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PSYCHOLOGICAL REACTION TO LIFE'S TRAUMA: WELL-BEING AND TRAUMA AMONG COLLEGE NURSING STUDENTS

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ABSTRACT

The present study examined the relationship between symptoms of post-traumatic stress, resilience, and growth in undergraduate students attending the University of South Florida, College of Nursing, in Tampa.

Some trauma survivors will demonstrate negative reactions to trauma, some will not demonstrate any post-trauma symptoms, while some individuals will show positive reactions. This study investigated how, in a sample of nursing students, the psychological factors associated with adverse reactions, resiliency, and post-traumatic growth occur. The identification of these factors within a nursing population can be used to better understand these reactions as well as aid in training nurses to improve their role as health care providers.

The relationships among three major areas of interest were investigated: negative reactions, resilience, and growth, using the following standardized scales and their subscales, as well as looking at moderators that may impact on these relationships. This study used on-line survey methodology. Surveys included Demographic information, Traumatic Event Questionnaire (TEQ), Post-Traumatic Growth Inventory (PTGI), Response to Stressful Experience Scale (RSES), PTSD Checklist-Civilian Version (PCL-C), Self-Compassion Scale (SCS), Multidimensional Scale of Perceived Social Support (MSPSS), and Center for Epidemiologic Studies Depression Scale (CES-D). The study population consisted of 115 undergraduate students.

PCL-C total scores were significantly positively correlated with CES-D. Higher PCL-C scores were associated with higher CES-D scores. PCL-C scores were significantly negatively associated with other instrument scores such as PTGI and RSES. A hierarchical regression model

was used to model the association of depression, self-compassion, growth, resilience, and social support on post-traumatic stress. The overall model significantly predicted PCL symptoms and explained a significant proportion of variance. Depression was the largest significant predictor of post-traumatic stress. Depression also explained a significant proportion of variance in post-traumatic stress. A hierarchical regression model was used to model the association of resilience, PCL-C, self-compassion, social support and depression on post-traumatic growth. The overall model significantly predicted post-traumatic growth and explained a significant proportion of variance. Resilience was the largest significant predictor of post-traumatic growth. Resilience also explained a significant proportion of variance in post-traumatic stress. A hierarchical regression model was used to model the association of post-traumatic growth, depression, PCL-C, self-compassion, and social support on resilience. The overall model significantly predicted resilience and explained a significant proportion of variance. Post-traumatic growth was the largest significant predictor of resilience. Post-traumatic growth also explained a significant proportion of variance in resilience.

This study supports previous notions that psychological distress and growth can coexist and are indeed related. Helping trauma survivors develop self- compassion and acceptance may prove to be of great benefit in finding positive outcome from life’s traumas'. Findings may guide interventions with other populations who experience PTSD and other post trauma reactions.

CHAPTER 1

PTSD AND POST-TRAUMATIC GROWTH

1.1. Introduction

A recent study indicated that 85 percent of emerging adults in college (18 to 24 year olds; Arnett, 2000), have experienced at least one traumatic event (Frazier, Anders, Perera, Tomich, Tennen, Park, & Tashiro, 2009). Individuals who have had a traumatic experience are more likely to report psychological maladjustment, such as post-traumatic stress (Marx & Sloan, 2003). Specifically, the prevalence rate of post-traumatic stress disorder (PTSD) is only 6,8% (Kessler, Sonnega, Bromet, Hughes, & Nelson, 1995) and some studies have found that only 4.8% of their total college student samples had enough trauma symptomatology to merit a diagnosis of PTSD (Frazier, Anders, Perera, Tomich, Tennen, Park, & Tashiro, 2009).

Given the discrepancy between the large number that report traumatic experience and those who develop post-traumatic stress symptoms, research has focused on possible moderators of this relationship, in particular protective variables amenable to change, as they can be utilized in prevention and intervention efforts. For example, previous research suggests that perceived social support (Haden, Scarpa, Jones, & Ollendick, 2007), resilience (Bonanno et al, 2004), growth (Tedeschi & Calhoun, 2004; Zoellner, & Maercker, 2006) and self-compassion (Thompson & Waltz, 2008) may influence the relationship between trauma and psychological adjustment among college students.

Although research has established the link between trauma and post-traumatic stress (Hovanitz, 1993; Ozer, Best, Lipsey, & Weiss, 2003; Kessler, Sonnega, Bromet, Hughes, & Nelson, 1995; Luthra, Abramovits, Greenberg, Schoor, Schmeidler, Levine, Nomura, &

Chemtob, 2008), the relative contribution and interaction among variables that may buffer the impact of traumatic events remains poorly understood, especially among the college nursing student population. Overall, the need for identification of variables that can be harness and deployed for protective purposes continues, and the present study addressed this call by examining potentially traumatic events, perceptions of social support, resilience and growth in a sample of college nursing students.

Findings may increase our understanding of experiences and resources among college nursing students, and aid in the refinement of prevention, education, and intervention efforts pertaining to trauma and adjustment, and hopefully will be able to be generalized to other populations of trauma survivors.

1.2. Traumatic event and PTSD

According to the DSM-IV-TR (APA, 2000) and the DSM-5 released in May 2013, a traumatic event is one that involves real or perceived threat of death or serious injury, or threat to one's physical integrity. Furthermore, a traumatic event can be when one witnesses the death, serious injury, or threat to the physical integrity of another person, or learn that a loved one has gone through one of these experiences.

Traumatic events can include naturally occurring events such as natural disasters, common events such as car accidents or chronic illness, and events that may be best described as atrocities that humans inflict upon each other (e.g., abuse, assaults, combat, and war related experiences).

Epidemiological literature (Norris & Slone, 2007) confirms that a vast majority of individuals in United States and around the world have suffered, or will at some point in their

lives suffer, violence, abuse, atrocity, and catastrophe. Although studies have focused on a number of indicators of psychological distress following trauma, one of the most frequently studied outcome is PTSD.

