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AN EXAMINATION OF THE EFFECTS OF TRAUMATIC EVENTS ON PSYCHOLOGICAL AND PHYSICAL HEALTH SYMPTOMS: TESTING A TRANSACTIONAL APPROACH

By

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ABSTRACT

AN EXAMINATION OF THE EFFECTS OF TRAUMATIC EVENTS ON PSYCHOLOGICAL AND PHYSICAL HEALTH SYMPTOMS: A TRANSACTIONAL APPROACH

By

Mariam R. Mourad

Objective: The main purpose of the current study was to examine the development of psychological and physical health symptoms in female survivors of interpersonal traumatic events using both a variable- and person-centered approach. The study assessed the influential relationship of characteristics of the traumatic event, the survivor's personality and environmental stressors to the development of these health outcomes (psychological and physical health symptoms) using Sameroff's transactional model. Based on Herman's trauma theory, this study also sought to determine if there was a difference between the experience of interpersonal (IPT) and non-personal traumatic events (NPT). **Method:** The current study examined a female college population from a Midwestern university that had experienced IPT (N=279), NPT (N=1165), and no trauma (N=362). Due to the different methodological approaches used in this study, data was analyzed using both structural equation models and cluster analyses. The transactional model was examined using structural equation models to assess the relationship between the different survivor domains and her psychological and physical health outcomes. An exploratory cluster analysis was conducted using a combined approach (initial agglomerative hierarchical and k-means iterative clustering procedures) for the person-centered section of this study. **Results:** Study findings indicated that survivors of IPT had significantly higher levels of all psychological and most physical health symptoms than

the NPT and no trauma group. However, significant differences between the IPT and NPT groups were not found for serious medical conditions. The transactional model was rejected for all trauma models explored, instead mediation models best accounted for the relationship between survivor characteristics and health outcomes. It was found that characteristics of an IPT were predictive of physical health symptoms through the presence of survivor personality, environmental stressors and psychological functioning. Post hoc analyses demonstrated that there were no characteristics that predicted physical health in the NPT survivor. Combination of the two forms of traumatic events was found to yield differing results than when they are examined separately. In regards to exploratory analyses, it was found that low levels of trauma characteristics, environmental stress, and certain personality factors were associated with resilient groups of IPT survivors. **Conclusion:** The current study suggests that the development of health problems in the survivor of an IPT is based on their perceptions of the world and their stressors after the traumatic event. Results indicate that there are significantly different consequences for survivors of IPT and NPT, suggesting a need to examine these groups separately in future research. The current study provides information as to the physical health repercussions of IPT and its relationship to psychological symptoms. These findings imply a need for clinicians to assess for physical health and as an indicator of the impact of the IPT on the survivor. Naturally occurring profiles suggest that certain constellations of the survivor's personality and environmental stressors are associated with a resilient profile for these women. These groupings can inform the development of useful clinical interventions for this population.

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INTRODUCTION

Prevalence rates of traumatic events in community samples indicate that more than half of the individuals reported exposure to at least one traumatic event in their lifetime (e.g., National Comorbidity Survey: Kessler, Sonnega, Bromet, Hughes, & Nelson, 1995). Some of the most common traumatic events experienced by both men and women were accidents, natural disaster with fire, and witnessing someone being killed or badly injured, and for women, specifically, rape and sexual molestation (Kessler et al., 1995). The experience of a traumatic event can have many detrimental consequences on the well-being of the survivor, including effects on psychological and physical health.

Most of the research regarding the effects of traumatic experiences on survivors has been on psychological reactions to traumatic events. Traumatic experiences are associated with symptoms of not only post-traumatic stress disorder (PTSD: Herman, 1992; Levendosky & Graham-Berman, 2001) and acute stress disorder (ASD: Kaplan, Matar, Kamin, Sadan, & Cohen, 2005), but also other anxiety disorders (Freeman et al., 2002; Leskin & Sheikh, 2002; Maes, Mylle, Delmeire, & Altamura, 2000; Zayfert, DeViva, & Hofmann, 2005), and depression (Carlson, McNutt, & Choi, 2003; Herman, 1992). A burgeoning literature has begun to discuss the relationship between physical health problems and exposure to traumatic events (e.g. Gill & Page, 2006; Spertus, Yehuda, Wong, Halligan, & Seremetis, 2003). Individuals with a history of traumatic experiences are more likely to report somatic and/or medical problems than individuals without such histories (Gill & Page, 2006; Leserman et al., 1996). Some of the medical problems found to be associated with the experience of a traumatic event include gastrointestinal, cardiopulmonary conditions (Golding, 1994), and bodily pains

(Leserman et al., 1996). These physical health consequences may be due to lower immune system functioning in persons with a history of traumatic experiences (Gill & Page, 2006).

While it is clear that exposure to a traumatic event is associated with psychological and physical health problems (health outcomes), there has been relatively little research examining the two symptom domains simultaneously (e.g. Dirkzwager, Grievink, van der Velden, & Yzermans, 2006; Gill & Page, 2006; Zoellner, Goodwin, & Foa, 2000). A major question that arises is what are the characteristics associated with the traumatic event, the individual, and the environment and their relationships to one another that differentially predict psychological versus physical health problems in survivors of traumatic events.

The current study examines the relationship between traumatic events and psychological and physical health consequences in a female college sample. This study explores which characteristics of the individual, the environment, and the traumatic event contribute to these consequences using both a variable-centered and a person-centered approach. In addition, this study explores the differences in psychological and physical health consequences based on the type of traumatic event experienced, interpersonal or non-personal (see next section for definition). Of specific interest in this study are women who have experienced interpersonal traumatic event(s). Although all traumatic events can have negative effects on the survivor and can affect the survivor's beliefs, the intentional harm caused by another person in an interpersonal traumatic event is theorized to have more detrimental effects on the way the person views herself, others, and her environment (Herman, 1992). The transactional model of development (Sameroff, 2000)

is utilized as a framework for conceptualizing the way the characteristics of interpersonal traumatic event transact with characteristics of the individual and environmental to influence the manifestation of psychological and/or physical health problems. A variable-centered approach is utilized for this component of the project. In addition, exploratory cluster analyses are conducted to determine survivor groupings which naturally arise based on particular profiles of the characteristics of the interpersonal traumatic event, the individual, and the environment. This is a person-centered approach to examining the differential effects of interpersonal traumatic events on female survivors.

Definition of a Traumatic Event and Trauma

This study is using the DSM-IV-TR definition of a traumatic event which is as follows: "experienced, witnessed, or was confronted with an event or events that involved actual or threatened death or serious injury, or a threat to the physical integrity of self or others " (American Psychological Association, 2000). Events that can be classified as traumatic can fall into one of two categories: interpersonal and non-personal. An interpersonal traumatic event (IPT) includes direct perpetration by another person towards the survivor such as childhood sexual or physical abuse, rape, sexual assault, experiencing or witnessing intimate partner violence. A non-personal traumatic event (NPT) does not include intentional or direct perpetration by others, e.g. accidents and natural disasters (Ford, Stockton, Kaltman, & Green, 2006).

The term trauma is commonly utilized to describe the experience of psychological distress within the literature. However the experience of a traumatic event can be conceptualized as differing from trauma. As will be discussed, although exposure to a traumatic event is common, not all survivors of these events display the detrimental

reaction to the event. It is thus important to distinguish between persons that have experienced a traumatic event and those that are traumatized, thus displaying negative consequences from the experience. The current study will define trauma as the experience of a traumatic event followed by the presence of negative outcomes for the survivor. Although psychological consequences are most commonly examined in the literature assessing the influence of traumatic events on survivors, the current study will also examine physical health consequences. Trauma will thus be defined as the display of psychological and/or physical health consequences after the experience of a traumatic event.

Type of traumatic event, prevalence rate, and gender differences

It was previously noted in the Diagnostic Statistical Manual-IIIR (DSM-IIIR: American Psychological Association, 1987) that the experience of a traumatic event based on the above definition would be outside of the normal human experience. However, surveys assessing rates of traumatic events have since disputed this idea. In the National Comorbidity Sample, Kessler and colleagues (1995) found that 61% of men and 51% of women have been exposed to at least one traumatic event in their lifetime. They found that 5-14% of women and 10-15% of men reported exposure to two or more traumatic events. Their sample endorsed a range of traumatic events, and gender differences were found regarding type of trauma. Men reported significantly more exposure to witnessing someone being harmed or killed, being in a life-threatening accident, natural disaster, and being threatened with a weapon or physically attacked. In contrast, women reported significantly higher levels of sexual molestation, rape, childhood abuse or neglect. Thus, women were more likely to have experiences involving

perpetration of violence against her by another person, i.e. interpersonal traumatic events (Breslau, Chilcoat, Kessler, Peterson, & Lucia, 1999a; Bureau of Justice Statistics, 2002; Kessler et al., 1995; Moser, Hajcak, Simons, & Foa, 2007). In addition, women were more likely than men to know the perpetrator of the IPT they experienced. For example, 84% of sexual assaults against women are found to be perpetrated by persons that the victim knows (Saunders, Kilpatrick, Hanson, Resnick, & Walker, 1999).

According to the National Comorbidity Survey, the most common traumatic events experienced for both men and women were accidents and natural disasters involving fire (Kessler et al., 1995). Similar to women exposed to IPTs, women exposed to NPTs have also been found to display higher negative health outcomes than men (Benight, Swift, Sanger, Smith, & Zepplin, 1999; Briere & Elliott, 2000; Wolfe, Schnurr, Brown, & Furey, 1994; Yehuda, Schmeidler, Siever, Binder-Brynes, & Elkin, 1997). These studies all provided support that women are also more likely to experience psychological and physical health symptoms as a result of the traumatic event than men. Kessler et al. (1995) found that women were twice as likely to be diagnosed with the traumatic event related disorder, i.e. PTSD, than men. The effect of a traumatic event on women is also found regarding physical health conditions. Studies found that women suffering from PTSD were 2.5 to 4.5 times more likely to experience medical problems than women without a PTSD diagnosis (Brewin, Andrews, & Valentine, 2000; Gill & Page, 2006).

Considering the high rates of negative consequences for women exposed to a traumatic event, it would be beneficial to focus on women to understand the influence of the traumatic event type on psychological or physical health symptoms. Identification of

differences in symptoms for women based on the domain for which the traumatic event falls, interpersonal or non-personal could provide further understanding of the way in which women respond to trauma. In light of recent traumatic national events for which U.S. residents have been exposed, e.g. Hurricane Katrina, the attack on the World Trade Center on 9/11/01, examining the different health responses displayed from types of traumatic events would be valuable for intervention.

Trauma Theory

Trauma theory, as developed by Herman (1992), can be applied to understand why physical and/or psychological health consequences arise for individuals exposed to traumatic events. According to the DSM-IV-TR, a traumatic event involves a situation in which the person perceives a threat to the life of or physical integrity of the self or others. As a result of this perception, in order to receive a diagnosis of PTSD, the person must experience intense fear, helplessness, or horror (American Psychological Association, 2000). Herman (1992) proposes that the level of fear experienced from the event may alter the survivor's sense of self and level of functioning (Herman, 1992). During the traumatic event the person may become conscious that she is vulnerable to injury or death, through natural disasters or at the hands of others. The nature of the relationship with the perpetrator prior to the event can also affect the survivor's reaction. If the person was a once-trusted individual, the abuse may raise confusion for the person in the way that she perceives roles in relationships and identification of safety in the environment. It is through the realization of the tenuous nature of one's own safety that the survivor may begin to doubt her own perceptions, trust in others, and the environment in general (Ebert & Dyck, 2004; Herman, 1992).

The level of fear experienced at the time of the traumatic event can be a great shock to the person's state of mind and can shatter the person's fundamental assumptions such as, people are ultimately good and would not harm others, or the world is a safe place (Ebert & Dyck, 2004; Herman, 1992). Violation of these basic beliefs due to a traumatic experience can lead to a variety of questions including how and why the traumatic event occurred. The experience of being hurt by others may also make the survivor wonder if she is vulnerable to further harm or in the case of perpetrated trauma- if people are ultimately untrustworthy (Ebert & Dyck, 2004).

These stark fears can corrupt the survivor's previously held fundamental truths which may eventually lead to a dramatic change in her definition of the self or others (Bloom, 1997). Thus, the traumatic event may leave the survivor with the struggle of how to perceive the world in light of her experiences. The overwhelming fear associated with these cognitions can alter the survivor's willingness to trust her own intuition about people or her trust of others. The internalization of the blame or fear possibly from the traumatic experience may lead to the development of other psychological disturbances (Olff, Langeland, & Gersons, 2005).

Trauma theory can also be applied to explain the physiological responses to the traumatic experience. The experience of a traumatic event can influence the survivor's physical state and responses to the environment. Exposure to average levels of stress results in the activation of the sympathetic nervous system (SNS), however a traumatic event places the human body and mind in a more severely stressed state. Such a shock to the human system can influence the functioning of different arousal mechanisms (Tosevski & Milovancevic, 2006; Woods et al., 2005). The body may release abnormally

high levels of biochemical messengers such as adrenaline, cortisol, and endorphins which function to suppress the autoimmune system. This may explain the somatic/medical problems reported by persons who had suffered a traumatic event.

In terms of traumatic events that occur at critical development periods such as childhood, Bloom (1997) suggests the survivor's reaction to the traumatic event may be influenced by her post-traumatic event environment. Considering the extreme stress of a traumatic event, its arousal of the SNS, and children's developing coping mechanisms, children may not be able to soothe themselves after such an experience. Thus it is important for caretaking adults to provide soothing responses for the child at this time. The lack of such aid may result in chronic hyperarousal of SNS leading to physical health problems. This component of trauma theory explains the effects of the traumatic events on physical health, in addition to the importance of adequate parenting/social support on the traumatized individual's health outcomes. This perspective can also be applied to survivors of adulthood traumatic events. The survivor of an interpersonal traumatic event is more likely to have a fear of others since her experiences were perpetrated by another person, possibly a close relationship. As such, the support received from a social network after the high level of stress and fear associated with a traumatic event, may aid the survivor to decrease their fears of others and arousal of the SNS. Based on this theory, the survivor's experiences after the traumatic event can have a large impact on the psychological and physical health outcomes.

Psychological Health and Traumatic Events

Based on trauma theory the distress caused by the experience of a traumatic event can alter the survivor's psychological functioning. The psychological disruption can

manifest itself in different ways for the survivor. According to trauma research the four psychological conditions most associated with the experience of a traumatic event include PTSD, ASD, anxiety, or depression (Carlson et al., 2003; Freeman et al., 2002; Herman, 1992; Kaplan et al., 2005; Levendosky & Graham-Berman, 2001; Zayfert et al., 2005).

Posttraumatic Stress Disorder

The psychological condition discussed most frequently in trauma literature is that of PTSD. This condition PTSD was developed to classify symptoms specific to the experience of a traumatic event (APA, 2000). These disturbances are categorized into three domains including reexperiencing elements of the traumatic event, avoidance of traumatic event related stimuli, and hyperarousal to reminders of the event. Although PTSD symptoms may commonly appear directly after exposure to a traumatic event, the persistence of these symptoms for at least one month after the event is necessary for diagnosis of PTSD (APA, 2000).

The rates of PTSD in women from the National Comorbidity sample that have experienced a traumatic event are 10.4% (Kessler et al., 1995). These rates were similar to the 13.8% found in another study examining PTSD rates solely in women (Breslau, Davis, Peterson, & Schultz, 1997). Numerous studies have focused on the development of PTSD in women from interpersonal traumatic events, e.g. childhood sexual and physical abuse, adult sexual abuse, and domestic violence (Breslau et al., 1999b; Darves-Bornoz et al., 1998; Johnson, Pike, & Chard, 2001) and from non-personal traumas e.g. flood, coal mining accidents, and motor-vehicle accidents (Maes et al., 2000; Strelau & Zawadski, 2005; Yehuda et al., 1997).

When examining prevalence rates of PTSD, Kessler et al. (1995) reported that all forms of trauma, interpersonal and non-personal, were qualifying events for the development of PTSD. However, the likelihood of developing PTSD from IPT in comparison to NPT has rarely been examined in the literature (Breslau et al., 1999a). In the few instances where it has been assessed, significant differences were found between the trauma types and their relation to PTSD. Breslau and colleagues found that a single incident of IPT had a higher likelihood of resulting in PTSD while only repeated NPT experiences were related to higher risk for PTSD (1999a). These findings contributed to the recognition that not all experiences of traumatic events have the same consequences for the survivor. More literature is needed to examine the differences between these two groups in regards to PTSD symptoms and other health consequences for the trauma survivors.

Clearly, based on the prevalence rates of PTSD, most individuals exposed to a traumatic event do not meet criteria for PTSD (Kessler et al., 1995). Fewer studies have examined the effects of various forms of traumatic events on the development of PTSD symptoms, rather than the actual diagnosis (Lauterbach & Vrana, 2001). However, there has been research to suggest that although traumatized individuals may not meet full criteria for PTSD, they may display PTSD symptoms (Amir, Kaplan, & Kotler, 1996; Bramsen, Dirkzwager, & van der Ploeg, 2000; Lauterbach & Vrana, 2001). Research has found that PTSD symptoms can also arise after the experience of an interpersonal (Lucenko, Gold, & Cott, 2000; Nisith, Mechanic, & Resick, 2000) or a non-personal traumatic event (Strelau & Zawadski, 2005; Yehuda et al., 1997). The high rates of PTSD symptoms associated with various forms of traumatic events along with the low rates of

full PTSD diagnosis in traumatized samples indicate a need to examine symptoms as well as the full-blown clinical syndrome in future research.

For example, one prospective study, Cortes and colleagues (2005) examined the effects of interpersonal traumatic events on PTSD symptoms on children and adolescents. They reported that the presence of avoidance/numbing and hyperarousal cluster of PTSD symptoms were most predictive of further psychological disturbances, i.e. another anxiety disorder diagnosis after the traumatic event. In addition, the persistence of re-experiencing symptoms at later assessment times was predictive of future anxiety disorders (Cortes et al., 2005). These findings indicate that examination of the separate PTSD symptoms can be informative regarding the survivor's future psychological functioning. Previous research has indicated that children and adolescents may display PTSD symptoms differently than adults (APA, 2000; Terr, 1981). As this study only examined PTSD symptoms in children and adolescents, it would be useful to also assess the display of PTSD symptoms in adult samples in relation to further psychological functioning.

Acute Stress Disorder and Dissociation

The DSM-IV diagnosis of acute stress disorder (ASD: APA, 2000) was also developed to categorize symptoms specific to the experience of a traumatic event. Some ASD diagnostic criteria are similar to those of PTSD, such as exposure to a traumatic event, reexperiencing, avoidance, and hyperarousal symptoms, however there are two main distinctions. The first is that a diagnosis of ASD requires the presence of dissociative symptoms during or after the traumatic event (APA, 2000). Second, the duration of all presented symptoms must be less than 4 weeks after exposure to the

traumatic event, since persistence of most of these symptoms past 4 weeks can translate to a diagnosis of PTSD. Some research states that ASD is considered a predecessor to the development of PTSD (Elklit & Brink, 2004). In an assessment of the predictive ability of ASD for PTSD in physical assault victims, it was found that ASD symptoms were predictive of 79% of subsequent PTSD cases (Elklit & Brink, 2004), indicating the importance of assessing for ASD in addition to PTSD. These rates indicate that there is a group of individuals who do not develop PTSD after experiencing ASD. Hence it is still important to assess for ASD separate from PTSD symptoms.

As a major distinctive symptom of ASD is the presence of dissociation during or after the event, there have been numerous studies that have examined this key symptom in relation to the experience of a traumatic event (Banyard & Williams, 1996; Johnson et al., 2001; Leahy, Pretty, & Tenenbaum, 2004; Maercker, Beauducel, & Schutzwohl, 2000; Sanders & Moore, 1999). Dissociation has been consistently found to be associated with the severity of the traumatic event (Johnson et al., 2001; Leahy et al., 2004; Maercker et al., 2000). For example, Johnson and colleagues (2001) examined the relationship between dissociation, psychological symptoms of PTSD, and depression in childhood sexual abuse survivors. They found that dissociation significantly predicted psychological symptom severity for both PTSD and depression and that traumatic event severity was predictive of dissociation. However, this study did not examine the other symptoms of ASD in relation to PTSD and depressive symptoms.

Although not everyone meets for full diagnosis of ASD, display of the symptoms of ASD such as dissociation can be indicative of other poor health functioning in the survivor. These findings support the need to examine symptoms of acute stress disorder

rather than only the full diagnosis. Many of the studies examining ASD symptoms have discussed it in relation to IPTs. Although there has been some research regarding ASD symptoms in NPTs (Marmar et al., 1994; Ursano et al., 1999; van der Velden et al., 2006; Wittmann, Moergeli, & Schnyder, 2006) there is no research comparing ASD symptom levels for IPT and NPT both traumatic event groups. It is important to assess if there are differences between the levels of ASD displayed by persons that have experienced different traumatic experiences.

Anxiety

According to the DSM-IV, PTSD and ASD are categorized as anxiety disorders (APA, 2000), however they are the only two disorders specific to the experience of a traumatic event, thus they are often examined separately in the trauma literature from other forms of anxiety. The experience of a traumatic event has also been related to the development of non-trauma specific anxiety disorders and symptoms such as generalized anxiety disorder, social phobia, and panic disorder (Freeman et al., 2002; Leskin & Sheikh, 2002; Maes et al., 2000; Zayfert et al., 2005). For example, one study reported that traumatized children experiencing PTSD symptoms were 25 times more likely to develop an anxiety disorder than the children that did not display PTSD symptoms (Cortes et al., 2005). As a result, some studies have examined anxiety disorders and symptoms in survivors in relation to the presence or absence of a PTSD diagnosis or PTSD symptoms.

Some of the trauma research focused on anxiety has examined the presence of PTSD with the development of specific anxiety disorders. Leskin and Sheikh (2002) found that more than half of the women that displayed panic disorder and PTSD together

reported histories of sexual abuse. These findings indicate that IPT, especially sexual abuse, is highly related to the development of panic disorder as well as PTSD. Although rates of sexual victimization were reported for the sample, analyses were conducted using all forms of traumatic events. Another anxiety disorder examined in relation to traumatic events and PTSD is social phobia. Zayfert, DeViva, and Hofmann (2005) found that in a sample of individuals exposed to a traumatic event 43% of individuals diagnosed with PTSD later developed social phobia. These results suggest that a relationship between anxiety disorders and traumatic events when PTSD is present.

Research has also examined the association between anxiety disorders and non-personal traumatic events (Freeman et al., 2002; Maes et al., 2000). Maes and colleagues (2000) examined the risk factors associated with the development of newly diagnosed anxiety disorders after the experience of a fire or motor-vehicle accident. They found that about 23% of the sample could be diagnosed with a new onset of generalized anxiety disorder or agoraphobia. These rates increased to 46% when limiting the sample to persons that also met criteria for PTSD. Surprisingly, the presence of a PTSD diagnosis was not one of the strongest predictors of a new-onset anxiety disorder diagnosis. Further examination of risk factors for the new-onset of an anxiety disorder was horror from the traumatic event, extent of physical injury, loss of control during event, and female sex. The increased incidence of new-onset anxiety disorders suggests that the risk factors for generalized anxiety disorder and agoraphobia are similar to those for PTSD. These findings support the importance of examining specific characteristics of traumatic events in relation to psychological functioning. Results from this study also provide evidence for

the need to examine anxiety disorders as the experience of a traumatic event itself can influence anxiety symptoms regardless of the presence of PTSD.

As demonstrated by the previous research, characteristics of the events may also influence the anxiety symptoms in survivors; the current study will examine the relationship between traumatic event characteristics and anxiety symptoms. In addition, many of the studies conducted regarding anxiety have examined specific disorders in relation to specific traumatic events, e.g. sexual abuse. Few studies have also examined if exposure to different types of traumatic events are related to different levels of anxiety symptoms (Cortes et al., 2005). Due to the high rates of exposure to traumatic events and low prevalence rates of full anxiety disorders in non-clinical samples, it is important to assess for anxiety symptoms in survivors.

Depression

In addition to conditions categorized as anxiety disorders, survivors of traumatic events have also been found to display depressive symptoms and disorders (Breslau et al., 1997; Johnson et al., 2001; Kessler et al., 1995). Studies of childhood abuse have consistently noted the development of depression in survivors (e.g., Bernet & Stein, 1999; Gladstone et al., 2004; Lang et al., 2003; Saunders et al., 1999). For example, a study examining incidence rates of psychological disorders in victims of childhood sexual abuse (CSA) found that victims were 2 times more likely to have a lifetime diagnosis of depression and 3 times more likely to suffer from depression at the time of the interview than non-CSA victims (Saunders et al., 1999). These findings were also found for victims of childhood physical abuse (Bernet & Stein, 1999). These rates suggest that there is an association between the experience of a traumatic event and the

presence of depressive symptoms. Results were corroborated by Saunders and colleagues (1999) who found that depression is not only linked to traumatic experiences at the time of the event but also over the lifetime. However, this study focused solely on the traumatic event of CSA. It is important to expand on this research and examine the relationship between more types of interpersonal (and non-personal) traumatic events and depression.

As is the case for anxiety disorders, depressive symptoms in traumatized individuals are also often assessed in relation to the presence or absence of PTSD throughout the literature. Breslau and colleagues (1997) found depression to be the most prevalent comorbid disorder with PTSD. 43.2% of the women exposed to traumatic events in this sample met criteria for PTSD and Major Depressive Disorder. The presence of PTSD has also been found to increase depression ratings in a sample diagnosed with Major Depressive Disorder (Oquendo et al., 2005). Other studies have found that preexisting depression influenced rates of PTSD through an increased probability of traumatic event exposure (Breslau et al., 1997). These findings suggest that the depression is not only affected by the experience of a traumatic event but can also serve an influential role in regards to the development of other psychological conditions. Due to the strong relationship between these two conditions, it is important to examine both depression and PTSD together.

Based on past research, the presence of depression appears to be highly associated with the experience of a traumatic event (e.g. Saunders et al., 1999). However, as with other disorders, it is important to assess for symptoms rather than mere diagnosis. In addition, more research on the effects of various forms of traumatic events on depressive

symptoms is needed to understand the relationship between those experiences and the survivors functioning.

There has been an abundance of research that has demonstrated that the experience of a traumatic event can affect the survivor's psychological well-being in the form of trauma specific anxiety or depressive symptoms. Although it is beyond the scope of the current study to attempt to distinguish between the common symptoms of each disorder, it is recognized that many co-occur with one another especially after a traumatic event. Due to the high levels of comorbidty between psychological symptoms, the current study proposes to examine the symptoms from all of these categories and to assess what characteristics of the traumatic event and the survivor's experiences influence the overall psychological functioning of survivors.

