnic populations, such as focusing on spiritual development and increasing appreciation of life.

Additional research may also consider the relation between therapy and posttraumatic growth, assessing if therapy focusing on helping those with a history of abuse develop posttraumatic growth. These skills of assessing situations in terms of growth may be helpful in assisting clients to better deal with future stressful events, allowing them to experience fewer symptoms.

To minimize the possible confusion caused by participants reporting reactions to past experiences, a longitudinal study may better assess such reactions. A future longitudinal study would allow for participants to be assessed following an initial trauma, and then again following a subsequent trauma, thus allowing for the points of confusion and ambiguity to be eliminated.

A beneficial study would involve the longitudinal analysis of the concepts assessed in the present study. Participants could be recruited prior to the age of sixteen, so as to minimize confusion related to which traumatic events caused which reactions. Participants could be given a measure to assess the presence of childhood abuse as well as measures to assess both positive and negative reactions to such abuse experiences. Cryder, Kilmer, Tedeschi, and Calhoun’s study (2006) indicates that it is possible to measure posttraumatic growth among children. Therefore, this concept would be measured during childhood to lessen potential problems with retrospection. Participants could then be assessed at five year intervals for the presence of traumatic experiences since the prior assessment as well as the reactions, both positive and negative, to the traumatic experiences.
An additional component that would also be beneficial to include in the longitudinal study would be to distribute participants into a traditional therapy treatment group, a posttraumatic growth therapy group, and a control group. Those in a posttraumatic growth therapy group could focus on turning negative experiences into growth opportunities. After participants completed the therapeutic interventions, measures of negative and positive reactions to traumatic experiences could be readministered allowing for the changes in how an individual views their traumatic experiences to be assessed.

Given the results of the present study, it is likely that those with a history of abuse in such a study would experience greater symptomology following subsequent traumas. However, the proposed study could assess the role of therapy, traditional or therapy focusing on posttraumatic growth, in how individuals experience successive traumas. It would also be beneficial for the study to assess for ethnicity differences and posttraumatic growth among participants. Ethnicity has been shown to be related to posttraumatic growth in some previous studies, and other studies have not yielded a relation between ethnicity and posttraumatic growth. This future study would allow for the relation to be examined further, allowing for the determination if the relation exists as well as to assess the role that therapy focused on posttraumatic growth might have on differing ethnic groups.

Results may indicate that those with a history of abuse are better able to handle subsequent negative experiences following therapeutic intervention specifically aimed at encouraging posttraumatic growth. Given these findings, clinicians would be better able to assist these individuals following childhood abuse experiences. Additionally, if the relation between ethnicity and posttraumatic growth is further supported, clinicians would be better equipped to specify their treatments to their particular client.
Demographics

Instructions: I would appreciate you providing the information about yourself that is requested below. Since I am not interested in the reactions of individual examinees, please do not write your name on this form.

Sex: M _____ F ______ Age: ________


Number of Children: ______________ Ages of Children:
___________________________________________________________________

Ethnicity (circle one):
Caucasian     Hispanic     American Indian     Asian/Pacific Islander     African American
Other (please specify) _________________________

Education (Circle current classification):

Freshman     Sophomore     Junior     Senior     Graduate Student

Highest level of education completed by your mother:

Junior High     High School     College     Graduate School

Highest level of education completed by your father:

Junior High     High School     College     Graduate School

Parent’s Occupations (please list)
Mother: ___________________________
Father: ___________________________
APPENDIX B

INFORMED CONSENT
Before agreeing to participate in this research study, it is important that you read and understand the following explanation of the purpose and benefits of the study and how it will be conducted. You must be 18 years of age or older to participate in this study.

Title of Study: History of Childhood Abuse and Posttraumatic Growth’s Effects on Reactions to Subsequent Traumatic Events
Principal Investigator: Stephanie Bezner, a graduate student in the University of North Texas (UNT) Department of Psychology.

Purpose of the Study:
You are being asked to participate in a research study. The purpose of this study is to examine how those with and without a history of abuse experience later stressful experiences.

Study Procedures:
You will be asked to fill out five questionnaires that will take approximately 30 minutes of your time. Questionnaires will ask questions regarding stressful or traumatic experiences that you may or may not have had. Questions will also focus on experiences that you may or may not have had after a stressful or traumatic experience.

Foreseeable Risks:
In completing the materials, a foreseeable risk is that you may feel some distress, psychologically and/or physically. These risks are minimal and will not be expected to go beyond stress typically experienced in recounting past experiences. However, should you feel distress, it should only be temporary and should decline over a relatively short time period. Should persistent or severe distress occur please call the number listed at the end of this form to obtain assistance.

Benefits to the Subjects or Others:
The more professionals know about child abuse, the better equipped they are to effectively help those having experienced child abuse.

Compensation for Participants:
Students will receive credit for research credit as compensation for participation in this study.

Procedures for Maintaining Confidentiality of Research Records:
The materials you are about to be complete do not require any personal information, with the exception of this Informed Consent Form. In order to keep the information on this Informed Consent Form confidential, as soon as the packet is returned to the examiner the Informed Consent Form will be immediately removed from the packet. Your name and package code will be logged on a master log. The Informed Consent Form and master log will be placed in separate files. The files will be placed in a locked cabinet in Terrill Hall, at the University of North Texas. The remaining materials will be located in a locked cabinet in a separate research room at the University of North Texas. No information about an individual participant derived from this study will be given to any person or group.
outside of the primary investigator or Dr. Sewell. The confidentiality of your individual information will be maintained in any publications or presentations regarding this study.

Questions about the Study
If you have any questions about the study, you may contact ________ at telephone number ________ or ________ , UNT Department of ________, at telephone number __________. Should persistent or severe distress occur, please call the UNT Counseling and Testing Center at ________ to obtain assistance.

Review for the Protection of Participants:
This research study has been reviewed and approved by the UNT Institutional Review Board (IRB). The UNT IRB can be contacted at (940) 565-3940 with any questions regarding the rights of research subjects.

Research Participants’ Rights:
Your signature below indicates that you have read or have had read to you all of the above and that you confirm all of the following:

- Stephanie Bezner has explained the study to you and answered all of your questions. You have been told the possible benefits and the potential risks and/or discomforts of the study.
- You understand that you do not have to take part in this study, and your refusal to participate or your decision to withdraw will involve no penalty or loss of rights or benefits. The study personnel may choose to stop your participation at any time.
- You understand why the study is being conducted and how it will be performed.
- You understand your rights as a research participant and you voluntarily consent to participate in this study.
- You have been told you will receive a copy of this form.

________________________________                                ____________
Signature of Participant                                     Date

For the Principal Investigator or Designee:
I certify that I have reviewed the contents of this form with the participant signing above. I have explained the possible benefits and the potential risks and/or discomforts of the study. It is my opinion that the participant understood the explanation.

________________________________________                ____________
Signature of Principal Investigator or Designee  Date
General Instructions

This survey contains questions that addressing previous stressful experiences that you may have had. It is very important that you answer the questions honestly and candidly.

Your cooperation in assisting me to complete this project is greatly appreciated.

The following pages contain different sets of questions. For each set of questions there will be different instructions. Please make sure that you read and follow each set of instructions.

If you feel any distress while completing the survey please do not hesitate to contact the following persons:

Investigator: Stephanie Bezner
Supervising Psychologist: Dr. K. Sewell
REFERENCES