In order to satisfy the DSM-IV criteria, an individual has to be exposed to a traumatic event that involves actual or threatened death or serious injury, or a threat to the physical integrity of self or others (A1 Criterion). It is also essential that the individual experience a response at the time that involves intense fear, helplessness or horror (A2 Criterion). PTSD can cause many symptoms. These symptoms can be grouped into three categories:

1.2.1. B Criterion: Re-experiencing symptoms

Criterion B PTSD symptoms involve persistent and distressing re-experiencing of the traumatic event in one or more of the following ways:

a) recurrent and intrusive distressing recollections of the event, including images, thoughts or perceptions;
b) recurrent distressing dreams of the events;
c) acting or feeling as if the traumatic event were recurring, such as sense of reliving the experience, illusions, hallucinations and dissociative feedback episodes, including those which occur on awakening, or when intoxicated;
d) intense psychological distress at exposure to internal or external cues that symbolize or resemble an aspect to the traumatic event;
e) physiological reactivity upon exposure to internal or external cues that symbolize or resemble an aspect of the traumatic event.

In these symptoms, the trauma comes back to the PTSD sufferer in some way, through memories, dreams, or distress in response to reminders of the trauma. PTSD is distinguished from "normal" remembering of past events by the fact that re-experiencing memories of the trauma(s) are unwanted, occur involuntarily, elicit distressing emotions, and disrupt the functioning and quality of life of the individual.

1.2.2. C Criterion: Avoidance symptoms

Criterion C PTSD symptoms involve persistent avoidance of stimuli associated with the trauma and numbing of general responsiveness, as evident by three or more of the following symptoms that were not present before the trauma:

a) efforts to avoid thoughts, feelings, or conversations associated with the trauma;
b) efforts to avoid activities, places, or people that arouse recollections of the trauma;
c) inability to recall an important aspect of the trauma;
d) markedly diminished interest or participation in significant activities;
e) feelings of detachment or estrangement from others;
f) restricted range of affect (e.g., unable to have loving feelings);
g) sense of foreshortened future, where the interviewee does not expect to have a career, marriage, children, or a normal life span.

Criterion C symptoms involve avoiding reminders of the trauma. These reminders can be internal cues, such as thoughts or feelings about the trauma, and/or external stimuli in the environment that spark unpleasant memories and feelings. To this limited extent, PTSD is not unlike a phobia, where the individual goes to considerable length to avoid stimuli that provoke emotional distress. Criterion C symptoms also involve more general symptoms of impairment,

such as pervasive emotional numbness, feeling “out of sync” with others, or expecting to be deprived of attaining normal developmental goals due to trauma experiences.

1.2.3. D Criterion: Hyper-arousal symptoms

Criterion D is represented by persistent symptoms of increased arousal not present before the trauma. For this cluster of symptoms to be positively endorsed, the patient must experience at least two of the five following symptoms:

a) difficulty falling or staying asleep;

b) irritability or outbursts of anger;

c) difficulty concentrating;

d) hypervigilance;

e) exaggerated startle response.

Individuals suffering from PTSD experience heightened physiological activation, which may occur in a general way, even while at rest. More typically, this activation is evident as excessive reaction to specific stressors that are directly or symbolically reminiscent of the trauma. Criterion D symptoms are often, but not always, linked to reliving of the traumatic event. For example, sleep disturbance may be caused by nightmares, intrusive memories may interfere with concentration, and excessive watchfulness may reflect concerns about preventing recurrence of a traumatic event that may be similar to that previously endured.

1.2.4. E Criterion: Required duration of symptoms

For a diagnosis of PTSD to be made, the symptoms must endure for at least one month. PTSD is sometimes misdiagnosed in individuals who exhibit symptoms shortly after exposure to a traumatic event (less than one month). Such individuals would be more appropriately diagnosed with Acute Stress Disorder or Adjustment Reaction. Although many individuals with Acute Stress Disorder go on to develop PTSD, many do not.

1.2.5. F Criterion: PTSD symptoms must be clinically significant

Criterion F requires that PTSD symptoms cause clinically significant distress or impairment in social, occupational, or other important areas of functioning. Some individuals may experience a great deal of subjective discomfort and suffering owing to their PTSD symptoms without conspicuous impairment in their day-to-day functional status. Other individuals show clear impairment in one or more spheres of functioning, such as social relating, work efficiency, or ability to engage in and enjoy recreational or leisure activities.

In summary, exposure to traumatic stress is a prerequisite for diagnosing PTSD. Symptoms of PTSD, present for at least one month, are divided into three symptom clusters: (1) re-experiencing of the traumatic event, (2) avoidance of trauma-relevant stimuli and numbing of general responsiveness, and (3) heightened physiological arousal.

1.2.6. PTSD in the DSM-5

Since the publication of the DSM-III in 1980 and its subsequent revisions up to the DSM-5, PTSD has received increased professional and public attention and has given rise to a large number of basic, clinical, and epidemiological studies. In the DSM IV-TR PTSD is a prevalent

disabling anxiety disorder characterized by re-experiencing, avoidance, numbing, or arousal that may occur after witnessing or experiencing traumatic event (APA, 2000).

The DSM-5 moved PTSD from the class of anxiety disorders into a new class of "trauma and stressor-related disorders". According to the APA, the publisher of the DSM-5, there are a number of significant changes in this category from the diagnostic criteria that appeared in the previous edition, DSM-IV. All of the conditions included in this classification require exposure to a traumatic or stressful event as a diagnostic criterion.

The rationale for the creation of this new class is based upon clinical recognition of variable expressions of distress as a result of traumatic experience. The necessary criteria of exposure to trauma links the conditions included in this class; the homogeneous expression of anxiety or fear-based symptoms, an-hedonic and dysphoric symptoms, externalizing anger or aggressive symptoms or dissociative symptoms.

1.2.7. Symptoms of PTSD: DSM-IV vs. DSM-5

Overall, the symptoms of PTSD are largely the same in DSM-5 as compared to DSM-IV, with the number of possible symptoms increased to 20, and dropping the symptoms that inquired about a sense of foreshortened future. More attention is now paid to behavioral symptoms that accompany PTSD in the DSM-5. The three clusters of DSM-IV symptoms are divided into four clusters in DSM-5: intrusion, avoidance, negative alterations in cognitions and mood, and alterations in arousal and reactivity. DSM-IV Criterion C, avoidance and numbing, are separated into two criteria: Criteria C (avoidance) and Criteria D (negative alterations in cognitions and mood).

1.2.8. Major differences between DSM-IV and DSM-5

The stressor criteria (Criterion A1 in DSM-IV) was modified. Indeed, DSM-5 is far more explicit in what constitutes a traumatic event: sexual assault is specifically included. The requirement for specific subjective emotional reactions (Criterion A2 in DSM-IV), requiring fear, helplessness, or horror happen right after the trauma, was eliminated in DSM-5 because it lacked empirical support for its utility and predictive validity. Previously certain groups, such as military personnel involved in combat, law enforcement officers and other first responders, did not meet criterion A2 in DSM-IV because their training prepared them to not react emotionally to traumatic events. Research suggests that Criterion A2 did not improve diagnostic accuracy.