It has been evident from trauma literature that different forms of traumatic events can influence the development of psychological conditions and their symptoms for both IPT and NPT. However, there has been little consideration as to whether these symptoms occur at different levels for each group or what factors are associated with their development. The few studies that have compared them have found that psychological consequences of IPT occur at higher levels than from NPT (Breslau et al., 1999). But as noted before, these comparisons have not been made with regards to all psychological conditions associated with traumatic experiences. Therefore it is important to determine if the type of traumatic event will influence the levels of these psychological conditions. Based on trauma theory's postulation that IPT can have more detrimental consequences than NPT because of the perpetration by others it is hypothesized that IPT will result in higher levels of psychological symptoms than NPT. Although there is research that

examines the different factors associated with the psychological functioning of IPT survivors, there are still many questions as to which factors are associated with the development of these symptoms. The current study examines how characteristics of the traumatic event as well as the individual influence the psychological health of the survivors.

Physical Health and Traumatic Events

In addition to the possible psychological impact of a traumatic event, recently there have been numerous studies that have examined and found a negative relationship between traumatic experiences and physical health (Finestone et al., 2000; Leserman, 2005; Newman et al., 2000; Sickel, Noll, Moore, Putnam, & Trickett, 2002; Ullman, 2007; Walker et al., 1999; Woods et al., 2005). A review of the literature reported that across studies, women suffering from PTSD after the experience of a traumatic event were 2.5 to 4.5 times more likely to experience more severe medical conditions (Gill & Page, 2006). Studies have found a negative relationship between various traumatic events and gastrointestinal symptoms (Golding, 1994; Leserman, 2005; Sickel et al., 2002), cardiopulmonary symptoms (Frayne et al., 1999; Golding, 1994; Lown & Vega, 2001), gynecological problems (Golding, 1994; Leserman, 2005; Sickel et al., 2002), bodily pain (Finestone et al., 2000; Golding, 1999; Suris, Lind, Kashner, & Borman, 2007), and poor health perceptions (Lown & Vega, 2001; Thompson, Arias, Baslie, & Desai, 2002).

The association between the experience of a traumatic event and physical health problems has also been demonstrated by the examination of medical utilization. In a study examining inpatient and outpatient medical utilization among women with and without a history of CSA, survivors of CSA with psychological distress had higher rates

of outpatient medical utilization than survivors of CSA without psychological distress (Arnow et al., 1999). These findings were also found when examining survivors of CSA over a 2-year period (Newman et al., 2000). Newman and colleagues (2000) reported that women with CSA and a current diagnosis of depression reported higher rates of physician and emergency room visits. These findings raise the question of how a traumatic event and subsequent PTSD or other mental heath disorders affect physical health.

An explanation of how physical health symptoms can be related to a traumatic experience is the event's influence on the immune system. The experience of stress has been found to activate biological stress mechanisms related to the "fight or flight response" such as the hypothalamic-pituitary-adrenal (HPA) and structures associated with the sympathetic nervous system (Green & Kimerling, 2004; Woods et al., 2005). During this experience, the energy of all the biological mechanisms is utilized to maintain homeostasis (Friedman & McEwen, 2004). The experience of one (or more) acute stressors such as a traumatic event is considered to be extremely taxing on these systems and may result in the dysregulation of immune parameters (Tosevski & Milovancevic, 2006).

Studies have also assessed the influence of traumatic experiences on immune parameters in survivors of traumatic events and comparison groups. For example, Woods and colleagues (2005) attempted to address this matter empirically in a study examining the predictive ability of childhood and adulthood interpersonal violence on immune status in a female sample. They utilized white blood cell count and different types of lymphocytes (including helper/inducer and suppressor/cytotoxic cells) to assess immune status. Interpersonal violence in adulthood was found to both directly and indirectly (i.e.

through PTSD) to be predictive of lower immune status (Woods et al., 2005). These findings indicate that a traumatic event may have a direct influence on the traumatized woman's immune status which would affect the person's vulnerability to physical health problems. The common limitation of all of these studies is that they only assess the vulnerability to health problems, not the physical health consequences of the immune system dysregulation. The current study assesses the physical health problems rather than vulnerability to these problems.

Some research has assessed physical health problems in survivors of traumatic events. In a study examining medical symptoms in sexually abused versus non-abused women, Golding (1994) reported higher rates of physical health symptoms in the sexually abused group such as gastrointestinal (abdominal pain and intolerances of food), pain (especially during urination), cardiopulmonary, neurological, sexual (burning or pain in genitals and painful intercourse) and reproductive symptoms (excessive menstrual bleeding). Examination of physical health symptoms in women that were sexually assaulted in the military reported higher rates of experiencing a heart attack in the last year, hypertension, and diabetes (Frayne et al., 1999). This population was also recently found to report more bodily pain than the comparison female veteran group. Findings from these studies suggest that there is an association between experiences of sexual assault and physical health symptoms (Suris et al., 2007). The assessment of actual symptoms provides further understanding of the way in which the experience of a traumatic event can manifest itself. However the previously discussed studies have focused on one type of traumatic experience at a time.

Studies examining a combination of interpersonal traumatic events have found conflicting results. Walker and colleagues (1999) found that a history of childhood maltreatment, physical and/or sexual, was associated with significantly poorer physical health than psychological symptoms. In comparison, a study examining the effects of CSA and childhood physical abuse (CPA) on adult women, found that childhood traumatic events were related to poorer perceptions of general health, but not related to actual adulthood physical health conditions (Thompson et al., 2002). This may be related to their measurement of chronic physical health problems. Physical health was assessed by asking for problems that interfere with normal activities. It is possible that symptoms that do not fulfill this criterion were not captured in this study. The presence of physical health problems experienced overall may be a better way to assess for health problems.

These findings were corroborated by another study assessing group differences of irritable bowel syndrome and CSA/CPA (Heitkemper et al., 2001). The presence of childhood and adult sexual and physical abuse were not found to predict higher levels of irritable bowel syndrome. The conflicting findings across studies for the impact of various forms of traumatic events on physical health raises questions as to which factors are influential for physical health symptoms. However, it should be noted that individuals with irritable bowel syndrome reported more psychological distress than those without irritable bowel syndrome. These findings reinforce the need to examine both physical and psychological health symptoms in order to capture the way in which the influence of a traumatic event is manifested in survivors.

The literature presented in this section raises important measurement issues in this population. Further research is needed to examine physical health problems exhibited by

women that have experienced various forms of traumatic events. The effect of traumatic experiences on physical health is a burgeoning area of research. Considering the previous focus on psychological functioning for trauma survivors, the main question raised by this relatively new area of research asks what factors are associated with development of physical health problems. In addition, questions arise regarding which factors are associated with the development of one domain of functioning over another if at all.

The combination of past and recent literature regarding health functioning after a traumatic event has raised the question of why some survivors display psychological symptoms or physical health problems, both symptoms and no symptoms. Studies have only begun to assess this relationship and utilize other characteristics to distinguish between the presence and absence of these symptoms. It is theorized that there are differences in the way that the health outcomes develop for the two types of traumatic events, specifically that IPT is more detrimental to the survivor than NPT (Herman, 1992). Characteristics of the traumatic event, the survivor's environmental stress and personality have been examined in the literature as predictors of these different health outcomes. The relationship between these characteristics however, is still not fully understood. The current study will examine the characteristics associated with the presence of psychological and physical health outcomes for survivors of IPT. A model of development utilized in the current study to understand the relationship between traumatic events and symptoms for survivors is the transactional model of development (Sameroff & Chandler, 1975).

Transactional model

According to trauma theory, the experience of a traumatic event influences the perception of self and the environment. The individual's perceptions are believed to possibly affect her psychological and physical health functioning. However, this raises questions as to how these factors influence one another in relation to health outcomes for the survivor. Sameroff and Chandler's transactional model (1975) proposes that human functioning is based on the operation of factors from multiple levels of ecology on one another. This framework proposes that there are transactions between characteristics of the environment and the individual which produce development and symptoms.

According to this model, health outcomes (psychological and physical) are based on the way these levels of the ecology transact with one another. For example, particular qualities of the environment may influence the individual characteristics displayed. Individual characteristics possessed by the person may also influence the likelihood of being exposed to a particular environment. In addition, the individual characteristics exhibited by the person are influenced by her genetic makeup, the characteristics she is predisposed to display. Thus, the characteristics of the individual and environmental levels are important to examine in relation to one another as they influence one another.

In this study, characteristics of the traumatic event are also proposed to transact with the individual and environmental characteristics and to be associated with psychological and physical health symptoms. Herman's trauma theory (1992) maintains that the intentional harm caused by another person for IPT may have more detrimental effects on the way the person views herself, others, and her environment. Thus, characteristics of the interpersonal traumatic event may be especially pertinent to how the

experience is interpreted and can possibly transact with other characteristics related to the person such as feature of her personality and the environment. Previous literature has utilized this model to explain the sequelae of an interpersonal traumatic event on the survivor (e.g., Sameroff & Mackenzie, 2003; Shields, Ryan, & Cicchetti, 2001; Spaccarelli & Kim, 1995).

In accordance with the transactional model, interpersonal traumatic event characteristics may also be unintentional products of the environment or individual characteristics. In the case of a person that has had abuse inflicted on them by a family member, she may view her environment as unsupportive and harmful from an early age. Due to the blurring of the lines between family member and perpetrator the survivor may not know how to protect herself from or avoid dangerous situations in which she can be victimized (Spaccarelli, 1994). The experience of a previous interpersonal traumatic event for this individual without advances in an understanding of how to protect oneself from danger based on the environment and individual can result in the experience of another traumatic event or the revictimization of the same type of event.

Much of trauma research continues to clarify what factors influence the development of different health outcomes. According to the transactional model, it is not merely the presence of the various factors, but also the way in which they transact with one another. Thus, it is more likely that differing relationships between the domains will contribute to the different psychological or physical health problems seen in survivors. This model of functioning also stresses the need to assess characteristics from various domains of the person's life, such as individual and environmental, as well as those of the interpersonal traumatic event. The current study examines characteristics associated with

the different domains discussed by Sameroff and Chandler (1975) as well as interpersonal traumatic event characteristics to explain the psychological and physical health consequences. For the purpose of this study, the different domains in the transactional model are based on factors associated with poorer or better functioning for survivors of traumatic events in trauma literature. The individual characteristics domain is redefined as personality characteristics often associated with psychological functioning while the environmental domain is categorized by stressors in the survivor's past and present environment.

Interpersonal Traumatic Event Characteristics

When discussing the health outcomes of IPTs on survivors, there are several characteristics of the traumatic event that can influence the way in which the survivor experiences the traumatic event. Research has explored how the different characteristics of the traumatic event can predict the development of various psychological or physical health symptoms. Some of the characteristics that have been cited to influence symptoms for traumatized individuals include relationship to perpetrator in the case of interpersonal trauma, severity of the traumatic event, and finally the experience of multiple traumatic events.

Relationship to Perpetrator

The defining characteristic of an interpersonal traumatic event is the perpetration of the event by another person. It is also considered the most salient element of the event as it is clear that the harm inflicted on the survivor was intentional and possibly maliciously caused by someone else (Herman, 1992). The survivor's perceptions and reactions to the traumatic event can be further complicated by her relationship with the

perpetrator (e.g., Ketring & Feinauer, 1999; Leahy et al., 2004; Lucenko et al., 2000). The perpetration of a traumatic event by someone that the person cares for may result in extreme confusion for the traumatized individual. It is theorized that it may be too difficult for the traumatized person to process the atrocity committed by someone she is supposed to trust, sometimes resulting in the need to dissociate from the event (Freyd, 1994, 1996)

A large area of literature in which the relationship to the perpetrator has been examined is that of CSA. A national survey of child rape found that 48% were perpetrated by a trusted non-relative, 41% by relatives, and 11% by strangers (Saunders et al., 1999). A number of studies have examined the influence of perpetrator identity or relationship characteristics to later psychological symptoms for survivors of CSA (e.g., Beitchman et al., 1992; Johnson et al., 2001). In Banyard and Williams' (1996) prospective study they found that the relationship to the perpetrator was not significantly associated with negative symptoms soon after the incident. However, it was the only significant predictor of adult emotional distress such as sleep problems, dissociative experiences, and overall psychological symptoms 20 years later (Banyard & Williams, 1996). These findings were further supported in Leahy et al.'s (2004) study on survivors of CSA. Despite the small sample size (N=39), they were able to detect a significantly higher level of PTSD symptoms and dissociative symptoms for survivors of CSA by trusted individuals, guardians/caretakers compared to CSA by persons lacking these relationship qualities. Further examination of perpetrator identity reported that CSA perpetrated by a father figure predicted the highest levels of psychological symptoms in adulthood, followed by family members and acquaintances, and finally strangers (Ketring

& Feinauer, 1999). Findings from these studies suggest that the survivor's relationship with the perpetrator could influence adult psychological symptoms.

Despite this evidence, there has also been some research on perpetrator identity that has refuted the hypothesis that perpetration of sexual abuse by a trusted individual or caretaker has a negative impact on psychological symptoms. In one study, the effects of perpetrator relationship, caregiving duties, and residential proximity (i.e. if the perpetrator resides with the victim) in adult survivors of CSA were examined in relation to PTSD symptoms (Lucenko et al., 2000). The authors reported that PTSD symptoms were found to be higher in survivors of CSA perpetrated by persons that did not have caretaking responsibilities for the victims. Another study by Johnson and colleagues (2001) found that the relationship and level of trust with the perpetrator was not significantly related to PTSD, depression, or dissociation symptom severity. These results contradict previous findings that CSA by a trusted individual or caretaker would have a more negative impact on victims of CSA.

It should be noted that the contradictory results may be related to sample selection. The two studies that did not find significant results regarding relationship with the perpetrator recruited their sample from a treatment seeking population. Thus, these results may not be representative of all survivors of CSA. It is possible that their sample was more severe than CSA survivors that are not seeking treatment for their experiences regardless of perpetrator identity. In comparison, studies that found significant differences in psychological symptoms based on relationship to the perpetrator were recruited from random surveys. Future studies assessing the perpetrator identity should be aware of this potential methodological confound.

Although perpetration is an integral part of interpersonal traumatic events, the influence of the relationship to the perpetrator is most commonly examined in CSA literature. However, there has been little research examining the perpetrator relationship for other forms of interpersonal traumatic events. As it is a defining characteristic of an IPT, it is important to examine the relationship with the perpetrator for all forms of this traumatic event category. Currently there are no studies that examine the relationship to the perpetrator and how that influences both psychological and physical health outcomes.

Severity of Traumatic Event

It has been theorized that the severity of the traumatic event has a negative influence on the survivor's functioning. Studies examining the influence of traumatic event severity have often sampled specific types of events to assess the effect of events such as war combat and torture on the psychological health of the survivor (Gold et al., 2000; Maercker et al., 2000; McFarlane & de Girolamo, 1996). For example, Gold et al. (2000) found severity of the traumatic event to be the best predictor of PTSD symptoms in prisoners of war. In contrast, a study conducted by Maercker and colleagues (2000) examined traumatic event severity of former political prisoners that had suffered various forms of torture during their detainment. These researchers found that severity was a good predictor of dissociative symptoms in their sample.

Another study sampling torture victims found that severity of the traumatic event was associated with PTSD symptoms, but not of anxiety and depressive symptoms (Basoglu & Paker, 1995). This array of results suggests that severity was not necessarily the best predictor for all mental health symptoms for survivors of IPT. However, the discrepancy in findings may be related to different definitions of severity utilized in each

study. Severity was defined as number of events experienced and duration of imprisonment in the Maerker et al. (2000) study. In comparison, Basolgu and Paker's study (1995) also defined torture severity using participant ratings of the event and did not include duration of specific torture events. These differences point out problems associated with having varying definitions of traumatic event severity across studies.

With regard to sexual abuse, severity is often characterized in the literature by level of abuse such as penetration (Johnson et al., 2001). Higher levels of abuse such as penetration were found to be associated with higher levels of peritraumatic dissociation, which was also found to be related to symptom severity of PTSD, depression, and dissociative symptoms in adulthood. Another study found that only severe CSA (not mild or moderate levels) was predictive of depressive, anxious, and dissociative symptoms (Ketring & Feinauer, 1999). These findings were corroborated by a meta-analysis examining the impact of CSA on survivors (Kendall-Tackett, Meyer Williams, & Finkelhor, 1993). In addition, to severity scales, Johnson et al. (2001) found that the belief that she could be killed or seriously injured during the CSA was also associated with more severe PTSD and depressive symptoms. Findings also suggest that perceived severity of the CSA is related to negative adult psychological symptoms.

There has been some research examining the influence of event severity on physical health symptoms survivors of traumatic events relationship (Leserman, 2005; Leserman et al., 1996). A study examining the effect of CSA and physical abuse on physical health found that severity, defined as rape or physical abuse involving life threatening force, was predictive of physical health problems such as gastrointestinal

symptoms (Leserman et al., 1996). More research is needed to assess the relationship between severity of traumatic event and physical health problems.

Another element of traumatic event severity is the level of physical injury caused by the experience. Studies have found that the injuries sustained due to the traumatic event were related to the development of PTSD (Koren, Norman, Cohen, Berman, & Klein, 2005) and depression (Maes et al., 2000; Rasmussen, Rosenfeld, Reeves, & Keller, 2008). Previous findings suggested that people were 8 times more likely to develop PTSD after experiencing trauma-related injury (Koren et al., 2005). A study examining chronic physical injury from torture found that the effects of traumatic event on PTSD and depression were fully mediated by chronic physical injury (Rasmussen et al., 2007). In comparison, a study examining NPT found that physical injury did not increase the prevalence of depressive symptoms but rather this was associated with the different types of trauma assessed in these studies. It is beyond the scope of this study to examine the predictive value of psychological symptoms with one another. These findings indicate the importance of assessing physical injury as an indicator of traumatic event severity.

There has also been some confusion due to the varying definitions of severity. Previous studies examining severity of the traumatic event have focused on researcher based criteria. However severity of the traumatic event can be associated with different aspects of the experiences such as a life threatening force (Leserman et al., 1996) or physical injuries (Maes et al., 2000). A recent study examining domestic violence and negative life events discussed the need to assess for participant based ratings of the traumatic event severity rather than imposing researcher ratings onto the event (Mourad, Levendosky, Bogat, & Von Eye, 2008). The current study assessed for both objective

(physical injury) and subjective (participant ratings) traumatic event severity scores in relation to psychological and physical health symptoms.

Multiple Traumas

One of the difficult aspects of research on the influence of traumatic events on health outcomes is the high rate of multiple traumatic experiences in survivors. Kessler and colleagues (1995) reported that 14% of all women in their sample experienced two traumatic events, 5% experienced three, and 6.4% experienced four or more traumatic events. According to the cumulative risk model (Sameroff & Seifer, 1983), the number of risk factors or stressors an individual is exposed to or possesses can influence her psychological functioning. A traumatic event is considered the most extreme form of stress that a person can endure (e.g., Gill & Page, 2006; Tosevski & Milovancevic, 2006), suggesting that similar effects may occur regarding cumulative traumatic experiences. Studies have found that the experience of more than one traumatic event may have detrimental effects on a survivor's psychological and physical health symptoms (Banyard, Williams, & Siegel, 2001; Breslau et al., 1997; Feerick & Haugaard, 1999; Kaltman, Krupnick, Stockton, Hooper, & Green, 2005; Ullman & Brecklin, 2003). Breslau et al. (1997) reported that subsequent traumatic events resulted in an increase in lifetime prevalence rates of PTSD: one traumatic event- 11.6%, two traumatic event- 13.6%, and three traumatic events- 13.8%.

Several studies have examined the relationship between PTSD and multiple traumatic events. Higher rates of PTSD symptoms have been found in relation to multiple traumatic events than single event survivors when examining survivors of CSA and adult sexual abuse (Kaltman et al., 2005; Nisith et al., 2000), witnessing of parental domestic

violence (Feerick & Haugaard, 1999), community violence (Scarpa, Haden, & Hurley, 2006) and the Holocaust (Yehuda et al., 1997). In a study of Holocaust survivors, Yehuda and colleagues (1997) found that the number of cumulative lifetime traumatic events was positively associated with PTSD symptoms of avoidance. Findings from a study conducted 50 years after the Holocaust suggest that the accumulation of traumatic events can have long-term effects of psychological functioning. However, few of these studies examined non-PTSD psychological symptoms in relation to multiple traumatic events.

Recently, studies have begun to examine the effects of multiple traumatic events on physical health problems. Examination of the effects of CSA or adult sexual abuse on physical health suggested that there were different factors based on age at the time of the sexual abuse (Ullman & Brecklin, 2003). The authors utilized the National Comorbidity Survey to assess the effects of sexual abuse on physical health. They found that for survivors of adult sexual assault (with no CSA) higher numbers of traumatic events experienced in life were predictive of chronic medical problems over a 1-year span. Surprisingly, the experience of CSA and adult sexual assault was not significantly predictive of medical problems (Ullman & Brecklin, 2003). Examination of medical problems over 1-year may have been too brief of a period to examine CSA effects. Further research on the relationship between multiple traumatic events and physical health over a longer period of time is still needed.

The issue of multiple traumas also raises some complications in the literature. There is an abundance of research that discusses the way in which previous traumatic events, especially during childhood, can increase the likelihood for future revictimization for the survivor (e.g., Banyard et al., 2001; Nishith et al., 2000). This is a particularly

salient issue regarding CSA and later sexual victimization. Empirical research purports higher revictimization rates among CSA survivors than non-CSA survivors (e.g., Banyard et al., 2001; Kaltman et al., 2005; Lang et al., 2003; Nisith et al., 2000; Sanders & Moore, 1999). Various theories explore the possible reasons for this situation including attachment theory. According to this theory, the violation caused by CSA results in difficulty feeling secure with attachment figures and thus feeling safe in the world. These impaired attachment schemas can result in difficulty for the child to properly assess a safe environment and persons thus leaving them more vulnerable to further harm (Alexander, 1992; James, 1994).

Similar results were found when examining the long-term effects of witnessing parental domestic violence (Feerick & Haugaard, 1999). They found that women who endorsed witnessing domestic violence between their parents were also more likely to endure CSA, childhood physical abuse, and adult physical assault by partners and strangers. However, these results may be related to the experience of a previous traumatic event, especially CSA, or by psychosocial factors of a home environment in which there is parental domestic violence. These findings corroborate the idea that people who experience an IPT during childhood are more likely to experience another traumatic experience.

Based on past literature, it appears that the experience of a traumatic event may leave the person more vulnerable for further victimization, thus complicating our understanding of why survivors of IPT are likely to experience high rates of trauma. It is beyond the scope of this study to provide an explanation for the connection between the experiences of multiple traumatic events; the current study is interested in examining the

effect of the multiple traumatic experiences on the survivor. Overall, the experience of multiple traumatic events appears to be frequent and to be predictive of poor psychological functioning. It is important to assess for other factors such as traumatic event characteristics and environment when examining the experience of multiple traumatic event. More studies are also needed to determine the relationship between this occurrence and physical health symptoms.

Previous meta-analyses examining the effects of traumatic events on survivors have reported that there are a range of characteristics that predict development of symptoms for survivors (Brewin et al., 2000; Ozer, Best, Lipsey, & Weiss, 2003). They found that characteristics specific to the traumatic event do not uniformly predict the development of symptoms for survivors. This suggests that there are other factors that may be related to the development of mental health and physical health problems. According to the Sameroff's transactional model, the development of pathology is related to transactions between the different domains of characteristics.

Personality Characteristics

The transactional model proposes that there are characteristics specific to the survivor that relate to her functioning. Research examining individual differences between survivors has found that there are several aspects of the survivor's personality that may influence health symptoms after the traumatic event. Personality characteristics have been studied in research as related to the development of both psychological and physical health problems.

5-factor model

A major model of personality characteristics is the 5-factor model, which purports there are 5 main personality dimensions: neuroticism, extraversion, agreeableness, conscientiousness, and openness (Costa & McCrae, 1985). These dimensions have been examined in relation to a wide variety of experiences including traumatic event consequences (Lauterbach & Vrana, 2001; Linley & Joseph, 2004; Nightingale & Williams, 2000; Smith, 2006). Considering that personality characteristics influence our perceptions and experiences of the world, it is possible that they may also have a protective or vulnerability influence regarding psychological health. The personality characteristics most commonly associated with psychological health problems is neuroticism (Bramsen, van der Ploeg, van der Kamp, & Ader, 2002; Lauterbach & Vrana, 2001; Lee, Vaillant, Torrey, & Elder, 1995; Strelau & Zawadski, 2005). Individuals that score high on the neuroticism scale are categorized as anxious, hostile, self-conscious, insecure, and vulnerable (Bramsen et al., 2002; Smith, 2006; Spindler & Elklit, 2003). Since the traits for this personality domain resemble symptoms of psychological disorders (e.g., depression and anxiety) it is likely that possession of these traits may increase the likelihood of psychological symptoms (Bramsen et al., 2002; Engelhard, van den Hout, & Kindt, 2003; Kendler, Kuhn, & Prescott, 2004; Lauterbach & Vrana, 2001; Roy, 2002; Tosevski & Milovancevic, 2006; Woods et al., 2005).

For example, a review of the 5-factor model research found that neuroticism was the only personality trait higher in traumatized individuals versus non-traumatized individuals (Bunce, Larsen, & Peterson, 1995). Other research studies reported that neuroticism predicted PTSD symptoms (Bramsen et al., 2002; Engelhard et al., 2003; Lauterbach &Vrana, 2001) and depression and traumatic event severity (Kendler et al.,

2004; Roy, 2002). Most of these studies examined neuroticism in relation to one type of traumatic event (e.g. CSA or wartime trauma). One study examined it in relation to all types of traumatic events (Lauterbach & Vrana, 2001). They found that high neuroticism was positively related to PTSD symptoms variables and traumatic event intensity and accounted for 43% of variance for PTSD severity (Lauterbach & Vrana, 2001). Further examination of personality characteristics determined that there was an interaction between high neuroticism and traumatic event intensity. According to these findings, the presence of high neuroticism was related to the survivor's reaction to the event. It is possible that individuals with neuroticism are less likely to have adequate coping mechanisms to minimize the impact of a traumatic event.

A major limitation of their study is that they examined both non-personal and interpersonal traumatic events together. Herman argues that there is a difference in how interpersonal traumatic events and non-personal traumatic events can affect personality characteristics due to the feeling of betrayal and harm at the hands of another person (1992). Thus it is important to examine them separately.