1.2.9. PTSD epidemiology

The lifetime prevalence of PTSD among adults in the U.S. has been estimated at 6.8% (Kessler, Berglund, Demler, Jin, Merikangas, & Walters, 2005). In the United States, a large number of women and children live at substantial risk of physical and sexual violence within their own homes and most intimate relationships (Tjadeen & Thoennes, 1998, 2000). There is by now considerable evidence that abuse in childhood sets the stage for future abuse (Follette, Polusny, Bechtle, & Naugle, 1996) and that violence against women and children has become a public health problem of pandemic proportions. Around the world, in countries and cultures afflicted by civil strife and international warfare, men are more likely to encounter the horrors of war as armed combatants (Goldstein, 2001). Increasing numbers of children have been witness to genocide, commandeered into armed conflicts as "child soldiers," and forced to recruit and even execute other children (Garbarino, Kostelny, & Dubrow, 1991; Mendelsohn, & Straker, 1998; Myers-Walls, 2004). In the context of war, women and girls are subject to repeated rape and treated as "trophies" of war by conquering soldiers and occupying forces. Among them are those

who, having been violated by enemy combatants, are ostracized by their communities and abandoned by their families (Gingerich, & Leaning, 2004) Apart from these atrocities there are a host of natural and manmade disasters affecting entire communities. Earthquakes, floods, and hurricanes annually combine with incidents of school and community violence, industrial catastrophes, and acts of terror and revenge to ensure that here at home and on a worldwide stage, human suffering is broad in scope, diverse in nature.

Links between the extreme events to which human beings are exposed and the symptoms of psychological distress that can follow such exposure have been drawn (Ballenger, Davidson, Lecrubier, Nutt, Marshall, & Nemeroff, 2004; Bedard, Greif, & Buckley, 2004). That a significant number of men and women in combat suffer immediate, delayed, and ongoing symptoms of PTSD is by now well established (Figley, 1978, Gallers, Foy, Donahoe, & Goldfarb, 1988; Schnurr, Lunney, Sengupta, & Waelde, 2003). Equally well documented is the psychological harmfulness of criminal victimization (Kilpatrick, Saunders, Veronen, Best, & Von, 1987), rape (Burgess, & Holmstrom, 1974; Koss, & Harvey, 1991; Koss, 1993), child abuse and incest (Briere, & Elliot, 2003; Herman, 1981), disaster (Barron, 2004; Norris, Friedman, & Watson, 2002a, 2000b), and exposure to prolonged and recurrent trauma (Herman, 1992), including the extreme violations associated with political violence, terrorism, and torture (Goldfield, Mollica, Pesavento, & Farone, 1988; Resnick, Galea, Kilpatrick, & Vlahov, 2004; Turner, 2004) trafficking and prostitution (Farley, Cotton, Lynne, Zumbeck, Spiwak, Reyes et al. 2003).

A study by Taft, Resick, Watkins, & Panuzio (2009), assessed 162 female victims of rape or first degree assault for post-traumatic stress symptomatology and depression, as well as childhood physical and sexual abuse, adult physical and sexual assault, and severity of trauma

symptomatology. They found that those with higher post-traumatic stress symptoms tended to have higher depressive symptoms. In other words, there is strong support for the detrimental effects of traumatic stress symptomatology, beyond the traumatic event itself.

PTSD is not experienced by most trauma survivors. Experiencing a traumatic event does not mean that PTSD will definitely develop. Other factors play a role in whether or not someone eventually develops PTSD following the experience of a traumatic event. Epidemiological studies of the prevalence of PTSD demonstrated that the objective characteristics of the events were not sufficient predictors of this disorder (Kassler, Sonnega, Bromet, Hughes, & Nelson, 1995). This led to a consideration of subjective characteristics, particularly of the personal appraisal of the event by the survivor.

1.3. PTSD risk factors

Putative risk factors for PTSD can be divided into two broad categories (Breslau & Antony, 2007): those pertinent to the traumatic event (e.g., severity or type of trauma) and those relevant to individuals who experience the event (e.g., gender, prior experiences, or personality characteristics). Although some risk factors for PTSD appear to be related to prior experiences, data have also emerged implicating biological and possibly genetic risk factors for PTSD (Yehuda, 1999)

Several studies (Yehuda, 1999; Davidson, Tupler, Wilson, & Connor, 1998; Lyons, Goldberg, Eisen, True, Tsuang, & Meyer, 1993) have identified important genetic, biological and environmental risk factors for the development of PTSD after exposure to a traumatic event.

1.3.1. Genetic factors

Individuals who have family members with anxiety disorders or mood disorders are more likely to develop PTSD (Blanchard, Hickling, Forneris, Taylor, Buckley, Loos, & Jaccard, 1997; Breslau, Davis, Andreski, & Peterson, 1991). Furthermore, certain inborn temperamental qualities have been shown to predict the development of PTSD. Some of the traits identified as potentially having an impact include anxiety, neuroticism, introversion, and emotional reactivity, while the tendency to crave a high activity level is shown to be a protective factor against the development of PTSD.

1.3.2. Biological factors

Research suggests that certain areas of the brain have changed in some individuals with PTSD. In particular, brain areas implicated in the stress response include the amygdala, hippocampus, and prefrontal cortex (Bremner et al. 1995).

Researchers have also looked at the size of the hippocampus in people with and without PTSD. They have found that people who have severe, chronic cases of PTSD have smaller hippocampi (Gilbertson, Shenton, Ciszewski, Kasai, Lasko, Orr, & Pitman, 2002). The researchers have taken this to suggest that the experience of constant stress as a result of severe and chronic PTSD may ultimately damage the hippocampus, making it smaller (Pitman, 2001). In addition, patients with PTSD show increased cortisol and norepinephrine responses to stress. Studies suggest that an imbalance of certain substances called neurotransmitters (chemical messengers in the brain) may contribute to anxiety disorders (Yehuda, 2001). The neurotransmitters targeted in anxiety disorders are serotonin, dopamine, and epinephrine. Serotonin appears to be specifically important in feelings of well-being, and deficiencies are

highly related to anxiety and depression. Stress hormones such as cortisol also play a role. Traumatic stress is associated with increased cortisol and norepinephrine responses to subsequent stressors (Kolassa & Elbert, 2007).

1.3.3. Environmental factors

Life experiences including the amount and severity of previously experienced traumas, may affect the propensity to develop PTSD. Some research has suggested that traumatic life events can build up so when someone experiences a major trauma they are more likely to develop PTSD than those without a similar life history. Other research suggests that individuals who have experienced minor traumas may be less likely to develop PTSD if exposed to a major trauma.

Despite the prevalence of traumatic events, as well as the well-established link between such experiences and psychological, socio-emotional, and psychological distress, most individuals who experience a traumatic event are relatively resilient (Hoge, Austin, & Pollack, 2007). For example, although a significant proportion of survivors develop some trauma symptomatology, only six to twelve percent of trauma survivors go on to develop PTSD (Frazier, Gavian, Hirai, Park, Tennen, Tomich, & Tashiro, 2010).

Resilient survivors, however, tend to report more adaptive coping and more adequate support. As a result, resilient survivors may exhibit fewer stress symptoms after a traumatic event (Hoge, Austin, & Pollack, 2007). Most individuals who develop PTSD are hypothesized to succumb to new information validating rigid perceptions that the self is wholly incompetent and the world entirely unsafe; on the contrary, resilient individuals are believed to maintain flexible knowledge structures that can accommodate new information from a traumatic experience (Foa,

& Cahill, 2001). Personal resources that have been associated with resiliency include perceived social support, self-esteem, and dispositional optimism.

Low perceived social support has been identified as the strongest predictor of PTSD (Brewin, Andrews, & Valentine, 2000; Ozer, Best, Lipsey, & Weiss, 2003). Grasso et al. (2011) examined potential benefits of trauma exposure in college students. Individuals who experienced a traumatic event who did not develop PTSD were found to be more likely to report greater social support and subsequently relied less on avoidance-focused coping strategies to the potential trauma, even prior to the trauma, perhaps contributing to their apparent resiliency.

These findings highlighted perceived social support and less reliance on avoidance-focused coping strategies as attributes that may be important to resilient functioning post-trauma. High-perceived social support may facilitate the natural course of recovery from trauma exposure by fostering the perception that one is part of a solid social network that challenges perceptions that the world is hostile and dangerous. The perception that one belongs to a safe and protective social network may also promote greater use of approach-based coping strategies that reduce avoidance by providing a secure base from which to cognitively and emotionally recall and process traumatic memories (Brewin, Andrews, & Valentine, 2000; Charuvastra & Cloitre, 2008).

1.4. Post-traumatic growth and positive change following trauma

There is overwhelming evidence that traumatic events can produce many negative physical and psychological consequences. Although researchers have extensively studied the negative effects of trauma, there has been much less attention paid to the possibility of positive impact of negative events. However, there is a body of literature suggesting that people exposed to even the most traumatic events may perceive at least some good emerging from their struggle with such tragedies as rape (Burt, & Katz, 1987; Veronen, & Kilpatrick, 1983), incest (Silver, Boon, & Stones,1983), bereavement (Calhoun, & Tedeschi, 1990; Schwartsberg, & Janoff-Bulman, 1991), cancer (Collins, Taylor, & Skokan, 1990), HIV infection (Schwartzberg, 1994), disaster (Thompson, 1985), combat (Sledge, Boydstun, & Rabe, 1980) and the Holocaust (Yehuda et al., 1997). Several categories of perceived benefits have been identified.

Post-traumatic growth (PTG) is described as an enhanced perception of self and understanding of one's place in the world, a more profound sense of life meaning, improved coping skills, and a stronger sense of connectedness with others following potential traumatic event exposure (Tedeschi & Calhoun, 2004). PTG implies cognitive gains and growth, above and beyond what existed prior to the trauma (Tedeschi & Calhoun, 2004; Zoellner & Maercker, 2006). Some trauma survivors develop PTSD, many do not, and some show a positive reaction to experience of traumatic event and report personal growth.

Following the traumatic event, the individual can be seen working to cope with the trauma, incorporating social support into their attempts to deal with the event. Research suggests that some factors contributing to PTG, such as personal strength, relating to others, and new possibilities, are positively correlated with resilience, whereas other factors such as appreciation of life and spiritual change are positively correlated with PTSD symptoms (Daisuke et al., 2010).

In most instances however, the experience of growth does not imply the relief of psychological distress. Many investigations of perceptions of benefits show that although PTG is present, the trauma survivors continue to experience a degree of psychological distress (Cordova, Cunningham, Carlson, & Andrykowski, 2001; Frazier, Conlon, & Glaser, 2001; Salter, & Stallard, 2004; Wortman, 2004). Thus, one should not conclude that if an individual evidences PTG, that this is similar to resilience and no adverse reactions from the traumatic event are present. In fact, some literature supports that this experience of suffering following trauma is a necessary component for many people to undergo any PTG.

Post-traumatic growth has been measured and analyzed for various populations that have been affected by different traumatic events, including cancer patients (Cordova, Cunningham, Carlson, & Andrykowski, 2001), traffic accident survivors (Salter, & Stallard, 2004), community violence victims (Updegraff, & Marshall, 2005), and in a variety of populations e.g. adolescents (Milam, Ritt-Olson, & Unger, 2004) and Latina immigrants (Berger, & Weiss, 2006).

Some theorists have conceptualized PTG as a positive outcome of the struggle survivor face; others have conceptualized PTG as a coping strategy or a form of coping effort in the face of enduring distress (Zoellner & Maercker, 2006). Some factors of PTG might frequently be related to coping success, which is important for resilience, while other factors related to coping effort, which links in turn to PTSD. If this is true, the association of PTG with PTSD and resilience can be partially explained.

Although some previous studies (Lepore, and Revenson, 2006; Calhoun, & Tedeschi, 2006; Tedeschi & McNally, 2011) have suggested that PTG is comprised of several factors with different properties, few have examined both the association between PTG and PTSD and between PTG and resilience (RSES), focusing on each of the factors of PTG.

1.5. Traumatic events and resilience

Exposure to a traumatic event can result in a wide range of reactions. The focus has often been on pathological reactions and development of psychiatric disorders such as PTSD but more recently_resilience has been increasingly recognized as a common response (Bonanno, Galea, Bucciarelli, & Vlahov, 2007).