In addition to personality characteristics that serve as risk factors, there has been some research conducted regarding the protective quality using the 5-factor model, e.g. extraversion (Lauterbach & Vrana, 2001; Nightingale & Williams, 2000). Individuals that score high on extraversion are described as being warm, assertive, and positive attitudes to emotional expression (Nightingale & Williams, 2000). Extraversion is associated with chronically low levels of arousal compared to neuroticism which is associated with high levels of arousal (Strelau & Zawadski 2005). Extraverted individuals have been found to display lower levels of PTSD after the experience of a traumatic

event (Nightingale & Williams, 2000). However there has been little research regarding psychological functioning (Nightingale & Williams, 2000) relatively no research on its relationship to development to physical health symptoms despite discussions of arousal levels.

As the experience of a traumatic event is already associated with the activation of arousal mechanisms (Tosevski & Milovancevic, 2006; Woods et al., 2005), the authors hypothesize that the presence of personality traits also associated with arousal systems may interact with the development of psychological symptoms, specifically anxiety ones related to PTSD symptoms. As it is theorized that both of these personality traits are associated with arousal symptoms it will be useful to examine their relationship to physical health as well as psychological outcomes.

Optimism

Another personality factor associated with symptoms for traumatized individuals is optimism. One of the main personality characteristics that Herman (1992) described as being affected by the traumatic event is the survivor's perception of the self, others, and world. Thus, the existence of optimistic personality traits may serve as an adaptive mechanism in order to reinstate previously shaken beliefs after the traumatic experience or may be used to rebuild beliefs without damage to functioning. Research on personality characteristics has cited levels of optimism to influence health symptoms for survivors (Benight et al., 1999; Brodhagen & Wise, 2008; Bunce et al., 1995; Lauterbach, Vora, & Rakow, 2005; Segerstrom, 2001).

Studies have found that individuals displaying optimism experienced less distress associated with the traumatic event (Benight et al., 1999; Brodhagen & Wise, 2008).

These findings correspond to trauma theory's belief that characteristics of the survivor influence psychological functioning after traumatic event. In comparison, studies examining negative perceptions held by individuals in relation to health have found that pessimism (the opposite of optimism) or negativism (Bunce et al., 1995; Segerstrom, 2001) has a negative influence on the person's well being. Bonanno (2004) indicated that positive emotion is beneficial in reducing the aversive effects of a traumatic event. A study examining the relationship between the survivor's, the experience of a traumatic event, and PTSD symptoms found that negativism was a strong predictor of high PTSD symptoms (Linley & Joseph, 2004). The compilation of these findings suggests that low optimism in a traumatic event survivor may lead to increased psychological symptoms such as for PTSD.

In recent years, there has been a growing literature that examines the relationship between the individual characteristic of optimism in relation to immune system functioning (Segerstrom, 2001). This literature focuses on the effects of optimism on immune system functions in the face of stress. Among the research examining the effects of optimism on immune system functions, there is also literature that argues that optimism can lead to poorer immunity during stressful events (Cohen et al., 1999; Nes, Segerstrom, & Sephton, 2005; Segerstrom, 2006). These studies note that optimism appears to have positive effects for the individual regarding brief stressors. However, these results are reversed in relation to prolonged stress. In a recent study, Segerstrom (2006) examined characteristics of stressors in relation to optimism and immunity. She found that optimism predicted higher immune parameters for individuals facing brief, controllable stressors. In contrast, individuals with high optimism facing difficult,

prolonged stressors had lower immune parameters. Similar findings were also found in a prospective study by Cohen and colleagues (1999) when examining life stressors in 39 healthy women for 3 months. They found that optimism was associated with better immune parameters for brief stress. In comparison, optimism was associated with decreased immunity for women experiencing persistent stress at high levels (Cohen et al., 1999).

An explanation for this phenomenon may be the biological processes associated with prolonged stress. Nes et al. (2005) found that the sympathetic nervous system and HPA- axis were activated while problem solving in stressful situations thus the continuous activity of these systems during prolonged stress for optimists can be physiologically taxing for the immune system. These results suggest that although optimism may be beneficial for handling problems in the long term, it can have negative consequences for the optimistic individual during the process.

These findings may be especially pertinent to research on survivors of traumatic events. Such experiences result in increased levels of arousal and stress response. Although the event may not necessarily be long in duration, the symptoms that normally follow a traumatic experience, e.g. reexperiencing or intrusive thoughts, may influence the survivor. For example, it was reported that 94% of rape victims experienced PTSD symptoms 1 week after the event (Foa & Rothbaum, 1989). Thus, providing more support that the experience of a traumatic event, regardless of actual duration may evoke a longer physiological stress response than average stressors. There is currently no research on the effects of optimism on physical health conditions in connection with traumatic events. The current study proposes to examine this relationship based on findings reported in

stress literature. It is believed that high optimism may have negative effects on physical health and positive effects on psychological symptoms.

Locus of Control

A major feature of a traumatic event is the fear that one can be harmed or killed during the event (APA, 2000). When a person's physical integrity is at risk, the individual probably does not have control over what is occurring to her. After the traumatic experience, it is not uncommon for the survivor to be concerned over the level of control possessed in relation to their environment (Herman, 1992). The level at which the survivor feels that she may have had control over the event or that her vulnerability was outside of her control can contribute to the feelings of distress after the event (Foa, 1995; Herman, 1992). The distress experienced as a result of these feelings may be detrimental to the survivor's psychological and physical health.

A personality characteristic which is associated with these perceptions is locus of control, which is conceptualized as the way in which an individual perceives control for life events or stressors (Rotter, 1966). Rotter conceptualized locus of control as operating on a continuum, with the two extremes being: internal (control held by self) and external (control source is outside of individual). The locus of control construct has since been reconceptualized by Levenson (1973) as having three independent dimensions: internality, powerful others (these two embody Rotter's internal control and external control respectively), and chance. According to Levenson's conceptualization, these dimensions are not mutually exclusive, but rather could be endorsed by one individual. For the purpose of this study, these terms will be defined as internal and external control.

There has been some research suggesting that the relative strength of external versus internal locus of control held by the individual can influence her ability to manage the stressful experiences (Blocker & Copeland, 1994; Regehr, Cadel, & Jansen, 1999; Regehr, Hill, & Glancy, 2000; Walsh, Blaustein, Knight, Spinazzola, & van der Kolk, 2007). Internal locus of control permits the individual to believe that she has control over what happens to her versus external locus of control in which she believes that what happens to her is in the control of others.

In the event of high stress such as trauma, studies suggest that the relative strength of external versus internal locus of control can help determine the way the person handles the event. One study attempted to address this by examining the effect of publicized traumatic event on PTSD (Dyb, Holen, Steinberg, Rodriquez, & Pynoos, 2003). Participants were parents of children sexually abused at a daycare center in Norway. The story was highly publicized in the area and the trial received a lot of media attention. Parents that reported high levels of external locus of control also displayed higher levels of PTSD symptoms, while high levels of internal control were not associated with PTSD symptoms. These findings suggest that parent perception that they personally had little control over what happened to their children, whether to prevent or protect them after the trial, resulted in higher intrusive and avoidance symptoms.

Although an internal or external locus of control approach can be beneficial in different situations, high levels of internal locus of control has been found to be a protective personality characteristic in the event of a traumatic experience. For example, one study examining predictors of PTSD symptoms and depression in 164 traumatized firefighters found a lack of internal control was predictive of depression (Regehr et al.,

2000). In another study examining predictors of adjustment in college students that had experienced a traumatic event during their lifetime, locus of control was examined in relation to psychological well-being. Using Rotter's locus of control continuum, they found that internal locus of control was associated with better psychological symptoms for these college students (Banyard & Cantor, 2004). However, the study's definition of psychological well-being consisted of items such as autonomy, environmental mastery, and purpose in life, but not for symptoms of psychological disorders. More research is needed to assess the relationship between levels of internal locus of control and symptoms of psychological disorders for individual's that have experienced traumatic events.

Examination of locus of control in relation to a traumatic event experience suggests that the survivor's dominant perception of control can serve as a protective or vulnerability factor. Until now, locus of control has only been examined in relation to psychological functioning. Based on Herman's theory, it maybe that the perception of internal locus of control decreases survivor's hypervigilance resulting in a decrease in SNS activation. Research is needed to assess the relationship of locus of control on physical health. Examination of both dimensions of locus of control along with the two health outcome domains at the same time will provide more information about the influences of survivor's perception of control.

Environmental Stress Characteristics

According to the transactional model, the survivor's environment also plays an influential role in her functioning after a traumatic event. This model suggests that aspects of a person's environment can influence the likelihood of displaying

psychological or physical health symptoms. Environmental stressors may increase vulnerability to these symptoms through the lack of protection from harm or by increasing response levels to trigger symptoms. For a survivor of a traumatic event, environmental characteristics, before and after event may also influence the way in which she reacts to the experience and determine her level of functioning. Some characteristics which may be influential for a survivor are her social support network, life stressors, and a family history of psychological disorders.

Social Support

One of the most commonly discussed environmental characteristics related to functioning after an interpersonal traumatic event is that of social support. Members of the social support network can include family members, relatives, friends, and peers (Rosenthal, Feiring, & Taska, 2003). The experience of a traumatic event can result in loss of trust in self and others (Herman, 1992). As a result, the individual may be cautious of trusting others due to fear of being further harmed or victimized. In order for the survivor to reestablish trust in other persons and the environment, she would need to have an adequate support network to bolster this development. Herman (1992) postulates that positive social support is an integral part of the recovery process from trauma. Social support after the interpersonal traumatic event may aid the survivor in beginning to trust that others will not cause her harm but rather will provide support when she is distressed.

Numerous studies have examined the influence of social support on psychological symptoms (e.g., Bal, De Bourdeauhuj, Crombez, & van Oost, 2005; Banyard & Cantor, 2004; Gold et al., 2000; King, King, Foy, Keane, & Fairbank, 1999; Levendosky et al., 2004; O'Dougherty Wright, Fopma-Loy, & Fischer, 2005; Regehr et al., 2000). Much of

the literature assessing the utility of social support has found that it is often serves as a protective factor from the development of future mental health problems. For example, in the study examining adjustment to college among students that had suffered a variety of interpersonal and non-personal traumas found that higher levels of social support was linked to more positive adjustment in this sample (Banyard & Cantor, 2004). However, a major limitation of the study is that they only examined current social support in relation to positive adjustment, ignoring the type of social support at the time of the traumatic event. According to trauma theory, recovery from a traumatic event is associated with the type of support received in relation to the event. Examining current social support may not capture how much support the survivor received in relation to the traumatic event.

Other studies have examined the quality of social support in relation to the experience of the traumatic event. Davis and Brickman (1991) examined whether the type of social support influenced psychological adjustment for rape survivors. They found that unsupportive social networks were associated with poor psychological outcomes, but that positive social support was not related to better outcomes. Thus, indicating that although positive social networks did not influence psychological symptoms in either direction, unsupportive social networks were detrimental to psychological functioning. A major limitation of that study was that it did not take into account traumatic event characteristics such as event severity, in relation to survivor's functioning. It may be that individuals receiving positive support had more severe traumatic event symptoms than those receiving negative social support explaining the differences between psychological outcomes (Davis & Brickman, 1991).

Levendosky and colleagues (2004) also examined quality of social support in relation to domestic violence. They found differences in outcomes based on the quality of social support reported by pregnant abused women: social support networks. In this study having a high ratio of social support network members who had also experienced domestic violence compared to members who had not experienced DV was predictive of impaired quality of support among battered women. These findings suggest that social support networks of women suffering from the same problems do not provide sufficient support for the individual in order to develop a healthier perception of the world, self, and others. It may be that person's who have poor functioning do not provide sufficient support for survivor's of IPT and thus the quality of support received is just as important as the social support itself.

Previous findings are corroborated by studies examining the survivor's subjective perception and the role of the social support. Rosenthal and colleagues (Rosenthal et al., 2003) examined the relationship of support from various social figures in the lives of sexually abused children and adolescents as related to the survivor's satisfaction with the support provided. They found that satisfaction with support provided by caregivers or friends influenced depressive symptoms, self-esteem, and sexual anxiety (Rosenthal et al., 2003). These results suggest that survivor perceptions of satisfaction from the support network can also influence the survivor's mental health outcomes. The survivor's perception of the support provided can also influence the way she reestablishes trust in others during the recovery process.

The presence of social support can have a positive impact on mental health outcomes of interpersonal trauma survivors. Similar results were found regarding the

relationship between social support and physical health problems in CSA survivors; they reported that social support was the strongest predictor of physical health (Jonzon & Lindblad, 2006). However, more research is needed to examine social support and physical health problems in survivors of traumatic events.

According to trauma theory, social support is most relevant to the IPT survivor's functioning as it is indicative of a healing environment after the experience of a traumatic event. As such, it is important to not only examine current social support systems, but also those that were present after the experience of a traumatic event. Both time periods are theorized to influence the woman's environment and thus her perceptions of the world as a safe place. In addition, based on previous literature it is important to assess the perceived quality of the social support received by the survivor. However few studies have examined the quality of social support in relation to health outcomes, especially physical health. The current study will assess the survivor's perception of social support networks and its relationship to the IPT survivor's health outcomes. As there has been little research examining social support and physical health more research is needed to address this relationship in addition to psychological symptoms.

Life Stressors

The influence of other stressors in the lives of a traumatized individual has also been assessed as an environmental characteristic related to the health outcomes. Traumatic events activate the same biological and coping mechanisms as stress, however at a much more extreme level (Shalev, 1996). Both systems activate the sympathetic nervous system and produce a physiological response, however due to the higher level of fear associated with traumatic event there may be a greater response to it compared to

stress. Based on the similar mechanisms underlying traumatic events and stressors, it is possible that additional stress in the presence of a traumatic event may also increase the person's vulnerability to health problems. For example, a study examining a sample of women who have experienced the interpersonal traumatic event of domestic violence found that daily hassles and negative life events served as a mediator for the relationship between physical abuse and their physical health as well as in the relationship between abuse and their depression (Sutherland, Bybee, & Sullivan, 2002).

Several studies have examined the relationship between history of traumatic event and life stressors such as daily hassles and negative life events (Glaser, van Os, Portegijs, & Myin-Germeys, 2006; Kendler et al., 2004; Koopman, Gore-Felton, Classen, Kim, & Spiegel, 2001; Sutherland et al., 2002; Thakaar & McCanne, 2000; Ullman & Brecklin, 2003). One major question in this literature is how survivors interpret the stressful events. Female survivors of CSA with PTSD were found to experience more ASD symptoms related to everyday stressful events than non-CSA survivors. As these events were categorized as non-traumatizing to other people, it is theorized that stressful life events are perceived as more distressing for survivors of IPT (Koopman et al., 2001). This corresponds to trauma theories supervision that survivors of IPT view themselves as more vulnerable to harm.

Similar results were reported in a study using experience sampling to examine daily life stress in survivors of childhood traumatic events found that survivors of childhood traumatic events endorsed higher levels of emotional reactivity to daily stresses (Glaser et al., 2006). Emotional reactivity in this study was defined as a change in negative affect, thus survivors of childhood traumatic event mood changed more than

those not exposed to childhood traumatic events. However, there were no significant differences between both groups in regards to their rating of stressfulness from the events. All participants for this study were recruited based on frequent attendance status at a health organization. Thus, both groups appeared to display problems related to health regardless of traumatic event status. This unfortunately was also a limitation of the study as it only examined a sample with frequent medical problems and thus could not assess for physical health symptoms. In addition, the sample may not generalize to other populations as both groups already displayed medical problems.

Other studies that examined non-clinical samples found differences in relation to stress perceptions between groups exposed to childhood traumatic events and those that were not (Kendler et al., 2004; Thakaar & McCanne, 2000). A study examining daily life stress and a history of CSA in female college students found that the experience of CSA was associated with higher levels of stress and physical health problems (Thakaar & McCanne, 2000). However, the authors included participants that only experienced childhood sexual abuse for the CSA group, thus participants that endorsed adult sexual assault were excluded from the study completely. Due to the high rates of revictimization in CSA populations, this sample may not be representative of other CSA and interpersonal trauma samples.

In another study examining stressful life events in survivors, Kendler and colleagues (2004) found the CSA survivor group experienced more depressive symptoms from stressful life events than the no-CSA group. However, no clear definition of exclusion or inclusion criteria based on history of CSA or other traumatic events was presented for this study. The two studies that recruited non-clinical samples, reported

high endorsement of perceived stress from life events in comparison to the clinical sample presented in Glaser and colleagues' study (2006). These differences suggest that there may be differences in perceived stress related to the severity of the sample. Future research should be aware of these possible differences when choosing participants.

Based on the findings discussed, the experience of negative life events for a survivor of traumatic experience may be difficult to handle. Survivors appear to have stronger reactions to the events and are more vulnerable to display depressive or physical health symptoms in response to these stressors than non-survivors (Koopman et al., 2001). This may be related specifically to a treatment of an IPT. The current study examines a non-clinical sample will be more generalizable and examines one domain of traumatic experiences.

Family Psychiatric History

Numerous studies have discussed the role of family psychiatric history of psychological disorders as a predictor of psychological disorders and symptoms in offspring (King, King, Foy, & Gudanowski, 1996; Koenen et al., 2002; Koenen, Moffitt, Poulton, Martin, & Caspi, 2007; McKenzie, Marks, & Liness, 2001; Ozer et al., 2003; Yehuda, 1999). The presence of such a family history is believed to increase the biological vulnerability to the developing the same or related symptoms or disorders. For example, one study found that 51.4% of women with mothers that had a mental disorder experienced lifetime depression, 46.2% for women whose fathers had a disorder, and 75% for women with both parents affected by mental illness (Rowe, Fleming, Barry, Manwell, & Kropp, 1995). Yehuda and colleagues (1998) also found that there was a

significant relationship between the presence of PTSD in Holocaust survivors and their offspring.

Similar results were found in a study of family history of mental illness' influence on women that experienced sexual assault (Davidson, Tupler, Wilson, & Connor, 1998). In this study, family history was obtained by assessing the first generation relatives of all participants. Women with a history of sexual assault and that suffered from PTSD were found to have a higher rate of family history of psychological disorders than sexually assaulted women that did not develop PTSD. The rates of familial psychological disorders for the women with a history of sexual assault and PTSD were similar to those of a comparison group of non-traumatized women with a history of depression (Davidson et al., 1998). Salicoglu and colleagues (2003) also examined the influence of risk factors for psychological disorders on the traumatic event of an earthquake. They found that family history of psychiatric illness in the event of a traumatic experience was associated with more severe symptoms of depression. These findings suggest a strong vulnerability to psychological symptoms such as depression in the presence of familial history of psychological disorders.

Research findings have also suggested it may serve as a psychosocial risk factor for the person that experienced a traumatic event (Kellerman, 2001; Koenen et al., 2002; Koenen et al., 2007; Yehuda, 1999). This is best exemplified in studies of the transmission of trauma symptoms from Holocaust survivors to their offspring. In their examination of the offspring of Holocaust survivors, Yehuda and colleagues (2001) found that parental exposure to the Holocaust was a strong predictor of a lifetime diagnosis of depression. They also found that the offspring of Holocaust survivors with

PTSD were found to have increased rates of PTSD than offspring of Holocaust survivors without PTSD (Yehuda, Halligan, & Bierer, 2001). According to these findings, the experience of such a traumatic event by parents with or without the diagnosis of PTSD, lead to an increased risk of personal psychological problems for the offspring.

Familial psychiatric history has also been found to be an influential factor in exposure to a traumatic event. Studies have found that a family history of psychological disorders have influenced the risk of exposure to a traumatic event (Koenen et al., 2002; Koenen et al., 2007). In a longitudinal study examining the development of PTSD, factors that were found to influence the exposure to trauma included family psychiatric history, externalizing behaviors during childhood, and family adversity (Koenen et al., 2007). Another study examining the effects of family history on trauma exposure in twins that served in the military during the Vietnam War found that parental antisocial behavior was associated with higher risk of trauma exposure and the development of PTSD. In addition, exposure to traumatic event was significantly associated with parental depression (Koenen et al., 2002). It is suspected that the risk of personal traumatic event exposure for family members of relatives with familial psychological disorders may be related to matters of safety provided to the individual prior to a traumatic event or the support provided post-traumatic event. Parents that are struggling with their own psychological problems may not be able to protect their children from potentially dangerous situations. These parents may also not be able to provide adequate support to help their children cope with the stressors that may arise in their lives (Bloom, 1997). Some offspring of Holocaust survivors reported feelings of emotional neglect due to their

parents' frequent concern with the children and loved ones lost in the concentration camps rather than their surviving children (Kellerman, 2001).

Based on the findings from presented studies, a family psychiatric history may also influence the presence of psychological problems for relatives. Although the increase may be due to genetic vulnerability, there is also evidence to suggest that it may influence psychosocial environmental factors. This is particularly demonstrated through the increase in trauma experiences for offspring of relatives with psychological problems. This may be due to the lack of nurture or protection within family environments. It is important to examine family history of psychological disorders as an environmental characteristic that can influence the development of psychological symptoms for individuals that experienced a traumatic event.

Rationale

The trauma literature has often focused on the presence of psychological symptoms in relation to the experience of a traumatic event. Recent studies have begun examining the effects of a traumatic event on physical health in addition to psychological health. Although there have been some studies that have examined the relationship between physical health problems and symptoms of PTSD (Woods et al., 2005; Zoellner et al., 2000), there has been substantially less research that examines the effects of trauma on the symptoms from other psychological conditions and physical health problems. The current study will examine the relationship between traumatic experiences and the presence of psychological and/or physical health outcomes.

Unlike other studies that have examined immune system responses to traumatic events, the current study proposes to examine the expression of physical health outcomes

through participant reports of lifetime health problems. The present study will also examine the presence of psychological symptoms in order to assess if there is a presence of symptoms related to the traumatic event. Examination of psychological symptoms will enable the current study to assess if there are higher rates of certain types of symptoms in survivors of traumatic events.

Trauma research has either examined the effect of various forms of traumatic events, separately or collapsed with one another, on the presence of health symptoms (psychological and physical health). However, it is important to understand the different characteristics of the traumatic event that may be associated with health consequences. There have not been any studies that have assessed the difference between the type of traumatic event experienced, interpersonal or non-personal, and the survivor's health symptoms. A comparison of interpersonal and non-personal traumatic events will be made for both psychological and physical health symptoms.

Past research has also examined characteristics of trauma, individual, and the environment as predictors of health symptoms for individuals that with traumatic experiences. However, most studies have examined these characteristics using a variable-oriented approach. The person-oriented approach holds that behavior and development are person-specific and enables researchers to identify profiles of survivors based on patterns related to the independent and dependent variables (von Eye & Bergman, 2003). In the current study, the characteristics of the 3 domains in relationship to the health symptoms will be examined using both a variable and person-oriented approach.

As this part of the study was exploratory, previous hypotheses were made based on variable-centered research. Previous studies have examined the health outcomes

associated with profiles that occur from different types of interpersonal traumatic events (e.g. Campbell, Greeson, Raja, & Bybee, 2008, Pimlott-Kubiak & Cortina, 2003). However, there have not been studies that have examined the health outcomes associated with the characteristics of the survivor of an IPT. It has been well documented in the variable-centered approach that there are characteristics of the survivor's environment and personality as well as attributes of the trauma endured that are associated with the development of psychological and physical health outcomes (e.g., Bramsen et al., 2002; Reghr et al., 2000; Rosenthal et al., 2003; Segerstrom, 2001). Understanding the combination of the female survivor's characteristics associated with their health outcomes can provide a more detailed and interactive description of which survivor of IPT is more likely to experience the different health problems.

For the variable-oriented approach, the present study proposes to utilize the transactional model of functioning to examine the relationship between traumatic events, individual, environmental characteristics, and psychological and physical health symptoms. The use of this model allows the examination of individual, environmental, and trauma characteristics and provides a conceptualization of the way they may influence one another in relation to the health symptoms.

For the person-oriented approach, this study will explore the profiles of characteristics associated with the women and their experiences that are related to their health symptoms. The use of this approach will enable the current study to examine the characteristics related to women who have experienced a traumatic event that can influence their psychological and physical health functioning. This study is especially

interested to see if there are profiles of characteristic for women who display different health symptoms or no symptoms.

HYPOTHESES

Hypothesis 1a: According to trauma theory the experience of a traumatic event along with the shock and fear of harm or injury to one's physical integrity is what influences the development of health symptoms in survivors. Either type of trauma, interpersonal or non-personal, may have detrimental effects on the survivor. It is hypothesized that traumatized women will experience significantly higher levels of psychological and physical health symptoms than non-traumatized women. However, it is assumed that there are differences between the health outcomes for the two trauma groups. The experience of a traumatic event at the hands of another person is theorized to rupture the foundations for which the survivor's world is based on, thus it is also hypothesized that women who experience interpersonal traumatic event(s) will have higher levels of psychological and physical health symptoms than those who only experience non-personal traumatic events

Hypothesis 2: Prior studies have demonstrated that there are many characteristics of the traumatic event, the survivor and her environment which influence the development of health outcomes. However, the relationship between these characteristics and how they contribute to the functioning of the survivor of a traumatic event is still not fully understood. Sameroff and Chandler's transactional model of development proposes that characteristics of the individual and environment transact with one another and influence health outcomes. Using this model, and our theoretical understanding of IPTs, it is believed that the intensity levels of such a traumatic event will transact with

characteristics of the individual and the environment to influence health (psychological and physical) symptoms for the survivor (see Figure 1). In accordance with this model, it is also hypothesized that characteristics of the individual and environmental will significantly predict each other and that all of these domains will transact with one another and predict both psychological and physical health outcomes.

Hypothesis 3: In the current study, three domains have been identified as influencing health outcomes for survivors of IPT: trauma, personality, and environmental characteristics. In addition to examining the relationships between these domains with health outcomes, this study examines the way the agglomeration of each domain's characteristics as well as the health profiles associated with these clusters. As there has been no literature on this matter, these analyses will be exploratory. It is hypothesized that there will be a group created with no symptoms, one with psychological symptoms alone, and one with both psychological and physical health symptoms. Proposed profiles for the group of women who do not display any psychological and physical health symptoms include lower severity levels of the traumatic event, high levels of extraversion, an internal locus of control, and high levels of social support at the time of the traumatic event. The group of women who only display psychological symptoms are proposed to have experienced multiple traumatic events, perpetration by a family member or family acquaintance, and a family history of psychological problems. Based on theoretical conceptualization and previous research the profile proposed for the group of women who experience both psychological and physical health symptoms include higher severity of the traumatic event, higher levels of neuroticism, an external locus of control, and low levels of social support at the time of the traumatic event.

METHODS

Participants

Participants included 1806 female undergraduates enrolled at Michigan State University (MSU). All participants were recruited from the Psychology department undergraduate subject pool; thus they were all enrolled in a psychology course that required research participation credits. Inclusion criteria for the study included being female and being at least 18 years of age. A total of 2251 completed consent forms for participation. Several hundred were not included in the final sample: 169 because they were male[1] and 276 due to incomplete data.