It has been demonstrated that within the body of trauma survivors a large number of individuals do not develop PTSD despite their experience (Norris et al., 2002a; Yehuda, 2004) and an indeterminate number seem not only to survive but are perceived even to thrive (Tedeschi & Calhoun, 1995; Wild & Pavio, 2003).

Resilience, the ability to bounce back or cope successfully despite substantial adversity (Rutter, 1985), has received significant attention from various domains. A number of studies (Flach, 1997; Richardson, 2002; Tusaie & Dyer, 2004) have found that social support and meaningful relationships with at least one peer or family member are consistent with resilient outcomes. These relationships provide opportunities for communication and support and are important not only for their existence, but also within the context that the individual perceives them as being of healthy quality (Tusaie & Dyer, 2004).

Originally, resilience was referred to as a personality trait whereas over the past decade or two resilience has been redefined as a dynamic, modifiable process (Luthar, Cicchetti, & Becker, 2000). Bonanno (2004) has defined resilience as the ability to maintain a state of normal equilibrium in the face of extremely unfavorable circumstances. To enhance resilience, it is necessary to have an understanding of its determinants.

Various factors such as beliefs, attitudes, coping strategies, behaviors and psychosocial cohesion have been suggested as conveying protection or endorsing resilience in the face of trauma. Resilient individuals may show insight, initiative, humor, creativity and independence.

In the most basic sense, resiliency is the ability to adapt and cope successfully despite threatening or challenging situations, usually with healthy recovery from extreme stress and trauma (Wilson & Drozdek, 2004). The coping response to trauma varies substantially (Bonanno, Galea, Bucciarelli, & Vlahov, 2006). The absence of psychological reaction or resilience to traumatic events is commonly reported to appear in those with extraordinary emotional and physical strength (Tucker, Pfefferbaum, Doughty, Jones, Jordan, & Nixon, 2002) and yet be a pathological or dysfunctional form of grief (Bonanno, 2004) or absent or defensive denial (Bowlby, 1980).

A significant finding from studies of resilience, has suggested that people are not born resilient, but rather instead resilience is gained through exposure to hardship (Walker, & Avant, 2005; Johnson & Wiechelt, 2004). This implies that resilience develops over time, suggesting that resilience is a process and not a personal trait. It can be perceived to be an adaptive state that can be nurtured throughout one's life (Walsh & Pryce, 2003). Some research has investigated if resilient people are buffered from depression by positive emotions and resilient people thrive through positive emotions (Fredrickson, Tugade, Waugh, 2001; Forgeard, 2011)

Examining the interrelations among the correlates of resilience, it was found that the experience of positive emotions after September 11th attacks (gratitude, interest, love, and so forth) accounted for the relation between preexisting trait resilience and the later development of depressive symptoms. In other words, positive emotions appeared to be a core ingredient that

actively buffers resilient people against depression in the aftermath of crises (Fredrickson, Tugade, Waugh, & Larking, 2003).

Fredrickson and Joiner (2002) have examined the relationship between trait resilience and post-crisis growth, targeting a set of psychological traits closely related to resilience itself, including life satisfaction, optimism and tranquility, and measured them both before and after the crisis. It was found that trait resilience predicted increases in these psychological resources and that this association was fully mediated by post-crisis experience of positive emotions. Therefore, although crises can be expected to deplete one's psychological resources, resilient people appear to bounce back stronger than before. In other words, positive emotions are critically active ingredients within trait resilience that help resilient people to thrive after crisis (Fredrickson, Tugade, Waugh, & Larking, 2003).

Psychological resilience has been described as a relatively prevalent multidimensional phenomenon (Bonanno, 2004; Harvey & Tummala-Narra, 2007a,b). However, knowledge of resilience is poorly understood as a protective factor to trauma (Bonanno, 2005). Most people are exposed to at least one violent of life-threatening situation during the course of their lives (Ozer, Best, Lipsey, & Weiss, 2003). As people progress through the life cycle, they are also increasingly confronted with deaths of close friends and relatives. Not everyone copes with this potentially disturbing distress from which they are unable to recover. Others suffer less intensively and for a much shorter period of time.

Some people seem to recover quickly but then begin to experience unexpected health problems or difficulties concentrating or enjoying life the way used to. However, large number of people manage to endure the temporary upheaval of loss or potentially traumatic events remarkably well, with no apparent disruption in their ability to function at work or in close

relationships, and seem to move on to new challenges with apparent ease (Bonanno, Papa, & O'Neil, 2001).

The importance of protective psychological factors in the prevention of illness is well established (Taylor, Kemeny, Reed, Bower, & Gruenewald, 2000). Moreover, developmental psychologists have shown that resilience is possible even among children growing up in disadvantaged conditions (Masten, 2001). However in traumatic events, such as September 11 attack; children have a greater propensity to show more extreme reactions (Bonanno & Kaltman, 1999). Older adults have been found in some studies to be more resilient than younger adults (Bonanno, Galea, Bucciarelli, & Vlahov, 2007).

Unfortunately, because most of the psychological knowledge base regarding the ways adults cope with loss or potential trauma has been derived from individuals who have experienced significant psychological problems or sought treatment, theorists working in this area have often underestimated and misunderstood resilience, viewing it either as a pathological state or as something seen only in rare and exceptionally healthy individuals.

A key feature of the concept of adult resilience to trauma, is its distinction from the process of recovery (Bonanno, 2004). The term recovery connotes a trajectory in which normal functioning temporarily gives a way to threshold or sub-threshold psychopathology (e.g., symptoms of depression or post-traumatic stress disorder) usually for a period of at least several months, and then gradually returns to pre-event levels. Full recovery may be relatively rapid or may take as long as one or two years.

By contrast, resilience reflects the ability to maintain a stable equilibrium. In the developmental literature, resilience in typically discussed in terms of protective factors that foster the development of positive outcomes and healthy personality characteristics among children

exposed to unfavorable or aversive life circumstances (Garmezy, 1991; Luthar, Cicchetti, & Baecker, 2000; Masten, 2001; Rutter, 1985).

The concept of resilience has been expanded to trauma and pertains to the ability of adults in otherwise normal circumstances who are exposed to an isolated and potentially highly disruptive event, such as the death of close relative or a violent or life-threatening situation to maintain relatively stable, healthy levels of psychological and physical functioning. Findings showed that resilient individuals may experience transient perturbations in normal functioning (e.g., several weeks of sporadic preoccupation or restless sleep) but generally exhibit stable trajectory of healthy functioning across time, as well as the capacity for generative experiences and positive emotions (Bonanno, Papa, & O'Neill, 2001). Some trauma survivors in fact, who do not develop PTSD, show a positive reaction to experience of traumatic event and report personal growth.

1.6. Self-compassion as moderator in trauma symptoms

The degree to which people cope effectively with stressful life events is a primary determinant of their subjective well-being. Not surprisingly, researchers have devoted a great deal of effort toward understanding which coping strategies and processes are most effective under various circumstances and identifying individual differences in how people cope with negative events.

Although self-compassion has been discussed in Eastern philosophy (Buddhism in particular) for centuries, it appeared in psychological literature only recently as illustrated with Neff's (2003a,b) publication of two articles that described the construct of self-compassion and provided a self-report inventory for the measurement of individual differences in the tendency to

be self-compassionate. In essence, self-compassion involves directing the same kind of care, kindness, and compassion toward oneself that one conveys toward loved ones who are suffering.

According to Neff (2003a), self-compassion involves "being open to and moved by one's own suffering, experiencing feelings of caring and kindness toward oneself, taking an understanding, nonjudgmental attitude toward one's inadequacies and failures, and recognizing that one's experience is part of the common human experience".

Neff conceptualized self-compassion in terms of three primary features: *self-kindness, common humanity, and mindfulness.* The central aspect of self-compassion involves treating oneself kindly when things go wrong. For instance, when they fail or make a critical error, self-compassionate people tend to treat themselves with greater kindness, care, and compassion and with less self-directed criticism and anger than people who are low in self- compassion.

Self-compassion also involves being reassuring rather than critical toward oneself when things go wrong (Gilbert, Clarke, Kemple, Miles, & Irons, 2004). Treating oneself *kindly* can manifest itself in overt actions such as taking time off to give oneself a break emotionally or in mental acts of kindness such as engaging in self-talk that is positive, encouraging, and forgiving.

The second feature of self-compassion, *common humanity*, involves recognizing that one's experiences, no matter how painful, are part of the common human experience. When people fail, experience loss or rejection, are humiliated, or confront other negative events, they often feel that their experience is personal and unique when, in reality, everyone experiences problems and suffering. Realizing that one is not alone in the experience reduces people's feelings of isolation and promotes adaptive coping (Neff, 2003a).

The third feature of self-compassion, according to Neff (2003b), involves taking a balanced perspective of one's situation so that one is not carried away with emotion. When faced

with trials and tribulations, people who are low in self-compassion, tend to dwell on the negativity of the situation and wallow in their emotions. In contrast, those who are able to maintain perspective in the face of stress and approach the situation with mindfulness (Brown, & Ryan, 2003) cope more successfully. Neff (2003b) identified *mindfulness* as a core component of self-compassion and suggested that being mindful of one's feelings is essential to showing oneself compassion.

Self-compassion is typically measured with the Self-Compassion Scale (SCS; Neff, 2003a), a 26-item self-report scale that assesses six factors that reflect the positive and negative poles of the three components of self-compassion just described—self-kindness/self-judgment, common humanity/perceived isolation, and mindfulness/overidentification. The SCS has a number of benefits for its use including ease of administration and has been used successfully cross-culturally. It has been translated into a number of other languages and been applied to a variety of cultures and ethnic groups (Deniz, Kesici, & Sümer, 2008). Cross-cultural studies using the SCS have revealed cultural differences in the expression and levels of self-compassion (Neff, Pisitsungkagarn, & Hsieh, 2008).

Studies about self-compassion (Neff, 2003) and post-traumatic symptoms that people may experience following trauma or other stressful events are scarcely found in literature. One such study, carried out by Thompson and Waltz (2008), examined a sample of 100 participant, called "Expose group" who met PTSD Criterion A. They reported that exposure to trauma and subsequent post-traumatic stress symptoms may be associated with self-criticism and avoidance of internal exposure. Their finding showed that PTSD "Avoidance" symptoms was significantly correlated with self -compassion, but re-experiencing and hyper-arousal did not. Individuals high in self-compassion may engage in less avoidance strategies following trauma exposure.

In the past decade, a number of studies have begun to identify correlations and defining characteristics of self-compassion in individual psychological functioning. Neff, Rude, & Kirkpatrick (2007), found self-compassion to be significantly associated with higher levels of happiness, optimism, positive mood, personal initiative, curiosity, and exploration. Self-compassion is associated with well-being among both adolescents and adults (Neff & McGeehee, 2010). Meanwhile, high incidences of childhood physical abuse, emotional abuse, and neglect have been found to correlate with lower levels of self-compassion later in life (Tanaka, Wekerle, Schmuck, & Paglia-Boak, 2011). High self-compassion in individuals has been linked to increases in social connectedness, and decreases in self-criticism, rumination, thought suppression, and anxiety (Neff, Kirkpatrick, & Rude, 2007).

Leary et al. (2007) reported that individuals with high self-compassion have also been found to judge themselves less critically in creative performance tasks than those with low self-compassion. Those high in self-compassion were also less likely to ruminate about negative feedback and had lower emotional responses to both real and imagined negative events.

Mosewich, Kowalski, Sabiston, Sedgwick, & Tracy (2011), demonstrated that self-compassion mitigated negative emotions when receiving neutral feedback. Furthermore, self-compassion is negatively correlated with proneness to shame, fear of failure, body consciousness, and negative self-evaluations. Neff, Hsieh, & Dejitterat (2005) reported that self-compassion is positively correlated with perceived competence and negatively correlated with fear of failure. The same study reported that individuals high in self-compassion were more focused on mastery than performance goals in a learning context. Self-compassion has been found to correlate positively with self-efficacy (Iskender, 2009).

Whether measured as a trait or induced as a state, self-compassion relates positively to indices of psychological well-being. People who score high in self-compassion tend to score lower on measures of neuroticism and depression, and higher on measures of life satisfaction, social connectedness, and subjective well-being (Leary et al., 2007; Neely, Schallert, Mohammed, Roberts, & Chen, 2009; Neff, 2003b; Neff, Kirkpatrick et al., 2007; Neff, Rude, & Kirkpatrick, 2007). Furthermore, people who are self-compassionate are buffered against feelings of anxiety after experiencing a stressor, even after partialing out self-esteem (Neff, Kirkpatrick et al., 2007). These findings suggest that self-compassion can be conceptualized as a coping strategy that promotes well-being and positive psychological functioning.