Trauma incidence was calculated for participants based on the traumatic event that they reported as being the most upsetting event on the list of traumatic events that they have experienced; that trauma labeled their primary traumatic event. Participants were divided into different trauma groups based on this response. The interpersonal traumatic event group consisted of 15% (N=279) of the sample, the non-personal traumatic event group was the largest at 65% (N=1165), and the final 20% (N=362) reported no experience of a traumatic event in their lifetime and thus were placed in the non-traumatic event group. The demographic characteristics for each group are provided in Tables 1 and 2. Endorsement of clinical levels of psychological conditions was also measured for each group and was reported in Table 3.

[1] All materials used for the current study clearly stated that only females were allowed to participate, including the introductory description of the study from which participants chose the projects they could participate in as well as the consent form. Despite these instructions, 169 identified males participated in this study. Their information was removed from the present databases.

Procedures

Participants were recruited from psychology classes at a Midwestern University and received course credit for their participation in the study. Participants were provided a brief description of the study prior to completing the questionnaires so as to inform them of the study purposes. Participants were informed that they must be female and above the age of 18 in order to participate in the study. The study was conducted completely online and consisted of self-report questionnaires. The study was designed to be completely anonymous in order to protect the privacy of the women that endorsed traumatic experiences and to encourage full disclosure on the questionnaires. At the end of the study, participants were provided with a feedback sheet to explain the purpose of this study in more detail and a resource list for mental health services in the community if needed.

All participants for the study were asked to complete questionnaires assessing demographic information, measures assessing their psychological health, physical health, personality characteristics, non-trauma related environmental stress measures, and a screener for traumatic experiences (see measure descriptions below). Women that endorsed a history of at least one traumatic event, interpersonal or non-personal, were instructed to complete the remaining measures assessing characteristics of the traumatic event, PTSD symptoms, ASD symptoms, and social support directly after the trauma experience.

Measures

Demographics

Participants were asked to complete a short questionnaire, 4-items, to identify their age, race/ethnicity, education level, and family income (parents' income for those supported by parents). An additional item was added to the end of the questionnaire to identify participant's sex in order to screen for possible males that may have participated in the study. Gender was imputed to assess for persons that were male and did not answer the question. Participants were categorized as male were removed from the database. All identified males were removed from the database. See appendix A for copies of all measures.

Physical Health Symptoms

National Health Interview Survey (NHIS: Centers for Disease Control, 2005). This 28-item measure was designed to assess health concepts in clinical and research settings. For the purposes of this study, it was adapted to include more medical conditions discussed in the physical health and trauma experience literature such as gastrointestinal and gynecological conditions. Participants were asked about the presence or absence of medical conditions diagnosed by a medical practitioner at any time in their life. Medical conditions assessed in this measure include cardiopulmonary, gastrointestinal, and gynecological. Moderate reliability was found for this measure in the current study (alpha= .70).

Miller Abuse Physical Symptom and Injury Scale (MAPSAIS: Miller & Campbell, 1993). This is a 47-item measure that assesses physical ailments endured over the past year and lifetime. Lifetime symptoms were assessed by presence or absence and current year symptoms will be assessed using a 4-point Likert scale ranging from "Not at all" to "Often." This measure was originally designed to assess physical health problems

directly related to interpersonal violence and general physical health problems. It included 40-items that assess health ailments specific to immune functioning such as allergies (e.g. hay fever, asthma), infections (e.g. urinary tract, respiratory, viral) and chronic pain (headache, back pain, chest pain, abdominal pain). Woods and colleagues (2005) found that this measure to have high reliability (alpha=.84) and validity as related to all medical charts for their participants. High reliability was found for this section of the measure in the current study (alpha= .90).

The remaining 8-items are specific to physical conditions related to interpersonal violence. These items were reworded to encompass physical health problems directly related to the traumatic event that bothered them the most. Examples of these items include "Hospitalized due to injuries from the traumatic event" and "Facial injuries due to the traumatic event." Participants were instructed to only complete this section if they had already endorsed the experience of a traumatic event. The sum of these questions was used as physical health severity for traumatic characteristics. This section of the measure yielded high reliability (alpha= .84).

Measures of Psychological Symptoms

Center for Epidemiologic Studies Depression Scale (CED-S: Radloff, 1977). This is a 20-item self-report instrument that assesses the presence of current depressive symptoms in the past week. Examples of items include: "I did not feel like eating; my appetite was poor," "I felt lonely," and "I felt sad." Participants were asked to report how often they experienced each item in the past week using a 4-item Likert scale ranging from "Rarely or none of the time" to "Most or all of the time." CED-S total scores range from 0-60 with higher scores indicating more depressive symptoms. Scores of 16 or

higher were indicative of clinical levels of depression (Radloff, 1977) and were used as to classify participants in the current study. The CED-S was reported to have internal consistency in the general population with an alpha of.85 and a psychiatric inpatient population with an alpha of .90. It was also reported to have moderate to high levels of convergent validity (Radloff, 1977). The current study found high reliability for this measure (alpha= .90).

Beck Anxiety Inventory (BAI: Beck, Epstein, Brown, & Steer, 1988). This is a 21-item self-report instrument that assesses the presence of current panic-like anxiety symptoms in the past week. Examples of items include: "Unable to relax," "Hands trembling," and "Difficulty breathing." Participants will be asked to report how often they experienced each item in the past week using a 4-item Likert scale ranging from "Not at all" to "Severely, I could barely stand it." BAI total scores range from 0-63 with higher scores indicating more anxiety symptoms. Scores of 16-63 were determined to represent moderate to severe levels of anxiety according to past research (Beck et al., 1988) and were used to classify presence of clinical levels of anxiety in the current study. Authors of the BAI reported high internal consistency (alpha=.92) and high content validity of .92 for panic disorder without agoraphobia, .91 for social phobia, and .85 for generalized anxiety disorder (Beck et al., 1988). High reliability was found for this measure in the current study (alpha= .90).

Posttraumatic Diagnostic Scale (PDS: Foa, 1995). This 38-item self-report scale assesses all symptoms from all 6 criteria sets of PTSD based on the DSM-IV. Below is a description of each section of the PDS.

- Screener for Traumatic Event: The PDS begins with a list of 13-items that screen for the experience of a traumatic event including sexual victimization during childhood or adulthood, accident/fire, torture, and life threatening illness. If more than one event was endorsed, participants were asked to identify the traumatic event that bothered her the most; for the purpose of this study, this was considered the primary traumatic event. The information collected in this section was utilized for three areas of data analysis. The events endorsed in this section were used to screen for the experience of a traumatic event. Events considered the most distressing traumatic experience were used to categorize the women based on interpersonal or non-personal traumatic event experience into groups for analysis. Participants that did not endorse any items in this section were directed to skip the following sections of the PDS.
- Characteristics of Traumatic Events: To assess for psychological severity of the traumatic event, participants were also asked to report how upsetting the event was at the time it occurred. Each item was measured on a 4-point Likert scale ranging from "Not at all" to "A lot." Items were summed for the primary traumatic event to produce a psychological severity score. To assess for relationship to the perpetrator, participants were asked to report the number of times each interpersonal traumatic event was perpetrated by a family member (e.g. father, brother, step-father), family friend or neighbor, or stranger. The category and number of times the event was perpetrated by for the primary traumatic event was used for analysis. Finally the number of events reported by the participants, and the number of times each one occurred, was summed to

produce a total trauma exposure score to assess for multiple traumatic event exposure.

- Trauma Symptoms: Participants who endorsed an experience of a traumatic event were asked to complete 17-items that correspond to the DSM-IV-TR PTSD symptoms of reexperiencing, avoidance, and arousal. Participants were directed to complete these questionnaires based on their primary traumatic event. The experience of each symptom in the past month will be measured using a 4-point Likert scale ranging from "Not at all" to "5 or more times a week/Almost Always." The frequency of symptoms was summed to create a sum score for each cluster of PTSD symptoms.

The PDS is reported to have high test-rest reliability for total symptom severity (alpha=.82) and for each of the symptoms clusters (alpha range= .77-.85). It was also found to have high convergent validity with the PTSD portion of the SCID, kappa=.65 (Foa, 1995). High reliability was found in the current study for trauma symptoms (alpha= .92).

The Stanford Acute Stress Reaction Questionnaire (SASRQ: Cardena, Koopman, Classen, Waelde, & Spiegel, 2000). This is a 30-item self-report questionnaire that measures symptoms of ASD such as dissociation, reexperiencing avoidance, and hyperarousal. For example, "I experienced myself as though I were a stranger," "I felt hypervigilant or on edge," and "had repeated and unwanted memories of the event." Each item is measured on a 5-point Likert scales ranging from "Not experienced" to "Very often experienced." Participants were directed to respond to questions in this measure based on their primary traumatic event. Participants were asked to report if they had

experienced these symptoms during the most traumatic event or up to 4 weeks afterward. Their ratings were used to produce one total ASD score. This measure has been utilized in previous studies to assess symptoms of ASD based on different traumas such as earthquakes, firestorms, and witnessing someone else's death (Cardena & Spiegel, 1993; Freinkel, Koopman, & Spiegel, 1994; Koopman, Classen, & Spiegel, 1994). The SASRQ was reported to have high internal consistency (alpha=.93). The current study found high reliability for this measure (alpha= .97).

Measures of Individual Characteristics

Eysenck Personality Questionnaire- Revised and Abbreviated (EPQR-S: Eysenck, Eysenck, & Barrett, 1985). This measure is a 24-item assessment of abbreviated version of the revised Eysenck Personality Questionnaire (Eysenck et al., 1985). The items assess for extraversion and neuroticism. The EPQR-S has been widely used throughout the literature to assess personality dimensions. Examples of items in the extraversion scale include, "Are you an irritable person," "Are you a talkative Person," and "Have you ever said anything bad or nasty about someone." Items were reverse coded as needed and summed to determine total score for each domain; only neuroticism and extraversion will be used in analyses for this study. The EPQR-S was reported to have high test-retest reliability for females, .80 for neuroticism and .84 for extraversion (Eysenck et al., 1985). This measure yielded high reliability scores of .82 for neuroticism and .86 for extraversion in this study.

Life Orientation Test- Revised (LOT-R: Scheier, Carver, & Bridges, 1994). This is a 10-item scale that measures positive outcome expectancies. It is utilized to assess for optimistic and pessimistic attitudes. It provides 3 statements that are positively stated, 3

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that are negatively stated, and 4 filler items used to disguise the intent of the scale. Examples of items in the LOT-R include "In uncertain times, I usually expect the best," "I'm always optimistic about my future," and "I rarely count on good things happening to me." Participants were asked to respond how much each item reflects their own attitudes using a 5-point Likert scale ranging from "I agree a lot" to "I disagree a lot." Responses denoting pessimistic values were reversed scored. Items were summed to create one total optimistic score and ranged from 0-32 with high scores reflecting more optimistic beliefs. Internal consistency for the LOT-R was found to be .78 for the optimism items and test-retest scores taken over 4-28 months ranged from .59-.79 (Segerstrom, 2006). The LOT-R was also reported to have adequate discriminant validity (Scheier et al., 1994). High reliability was found for this measure in the current study (alpha= .79).

Levenson's Locus of Control Scale- Brief version (LOC-B: Sapp & Harrod, 1993). This 9-item measure is the abbreviated version of Levenson's Locus of Control Scale (1974) which is designed to assess perceptions of locus of control. Participants were asked to rate a statement using a 5-point Likert scale ranging from " Strongly Agree" to " Strongly Disagree." Statements utilized in this measure were designed to assess 3 categories of control: internal control, chance, and powerfulness of others (i.e. external control). The 6 –items assessing internal and external control were utilized in the analyses for this study. Examples of items include: "My life is determined by my own actions" and "My life is chiefly controlled by powerful others." Sapp and Howard report moderate reliability coefficients for internal control .58, chance .65, and powerfulness of others .72. They also reported significant ($p<.01$ level) predictive and construct validity in relation to other Locus of Control measures. Inter-item correlations for internal fall in

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the optimal range of .32 to .44. Inter-item correlations for external control falls in a slightly lower range of .10 to .40 with a mean of .20.

Measures of Environmental Characteristics

Crisis Support Scale (CSS: Joseph, Andrews, Williams, & Yule, 1992). This 7-item scale assesses survivor perceptions of received social support after a traumatic event. Participants were asked to rate their perceptions of social support right after the primary traumatic event and current social support. A 7-point Likert scale ranging from "Never" to "Always" is utilized to assess the reception of social support after the experience of a traumatic event. Examples of the items in the CSS are "Someone willing to listen," "Sympathy and support from others," and "Feeling let down." Items were summed to create two total social support scores, one at the time of the traumatic event and for current social support. They were reverse coded so that high items reflect less social support related to the traumatic event. Elklit and colleagues (2001) reported good internal consistency and discriminatory power in their review of 11 studies (N=4213) that used the CSS and reported an alpha of .74 (Elklit et al., 2001). High reliability was found for both current and past social support (alpha=.90 and .91 respectively).

Life Experiences Survey (LES: Sarason, Johnson, & Siegel, 1978). This 37-item questionnaire asks about life events experienced in the last year that may have caused changes in the participant's life. If an event occurred, the participant was instructed to report whether they view the event as positive or negative on a 7-point Likert scale ranging from –3 for extremely negative impact to +3 for extremely positive impact. Some examples of items are "death of a close family member," "trouble with employer," and "marital separation." Items endorsed were multiplied by their impact rating and only

items rated as negative scores were summed to create one total score for negative life events. This measure was found to have high reliability for the current study (alpha= .77 to .81).

Family History Questionnaire (FHQ: Klump, 2001). In this measure, the participant was asked to indicate if any relatives have major internalizing psychological problems such as depression, post-traumatic stress disorder, anxiety, alcoholism, or suicide and/or attempts (they will be provided with definitions of each disorder in case there were any questions about the diagnostic terms). If the participant answers positively to any of the mental health problems, they were asked to identify the family members' relation to themselves (e.g. mother, brother, father's sister) and asked if that individual was treated or hospitalized for the condition. Family psychiatric history score was composed of the total number of family members (e.g. mother, father, or siblings) that the participant identified as having an internalizing disorder.

RESULTS

Missing Data

Due to the nature of the data collection, there were many checks conducted to assess for completion and accuracy of the data. All participants that did not complete the PDS screening section were removed from the database prior to analyses. As previously mentioned, data were checked for accuracy and participants identified as male or with incomplete data were removed from the database to ensure that only data from participants that understood the questionnaires were included in the study. Any remaining missing data were imputed using the EM estimation method (SYSTAT 12). This statistical algorithm is used to find the maximum-likelihood estimate of the parameters of

the distribution from the data set with missing values. Estimates were rounded to the nearest full value and used to replace the missing values in the data set. See table 4 for percent of data imputed and descriptive statistics of the variables before and after imputation.

Hypothesis Testing

Hypothesis 1

The first hypothesis addressed whether there was a difference in psychological and physical health outcomes for the different groups based on trauma experiences. Multivariate Analysis of Variance (MANOVA) demonstrated a significant difference between the no trauma, IPT, and NPT groups (Λ=. 647, $F_{18,1806} = 48.444$, $p < .01$) for both types of outcomes (see table 5). Further post hoc tests were conducted using Tukey HSD to assess for significant differences between the groups.

The IPT group was found to be significantly different than the no trauma and NPT groups for depressive and anxious symptoms, however, there were no significant differences between the no trauma and NPT groups (see table 6). The IPT and NPT groups were also significantly different from one another for PTSD and ASD symptoms. In addition, all three groups were significantly different from one another for serious medical conditions, lifetime and past year physical ailments. The IPT group had the highest means for all mental health outcomes, NPT had the second highest, and the no trauma group had the lowest.

Hypothesis 2: Structural Model

IPT Model Testing

In order to test the transactional model for trauma, a structural equation model (SEM) was estimated based on group membership; groups were created based on the primary traumatic event endorsed. All SEM analyses were conducted with LISREL, version 8.72 (Joreskog & Sorbom, 2005). The IPT hypothesized model fit was χ^2 (184, N = 279) =341.38, p <.01, Goodness of Fit Index (GFI) = 0.90, Comparative Fit Index (CFI) = 0.96, Normed Fit Index (NNFI) = 0.95, Root Mean Square Error of Approximation (RMSEA) = 0.055, 90 Percent Confidence Interval for RMSEA = (0.046; 0.065), and Standardized Root Mean Square Residual (RMR) = 0.071. Thus, the model showed a good fit to the data.

In regards to personality characteristics, it was found that neuroticism and external control loaded negatively on the latent variable, while the other three factors loaded positively onto the latent variable. Based on these findings and previous literature that these two factors were categorized as risk factors for psychological symptoms (Bramsen et al., 2002; Dyb et al., 2003; Lauterbach & Vrana, 2001; Lee, Vaillant, Torrey, & Elder, 1995; Regehr et al., 2000) and physical health consequences of traumatic experiences, it appears that the factor loaded as protective personality characteristics. As a result, the personality characteristics latent variable will be referred to as protective personality characteristics for this analysis.

Further examination of the path coefficients indicated that only some of the hypothesized relationships were significant. The transactional model was tested and, as hypothesized, it was found that high levels of trauma characteristics were predictive of high levels of environmental stress (t= 3.16, p < .05) and negatively predictive of protective personality characteristics (t= -2.67, p < .05). Contrary to other hypotheses in

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the transactional model, trauma characteristics were not directly predictive of psychological or physical health symptoms. Protective personality characteristics were negatively predictive of environmental stress (t= -4.29, $p < .05$) and psychological symptoms (t= -3.47, $p < .05$) but not significantly predictive of physical health symptoms. As hypothesized, environmental stress was found to be predictive of psychological symptoms (t= 3.47, $p < .05$) but not of physical health symptoms. Finally, psychological symptoms were found to be predictive of physical health symptoms (t= 2.50, $p < .05$). Overall, these findings do not offer strong support of the hypothesized transactional model for the traumatic event situation. However, further examination of these results suggests the presence of a mediation model of trauma characteristics and health outcomes through environmental stress. See figure 2. Additional analyses were conducted to test this mediation model.

The presence of a mediation model among the trauma characteristics of IPT and health outcomes was assessed by removing the pathways from trauma characteristics to both psychological and physical health symptoms. The model fit was χ^2 (186, N = 279) =342.61, p <.01, Goodness of Fit Index (GFI) = 0.90, Comparative Fit Index (CFI) = 0.96, Normed Fit Index (NNFI) = 0.95, Root Mean Square Error of Approximation (RMSEA) = 0.055, 90 Percent Confidence Interval for RMSEA = (0.046; 0.064), and Standardized Root Mean Square Residual (RMR) = 0.070. The fit statistics indicate a good fit to the data and are similar to the fit indices from the previous model. A chi-square test of difference was conducted between these two models and determined that the models were not significantly different from one another.

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Post Hoc Transactional Model Testing

As previously noted the primary focus of this study has been to examine the relationship of characteristics of IPT survivors in relation to psychological and physical health outcomes. Results from the preceding analyses indicate that there are significant differences between the reactions of IPT and NPT survivors. Based on these findings and the lack of support for the transactional model with survivors of IPT the question was raised as to whether this model would be a good fit for survivors of NPTs. Previous studies have found that aspects of the traumatic event (e.g., physical injury: Koren et al., 2005; Maes et al., 2000) personality (e.g., Nightingale & Williams, 2000) and environmental characteristics (e.g., Benight et al., 1999) are also predictive of health outcomes for survivors of NPT. Thus, I proposed post hoc hypotheses to examine if the transactional model was well suited to survivors of non-personal traumatic events. The following exploratory analyses reflect the hypothesis that the transactional model may better depict the relationships between different survivor domains for a NPT group compared to an IPT group.

In addition, the current study also raised the question of the differences between examining the trauma groups separately compared to collectively. Since significant differences were found for almost all health outcomes between the IPT and the NPT survivors, the question of what happens when the different trauma groups are combined arises. As noted in the review of trauma literature, it is common to examine the experience of trauma either together (e.g. Lauterbach & Vrana, 2001) or separately (e.g. Banyard & Williams, 1996), however, it is not common to compare these approaches. Thus, I also proposed the combination of these groups in order to compare the

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relationships that emerge based on this approach compared to the premise of this study, that they need to be separated from one another. Due to the nature of the different traumas experiences it is hypothesized that there will be differences between in the relationships between survivor characteristics and health outcomes when the traumatic event types are combined versus separated. The following analyses reflect these additional research questions.

NPT Model Testing

Based on the MANOVA findings discussed earlier, there were significant differences between the IPT and NPT groups for psychological and physical health symptoms. Thus, the transactional model was also assessed using structural equation modeling for the NPT sample in addition to the IPT sample. According to SEM analyses, the NPT model fit was χ^2 (151, N = 1165) =738.81, p <.01, Goodness of Fit Index (GFI) = 0.94, Comparative Fit Index (CFI) = 0.96, Normed Fit Index (NNFI) = 0.95, Root Mean Square Error of Approximation (RMSEA) = 0.058, 90 Percent Confidence Interval for RMSEA = (0.054; 0.062), and Standardized Root Mean Square Residual (RMR) = 0.060. Thus, the model was a moderate fit to the data.

As with the survivors of IPT, personality characteristics also loaded on the latent variable in the direction of protective personality characteristics. As predicted, there were several significant path coefficients within the path model. It was found that high levels of trauma characteristics were predictive of high levels of environmental stress (t= 6.54, p < .05) and negatively predictive of protective personality characteristics (t= -3.66, p < .05). As was the case for the IPT model, trauma characteristics were not directly predictive of psychological or physical health symptoms. Protective personality

characteristics were negatively predictive of environmental stress (t= -9.27, p < .05) but not significantly predictive of psychological or physical health symptoms (see figure 3). Environmental stress was found to be predictive of psychological symptoms (t= 2.67, p < .05) but not of physical health symptoms. Unlike in the IPT model, psychological symptoms were not predictive of physical health symptoms.

Based on these findings, the transactional model was not supported in the NPT model. Findings indicate that in the NPT group there are no factors that predict physical health symptoms, however, trauma characteristics appear to indirectly predict psychological health symptoms through environmental stress factors. A full mediation model of trauma characteristics through environmental stress to psychological symptoms was found and tested.

The possible presence of a mediation process among the trauma characteristics of NPT and health outcomes was assessed by removing the pathways from trauma characteristics to both psychological and physical health symptoms. The model fit was χ^2 (153, N = 1165) = 739.91, p <.01, Goodness of Fit Index (GFI) = 0.94, Comparative Fit Index (CFI) = 0.96, Normed Fit Index (NNFI) = 0.95, Root Mean Square Error of Approximation (RMSEA) = 0.057, 90 Percent Confidence Interval for RMSEA = (0.053; 0.062), and Standardized Root Mean Square Residual (RMR) = 0.060. The fit statistics indicate a moderate fit to the data and are similar to the fit indices from the previous model. The mediation was upheld after the removal of the non-significant parameters from trauma characteristics to the health outcome variables. In addition, two previously non-significant paths became significant when these paths were removed: personality characteristics were positively predictive of psychological symptoms (t= 2.34, p < .05)

and environmental stress was significantly predictive of physical health symptoms (t= 2.87, $p < .05$). Despite these differences, a chi-square test of difference determined that the models were not significantly different from one another.

Full Trauma Model

As discussed, a model was also estimated for all women that reported any form of traumatic event to assess if the transactional model was valid for the combined trauma group. In regards to the full trauma model, the model fit was χ^2 (176, N = 1444) =919.67, p <.01, Goodness of Fit Index (GFI) = 0.94, Comparative Fit Index (CFI) = 0.97, Normed Fit Index (NNFI) = 0.95, Root Mean Square Error of Approximation (RMSEA) = 0.054, 90 Percent Confidence Interval for RMSEA = (0.051; 0.058), and Standardized Root Mean Square Residual (RMR) = 0.056. Thus, the model was a good fit to the data.

As in the previous models, personality characteristics also loaded on the latent variable in the direction of protective personality characteristics. In regard to the relationships of the different characteristics, trauma characteristics were found to be predictive of environmental stress (t= 6.48, $p < .05$) and negatively predictive of protective personality characteristics (t= -5.80, $p < .05$) but not directly predictive of psychological or physical health symptoms (see figure 4). In regard to protective personality characteristics, as in the previous models, they were found to be negatively predictive of environmental stress (t= -6.75, $p < .05$). Unlike in the previous models, they were also found to be positively predictive of physical health symptoms (t= -3.89, $p <$ .05) and not predictive of psychological symptoms. As with the previous models, environmental stress was found to be predictive of psychological symptoms (t= 7.91, $p <$ .05) and physical health symptoms (t= 3.47, $p < .05$). Finally, psychological symptoms

were not predictive of physical health symptoms. The full trauma model supports the transactional model for protective personality characteristics. Additional analyses were conducted to test this mediation model.

The presence of mediation model among the trauma characteristics of full trauma model and health outcomes was assessed by removing the pathways from trauma characteristics to both psychological and physical health symptoms. The model fit was χ^2 (178, N = 1444) =922.99, p <.01, Goodness of Fit Index (GFI) = 0.95, Comparative Fit Index (CFI) = 0.97, Normed Fit Index (NNFI) = 0.96, Root Mean Square Error of Approximation (RMSEA) = 0.054, 90 Percent Confidence Interval for RMSEA = (0.050; 0.057), and Standardized Root Mean Square Residual (RMR) = 0.056. The fit statistics indicate a good fit to the data and are similar to the fit indices from the previous model. A chi-square test of difference was conducted between these two models and determined that the models were not significantly different from one another.

Group Comparison Model

Multiple-group analyses were attempted to compare the three different groups for this study. The full trauma group could not be compared to the IPT or NPT groups because the participants from the IPT and NPT groups were the participants in the Full Trauma group. A comparison between the IPT and NPT models was attempted. The NPT model did not include the manifest variable of perpetration due to the nature of the traumatic events experienced, thus making comparison of the two-group model difficult. The IPT and NPT group was compared by fixing the missing variable in the IPT model and setting it equal to zero in the second model, however the model did not converge thus indicating that the models are not comparable to one another.

Hypothesis 3: Exploratory Cluster Analyses

Cluster Analytic Plan

As proposed in the hypotheses, only the IPT group was examined in this exploratory person-centered approach. Prior to clustering, all scores in the IPT group were standardized to account for the different scales and ranges used (Hair & Black, 2000). The data were divided based on the categories represented in the previous structural equation models: trauma characteristics, environmental stress characteristics, personality characteristics. Thus, three sets of clusters were used for this study. Psychological and physical health symptoms were compared across clusters to determine whether or not differences existed.

For all clusters, a combined approach was used. An initial agglomerative hierarchical cluster analysis was conducted using Ward's method and squared Euclidean distances as the measure of proximity. Ward's method was selected because it maximizes within-group homogeneity by minimizing the within-cluster error sum of squares (Hair & Black, 2000). Squared Euclidean distances were then used because they provide the distance between the individuals in clusters (Hair & Black, 2000). The stability of these cluster solutions were examined using a split-half test (Hair & Black, 2000). Second, stable solutions were submitted to a K-means iterative clustering procedure. The K-means clusters were then conducted to determine the final solution for the cluster categories. Finally, MANOVAs were conducted for the cluster solutions to assess if the psychological and physical health symptoms were significantly different from one another based on cluster membership.

A combined approach was chosen for this study, in which both hierarchical and iterative cluster procedures were conducted, to utilize the advantages and address the disadvantages of each clustering procedure if used alone. The agglomerative hierarchical procedure allows the data to determine the number of clusters based on naturally occurring clustering. However, a disadvantage of this technique is that it is susceptible to outliers which can distort the cluster solutions developed (Hair & Black, 2000). In comparison, the K-means iterative procedure requires the researcher to determine the number of clusters used for the analysis but is less susceptible to outliers. Thus a combined approach is useful way to deal with the problems that each procedure raises and was used in the current study (Hair & Black, 2000).

Trauma Characteristics

Preliminary hierarchical clusters were used to determine the number of clusters that form from the data based on 4 trauma characteristic variables: physical severity, psychological severity, cumulative multiple traumas, and perpetration of traumatic events by family member. The cluster analysis produced a dendogram with an 11, 6, 5, 4, 3, 2, 1-cluster solution (see figure 5). The 3-cluster solution was determined to be the most appropriate solution based on group size, conceptual meaning for the study, and stability of results. An iterative clustering procedure was then conducted for the 3-cluster solution (see table 7 for means).

In the first cluster (N=158), women displayed low levels of all trauma characteristics (see figures 6-8). It was thus categorized as the low risk group. Women in this group displayed low levels of all physical health and psychological health symptoms.

In the second cluster, (N=90), women displayed high levels of multiple traumas and moderate levels of perpetration of traumatic events by family members. Women in this group also reported moderate levels of psychological severity and low levels of physical severity. Based on this profile, this group was labeled the multiple trauma group. In regards to physical health symptoms, women with this profile reported high levels of physical ailments in the past year and over their lifetime. They also reported moderate levels of serious medical conditions. Women with this profile of trauma characteristics displayed relatively moderate levels of all psychological symptoms.

The final cluster (N=31), was categorized by the highest levels of physical health severity and minimal levels of all other trauma characteristics. This cluster was categorized as the high injuries group. Women with this profile displayed high levels of all physical health symptoms. They also displayed high levels of anxiety and PTSD symptoms, moderate levels of ASD symptoms, and low levels of depressive symptoms.

MANOVAs were conducted to assess for statistical differences regarding psychological and physical health symptoms between the 3 clusters. Multivariate analyses indicated a significant difference between the clusters (Λ=. 835, $F_{14,279} = 3.628$, $p < .01$). Further examination of the between-subjects findings indicated a significant difference for all psychological and physical health symptoms excluding serious medical conditions, $p < .01$ (see table 8). Further post hoc tests were conducted using Tukey HSD to assess for significant differences between the groups (see figures 6-8).

Examination of the 3 profiles in post hoc tests indicated that the low risk group (cluster 1) was found to be significantly lower than the multiple trauma group (cluster 2) and the high injuries from trauma group (cluster 3) for physical ailments in past year and

over lifetime, anxiety, ASD, and PTSD symptoms. Cluster 1 was also found to be significantly lower than cluster 2 for depressive symptoms, but not cluster 3. As mentioned in the MANOVA results, there were no significant differences found between the clusters for serious medical conditions.

Personality Characteristics

Women in the IPT group were also clustered based on personality characteristics. Preliminary hierarchical clusters were conducted using the 5 variables: optimism, neuroticism, extraversion, internal control, and external control. The cluster analysis produced a dendogram which showed a 16, 10, 7, 6, 5, 4, 2, 1-cluster solution (see figure 9). The 4-cluster solution was suggested as the most appropriate solution based on group size, conceptual meaning for the study, and stability of results. An iterative clustering procedure was then conducted for the 4-cluster solution (see table 9 for means).

The first cluster (N=95) was categorized by the highest levels of optimism of the 4 profiles. These women also displayed moderate levels of extraversion and internal control; low levels of both neuroticism and external control. See figure 10-12. This cluster was thus labeled the high optimism and low neuroticism group. Women who clustered into this group displayed low levels of both psychological and physical health problems.

In the second cluster (N=89), women displayed moderate levels of both neuroticism and extraversion, and minimal levels of internal and external control, and low levels of optimism. Thus, this profile was labeled the average personality characteristics group. The women that had this profile displayed the highest level of physical health symptoms of all 4 groups, especially physical ailments in their lifetime

and the past year. These women also displayed moderate levels of all the psychological symptoms.

The third cluster of women (N=49) displayed the highest levels of neuroticism and the lowest levels of extraversion of the four profiles. Women in this group also displayed minimal levels of internal control, and low levels of optimism and external control. This cluster was thus labeled the high neuroticism group. Women with this profile displayed average levels of all physical health symptoms and psychological symptoms with the exception of depression. Women in this group displayed the highest levels of depression of all 4 groups.

For the final cluster (N=46), women exhibited the highest levels of external control and the lowest levels of internal control and optimism of the 4 groups. Women in this group also displayed average levels of both neuroticism and extraversion. This profile was thus labeled the high external control group. Women with this profile displayed high levels of physical ailments in the past year, but minimal levels of both serious medical conditions and lifetime physical ailments. Women in this group also displayed high levels of depression and anxiety, but minimal levels of PTSD or ASD symptoms.

Further analyses were conducted to assess if the profiles were significantly different than one another in regards to their psychological and physical health outcomes. Multivariate analyses indicated a significant difference between the clusters (Λ=. 670, $F_{21,279} = 5.516, p < .01$). Further examination of the between-subjects findings indicated a significant difference for all psychological and physical health symptoms excluding

serious medical conditions, $p < .01$ (see table 10). Post hoc tests were conducted using Tukey HSD to assess for significant differences between the groups (see figures 10-12).

Examination of the 4 profiles in post hoc tests for lifetime physical ailments and ASD symptoms for women in cluster 1 were significantly lower than women in cluster 2. However, there were no significant differences between women in cluster 3 and 4 for these outcomes. Women in cluster 1 displayed significantly lower PTSD symptoms than women in clusters 2 and 4. Finally, the Physical ailments for the last year, depressive and anxiety symptoms for women in cluster 1 were significantly lower than those of all the women in other clusters.

Environmental Stress

Women in the IPT group were finally clustered based on their environmental factors. Preliminary hierarchal clusters were conducted using the 4 variables: negative life events, family psychiatric history, and social support (current and at the time of the traumatic event). The cluster analysis produced a dendogram which showed a 22, 14, 9, 6, 5, 4, 3, 2, 1-cluster solution (see figure 13). The 3-cluster solution was determined to be the most appropriate solution based on group size, conceptual meaning for the study, and stability of results. An iterative clustering k-means procedure was then conducted for the 3-cluster solution (see table 11 for means). Social support in the current study was coded for presence of social support rather than the lack of social support and was graphically represented accordingly in figure 14. Thus low levels of social support actually represent high levels of social support problems in the present analysis and will be discussed based on the latter definition.

The first cluster (N=68) was categorized by high levels of negative life events and social support, both past and current. This group displayed low levels of family psychiatric history. See figures 14-16. It was thus labeled the high environmental stress group. In regards to the physical health, women in this group were categorized by the highest levels of physical ailments in the past year and minimal levels of lifetime physical ailments and serious medical problems. In regard to psychological health, women with this profile reported the highest levels of depressed symptoms and moderate levels of anxiety, ASD, and PTSD symptoms.

Women in the second cluster (N=145), were categorized by low levels of all forms of environmental stress, past and present. This group was thus labeled as the low environmental stress group. Women with this profile were also found to display low levels of all physical health and psychological health symptoms.

Women in the final cluster (N=66) displayed very high levels of family psychiatric history. In comparison, these women displayed minimal levels of other forms of environmental stress examined in this study. Thus, this group was labeled the high family psychiatric history group. Women in this group displayed high levels of physical ailments currently and over their lifetime. They reported minimal levels of serious medical conditions in their lifetime. In regard to psychological health, women with this profile reported high levels of ASD symptoms, moderate levels of PTSD and anxiety symptoms, and low levels of depressive symptoms.

MANOVAs were conducted to assess for statistical differences regarding psychological and physical health symptoms between the 3 clusters. Multivariate analyses indicated a significant difference between the clusters (Λ=. 738, $F_{14,279} = 6.321$,

$p < .01$). Further examination of the between-subjects findings indicated a significant difference for all psychological and physical health symptoms excluding serious medical conditions, $p < .01$ (see table 12). Further post hoc tests were conducted using Tukey HSD to assess for significant differences between the groups (see figures 14-16).

Examination of the 3 profiles in post hoc tests for depressive symptoms indicated that all three clusters differed from one another on a significant level. The low environmental stress group (cluster 2) was found to be significantly lower than the high family history group (clusters 3) for lifetime physical health ailments. Cluster 2 was also found to be significantly lower than clusters 1 and 3 for physical ailments in the past year, anxiety, ASD, and PTSD symptoms. As previously mentioned, there were no significant differences between the three groups for serious medical conditions.

DISCUSSION

Overall, the findings from this study offered support for differences between the psychological and physical health outcomes for survivors of interpersonal compared with non-personal traumatic events. These differences were found both for the magnitude of the outcomes as well as the survivor characteristics that influence the development of these health outcomes. While the proposed transactional model was not supported for the interpersonal survivor population, mediation models were found to explain the relationship between these survivor characteristics and health outcomes. As was the case for the IPT survivor group, the transactional model was not supported for post hoc analyses conducted with survivors of both non-personal and all forms of traumatic events. Rather a mediation model was found for all survivor types. However, the relationship between survivor characteristics in relation to health outcomes differed based

on the type of traumatic event examined. In general, study findings support Herman's (1992) trauma theory that the experience of an interpersonal traumatic event has a different impact on the survivor than a non-personal traumatic event. Current findings suggest a need to differentiate between types of traumatic events when examining the consequences for psychological and physical health.

Person-centered analyses were also conducted to examine the groupings of interpersonal traumatic event and survivor characteristics. The health profiles that correspond to these groupings were then examined. Cluster analyses indicate that there are multiple health symptom profiles of women who have suffered IPT and that these symptom profiles differed meaningfully based on characteristics of the trauma, personality, and environmental stress. A group with low levels of psychological and physical health problems was found in each cluster analysis and this group was associated with low risk characteristics. These findings suggest that the combination of certain risk and protective factors in survivors of interpersonal traumatic events is related to resilience. Interpretations of the specific findings are discussed below.

Trauma Group Differences

Results from MANOVA analyses indicate that there were differences between the psychological and physical health repercussions for female survivors of IPT, survivors of NPT, and women that did not report the experience of a traumatic event. Women that experienced IPT as their primary traumatic event consistently endorsed higher levels of each psychological symptom than the NPT and no trauma groups. This supports Herman's trauma theory (1992) which postulates that the experience of an interpersonal

traumatic event has more negative repercussions for the survivor over other forms of traumatic events due to the nature of the event.

The IPT group was found to have significantly higher levels of depressive and anxiety symptoms than both other groups, while there were no significant differences between the NPT and no trauma groups for these symptoms. These findings suggest that not all forms of trauma are related to the presence of internalizing mental health problems. Although the experience of any form of traumatic event may affect the survivor's understanding of her vulnerability to harm in the world, the experience of a traumatic event at the hands of another person differentially exposes the survivor to risk for mental health problems. The experience of an NPT may result in the activation of a state anxiety response when a situation arises that was related to traumatic event, e.g. trauma associated to a tornado may result in fear when a tornado approaches or other forms of inclement weather. In contrast, the experience of an IPT may result in chronic fear of further harm by close relationships or other people in general and be associated with a feeling of vulnerability and anxiety in relation to other people. This experience may also result in negative interpretations of situations associated with other people due to the IPT survivor's fear of vulnerability which has been associated with the development of depressive symptoms (Beck, 1972).

In regard to physical health, supportive of my hypothesis, the IPT group reported significantly higher levels of recent and lifetime physical ailments, such as colds/viruses, than the NPT and no trauma groups. These findings may be explained by the theory that the experience of a traumatic event may result in the activation of the sympathetic nervous system which regulates the immune system response (Tosevski & Milovancevic,

2006). As described above, the experience of an interpersonal traumatic event may result in constant activation of this nervous system through the chronic anxiety of being harmed by others, thus affecting the survivor of an IPT's immune system response.

In contrast, when examining serious medical conditions such as heart problems, diabetes, or cancer, significantly higher levels were exhibited by both groups that experienced any form of traumatic event compared to the no trauma group. However, the IPT and NPT groups reported statistically similar levels of serious medical conditions to one another, even though the IPT group had higher levels of serious medical conditions. Previous studies have found high levels of physical health conditions for survivors of interpersonal traumatic events e.g. CSA (Arnow et al., 1999; Newman et al., 2000), childhood and adulthood interpersonal violence (Golding, 1994; Walker et al., 1999; Woods et al., 2005). It may be that the lack of significance between the trauma groups in this study is related to the low endorsement of serious medical conditions in this study overall. Most of the conditions categorized by this variable were chronic and had serious health consequences for the individual suffering from them in comparison to the physical ailments which were categorized as more transient medical conditions such as colds and viruses. Younger women may not have developed these serious medical conditions yet due to their age. It may also be that persons that have developed such serious medical conditions would not be physically well enough to be enrolled in a 4-year university. Thus, there was a restricted range on the number of serious medical conditions seen in the current study.

Transactional Model Testing for IPT

The current study was primarily concerned with the environmental and personality characteristics associated with the presence of psychological and physical health symptoms for the survivors of interpersonal traumatic events. Based on Sameroff's transactional model (2000), it was hypothesized that the dynamic relationship between the traumatic event, the survivor's personality, and environmental stressors would transact with one another to influence health outcomes. However, the findings do not support the transactional premise that various domains of the IPT survivor's life (past and present) directly influence one another to explain the presence of mental and physical health. Contrary to the hypotheses, it was found that neither psychological nor physical health symptoms were directly predicted by trauma characteristics for any of the trauma groups. Rather psychological and physical health symptoms were predicted by environmental stress, personality, or other health outcomes which were influenced by trauma characteristics. Thus, these findings are indicative of a mediation relationship for the development of health outcomes in traumatic event survivors rather than a transactional model.

The transactional model was rejected due to the lack of a direct relationship from trauma characteristics to health outcomes. This may have been the result of my interpretation of the influential factors for poor functioning. The current study took the approach that one of the elements that affects these outcomes is the experience of the traumatic event, thus implying that the different domains have the same level of influence on the survivor of an IPT. This approach presumes that characteristics of the IPT are as detrimental as the survivor's world after the event, however, the lack of support for the

transactional model suggests otherwise. It can be inferred from study results that characteristics of the IPT alone are not sufficient for the development of health outcomes; rather the key element is the appearance of the survivor's world following the IPT. Findings from this study suggest that after an IPT the survivor's world is shaped by external factors (i.e., stressors) and her interpretation of this world (i.e., her personality). Although these findings do not support the transactional model, they do not necessarily contradict the theoretical basis for this study. Herman's trauma theory includes the survivor's environment as an important factor for the survivor's healing process (1992). Results from the current study suggest that the survivor's environment and personality are not just used for the healing process but also influence any health consequences experienced by the survivor of an IPT.

Previous trauma literature has supported a mediational relationship between traumatic experiences and psychological consequences through other factors such as parenting (Levendosky, Leahy, Bogat, Davidson, & Von Eye, 2006), social support (Levendosky et al., 2004), and psychosocial stressors (Oppedal, 2008). These results are consistent with national surveys that found that only a subset of people who experience a traumatic event develop psychological symptoms (Breslau et al., 1997; Kessler et al., 1995). Thus, overall study findings support the concept that health consequences are indirectly influenced by trauma characteristics through effects on environmental and personality characteristics.

Further examination of the IPT group model demonstrated that protective personality characteristics also negatively predicted by environmental stress characteristics. Although protective personality characteristics had a direct relationship

with psychological symptoms for survivors of IPT, a path existed between protective personality and environmental stress which then predicted psychological symptoms. This corresponds with past trauma research indicating that personality influences the survivor's coping ability in regards to trauma or stress. People that have high risk personality characteristics, e.g. pessimism, may be more likely to make negative attributions to life events they have experienced and/or interpret their social networks as being unsupportive (Brodhagen & Wise, 2008; Segerstrom et al., 2005). A similar relationship was found in a recent study examining optimism in IPT survivors. They found that optimism was related to problems with interpersonal relations, school and work (Brodhagen & Wise, 2008). Distorted thoughts about the world and self have also been found to be defining characteristics of depression as they may result in the individual interpreting their abilities and other people's relationships in a negative light (Beck, 1972).

Previous literature examining the reason for the direct relationship between personality characteristics and psychological distress has delved into the coping strategies associated with these qualities. Researchers have found that the survivor's belief of how he/she would be able to cope with the stress of a traumatic event (coping self-efficacy) mediated the relationship between PTSD distress and optimism (Benight et al., 1999). It is theorized that despite the experience of a traumatic event, a person who views the world in a positive light would be more willing to believe that there are some good people in the world and that they can develop positive relationships (Herman, 1992). This view of the world and others could help the survivor in her healing process by refuting the concern that she would be harmed again. These findings suggest that the survivor's

own perception of her coping ability influences the relationship between personality characteristics and psychological distress.

Despite previous hypotheses, it was found that physical health symptoms are only directly influenced by psychological symptoms rather than other proposed characteristics of the environment, personality or traumatic event. Previous research has shown that individuals with PTSD and other psychological conditions related to interpersonal traumatic events were more likely to display problems with their physical health than persons without psychological conditions (Arnow et al., 1999; Cloitre, Cohen, Edelman, & Han, 2001; Martin, Rosen, Durand, Knudson, & Stretch, 2000; Zoellner et al., 2000). The presence of symptoms such as reexperiencing may result in the hyperactivation of the sympathetic nervous system and lower the strength of the person's immune response (Tosevski & Milovancevic, 2006). Thus, physical health problems are related to the survivor's psychological reaction to the event. For example, a person that continues to feel as though the event is occurring to her or being reminded of that experience may have an overly activated fight or flight response in comparison to the person that does not reexperience the event. Correspondingly, in response to the hyperactivation of the sympathetic nervous system, the immune system then is chronically lowered. Since the survivor's psychological reaction is theorized to be influenced by her experience of further life stressors as well as poor coping personality styles these characteristics may be indirectly affecting physical health through psychological symptoms.

In general, this study finds that characteristics of the IPT indirectly affect the survivor's functioning through aspects of her personality and environment. According to these findings, women that experience an IPT are not necessarily affected by the

perpetrator, their perception of the event's severity, or how often this event or similar events occur, but rather by how these factors make them view themselves and the world. Understanding this mediation is integral to modeling the dynamics between an IPT survivor's experience of the trauma and her subsequent health. The experience of any traumatic event can be detrimental to the survivor's health in that it alters the survivor's sense of safety. However, the experience of an IPT is most damaging as it affects the survivor's proficiency to see the world as safe afterwards. For these reasons a supportive environment and positive attributions are essential for the IPT survivor's functioning. As such, these results also provide an explanation of why diminished functioning is not universal for all survivors of IPT.

Health Outcomes for NPT Group

Although there was considerable overlap in the findings between the IPT and NPT groups, there were two main differences found between these groups. The first was the lack of a significant pathway from any domain to physical health symptoms. Thus, physical health was not found to be related to characteristics of the traumatic event, environmental stress, or personality. There has been some literature that has found a relationship between non-personal traumatic events and physical health symptoms (Dirkzwager et al., 2006; Taft, Stern, King, & King, 1999; Wagner, Wolfe, Rotnitsky, Proctor, & Erickson, 2002). However, many of these studies were based on military traumas. It is not always clear what was entailed in combat trauma, it is possible that these traumas were more interpersonal in nature or were perceived as having a perpetrator as the traumas were based on war-related experiences. A more clearly defined NPT population may not have similar physical health consequences as a military

population which probably has considerable IPT experiences. Further research is needed to provide more information about the characteristics of an NPT population.

Another reason these relationships may not have been found in the current study refers to the low rates of PTSD endorsed within the NPT sample (see table 3). Past studies examining physical health symptoms in relation to traumatic events consistently indicated that the presence of physical health symptoms were based on the level of PTSD experienced by the survivor (e.g., Taft et al., 1999). Similar findings were reported for IPT groups (Schnurr & Green, 2004; Zoellner et al., 2000). Thus it may be that physical health symptoms are associated with PTSD symptom endorsement rather than all psychological symptoms as is the case with IPT survivors. This may be a result of the different types of trauma endured. Based on the immune system hypothesis, the sympathetic nervous system would be more active for women who are reexperiencing traumatic events either through PTSD reexperiencing symptoms or retraumatization (Woods, 2005). Previous studies have found that survivors of IPT are at higher risk for revictimization compared to survivors of NPT (Banyard et al., 2001; Nisith et al., 2000). It is possible that for those women that do not experience revictimization or multiple traumas, high levels of reeexperiencing symptoms, as evidenced by meeting full criteria for PTSD, would be necessary to for hyperactivation of the sympathetic system associated with physical health problems. Future studies examining the immune responses in survivors of traumatic events should assess for differences between the different trauma groups.

The other difference found between the IPT and NPT models is that personality characteristics did not directly predict psychological symptoms. It appears that in the

NPT model, healthy personality characteristics have an indirect relationship with psychological stress through environmental stress characteristics. This may be explained by the nature of the NPT trauma versus the IPT trauma. Traumatic events can shatter the survivor's fundamental assumption that they are safe, leading in some cases to personality changes (Herman, 1992). The development of a self-conscious, insecure, and vulnerable personality type (Bramsen et al., 2002) may be more likely for someone who has experienced a traumatic event at the hands of another person compared with someone who experiences a natural disaster, as an interpersonal trauma may exacerbate the pre-existing personality beliefs or shatter prior fundamental assumptions about the self.

Results indicate that in addition to the difference in means between the two groups discussed earlier, there are also differences in the health outcomes based on the type of traumatic event endured. As it has been theorized, the psychological reaction of the survivor of is predictive of physical health, lower levels of psychological symptoms associated with the experience of a NPT may explain the lack of a prediction to physical health problems for the survivors of NPT. Thus, these findings appear to be complimentary to those found for IPT survivors.

Health Outcomes for All Trauma Group

For the final SEM analysis, both trauma groups were combined in order to examine the transactional model using the practice commonly found in trauma literature. When examining the relationship of trauma, environmental stress, and personality characteristics on health outcomes for all trauma survivors together, aspects of the survivor characteristic model changed. The full trauma group results shared some similarities with the separate group models; for all three models, trauma characteristics

predicted environmental stress and negatively predicted healthy personality characteristics, but did not predict either health outcome (refer back to figures 2-4). Thus, the mediation model arose for all types of trauma models. These findings supported previous research which demonstrated a mediation model between various aspects of a trauma survivor's characteristics and their psychological and/or physical health regardless of the type of traumatic event experienced (Levendosky et al., 2004; Levendosky et al., 2006; Oppedal, 2008). The full trauma group also displayed similar characteristics as the separate trauma group models regarding the influence of environmental stress characteristics on psychological health and healthy personality characteristics on environmental stress.

The consistent nature of these mediation findings suggested that there are certain aspects of a trauma survivor's experiences which can have detrimental influences on her regardless of the type of trauma she endured. For example, it appeared that environmental stress mediates the relationship between characteristics of the traumatic event and the survivor's psychological health symptoms for IPT, NPT, and when the two forms of traumatic events are combined. These findings supported past research which has found that the presence of environmental stress factors in the life of a survivor of a traumatic event is associated with more psychological health problems than if these factors were absent (Brewin et al., 1999; Glaser et al., 2006; Thakaar & McCanne, 2000). Traumatic events have been described as severe forms of stressful events (Strelau & Zawadski, 2005) in some research. Based on this definition, the cumulative effect of several stressors can have detrimental affects on the individual as the person's sympathetic nervous system is constantly reacting to the different stresses that it is experiencing

(Woods, 2005). Thus, it is understandable that the experience of further negative life events would result in an increased likelihood for health problems.

The combination in this model of both forms of traumatic events also yielded results which were not found in the separate trauma models. The current study found that when IPT and NPT groups were combined environmental stress and healthy personality characteristics were found to predict physical health symptoms. Unlike the previous models, these findings suggest that when trauma types are combined, that trauma characteristics indirectly influence the physical health symptoms through other survivor characteristics. This is very different than the NPT model alone which did not predict physical health symptoms at all or the IPT model which found that physical health symptoms were only predicted through psychological symptoms. These findings indicate that the combination of trauma groups alters the predictive relationships for physical health but not psychological symptoms. The disparity in the current study between this model and the separate IPT and NPT models may be a result of the low variance for physical health symptoms in the NPT model alone. It may be that combining the two models provided further variance for the physical health latent variable in the model. However, the difference in variance may have been artifact of the different rates of physical health symptoms that are actually endorsed in a population that has experienced an NPT as their primary traumatic event compared to those that experienced an IPT.

These findings suggested that combining the two groups not only conceals the distinct relationships associated with the development of physical health symptoms for trauma survivors, it may also confuse the researcher's understanding of the dynamics associated with the development of physical health symptoms. It is important to be aware

of the differences in presentation when both groups are combined, especially since the relationship between physical health and traumatic events is a relatively new area of research.

Person-Centered Approach for Survivor's of IPT

Previous trauma literature has predominantly focused on the relationship between specific factors associated with the traumatic events and the survivor, classified as the variable-centered approach (Levendosky, Bogat, & Von Eye, 2007). However these studies do not necessarily give the sense of the survivor as a whole entity or what elements categorize her experiences. In recent years, more trauma researchers have begun to incorporate the person-centered approach into their analyses of the interpersonal violence (Campbell et al., 2008; Levendosky et al., 2008; Mourad et al., 2008). The use of cluster analysis has been one approach to this methodology. Past trauma studies using this approach have examined if the different IPTs have distinct profiles from one another (Campbell et al., 2008; Pimlott-Kubiak & Cortina, 2003). The current study was interested in assessing the profiles of the survivor to gain a different perspective of how characteristics of the survivor affect her psychological and physical health outcomes.