Self-compassion is a potentially important construct related to self-care for caregivers, medical, nurses and mental health professionals. Self-compassion has been described as being integral to counselor self-care, allowing clinicians to mitigate occupational stress (Patsiopoulos, & Buchanan, 2011). Considering these challenges, some scholars emphasize the potential effect of self-compassion for caregivers to ameliorate stress and promote self-care (Halifax, 2011).

Boellinghaus, Fergal, & Hutton (2012), have been directly focused on self-compassion concerning medical professionals. Heffernan, Griffin, McNulty, & Fitzpatrick (2010), demonstrated that self-compassion was shown to correlate positively with emotional intelligence in nurses (using the Trait Emotional Intelligence Questionnaire). Overall, studies have shown advantages to high self-compassion in individuals and their psychological functioning.

1.7. Perceived social support as moderator in trauma symptomatology

A number of studies have found that social support functions as a buffer for psychological distress, and that lack of social support may lead to adverse outcomes such as a

relapse into depression, emotional distress in physically ill patients, and adverse health and psychological impacts due to stressful life experiences (Wongpakaran, Wongpakaran, & Ruktrakul, 2011).

Research indicates that there are at least two specific aspects to social support: perceived and received social support. For example, social support may refer to one's social network or the quantity of people available to help or give material or emotional aid (e.g. primary care patients), (Eurelings-Bontekoe, Diekstra, & Verschuur, 1995). On the other hand, social support may be conceptualized as the perception that aid provided by others is adequate, or to the perceived quality of one's support, which may influence adjustment (Asberg, Bowers, Renk, & McKinney, 2008).

Over the past two decades, research has supported a so-called buffering effect, in that social support, particularly perceived social support, protects against the effects of negative stress. Dahlem, Zimet, & Walker (1991) assessed perceived social support using the Multidimensional Scale of Perceived Social Support (MSPSS), a depression measure, a measure of life events, and a social desirability scale. Results found that high life stress (scores higher than the median on the scale of life events) had significant negative correlations with perceived social support and depression scores. This correlation was not observed in those with low life stress, which indicates that for those with high life stress, perceived social support buffers against depression while those with low life stress do not need perceived social support to buffer against depression.

In an attempt to measure social support, Zimet et al. (1988), developed the MSPSS, that has been widely used in both clinical and non-clinical samples. In this study MSPSS was used to investigate how the social support is perceived by nursing students. Participants completing the

MSPSS were asked to indicate their agreement with items on a 7-point Likert-type scale, ranging from very strongly disagree to very strongly agree. Total and subscale scores range from 1 to 7, with higher scores suggesting greater levels of perceived social support (Canty-Mitchell, & Zimet, 1998). It is meant to measure an individual's perception of how much he or she receives outside social support and has been tested on people from different age groups and cultural backgrounds and found to be a reliable and valid instrument.

The MSPSS consists of three sub-scales: Family, Friends, and Significant Others. Most investigations have revealed MSPSS to be a three-factor construct, which demonstrates good to excellent internal consistency and test-retest reliability (with a Cronbach's alpha of 0.81 to 0.98 in non-clinical samples, and 0.92 to 0.94 in clinical samples).

1.8 PTSD symptoms and depression

PTSD and depression have been studied in populations that have experienced a range of traumas. The strong association between PTSD and depression suggests to some that there is a common vulnerability following a traumatic experience (Breslau et al. 2000). In fact, it has been found that among people who have or have had a diagnosis of PTSD, approximately 48% also had current or past depression. People who have had PTSD at some point in their life are almost 7 times as likely as people without PTSD to also have depression. Another study found that 44.5% of people with PTSD one month after experiencing a traumatic event also had a diagnosis of depression (Shalev, Freedman, Peri, Brandes, & Sahar, 1997).

In a study conducted by Galea, Ahern, Resnick, Kilpatrick et al. (2002), researchers assessed the prevalence and correlates of acute PTSD and depression among residents of Manhattan five to eight weeks after September 11th attacks. Among 1008 adults interviewed,

7.5% reported symptoms consistent with a diagnosis of current PTSD related to the attacks, and 9.7% reported symptoms consistent with current depression.

1.9. Nurses' trauma exposure and psychological reaction

It is well-established that nursing can be a stressful occupation (Chang et al., 2007). Nurses have been identified as having unique stressors, both in the job, and in the factors that might contribute to career choice. Many sources acknowledge the correlation between exposure to a high volume of stressors and the development of conditions such as burnout, compassion fatigue, and vicarious traumatization. Healthcare jobs have high emotional demands. Nurses are confronted with additional stress of grief, death and dying, and budget cuts leading to inadequate staffing and overtime. As a result, healthcare stress has been linked to anxiety, mental fatigue, burnout, as well as suicide and increased psychiatric admissions.

Studies have showed that nurses can abandon their practice because of the struggles experienced in the healthcare setting (Hodges et al., 2008). When emotional exhaustion infiltrates nurses' personal lives and issues are not addressed in the workplace, burnout can result. It has been found that the development of resilience assists in the retention of experienced nurses within the profession. Nurses are continually exposed to patients who suffer for extended periods. Exposure to patients' pain has resulted in emotional exhaustion, distress, reduced self-esteem, and desensitization to pain, having implications for both the care of the patient and the nurses' well-being.

Kornhabe and Wilson (2011) explored the concept of building resilience as a strategy for responding to adversity experienced by nurses in a burn unit. They found that nurses who were emotionally hardened and detached from the patients' trauma stayed longer in those positions

and reported less adverse emotional consequences. A strong social support network and an emotional support from nursing colleagues have also been found to be a crucial element in the development of resilience in the workplace.

Talking with coworkers and experienced staff, humor, teamwork, and timeout were identified as coping strategies used by nurses, especially in high stress settings like the burn unit. Nurses in those settings claimed that without the team, they would not be able to care for burn patients competently, stating that a multidisciplinary team approach gave them support, direction, and assisted in providing competent nursing care to their patients (McCann, Beddoe, McCormick, Huggard, Adamson, & Huggard, 2013).

Resilience has been identified as an essential attribute assisting nurses to adapt to the physical and emotional demands of nursing, particularly amidst the current nursing climate (Jackson, Firtko, & Edenborough, 2007). Because resilience is considered to include both effective coping and effective adaptation in the face of negative circumstances (Tugade & Fredrickson, 2004), the coping factors highlights that there are a number of factors that contribute to the effective coping of nurse.