Characteristics of the interpersonal traumatic event (multiple traumas, physical and psychological severity, and perpetration by family members), survivor's personality, and environmental stress were examined in separate cluster analyses to assess for the constellation of characteristics that arose for each domain. Overall, a resilient group of emerged for each domain of survivor characteristics. Psychological and physical health symptoms corresponding to these survivor characteristic groupings were also examined. Health profiles exhibited in this study did not fully support previous hypotheses that there

were would be four profiles displayed including the presence of only psychological symptoms, only physical health symptoms, both forms of health symptoms and an absence of symptoms. Instead, the health symptom profiles varied based on the specific aspects of the trauma, environment and personality characteristics they corresponded to. Most of the profiles included some psychological and physical health symptoms, but at varying levels. Specific findings for clusters on each set of characteristics are discussed below.

Traumatic Event Characteristics for survivors of IPT

Cluster analyses of the traumatic event characteristics determined that there were three different profiles that formed based on the women's experiences of multiple traumatic events, perpetration of the traumatic event by a family member, and reported psychological and physical severity of the traumatic event. Based on the characteristics of each cluster, the profiles were defined as low risk, multiple trauma, and high injury groups. Examination of the psychological symptoms for these profiles found that the low risk group had significantly lower levels of anxiety, ASD, and PTSD symptoms than women in the multiple trauma group or high injury group. The low risk group also displayed significantly lower depressive symptoms levels than the multiple trauma group (refer to figures 9-11). Results suggest that the perceived severity of the interpersonal traumatic event characteristics does influence the psychological and physical well being of the female survivor after the experience of a traumatic event. These findings support previous research indicating that different elements of the traumatic event itself, e.g. perpetration by a family member can create a different health profile than for women who experience low levels of perpetration by other persons in the survivor's life.

Women in the low risk group and women in the high injury group did not differ from one another on depressive symptoms level, despite significant differences between these groups based on other mental health symptoms (i.e. anxiety, ASD, and PTSD: APA, 2000). Only the women in the multiple trauma group displayed high depressive symptoms. These findings imply that women with high levels of physical injury from IPT present similarly to groups with other trauma characteristics for anxiety symptoms, but not for depressive symptoms. It may be that the physical harm endured during the traumatic event contributes to the appraisal of fear from potential harm. In this case, the survivor has "physical" evidence that she could be harmed as she not only endured a life threatening experience but also sustained injuries from this event. Hence she may be more cognizant of further harm and exhibits this fear as different forms of anxiety. Previous studies have found that physical injuries are associated with the development of PTSD (Koren et al., 2005; Rasmussen et al., 2008). For example, a study examining physical injuries in relation to survivors of torture found that injuries fully mediated the relationship between torture and PTSD (Rasmussen et al., 2008). These findings correspond with the idea that these injuries serve as reminder of the event and makes the feeling of vulnerability more salient.

Research examining severity of traumatic events has also demonstrated that severity of the traumatic event, as evidenced by events with the potential for more physical injuries, can have negative consequences for the survivor as well (Johnson et al., 2001; Leserman et al., 1996; Maercker et al., 2000). The issue of physical injuries can add to the survivor's perception of the traumatic event's severity as well as her fear of

harm. Thus, women who experience high levels of physical injury are more likely to have higher psychological symptoms, than the women who experience lower levels.

In regards to physical health symptoms, the low risk group was found to display significantly lower levels of lifetime and recent physical ailments than for women who are characterized by multiple traumas or high physical severity. This is consistent with previous findings that survivors of multiple IPTs were more likely to report chronic health problems over the course of a year (Ullman & Brecklin, 2003). These findings may be explained by immune system functioning such that frequent reactivation of the sympathetic nervous system can influence the physical health characteristics of female IPT survivors (Woods et al., 2005).

Significant differences were not found between the different profiles for serious medical conditions. This may be a function of the low endorsement of these conditions in general throughout the study. The smaller group sizes for the IPT group clusters may have resulted in too small of an effect for differences to be estimated.

Personality Characteristics for survivors of IPT

Cluster analysis of the personality characteristics associated with survivors of IPT led to four personality profiles for these women: the high optimism and low neuroticism group, the average personality characteristics group, the high neuroticism group, and the high external control group. The first group displayed the highest level of optimism and the lowest level of neuroticism of all the different groups that emerged. Although all personality characteristics examined in the present study have been associated with survivor functioning after a traumatic event, the two most commonly discussed have been optimism and neuroticism. Personality literature has consistently associated high levels of

optimism (Bunce et al., 1995; Lauterbach et al., 2005; Segerstrom et al., 2001) and low levels of neuroticism (Bramsen et al., 2002; Lauterbach & Vrana, 2001; Strelau & Zawaski, 2005) with better functioning for survivors of traumatic events. Research has also identified high levels of external control or low levels of internal control as being associated with poor survivor functioning (Banyard & Cantor, 2004; Dyb et al., 2003). In the current study, high levels of the two risk factors, neuroticism and external control, were classified as separate clusters. Thus, there were two risk groups, one resilient group and one average group. The separate grouping of the two risk personality characteristics, neuroticism and external control, suggests that there is a difference in between these factors. As neuroticism is associated with anxiety and low self-esteem and external control is associated with the perception that the person is at the whim of the universe, it is surprising that there is little overlap between these personality traits. It may be that there are different underlying mechanisms pertaining to each of these factors. These differences may be a result of the different personality areas being assessed, for example the image they present of themselves to the world versus their perception of environment. The differences between these realms of personality may also explain the variation in health outcomes that arise for the different risk profiles. Finally an average personality characteristics cluster formed which displayed equal levels of neuroticism and extraversion. This suggests that there is a subgroup of survivors that do not have elevated levels of the protective or risk personality factors. The clusters that formed in this analysis were indicative of different levels of psychological and physical health profiles.

In regards to psychological health, women in the high optimism and low neuroticism group were found to have significantly lower levels of depression, and

anxiety symptoms than all of the other survivors of IPT. By definition, optimism, expectation of positive outcomes (Brodhagen & Wise, 2008), is contradictory to the characteristics of depression of negative perceptions of the self and world (Beck, 1972). The same is true of the characteristics of neuroticism, defined as anxious, self conscious and insecure (Bramsen et al., 2002; Smith, 2006; Spindler & Elkhit, 2003). Thus lower levels of depressive and anxiety symptoms are logical for the respective levels of these personality factors. These findings are consistent with previous literature examining neuroticism (Bunce et al., 1995).

Women with the high optimism and low neuroticism profile were also found to have significantly lower levels of physical ailments in the past year than all of the other survivors of IPT. It is possible that these findings are also a result of interpretation of these events by optimistic persons. As optimism is associated with perceived stress levels (Cohen et al., 1999; Segerstrom, 2001) and stress levels are associated with the activation of the sympathetic nervous system (Tosevski & Milovancevic, 2006), it may be that optimism serves as a protective factor from health problems. The optimistic perception that things will ultimately work out and that the world is not malicious can help the survivor remain calm in the face of daily stressors explaining the lower rates of physical health ailments in the past year.

The second group that emerged from the data was that of average levels of personality characteristics. This group did not display high or low levels of any of the five personality characteristics used in profile formation. As indicated by this description, this group displays the most balanced personality characteristics of the four profiles that emerged from this study. Average personality characteristics are not commonly

considered in the literature. Interestingly, women with this profile were found to display the highest levels of ASD and PTSD and overall physical health symptoms (see figures 14 and 15). Past research has focused on high and low levels of the different personality characteristics and which factors are associated with poor functioning (e.g. Segerstrom, 2001), however it may be that the lack of protective personality characteristics are especially detrimental to survivors of IPT. Trauma theory purports that due to the nature of an IPT, a major element of the healing process for survivors is to learn to regain trust in the world and themselves. It has been shown using variable-centered methodologies in the current study that protective aspects of the survivor's personality help to mediate this relationship. Thus it may be that the lack of these characteristics associated with resilience places the survivor at risk for future health problems, even in the absence of personality risk factors. The formation and distinctive health characteristics of women with this personality profile suggest that it is important to consider all levels of personality factors in relation to survivors of IPT rather than only the influence of high levels.

Another profile that emerged for female survivors of IPT was the high external control group. The main distinguishing feature of this group was that the PTSD symptoms for the high external control group were found to be significantly higher than the high optimism and low neuroticism group. Herman's trauma theory (1992) suggests that in order for the survivor of an IPT to heal, they need to develop the ability to view the world as a safe place again. Experiencing oneself as being at the mercy of the whims of the universe does not foster this belief. Rather may perpetuate the belief that one is susceptible to further harm. This can result in symptoms of hypervigilance regarding

one's environment; these behaviors can be categorized as hyperarousal associated with both PTSD and ASD (APA, 2000). Thus, the development of higher PTSD symptoms for women that display this profile compared to women who view the world as safe and having positive qualities is consistent with the theory of how psychological distress develops after the experience of an IPT.

The final group formed from the personality cluster analysis of IPT survivors was that of the high neuroticism group. Similarly to the high external control group, this profile also displayed the complimentary personality styles of low extraversion which is often associated with high neuroticism (Costa & McCrae, 1985). Based on previous research examining the effects of neuroticism and low extraversion on survivors of trauma, it was expected that women with this profile would display high rates of psychological symptoms. However, study findings indicated that this group was not significantly different than other groups characterized by negative personality characteristics. It may be that although there are women that experience high rates of neuroticism it does not add to the IPT survivor's psychological profile. Rather other personality characteristics are required to distinguish psychological repercussions of the survivor. These findings may be indicative of a more systemic problem of the assessment of neuroticism in relation to psychological conditions. The relationship between neuroticism and psychological health found in the literature may be a result of the overlapping definition of these conditions rather than an actual relationship (Bramsen et al., 2002; Kendler et al., 2004; Tosevski & Milovancevic, 2006; Woods et al., 2005). Further attempts to parse out the differences between may be needed in the future to assess for the relationship between these factors for survivors of trauma.

Environmental Stress Characteristics for survivors of IPT

When examining the female survivors of IPT based on their environmental stress profiles, three different groupings emerged from the data: high environmental stress, low environmental stress, and high family psychiatric history (refer to figures 12-14). These findings suggest that there is a low environmental stress group and then two distinct groups that display high levels of environmental stress. The first high environmental stress group is categorized by high levels of current stressors including negative life events in the past year and a current lack of social support. It appears that this group was formed based on more recent difficulties in regards to their life circumstance and social support. These factors may correspond with one another as difficulties with social support network have been associated with poorer perceptions of life circumstances (Brodhagen & Wise, 2008). In comparison, the second group of women with high environmental stress only report high levels of family psychiatric history. Contrary to hypotheses, women who report high levels of family psychiatric history do not appear to be clustered with women that report other forms of environmental stressors. This grouping suggests that the women who report a family psychiatric history are distinct from the women who report more recent environmental stressors. As there appears to be little overlap between the two groups, the emergence of these two profiles also suggests that the presence of family psychiatric history does not influence the emergence of later stressors. This helps explain findings from previous studies that found a stronger effect on psychological outcomes for survivors experiencing low social support than family psychiatric history (Brewin et al., 2000; Ozer et al., 2008). The separate clustering of these stressors is an important contribution to the field of trauma as it provides further

understanding that the groups of individuals experiencing these stressors may be dissimilar and thus have different health consequences.

Upon further examination of the profiles that arose based on IPT survivors' environmental stress experiences it was found that there were indeed differences between the groups. In regards to psychological symptoms, it was found that the group with the lowest level of environmental stress was significantly different than the other two groups in relation to anxiety, ASD, and PTSD symptoms. This is consistent with previous findings that persons experiencing higher levels of environmental stressors such as less social support (Brewin et al., 2000), negative life events (Glaser et al., 2006; Kendler et al., 2004), and family history of psychological problems (Koenen et al., 2001; Ozer et al., 2008) are more likely to display more psychological symptoms associated with the IPT they have experienced. It has been theorized that the experience of more environmental stressors can exacerbate the effects of a traumatic experience, resulting in higher psychological symptoms than if the stressors are absent (Brewin et al., 2000).

Further examination of these profiles indicated that all of the groups had significantly different levels of depressive symptoms from one another. The low environmental stress group had the lowest level, while the high environmental stress and high family psychiatric history had the highest and second highest respectively. These findings suggest that survivors of IPT with current stressors have higher levels of depressive symptoms than those survivors with a family psychiatric history. Results suggest that depressive levels are associated with the experience of stressors and the time frame for which it occurred. For example, survivors that endorsed the experience of recent environmental stressors, poor social support and high negative life events, also

exhibited the highest levels of depressive symptoms. In comparison, those that reported past stressors experienced significantly lower levels of depressive symptoms than those experiencing recent stressors. Previous studies have found that the experience of current stressors such as negative life events and domestic violence influences depressive symptoms when there is a familial vulnerability for internalizing symptoms (Mourad et al., 2008). However, as the groupings that emerged do not combine pat and current stressors, it appears that there are differences in the levels of depressive symptoms that are displayed. These findings may also be a function of the present study's methodology for assessing depressive symptoms; data on current depressive symptoms were collected in the present study. Future research should assess for lifetime depressive symptoms when examining environmental stressors so as to clarify this matter. However, it should be noted that assessment of current depressive symptoms in relation to past events is a common methodological issue in the trauma literature (e.g., Mourad et al., 2008). Thus, in spite of these methodological concerns, the level of depressive symptoms provides further support for the distinct grouping of the environmental stressors.

The low environmental stress group displayed significantly lower physical health ailments in the past year than both the other groups. These results indicate that moderate to high levels of any environmental stressor influences the development of current physical health ailments. Based on the immune system theory, it may be that current stressors serve as an activator for the sympathetic nervous system for an immune system that is already sensitive to arousal due to the experience of previous traumatic event. This theory also explains the reason that women with high levels of family psychiatric history displayed higher lifetime physical ailments. It may be that the prolonged stress endured

of this family environment contributed to frequent activation of the sympathetic nervous system resulting in more health problems.

Both findings regarding the environmental stress profiles relationship to physical health suggests that women who have experienced an IPT and experience moderate levels of stress are more likely to develop physical health ailments (lifetime or present). Thus it is important to be aware that these women's stress levels can also influence their physical health. As there has been little research conducted on the role that environmental stress plays on physical health, these findings provide further information about the function of environmental stress on physical health.

Cluster Analysis Conclusion

Findings from the cluster analyses demonstrated that distinct profiles emerge for female survivors of IPT based on their experiences with the traumatic event, features of their personality, and the stressors they are exposed to. Examining the nature of these profiles gives researchers a deeper understanding of the characteristics associated with a survivor of IPT. Examination of all the clusters suggests that certain profiles from each domain are associated with higher levels of psychological and physical health symptoms. Overall results of the trauma characteristics indicate that the high physical injury profile exhibits are related to the highest level of anxiety disorder symptoms and physical health problems. Results suggest that average personality characteristics were most indicative of trauma condition symptoms (PTSD and ASD) and physical health problems. In comparison, women with high environmental stress displayed the highest depressive and anxiety levels, while women with a family psychiatric history displayed the highest trauma condition symptoms (PTSD and ASD) and physical health problems.

It is very important to examine these naturally occurring profiles as they demonstrate the constellation of personality and environmental stress emerge in female survivors of IPT. These groupings can then help future researchers to assess what other factors influence these specific collection of characteristics as well as provide information regarding the health outcomes associated with these groupings. Recognizing the profiles that emerge for these women provides us with more information as to why some survivors of IPT have poorer health functioning than others after the experience of a traumatic event. As this was the first study to examine these characteristics using a person-centered approach, this study provides the field with insight regarding the reason there are varying levels of functioning for female survivors of IPT.

Limitations and Future Directions

There were some limitations regarding the methodology of the present study that may influence the generalizability of these findings. One limitation for this study is that it was conducted with a college sample. There were several implications of using this sample, the first is that due to the collectively younger age, they may have been less likely to report serious medical conditions than if the sample had a wider age range. The low variance within each trauma group may have resulted in the lack of significant findings for this variable. Future studies will need to recruit a wider age range so as to assess for the prevalence of serious medical conditions for each trauma group. Another limitation of this sample for physical health assessment refers to likelihood of finding persons with serious medical conditions enrolled in a university. It may be that the use of a college sample naturally filters out persons with serious medical conditions due to the taxing requirements of schoolwork. However, despite these limitations significant

differences were found between the trauma and no trauma groups. These results could be considered more meaningful as there was less endorsement of these conditions overall.

Second, it can be argued that trauma survivors who have been able to attend college are a high-functioning group and may be qualitatively different than other trauma survivors. This limitation may have contributed to the lower levels of actual psychological disorders in the current study. Despite this limitation, this population still showed significant variability on the different symptoms assessed (with the exception of serious medical conditions) and significant differences were found based on these symptoms. In addition, it should be noted that students in the study were only asked their education status, they were not asked for their course grades. As more than 60% of the sample reported freshman or sophomore standing, it is unclear if they were successfully matriculating through the university. Future studies that choose to use a college population would be advised to collect information regarding their sample's functioning level.

There were also limitations associated with the IPT and NPT samples. First the size of the IPT group (N=279) although sufficient for the SEM analyses conducted resulted in small group sizes at times for the cluster analyses. This may have contributed to fewer significant differences between the survivor group health outcomes. Future studies should try to recruit larger groups when conducting cluster analyses to assure the ability to find significant findings when present. Another limitation of the sample size was that the IPT and NPT samples were not proportionate in size. This may have affected the model findings when both groups were combined together and findings when the two groups were compared to one another. The disproportionate size of the groups is also

representative of the frequency of the two different trauma groups in the trauma experiencing population (Kessler et al., 1995; Lauterbach & Vrana, 2001). This is also indicative of the problem that trauma researchers may experience, without their knowledge, when a general trauma group is sampled. Researchers should be aware of this matter when sampling, as well as the blurring of results when these two trauma groups are combined together.

As is generally the case when deciding on the event to assess for PTSD, the primary traumatic event was determined solely by the participant. This raised some issues regarding the grouping of the survivors, as reported in much of the trauma literature, many of the survivors experienced more than one traumatic event. However, not all of the events experienced fell into only one category, there were some people who reported incidents of both IPT and NPT. Hence the groups were not necessarily comprised of survivors of only one form of traumatic event. This issue is not specific to the current study; many trauma survivors have experienced both types of traumatic events. As specified by the DSM-IV (APA, 2000) the event that is assessed for PTSD is the one that the survivor considers the most severe. It important to notice the differences found between the groups based on this definition.

Finally, there were some restrictions placed on the study due to the use of the internet for data collection. One restriction was that structured clinical interviews could not be utilized for this study to assess for psychological symptoms. This limited the study in the type of measures that could be used to assess for lifetime psychological symptoms. The depression questionnaire used in the current study did not assess for lifetime depression symptoms. It would have been useful to also assess for lifetime psychological

symptoms as the study examined different survivor characteristics associated with past experiences (e.g. family psychiatric history). This method of data collection also limited the study to only using self-report data, thus some of the data collected may have represented single-reporter bias regarding their experiences. It may have been beneficial to obtain information from other persons such as family members' to corroborate the participant's reports of family psychiatric history. Previous studies have reported that self-reports have a low sensitivity level for diagnosing psychiatric illness in relatives (Orvaschel et al., 1988). However, the current study was primarily concerned with the survivor's perception of their family members as well as all other information collected. As noted earlier and through the findings of this study, the experience of a traumatic event is based on the survivor's perception of the experience as well as their views of the world and themselves post-trauma. Thus, it was very important for the current study to utilize self-report measures to assess the information pertaining to the survivor's experiences.

In addition there may be some concern over the validity of the answers provided by the participants. This however is can be an issue for all self-report studies. Collecting in-person self-report measures does not ensure correct the reporting of correct data either, thus the use of the internet is not necessarily a limitation. In contrast, there were considerable benefits to using this form of data collection. Due to the anonymous nature of the data collection, the use of the internet may have allowed participants to feel that the data was more confidential thus making them more comfortable to answer the questions honestly. The use of the internet format also allowed for a more convenient data collection process as office space and lab assistants were not required. It also

provided the participants with more flexibility regarding when they could complete the study.

Despite the limitations mentioned, there were several strengths of the current study. There has been limited research examining the difference between IPT and NPT on psychological symptoms for the survivor and no studies that have compared these groups in relation to physical health symptoms. Other studies took the approach that all traumatic events fall under one category and melded them altogether without comparing the two groups. A comparison between the two trauma groups is important to recognize and understand that there are different consequences resulting from the different types of traumatic events. Without such a contrast present in the literature, many researchers may continue to examine the two groups together unaware of how it may affect their results. Assessment of the two different groups separately also allowed us to examine the distinct relationships between survivor characteristics for each of trauma groups. It will be important for future trauma researchers to be careful of combining these groups together under the guise that all traumatic experiences can treated the same or will have the same consequences for their survivors.

An important strength of this study is that it used different methodologies to explore the characteristics and reasons that some female survivors exhibit poor health functioning after the traumatic event and others do not. The use of both a variable-centered and person-centered approach allowed this study to examine the influence of the characteristics based on domain (personality or environmental) as well as the groupings that emerge from the data to describe the women who have experienced an IPT. These

approaches not only allow us to understand what the women look like, but also to reflect on their psychological and physical functioning.

Another important element of this study refers to its exploration of physical health problems in relation to female survivors of IPT and other forms of traumatic events. The effect of trauma on physical health has been a relatively new area within the trauma research. This has been the first comprehensive study to examine physical health consequences of trauma exposure across different domains, trauma groupings, traumatic event characteristics, personality features, and environmental stressors. All of the domains were found to be associated with the development of physical health problems for IPT survivors, but this study provided further information as to the route in which these symptoms develop in relation to psychological symptoms. There is still much more to learn regarding effects of this experience on survivors, future research will be needed to examine more characteristics for trauma survivors discussed in the literature e.g. age and race associated with the traumatic events, as well as different gender. The current study was focused on the presence of actual physical health conditions rather than just examining the immune system functioning. However many of the findings speculated that the survivor's experiences affected her immune functioning resulting in physical health problems. It may be useful for future studies to examine both the immune system markers and physical health conditions to assess how the immune system actually influences the development of physical health conditions. As the trauma field continues to grow, it will be more important for researchers to incorporate physical health repercussions into the consequences of traumatic events to be assessed in order to understand the full health repercussions of these events on its survivors.

Clinical Implications

The differences between the two trauma domains may also have implications for assessment and definition of trauma conditions for survivors. Based on study findings the experience of an IPT is different than that of a NPT and can have different consequences, including physical health problems, for survivors of IPT. Clinicians that are aware of the relationship between psychological and physical health can begin to incorporate the evaluation of physical health problems in their assessment of these clients. As trauma research in this arena increases and assessment methods evolve it may become important to weave physical health symptoms in present psychological diagnoses to understand the severity of the survivor's functioning.

Awareness of the connection between psychological and physical health functioning suggests a need for clinical interventions to prevent the development of physical health problems, in addition to poor psychological functioning. Results indicate a need for psychological interventions before the development of medical conditions. Early interventions may need to incorporate techniques to reduce the hyperactivation of the nervous system. For example, these findings suggest that it is imperative for clinicians to teach survivors of IPT relaxation techniques in response to their reexperiencing symptoms. Varying trajectories for survivors of IPT and NPT also suggests a need for trauma domain focused clinical interventions. For example, based on these findings, it may be useful to incorporate support groups in the treatment of IPT survivors to foster the development of a healing environment.

Study results can also be applied in a clinical setting to understand what characteristics are related to poorer functioning for survivors of IPT. Person-centered

findings can be used to understand the different profiles of women that may seek treatment after experiencing an IPT. Recognition of which profile the client fits can also be used to alert the clinician of the potential health (psychological and physical) concerns associated with those profiles. For example the assessment of personality characteristics to aid in the understanding of the possible health profiles displayed in female clients with a history of IPT. Although the findings from this study were informative, further research is needed to examine the profiles of trauma survivors using a larger sample. It would be useful to apply the person-centered approach for similar analyses in relation to women of different ethnicities and males.

Conclusion

The current study set out to examine if theorized differences between survivors of IPT and NPT were present and what the implications of these differences were on health outcomes. The study was also interested in examining the factors associated to the development of health outcomes specific to survivors of IPT using different approaches. I was able to demonstrate that there were differences between the levels of the different health outcomes, which also led me to examine the differences between the trajectories for each of these types of traumatic events.

This study revealed differences in consequences between traumatic event domains, IPT and NPT, as well as differences in the factors associated with these outcomes. This study also provided further information regarding the trajectory of psychological and physical health for survivors of IPT based on variable- and person-centered approaches. These findings demonstrated that it is important to examine the domains of traumatic events separately so as to prevent mistaken findings due to melding

of two distinct groups. Based on these findings, future studies should continue to examine the effect of IPT on physical health problems and sample a wider range in age and physical health functioning. Finally, this study suggests the need to develop assessment and treatment plans based on the type of trauma experienced by the survivor and the particular characteristics of the trauma, the survivor's environment and personality.

APPENDIX A

Table 1.

Demographic percentages for each trauma group

		IPT	NPT	No trauma
Ethnicity				
	White	75.3	83.5	73.5
	Black	10.8	6.5	8.6
	Asian/Pacific Islander	5.7	4.5	11
	Hispanic	2.9	2	1.7
	Other	4.7	2.9	4.1
Income				
	0-18,500	10.8	5.2	7.5
	19,000-30,000	10	5.2	5.2
	30,500-50,000	12.2	11.7	10.5
	50,500-75,000	20.8	18.3	13.3
	75,500-100,000	20.1	24.2	19.3
	100,500-200,000	17.6	24.7	26.8
	200,000 and above	8.6	10.4	16.6
Education				
	Freshman	28	36.2	35.4
	Sophomore	32.6	28.2	26.8
	Junior	22.6	19.4	21.8
	Senior	15.1	15.5	15.5
	BA complete	1.4	0.6	0.3

Table 2.

Age by Trauma Group

Group	Mean	Median	SD (range)
Interpersonal trauma	19.86	19	3.16 (18-53)
Non-personal trauma	19.50	19	1.664 (18-33)
No trauma	19.44	19	1.390 (18-27)

Note: Only includes persons that reported items

Table 3.

Percent of women in each group with psychological disorders

	IPT	NPT	No trauma
Clinical levels of Depression (CD)	54.1	38	35.1
Moderate-Severe levels of anxiety (CA)	29.4	18.2	15.2
PTSD	14	4.2	na
ASD	36.9	17.5	Na
ASD and PTSD	10	2.3	Na
CD, ASD, and PTSD	7.2	1.9	Na
CA, ASD, and PTSD	5.4	1.3	Na
CA and CD	24.7	13.9	13
Presence of any psychological diagnoses	69.2	49.5	37.3
Presence of all psychological diagnoses	4.3	1.0	Na

Table 4.

Descriptives for all variables before and after estimation

	Mean (after estimation)	SD (after estimation)	Range	Mean (before estimation)	SD (before estimation)	Percent Imputed
Trauma						
Psychological severity	1.97	1.23	0-3	1.96	1.24	.7
Physical Severity	.56	1.25	0-7	.56	1.28	4.7
Multiple trauma	2.81	2.84	0-23	2.81	2.84	0
Perpetrated by family	.23	1.14	0-20	.23	1.14	0
Perpetrated by friend	.11	1.13	0-30	.11	1.13	0
Stress						
Negative life events	4.24	3.26	0-30	4.24	3.26	0
Family History	1.18	1.73	0-11	1.18	1.73	0
Current Social Support	31.04	7.26	3-42	31.04	7.25	0

Table 4. continued

Past Social Support	22.04	14.25	0-42	21.98	14.50	5.1
Personality						
Neuroticism	5.22	3.36	0-12	5.22	3.36	.1
Extraversion	9.24	3.06	0-12	9.24	3.06	.1
Optimism	14.52	4.14	0-24	14.52	4.14	0
Internal Control	8.67	1.79	0-12	8.67	1.79	0
External Control	5.52	1.68	0-12	5.52	1.68	.1
Psychological Symptoms						
Depression	14.77	9.69	0-55	20.44	6.72	.1
Anxiety	9.62	8.39	0-51	9.62	8.39	.1
ASD	24.91	30.31	0-127	24.60	30.46	5.1
PTSD	6.90	8.61	0-54	6.90	8.77	0
Reexperiencing	2.08	2.70	0-15	2.48	2.83	4.5
Avoidance	2.31	3.44	0-21	2.80	3.65	4.6
Hyperarousal	1.74	2.66	0-15	2.13	2.84	4.8
Physical Health Symptoms						
Medical Conditions	1.48	1.53	0-20	1.48	1.53	0

Table 4. continued

Lifetime Physical health ailments	18.92	5.84	0-39	18.92	5.84	0
Past Year Physical health ailments	23.91	10.47	0-65	23.91	10.47	0

Table 5.

Between Subjects Effects: MANOVA for all groups

Source	Dependent Variable	df	Mean Square	F	*p*	η^2	Power
Intercept	Medical Conditions	1	2776.479	1192.626	.000	.398	1.000
	Lifetime Phys. ailments	1	445052.865	13593.98	.000	.883	1.000
	Past Year Phys. ailments	1	729744.061	6867.808	.000	.792	1.000
	Depression	1	296824.999	3223.628	.000	.641	1.000
	Anxiety	1	126677.699	1838.858	.000	.505	1.000
	Reexperiencing	1	3466.349	597.555	.000	.249	1.000
	Avoidance	1	4416.696	435.308	.000	.194	1.000
	Hyperarousal	1	2594.626	432.25	.000	.193	1.000
	ASD	1	757885.934	1053.723	.000	.369	1.000
Trauma	Medical Conditions	2	16.757	7.198	.001	.008	.934

Table 5. continued

	Lifetime Phys. ailments	2	1303.701	39.821	.000	.042	1.000
	Past Year Phys. ailments	2	3180.584	29.933	.000	.032	1.000
	Depression	2	1809.217	19.649	.000	.021	1.000
	Anxiety	2	1409.361	20.458	.000	.022	1.000
	Reexperiencing	2	1006.459	173.501	.000	.161	1.000
	Avoidance	2	1308.613	128.977	.000	.125	1.000
	Hyperarousal	2	729.113	121.466	.000	.119	1.000
	ASD	2	180571.092	251.056	.000	.218	1.000
Error	Medical Conditions	1803	2.328				
	Lifetime Phys. ailments	1803	32.739				
	Past Year Phys. ailments	1803	106.256				

Table 5. continued

Depression	1803	92.078
Anxiety	1803	68.889
Reexperiencing	1803	5.801
Avoidance	1803	10.146
Hyperarousal	1803	6.003
ASD	1803	719.246

Table 6.

Mental health outcome means by group

	No trauma mean	IPT mean	NPT mean
Depressive symptoms	13.93	18.07[b]	14.25
Anxiety Symptoms	8.46	12.44[b]	9.31
All PTSD Symptoms	na	12.64[a]	7.66[a]
PTSD reexperiencing	na	2.31	2.69
PTSD avoidance	na	2.57	3.07
PTSD hyperarousal	na	2.04	2.28
ASD Symptoms	na	46.44[a]	27.55[a]
Serious Medical Conditions	1.26[b]	1.72	1.50
Lifetime Physical ailments	16.77[a]	20.68[a]	19.17[a]
Past Year Physical Ailments	21.12[a]	27.47[a]	23.93[a]

Note: [a]Means are significantly different from all other groups on a $p < .05$ level.

[b]Means are significantly different from the other two groups on a $p < .05$ level.

Table 7.

Trauma Characteristics Final Iterative Cluster Analysis (Four-Cluster Solution)

	Cluster		
	(N=158)	(N=90)	(N=31)
Physical Severity	-.342	-.212	2.357
Psych Severity	-.256	.375	.216
Multiple trauma	-.574	.916	.266
Perpetration by Family	-.388	.673	.021

Table 8.

Between Subjects Effects for Trauma Characteristic Profiles

Dependent Variable	df	Mean Square	F	*p*	η^2	Power
Medical Conditions	2	2.293	2.314	.101	.016	.467
Lifetime Phys. ailments	2	7.671	8.060	.000	.055	.956
Past Year Phys. ailments	2	8.686	9.198	.000	.062	.976
Depression symptoms	2	5.037	5.189	.006	.036	.826
Anxiety Symptoms	2	11.179	12.069	.000	.080	.995
ASD Symptoms	2	10.431	11.196	.000	.075	.992
PTSD Symptoms	2	14.123	15.607	.000	.102	.999

Table 9.

Personality Characteristics Final Iterative Cluster Analysis (Four-Cluster Solution)

	Cluster			
	(N=95)	(N=89)	(N=49)	(N=46)
Optimism	.962	-.423	-.499	-.637
Neuroticism	-.987	.485	.821	.226
Extraversion	.497	.486	-1.561	-.303
Internal Control	.359	.263	-.024	-1.225
External Control	-.411	.063	-.473	1.232

Table 10.

Between Subjects Effects for Personality Characteristic Profiles

Dependent Variable	df	Mean Square	F	*p*	η^2	Power
Medical Conditions	3	.701	.698	.554	.008	.198
Lifetime Phys. ailments	3	3.763	3.880	.010	.041	.822
Past Year Phys. ailments	3	10.301	11.464	.000	.111	.999
Depression symptoms	3	24.194	32.389	.006	.261	1.000
Anxiety Symptoms	3	13.191	15.214	.000	.142	1.000
ASD Symptoms	3	4.603	4.792	.003	.050	.900
PTSD Symptoms	3	7.430	7.990	.000	.080	.990

Table 11.

Environmental Stress Characteristics Final Iterative Cluster Analysis (Three-Cluster Solution)

	Cluster		
	(N=68)	(N=145)	(N=66)
Negative Life Events	.866	-.428	.047
Family History	-.381	-.470	1.424
Current Social Support	-.964	.509	-.123
Past Social Support	-.771	.513	-.332

Table 12.

Between Subjects Effects for Environmental Stress Characteristic Profiles

Dependent Variable	df	Mean Square	F	*p*	η^2	Power
Medical Conditions	2	.612	.610	.554	.004	.151
Lifetime Phys. ailments	2	9.684	10.335	.000	.070	.987
Past Year Phys. ailments	2	9.477	10.098	.000	.068	.985
Depression symptoms	2	25.492	30.993	.000	.183	1.000
Anxiety Symptoms	2	13.377	14.695	.000	.096	.999
ASD Symptoms	2	14.677	16.291	.000	.106	1.000
PTSD Symptoms	2	11.746	12.737	.000	.085	.997

APPENDIX B

Figure 1.
Interpersonal Traumatic Event Group Transactional Model

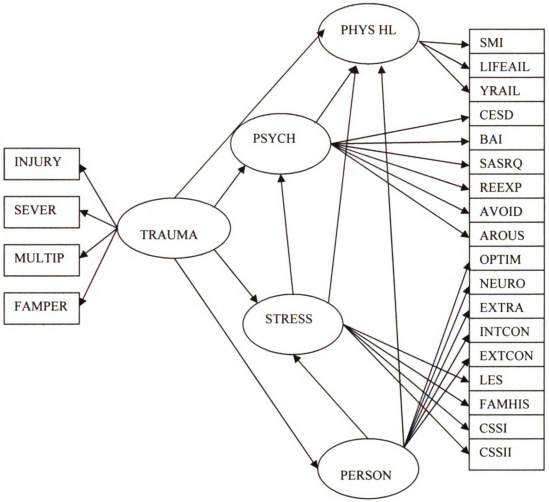


Figure 2.
Interpersonal Traumatic Events SEM Model

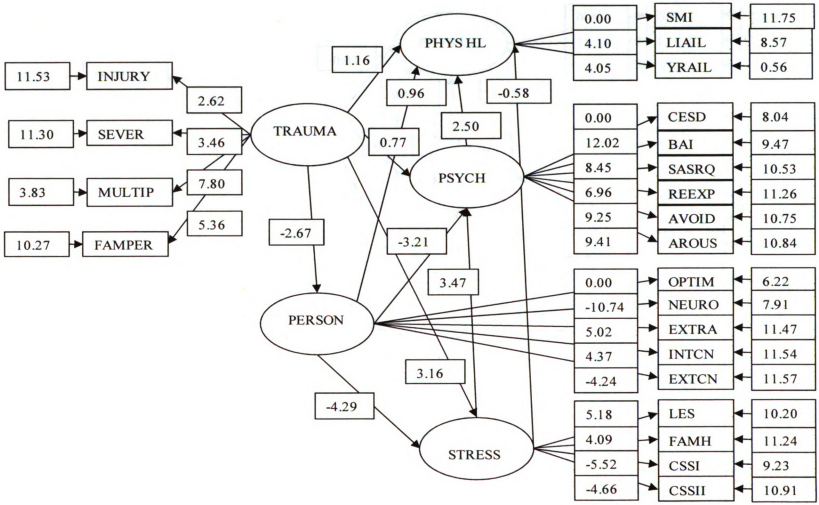


Figure 3.
Non-personal Traumatic Events SEM Model

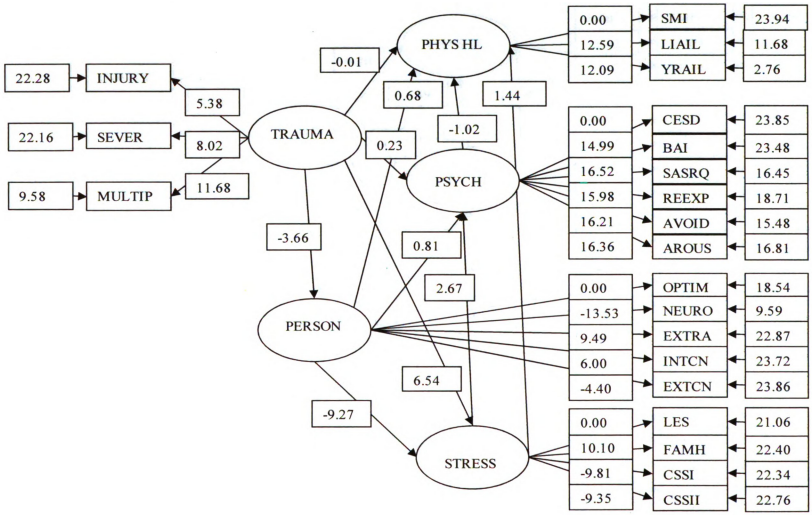


Figure 4.
All Types of Traumatic Events SEM Model

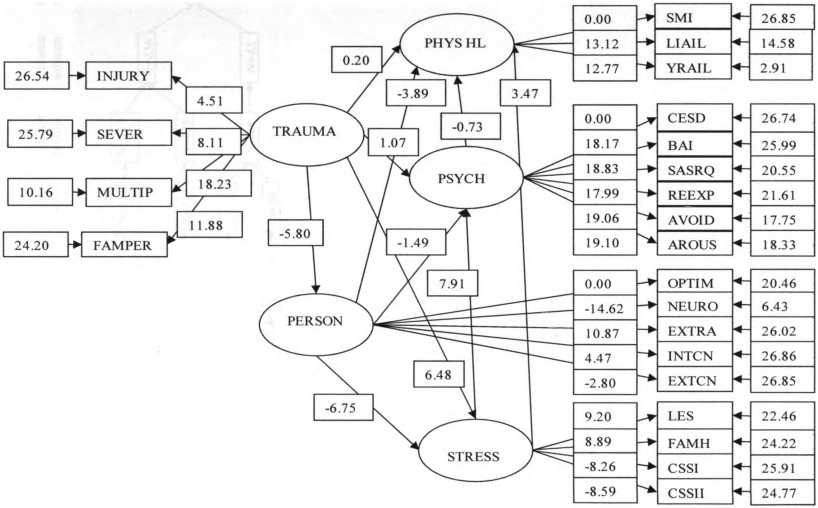


Figure 5.
Trauma Characteristics Dendogram

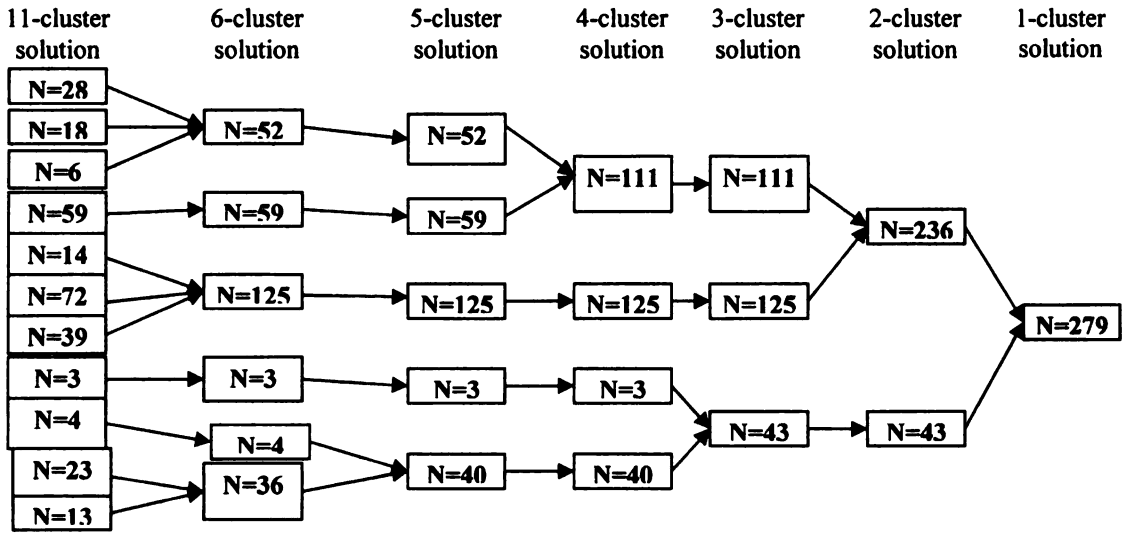


Figure 6.
Trauma Characteristics Clusters

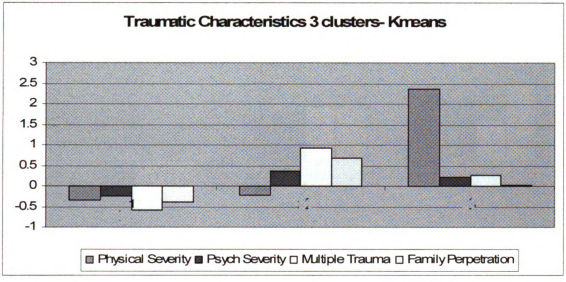
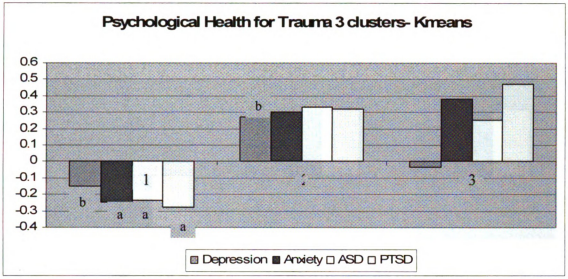
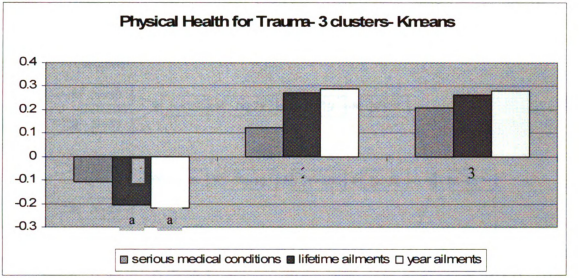


Figure 7.
Psychological symptoms for Trauma Characteristics Clusters



Note: Group marked with "a" is significantly different from all other groups $p < .05$ level. Groups marked with "b" are significantly different from one another $p < .05$ level.

Figure 8.
Physical Health symptoms for Trauma Characteristics Clusters



Note: Group marked with "a" is significantly different from all other groups $p < .05$ level.

Figure 9.
Personality Characteristics Dendogram

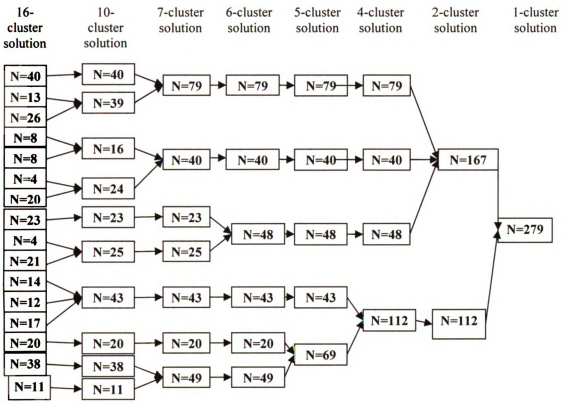


Figure 10.
Personality Characteristics Cluster

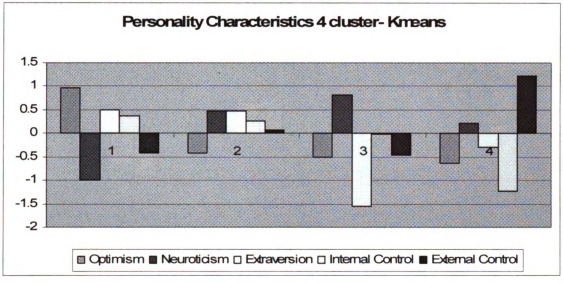
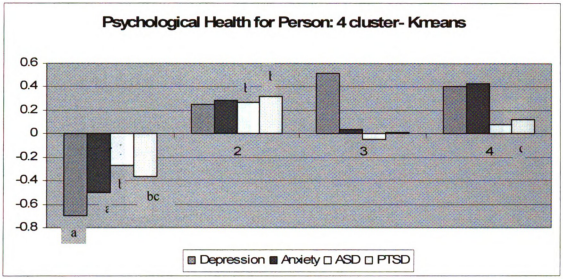
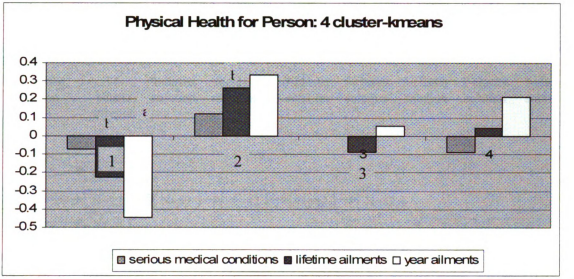


Figure 11.
Psychological symptoms for Personality Characteristics Cluster



Note: Group marked with "a" is significantly different from all other groups $p < .05$ level.
Groups marked with "b" are significantly different from one another $p < .05$ level.
Groups marked with "c" are significantly different from one another $p < .05$ level.

Figure 12.
Physical Health symptoms for Personality Characteristics Clusters



Note: Group marked with "a" is significantly different from all other groups $p < .05$ level. Groups marked with "b" are significantly different from one another $p < .05$ level.

Figure 13.
Environmental Stress Characteristics Dendogram

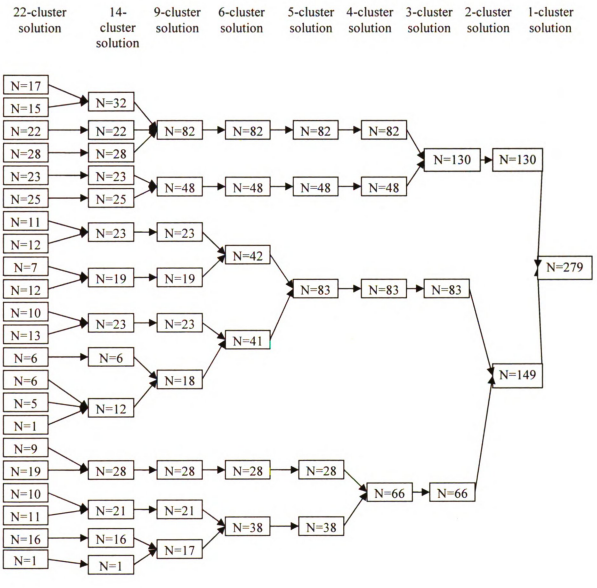
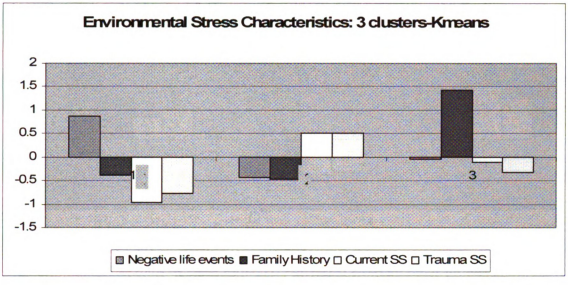
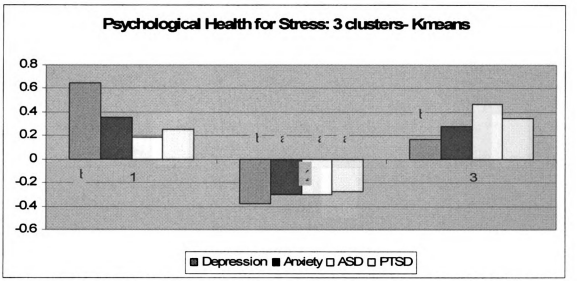


Figure 14.
Environmental Stress Characteristics Cluster



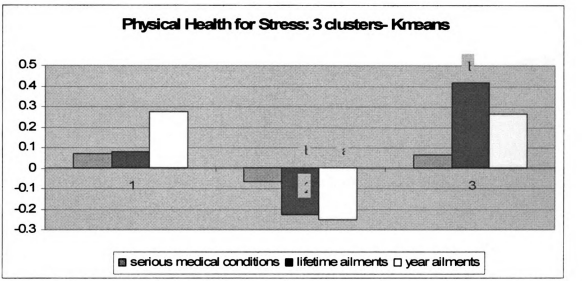
Note: Current and Trauma social support in this graph represent levels of perceived support by the survivor.

Figure 15.
Psychological symptoms for Environmental Stress Characteristics Cluster



Note: Group marked with "a" is significantly different from all other groups $p < .05$ level. Groups marked with "b" are significantly different from one another $p < .05$ level.

Figure 16.
Physical Health symptoms for Environmental Stress Characteristics Cluster



Note: Group marked with "a" is significantly different from all other groups $p < .05$ level. Groups marked with "b" are significantly different from one another $p < .05$ level.

APPENDIX C

Demographic Questionnaire

Below are some general questions about you.
For each question, please give the answer that best describes you.
Note: This study is open to females only. If you are a male, and have been assigned to this study in error, please do not continue answering these questions

1. What is your current age (in years)? _____

2. How would you describe you race/ethnicity? (Please circle all that apply.)

   a. White/Caucasian
   b. Black/African-American
   c. Asian/Pacific Islander
   d. Hispanic/Latino
   e. Native American/Alaskan Native
   f. Bi-/Multi-racial
   g. Other: _____

3. Which of the ranges below best describes your approximate annual family income? (Please circle. For students supported by parents, include your parents' income). Estimate as needed.

   $0-18,500
   $19,000-30,000
   $30,500-50,000
   $50,000-75,000
   $75,000-100,000
   $100,000-$200,000
   $200,000 and above

4. What is your level of education?
   a. Freshman standing
   b. Sophomore standing
   c. Junior Standing
   d. Senior Standing
   e. Already completed BA

National Health Interview Survey

Below are some questions about certain medical conditions.

Have you EVER been told by a doctor or other health professional that you had...	**YES**	**NO**	**Still Have Condition?**
1. Hypertension (high blood pressure) **If YES go to 1a**			
▶ **1a.** Were you told on 2 or more different visits that you had hypertension?			N/A
2. Coronary heart disease			
3. A heart attack			
4. Any other kind of heart condition or heart disease (e.g. heart murmur)			
5. A stroke			
6. Emphysema			
7. Asthma			
8. An ulcer. This could be a stomach, duodenal or peptic ulcer.			
9. Cancer or a malignancy (tumor) of any kind?			
10. Diabetes or sugar diabetes			
11. Hay fever			
12. Sinusitis			
13. Chronic Bronchitis			
14. Weak or failing kidneys (do not include kidney stones, bladder infections or incontinence)			
15. Any kind of liver condition			
16. Mononucleosis (i.e. mono)			
17. Irritable Bowel Syndrome			
18. Urinary Tract Infection			

19. Human papillomavirus (HPV)			
20. Pneumonia			

21. DURING THE PAST 30 DAYS, have you had any symptoms of pain, aching, or stiffness in or around a joint? Please do NOT include the back or neck. **If YES go to 21a**

1 Yes
2 No

►**21a.** Have you EVER seen a doctor or other health professional for these joint symptoms?

1 Yes
2 No

22. Have you EVER been told by a doctor or other health professional that you have some form of arthritis, rheumatoid arthritis, gout, lupus, or fibromyalgia?

1 Yes
2 No

The following questions are about pain you may have experienced in the PAST THREE MONTHS. Please refer to pain that LASTED A WHOLE DAY OR MORE. Do not report aches and pains that are fleeting or minor.

During the PAST THREE MONTHS, did you have...

	YES 1	**NO 2**
23. Neck pain		
24. Lower back pain		
25. Facial ache or pain in the jaw muscles or the joint in front of the ear		
26. Severe headache or migraine		

27. Did you have a head cold or chest cold that started in the past TWO WEEKS?

1 Yes
2 No

28. Did you have a stomach or intestinal illness with vomiting or diarrhea that started in the past TWO WEEKS?

1 Yes
2 No

MAPSAIS- I

Many people have experienced various physical ailments over their lifetime, please make if you have EVER experienced any of the following in your lifetime AND in the past year

	Have you <u>ever</u> had any of the following health problems in your life?	**YES**	**NO**	**If YES, how often in the past year?**			
				Not at all 0	**Seldom 1**	**Occasional 2**	**Often 3**
1.	Nausea (upset stomach/vomiting)						
2.	Back pain						
3.	Headache						
4.	Memory loss						
5.	Fainting/loss of consciousness						
6.	Ringing in ears						
7.	Dizzy spells						
8.	Seizures						
9.	Eye pain/vision loss						
10.	Shortness of Breath						
11.	Food intolerances						
12.	Difficulty Swallowing						
13.	Loss of Voice						
14.	Ear pain/hearing loss						
15.	Difficulty concentrating						
16.	Insomnia						

	Have you ever had any of the following health problems in your life?	YES	NO	If YES, how often in the past year?			
				Not at all 0	Seldom 1	Occasional 2	Often 3
17.	Diarrhea						
18.	Loss of Appetite						
19.	Abdominal pain						
20.	Chest pain						
21.	High Blood Pressure						
22.	Heart Palpitations						
23.	Chronic fatigue (always tired)						
24.	Pelvic Pain						
25.	Excessive Menstrual Bleeding						
26.	Vaginal discharge						
27.	Missed menstrual periods (do not include for pregnancy)						
28.	Painful menstruation						
29.	Painful intercourse						
30.	Bloating (e.g. gassy)						
31.	Sexually transmitted diseases (STDs: e.g., herpes, AIDS, CLAP)						
32.	Burning pain in sexual organs						

	Have you ever had any of the following health problems in your life?	YES	NO	If YES, how often in the past year?			
				Not at all 0	Seldom 1	Occasional 2	Often 3
33.	Rectal bleeding						
34.	Bladder infection						
35.	Frequent urination (peeing)						
36.	Painful urination (peeing)						
37.	Cold/flu						
38.	Viruses						
39.	Swollen joints						

CES-D

Below is a list of ways you might have felt or behaved. Please mark how often you have felt this way **during the past week.**

	During the past week....	**Rarely or none of the time (less than 1 day)**	**Some or a little of the time (1-2 days)**	**Occasionally or a moderate amount of time (3-4 days)**	**Most or all of the time (5-7 days)**
1	**I was bothered by things that usually don't bother me.**				
2	**I did not feel like eating; my appetite was poor**				
3	**I felt that I could not shake off the blues even with help from my family or friends**				
4	**I felt I was just as good as other people**				
5	**I had trouble keeping my mind on what I was doing**				
6	**I felt depressed**				
7	**I felt that everything I did was an effort**				
8	**I felt hopeful about the future**				
9	**I thought my life has been a failure**				
10	**I felt fearful**				
11	**My sleep was restless**				
12	**I was happy**				
13	**I talked less than usual**				
14	**I felt lonely**				
15	**People were unfriendly**				
16	**I enjoyed life**				
17	**I had crying spells**				
18	**I felt sad**				
19	**I felt that people dislike me**				
20	**I could not get "going"**				

BAI

Below is a list of common symptoms of anxiety. Please carefully read each item in the list. Indicate how much you have been bothered by each symptom during the **past week, including today**, and mark how bothered you were by each symptom.

	During the past week, how much were you bothered by	Not at all	Mildly. **It did not bother me much**	Moderately. **It was very unpleasant but I could stand it**	Severely. **I could barely stand it**
1	**Numbness or tingling**				
2	**Feeling hot**				
3	**Wobbliness in legs**				
4	**Unable to relax**				
5	**Fear of the worst happening**				
6	**Dizzy or lightheaded**				
7	**Heart pounding or racing**				
8	**Unsteady**				
9	**Terrified**				
10	**Nervous**				
11	**Feelings of choking**				
12	**Hands trembling**				
13	**Shaky**				
14	**Fear or losing control**				
15	**Difficulty breathing**				
16	**Fear of dying**				
17	**Scared**				
18	**Indigestion or discomfort in abdomen**				
19	**Faint**				
20	**Face flushed**				
21	**Sweating (not due to heat)**				

EPQR-A

Please answer each question by marking YES or NO. There are no right or wrong answers, and no trick questions. Work quickly and do not think too long about the meaning of the questions.

		Yes	No
1.	**Does your mood often go up and down?**		
2.	**Are you a talkative person?**		
3.	**Do you ever feel 'just miserable' for no reason?**		
4.	**Are you rather lively?**		
5.	**Are you an irritable person?**		
6.	**Do you enjoy meeting new people?**		
7.	**Are your feelings easily hurt?**		
8.	**Can you usually let yourself go and enjoy yourself at a lively party?**		
9.	**Do you often feel 'fed up'?**		
10.	**Do you usually take the initiative in making new friends?**		
11.	**Would you call yourself a nervous person?**		
12.	**Can you easily get some life into a rather dull party?**		
13.	**Are you a worrier?**		
14.	**Do you tend to keep in the background on social occasions?**		
15.	**Would you call yourself tense or 'highly-strung'?**		
16.	**Do you like mixing with people?**		
17.	**Do you worry too long after an embarrassing experience?**		
18.	**Do you like plenty of bustle and excitement around you?**		
19.	**Do you suffer from 'nerves'?**		
20.	**Are you mostly quiet when you are with other people?**		
21.	**Do you often feel lonely?**		
22.	**Do other people think of you as being very lively?**		
23.	**Are you often troubled about feelings of guilt?**		
24.	**Can you get a party going?**		

LOT-R

Please be as honest and accurate as you can throughout. Try not to let your response to one statement influence your responses to other statements. There are no "correct" or "incorrect" answers. Answer according to your own feelings, rather than how you think "most people" would answer.

	I agree a lot	I agree a little	I neither agree nor disagree	I disagree a little	I disagree a lot
1. In uncertain times, I usually expect the best.					
2. It's easy for me to relax.					
3. If something can go wrong for me, it will.					
4. I'm always optimistic about my future.					
5. I enjoy my friends a lot.					
6. It's important for me to keep busy.					
7. I hardly ever expect things to go my way.					
8. I don't get upset too easily.					
9. I rarely count on good things happening to me.					
10. Overall, I expect more good things to happen to me than bad.					

LOC-B

Please read each statement and mark how much you feel it characterizes you

	Strongly agree	Somewh at agree	I neither agree nor disagree	Somewh at disagree	Strongly disagree
1. When I make plans, I am almost certain to make them work.					
2. When I get what I want, it's usually because I worked hard on it.					
3. My life is determined by my own actions.					
4. To a great extent, my life is controlled by accidental happenings.					
5. When I get what I want, it's actually because I'm lucky.					
6. I've often found that what is going to happen will happen.					
7. People like myself have very little chance of protecting our personal interests where they conflict with those of strong pressure groups.					
8. My life is chiefly controlled by powerful others.					

9. Getting what I want requires pleasing those people above me.					

Please report how you feel about your current social support network. Please refer to support from friends and/or family in the past few weeks.

		Never	Rarely	Occasio nally	Half of the Time	Some of the Time	Most of the Time	Always
1.	**Someone willing to listen**							
2.	**Contact with people in a similar situation**							
3.	**Able to talk about thoughts and feelings**							
4.	**Sympathy and support from others**							
5.	**Practical help**							
6.	**Feeling let down**							
7.	**Overall satisfaction with support received**							

LES

Listed below are a number of events which sometimes bring about change in the lives of those who experience them. ***Please check those events which you have experienced <u>in the last year</u>. If you have not experienced a specific event in the last year, check N/A.*** **Be sure that all check marks are directly across from the items they correspond to.**

Also, for each item checked below, *please indicate whether you viewed the event as having a positive or negative impact on your life* at the time it occurred. A rating of -3 would indicate an <u>extremely negative</u> impact. A rating of 0 suggests <u>no impact</u> either positive or negative. A rating of +3 would indicate an <u>extremely positive</u> impact.

	N / A	**Event Occurred**	**Extremely negative**	**Moderately negative**	**Somewhat negative**	**No impact**	**Slightly positive**	**Moderately positive**	**Extremely positive**
1. Marriage			-3	-2	-1	0	+1	+2	+3
2. Detention in jail or comparable institution			-3	-2	-1	0	+1	+2	+3
3. Death of a romantic partner			-3	-2	-1	0	+1	+2	+3
4. Major change in sleeping habits (much more or much less sleep)			-3	-2	-1	0	+1	+2	+3
5. Death of close family member			-3	-2	-1	0	+1	+2	+3

	N / A	Event Occurred	Extremely negative	Moderately negative	Somewhat negative	No impact	Slightly positive	Moderately positive	Extremely positive
6. Major change in eating habits (eating much more or much less food)			-3	-2	-1	0	+1	+2	+3
7. Death of close friend			-3	-2	-1	0	+1	+2	+3
8. Outstanding personal achievement			-3	-2	-1	0	+1	+2	+3
9. Minor law violations (traffic tickets, disturbing the peace, etc.)			-3	-2	-1	0	+1	+2	+3
10. Pregnancy			-3	-2	-1	0	+1	+2	+3

	N / A	Event Occurred	Extremely negative	Moderately negative	Somewhat negative	No impact	Slightly positive	Moderately positive	Extremely positive
11. Changed work situation (different work responsibility, major change in working conditions, working hours, etc.)			-3	-2	-1	0	+1	+2	+3
12. New job			-3	-2	-1	0	+1	+2	+3
13. Serious illness or injury of close family member			-3	-2	-1	0	+1	+2	+3
14. Sexual difficulties			-3	-2	-1	0	+1	+2	+3

	N / A	Event Occurred	Extremely negative	Moderately negative	Somewhat negative	No impact	Slightly positive	Moderately positive	Extremely positive
15. Trouble with employer (for example, in danger of losing job, being suspended, demoted, etc.)			-3	-2	-1	0	+1	+2	+3
16. Trouble at school (for example, failing a class)			-3	-2	-1	0	+1	+2	+3
17. Major change in financial status (a lot better off or a lot worse off)			-3	-2	-1	0	+1	+2	+3
18. Major change in closeness of family members (a lot more close or a lot less close)			-3	-2	-1	0	+1	+2	+3

	N / A	Event Occurred	Extremely negative	Moderately negative	Somewhat negative	No impact	Slightly positive	Moderately positive	Extremely positive
19. Gaining a new family member (through birth, adoption, family member moving in, etc.)			-3	-2	-1	0	+1	+2	+3
20. Change of residence			-3	-2	-1	0	+1	+2	+3
21. Major change in religious organization activities (increased or decreased attendance)			-3	-2	-1	0	+1	+2	+3
22. Major change in number of arguments with romantic partner (a lot more or a lot less arguments)			-3	-2	-1	0	+1	+2	+3

	N / A	Event Occurred	Extremely negative	Moderately negative	Somewhat negative	No impact	Slightly positive	Moderately positive	Extremely positive
23. Major change in usual type and/or amount of recreation			-3	-2	-1	0	+1	+2	+3
24. Personally borrowing more than $10,000 (buying home, business, etc)			-3	-2	-1	0	+1	+2	+3
25. Personally borrowing less than $10,000 (buying car, TV, getting school loan, etc.)			-3	-2	-1	0	+1	+2	+3
26. Being fired from job			-3	-2	-1	0	+1	+2	+3
27. Having abortion			-3	-2	-1	0	+1	+2	+3
28. Major personal illness or injury			-3	-2	-1	0	+1	+2	+3

	N / A	Event Occurred	Extremely negative	Moderately negative	Somewhat negative	No impact	Slightly positive	Moderately positive	Extremely positive
29. Major change in social activities, e.g., parties, movies, visiting (increased or decreased participation)			-3	-2	-1	0	+1	+2	+3
30. Major change in living conditions of family (building new home, remodeling, deterioration of home, neighborhood, etc.)			-3	-2	-1	0	+1	+2	+3
31. Serious injury or illness of close friend			-3	-2	-1	0	+1	+2	+3
32. Ending of formal schooling			-3	-2	-1	0	+1	+2	+3

	N / A	Event Occurred	Extremely negative	Moderately negative	Somewhat negative	No impact	Slightly positive	Moderately positive	Extremely positive
33. Separation from spouse/partner (due to work, travel, etc.)			-3	-2	-1	0	+1	+2	+3
34. Engagement			-3	-2	-1	0	+1	+2	+3
35. Breaking up with boyfriend/ girlfriend			-3	-2	-1	0	+1	+2	+3
36. Leaving home for the first time			-3	-2	-1	0	+1	+2	+3
37. Reconciliation with boyfriend/ girlfriend			-3	-2	-1	0	+1	+2	+3

Family History Questionnaire

Have any of the following illnesses occurred in your immediate family (i.e., parents, siblings) and extended family (i.e., aunts, uncles, cousins, grandparents, etc.)? This does not include step-relatives or those related by marriage: just blood relatives. Please include yourself. If so, please indicate his/her relationship to you, his/her sex, the side of the family he/she is on, whether he/she has been hospitalized for the illness, and whether he/she has received other treatment (i.e., psychotherapy or medication) besides hospitalization for the condition. Please list multiple relatives with the same illness separately. Do not provide names. Write N/A if no one has had this illness.

Illness	His/her relationship to you (i.e., mother, brother, aunt)	Sex of Relative		Hospitalized or other treatments? (Y, N, or don't know)		
Eating Disorder	**1.**	**M**	**F**	**Y**	**N**	**Dk**
# of Immediate:	**2.**	**M**	**F**	**Y**	**N**	**Dk**
Paternal	**3.**	**M**	**F**	**Y**	**N**	**Dk**
Extended:	**4.**	**M**	**F**	**Y**	**N**	**Dk**
Maternal						
Extended:						
Anxiety Problems	**1.**	**M**	**F**	**Y**	**N**	**Dk**
# of Immediate:	**2.**	**M**	**F**	**Y**	**N**	**Dk**
Paternal	**3.**	**M**	**F**	**Y**	**N**	**Dk**
Extended:	**4.**	**M**	**F**	**Y**	**N**	**Dk**
Maternal						
Extended:						
Alcoholism	**1.**	**M**	**F**	**Y**	**N**	**Dk**
# of Immediate:	**2.**	**M**	**F**	**Y**	**N**	**Dk**
Paternal	**3.**	**M**	**F**	**Y**	**N**	**Dk**
Extended:	**4.**	**M**	**F**	**Y**	**N**	**Dk**
Maternal						
Extended:						
Non-Alcohol Drug Addiction	**1.**	**M**	**F**	**Y**	**N**	**Dk**
# of Immediate:	**2.**	**M**	**F**	**Y**	**N**	**Dk**
Paternal	**3.**	**M**	**F**	**Y**	**N**	**Dk**
Extended:	**4.**	**M**	**F**	**Y**	**N**	**Dk**
Maternal						
Extended:						
Depression	**1.**	**M**	**F**	**Y**	**N**	**Dk**
# of Immediate:	**2.**	**M**	**F**	**Y**	**N**	**Dk**

Illness	His/her relationship to you (i.e., mother, brother, aunt)	Sex of Relative	Hospitalized or other treatments? (Y, N, or don't know)
Paternal Extended: Maternal Extended:	3.	M F	Y N Dk
	4.	M F	Y N Dk
Manic Depression (Bipolar)	**1.**	**M F**	**Y N Dk**
# of Immediate: Paternal Extended: Maternal Extended:	2.	M F	Y N Dk
	3.	M F	Y N Dk
	4.	M F	Y N Dk
Suicide	**1.**	**M F**	**Y N Dk**
# of Immediate: Paternal Extended: Maternal Extended:	2.	M F	Y N Dk
	3.	M F	Y N Dk
	4.	M F	Y N Dk
Obsessive-Compulsive Disorder	**1.**	**M F**	**Y N Dk**
# of Immediate: Paternal Extended: Maternal Extended:	2.	M F	Y N Dk
	3.	M F	Y N Dk
	4.	M F	Y N Dk

PDS

Part 1:
Many people have lived though or witnessed a very stressful and traumatic event at some point in their lives. Indicate whether or not you have experienced or witnessed each traumatic event listed below by marking Yes or No on the answer sheet, the age at the time of the event, your relationship to perpetrator, and your reaction to the traumatic event at the time it occurred as well as now.

1. **Serious accident, fire, or explosion (for example, an industrial, farm, car, plane, or boating accident)**

Age at time of event_____

How upsetting was the event at the time it occurred? (Pick one)
   a. Not at all
   b. A little bit
   c. Moderately
   d. A lot

How many times did this event occur? _____

2. **Natural disaster (for example tornado, hurricane, flood, or major earthquake)**

Age at time of event_____

How upsetting was the event at the time it occurred? (Pick one)
   a. Not at all
   b. A little bit
   c. Moderately
   d. A lot

How many times did this event occur? _____

3. **Non-sexual assault by a family member or someone you know (for example, being mugged, physically attacked, witnessing domestic violence between parents, shot, stabbed, or held at gunpoint)**

Age at time of event_____

How upsetting was the event at the time it occurred? (Pick one)
   a. Not at all
   b. A little bit
   c. Moderately
   d. A lot

Who was the person committing these actions? (Circle all that apply)

a. Family member (e.g. father, brother, step-father). # of times _____
b. Family Friend, neighbor, or an acquaintance. # of times _____

4. Non-sexual assault by a stranger (for example, being mugged, physically attacked, shot, stabbed, or held at gunpoint)

Age at time of event_____

How upsetting was the event at the time it occurred? (Pick one)

a. Not at all
b. A little bit
c. Moderately
d. A lot

How many times did this event occur? _____

5. Sexual assault by a family member or someone you know (for example, rape or attempted rape).

Age at time of event_____

How upsetting was the event at the time it occurred? (Pick one)

a. Not at all
b. A little bit
c. Moderately
d. A lot

Who was the person committing these actions? (Circle all that apply)

a. Family member (e.g. father, brother, step-father). # of times _____
b. Family Friend, neighbor, or an acquaintance. # of times _____

6. Sexual assault by a stranger (for example rape or attempted rape)

Age at time of event_____

How upsetting was the event at the time it occurred? (Pick one)

a. Not at all
b. A little bit
c. Moderately
d. A lot

Who was the person committing these actions? (Circle all that apply)

a. Family member (e.g. father, brother, step-father). # of times _____
b. Family Friend, neighbor, or an acquaintance. # of times _____

7. Military combat or a war zone

Age at time of event_____

How upsetting was the event at the time it occurred? (Pick one)

a. Not at all
b. A little bit
c. Moderately
d. A lot

How many times did this event occur? _____

8. Sexual contact when you were younger than 18 with someone who was 5 or ore years older than you (for example, contact with genitals or breasts)

Age at time of event_____

How upsetting was the event at the time it occurred? (Pick one)

a. Not at all
b. A little bit
c. Moderately
d. A lot

Who was the person committing these actions? (Circle all that apply)

a. Family member (e.g. father, brother, step-father). # of times _____
b. Family Friend, neighbor, or an acquaintance. # of times _____
c. Stranger. # of times _____

9. Imprisonment (for example, prison inmate, prisoner of war, hostage)

Age at time of event_____

How upsetting was the event at the time it occurred? (Pick one)

a. Not at all
b. A little bit
c. Moderately
d. A lot

How many times did this event occur? _____

10. Torture

Age at time of event_____

How upsetting was the event at the time it occurred? (Pick one)

a. Not at all
b. A little bit
c. Moderately
d. A lot

How many times did this event occur? _____

11. Life threatening illness (e.g. cancer, AIDS)

Age at time of event_____

How upsetting was the event at the time it occurred? (Pick one)

a. Not at all
b. A little bit
c. Moderately
d. A lot

How many times did this event occur? _____

12. Other traumatic event (Specify_____)

Age at time of event_____

How upsetting was the event at the time it occurred? (Pick one)

a. Not at all
b. A little bit
c. Moderately
d. A lot

Who was the person committing these actions? (Circle all that apply)

a. Family member (e.g. father, brother, step-father). # of times _____
b. Family Friend, neighbor, or an acquaintance. # of times _____
c. Stranger. # of times _____

IF YOU MARKED YES TO ANY OF THE ITEMS ABOVE, CONTINUE. IF NOT, PLEASE STOP HERE.

Part 2:

13. If you marked Yes for more than one traumatic event in Part 1, indicate which one bothers you the most. If you marked Yes for only one traumatic event in Part 1, mark the same one on the answer sheet

a. Accident
b. Disaster
c. Non-sexual assault by a family member or someone you know
d. Non-sexual assault by a stranger
e. Sexual assault by a family member or someone you know
f. Sexual assault by a stranger
g. Military combat or a war zone
h. Sexual contact under 18 with someone who was 5 or more years older than you
i. Imprisonment
j. Torture
k. Life threatening illness
l. Other traumatic event

During this traumatic event:

14. Were you physically injured?
15. Was someone else physically injured?
16. Did you think that your life was in danger?
17. Did you think that someone else's life was in danger?
18. Did you feel helpless?
19. Did you feel terrified?

Part 3:

Below is a list of problems that people sometimes have after experiencing a traumatic event. Read each one carefully and choose the answer that best describes how often that problem has bothered you in the **past month**. Rate each problem with respect to the traumatic event you marked in Item 13.

	Not at all **(only 1 time)**	Once in a while **(1 time a week or less)**	Half of the time **(2-4 times a week)**	Almost always **(5 or more times a week)**
20. Having upsetting thoughts or images about the traumatic event that came into your head when you didn't want them to				
21. Having bad dreams or nightmares about the traumatic event				
22. Reliving the traumatic event, acting or feeling as if it was happening again				
23. Feeling emotionally upset when you were reminded of the traumatic event (for example feeling scared, angry, sad, guilty, etc.)				
24. Experiencing physical reactions when you were reminded of the traumatic event (for example,				

breaking out in a sweat, heart, beating fast)				
25. Trying not to think about, talk about, or have feelings about the traumatic event				
26. Trying to avoid activities, people, or places that remind you of the traumatic event				
27. Not being able to remember an important part of the traumatic event				
28. Having much less interest or participating much less often in important activities				
29. Feeling distant or cut off from people around you				
30. Feeling emotionally numb (for example, being unable to cry or unable to have loving feelings)				
31. Feeling as if your future plans or hopes will not come true (for example, you will not have a career, marriage, children, or a long life)				
32. Having trouble				

falling asleep				
33. Feeling irritable or having fits of anger				
34. Having trouble concentrating (for example, drifting in and out of conversations, losing track of a story on television, forgetting what you read)				
35. Being overly alert (for example, checking to see how is around you, being uncomfortable with your back to a door, etc)				
36. Being jumpy or easily startled (for example when someone walks up behind you)				

37. How long have you experienced the problems that you reported above? (Mark only one)

a. Less than 1 month
b. 1 to 3 months
c. More than 3 months

38. How long after the traumatic event did these problems begin? (Mark only one)

a. Less than 6 months
b. 6 or more months

SASRQ

NOTE: These questions refer to the traumatic event you marked as most upsetting to you on the PDS

DIRECTIONS: Below is a list of experiences people sometimes have during and after a stressful event. Please read each item carefully and decide how well it describes your experience during and after immediately after the event that you reported **bothered you the most** (during and in the four weeks afterwards). Refer to this event in answering the items below. Use the 0-5 point scale shown below and circle the number that best describes your experience.

0----------1----------2----------3----------4----------5----------
not experienced | very rarely experienced | Rarely experienced | Sometimes experienced | often experienced | very often experienced

1.	I had difficulty falling or staying asleep.	0	1	2	3	4	5
2.	I felt restless	0	1	2	3	4	5
3.	I felt a sense of timelessness.	0	1	2	3	4	5
4.	I was slow to respond.	0	1	2	3	4	5
5.	I tried to avoid feelings about that event.	0	1	2	3	4	5
6.	I had repeated distressing dreams about that event.	0	1	2	3	4	5
7.	I felt extremely upset if exposed to events that reminded me of an aspect about that event.	0	1	2	3	4	5
8.	I would jump in surprise at the least thing.	0	1	2	3	4	5
9.	Knowing about the event made it difficult for me to do perform work or other things I needed to do.	0	1	2	3	4	5
10.	I did not have the usual sense of who I am.	0	1	2	3	4	5
11.	I tried to avoid activities that reminded me about the event.	0	1	2	3	4	5
12.	I felt hypervigilant or "on edge".	0	1	2	3	4	5
13.	I experienced myself as though I were a stranger.	0	1	2	3	4	5
14.	I tried to avoid conversations about that event.	0	1	2	3	4	5
15.	I had a bodily reaction when exposed to reminders of that event.	0	1	2	3	4	5
16.	I had problems remembering important details about that event.	0	1	2	3	4	5

17.	I tried to avoid thoughts about that event.	0	1	2	3	4	5
18.	Things I saw looked different to me from how I know they really looked.	0	1	2	3	4	5
19.	I had repeated and unwanted memories about that event.	0	1	2	3	4	5
20.	I felt distant from my own emotions.	0	1	2	3	4	5
21.	I felt irritable or had outbursts of anger.	0	1	2	3	4	5
22.	I avoided contact with people who reminded me of that event.	0	1	2	3	4	5
23.	I would suddenly act or feel as if learning about my that event was happening again.	0	1	2	3	4	5
24.	My mind went blank.	0	1	2	3	4	5
25.	I had amnesia for large periods of learning about that event.	0	1	2	3	4	5
26.	The experience of that event caused problems in my relationships with other people.	0	1	2	3	4	5
27.	I had difficulty concentrating.	0	1	2	3	4	5
28.	I felt estranged or detached from other people.	0	1	2	3	4	5
29.	I had a vivid sense that the experience of that event was happening all over again.	0	1	2	3	4	5
30.	I tried to stay away from places that reminded me of that event.	0	1	2	3	4	5

MAPSAIS II

NOTE: These questions refer to the traumatic event you marked as most upsetting to you on the PDS

	Have you ever had any of the following health problems in your life?	**YES**	**NO**	**If YES, how often in the past year?**			
				Not at all 0	**Seldom 1**	**Occasional 2**	**Often 3**
1	Hospitalized for injuries due to traumatic event						
2	Taken to Emergency Room						
3	Injuries requiring surgery due to traumatic event						
4	Injuries requiring stitches due to traumatic event						
5	Broken bones due to traumatic event						
6	Arthritis due to injuries from traumatic event						
7	Facial injuries (black eye, bruises, bloody nose) due to traumatic event						
8	Head injury due to traumatic event (concussion)						

CSS- II

Think back to when the event you reported bothered you the most occurred. Please report how you felt about the social support at that time. Please refer to support from friends and/or family at that time.

		Never	Rarely	Occasionally	Half of the Time	Some of the Time	Most of the Time	Always
1.	**Someone willing to listen**							
2.	**Contact with people in a similar situation**							
3.	**Able to talk about thoughts and feelings**							
4.	**Sympathy and support from others**							
5.	**Practical help**							
6.	**Feeling let down**							
7.	**Overall satisfaction with support received**							

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