Mealer, Jones, & Moss (2011) conducted qualitative interviews by telephone with 13 highly resilient nurses and 14 nurses with a diagnosis of PTSD. Highly resilient nurses identified spirituality and a supportive social network as the most frequent psychological characteristics used to cope with stress experienced in the work environment. Other psychological characteristics employed by highly resilient nurses included active coping skills, optimism, developing cognitive flexibility, and having a resilient role model.

In contrast, nurses with PTSD lacked healthy psychological characteristics to cope with stress, identifying intrusive thoughts, regrets, poor social networks, lack of active coping skills and poor identification with a general role model were present.

Future research was recommended to better understand coping mechanisms employed by highly resilient nurses and how they maintain a healthier psychological profile.

CHAPTER 1

A STUDY ON COLLEGE NURSE STUDENTS

2.1. Purpose and hypotheses

The purpose of this study was to investigate how college nursing students deal with trauma and the psychological factors that are associated with the development of post-traumatic symptoms, resiliency and with the occurrence of PTG.

This research explored the relationships between resiliency factors (including social support, religion and spirituality, positive emotions, cognitive flexibility, self-efficacy and coping) and growth factors as identified on the PTGI (new possibilities, personal strength, spiritual change, appreciation of life and relationships to others).

Relationships among three major areas of inquiry were analyzed: negative reaction (PCL-C scores), resilience (RSES scores) and growth (PTGI scores).

Specifically, the purpose of the study was to analyze the following:

(1) There is a correlation between nurses resilience (RSES) and perceived Social Support (MSPSS); furthermore, our objective was to investigate how the 3 factors (family, friends or others) were correlated with RSES and PCL scores.

(2) There is a correlation between SCS and PCL-C scores. We expect to find an inverse relationship.

(3) There are differences among SCS scores and some clusters of PTSD since previous studies (Thompson & Waltz, 2008) found a significant correlation only for the avoidance subscale (cluster B of PTSD).

(4) There is a correlation between resilience (RSES) and post-traumatic growth (PTG). We expect that some factors of PTG might be related to coping success, which itself is linked with resilience.

(5) By using this set of measures we expect to predict which subject develops more symptoms of PTSD, which subject is more resilient to trauma and which subject we expect to grow after the trauma exposure.

2.2. Participants

Participants were 115 undergraduate students recruited from the College of Nursing at the University of South Florida. Participants ranged from 18 to 57 years old (*M*=26.7, *SD*= 8.4) with more females (*N*=104, 90.4%, *SD*=8.7), than male (*N*=11, 9.6%, *SD*=5.6).

Caucasians composed most of the sample (N=76, 66.1%), while 16.5% were African American (*N*=19), 8.7% were Hispanic (*N*=10), 2.6% were Asian (*N*=3), and 6.1% considered themselves "Other" (*N*=7). Students were primarily single (*N*=78, 67.8%), while 25.2% were married (*N*=29) and 7% were divorced (*N*=8).

When stratified by year of college, the sample consisted of primarily upper classman: seniors (*N*=81, 70.4%), juniors (*N*=26 22.6%) sophomores *(N*=6, 5.2%), and freshmen (*N*=2, 1.7%). Participants reported car accidents (*N*=27, 23.5) as the most significant traumatic event experienced followed by sexual abuse/physical attack (*N*=26, 22.6%) as well as sudden and unexpected death of someone close (*N*=26, 22.6%), life threatening illness (*N*=14, 12.2%), threatened with a weapon (*N*=6, 5.2%), and other (*N*=16, 13.9%).

2.3. Procedure

This research is a correlational study using survey methodology. Participants were undergraduate nursing students recruited through both on line solicitation and placing flyers on the walls within the College of Nursing. Students were asked only to register if they had experienced at least one self-reported traumatic event (Criterion A, PTSD). Students were approached in a non-coercive fashion, inviting them to take part in this study.

After reading the informed consent form and reviewing the risks, benefits, and associated information of the study, participants decided whether they would like to participate, and those that did signed the informed consent form. Those who decided to participate were also told that researchers were aware of possible negative reactions generated by certain questions; therefore, researchers would refer to the counseling center and have an emergency number for the counselor on call. After signing the informed consent form, researchers had the participants fill out the questionnaires.

Included are: standardized scales of psychological functioning and trauma history, demographic information, Traumatic Event Questionnaire (TEQ), Post-traumatic Stress Disorder Checklist (PCL-C), Posttraumatic Growth Inventory (PTGI), Response to Stressful Experience Scale (RSES), Self-Compassion Scale (SCS), Multidimensional Scale of Perceived Social Support (MSPSS), and Center for Epidemiological Studies Depression Scale (CES-D).

After determining that the questionnaires did not negatively impact the participants' well-being, they were thanked and released from the study. Students needed about 30 minutes to complete the battery of questionnaires. After the completion of the survey packets, they were given a $10 gift card.

2.4. Measures

2.4.1. Post-traumatic Stress Disorder Checklist (PCL-C)

The PCL-C Civilian Version (Weathers, Litz, Herman, Huska, & Keane, 1993) is a 17-item self-report inventory based on the DSM-IV symptoms of PTSD. The PCL-C was designed to assess responses to traumatic experience encountered in the course of civilian life. The PCL-C asks about symptoms in relation to "stressful experiences."

The PCL-C is useful because it can be used with any population. Typically, it is optimal to assess traumatic event exposure to ensure that a respondent has experienced at least one Criterion A event. A determination of PTSD symptoms can be made by:

1. Determining whether an individual meets DSM-IV symptom criteria, i.e., at least 1 B item (questions 1-5), 3 C items (questions 6-12), and at least 2 D items (questions 13-17). Symptoms rated as "Moderately" or above (responses 3 through 5) are counted as present. A score of 3 or greater is used to affirm a symptoms on the item.

2. Determining whether the total severity score exceeds a given cut off point.

3. Combining methods (1) and (2) to ensure that an individual has sufficient severity as well as the necessary pattern of symptoms required by the DSM-IV.

Respondents rate each item from 1 ("not at all") to 5 ("extremely") to indicate the degree to which they have been bothered by that particular symptom over the past month. A total symptoms severity score (range=17-85) can be obtained by summing the scores from each of the 17 items.

The National Center for PTSD sets the following guidelines: from 30-35 civilian primary care, general population sample; from 36-44 specialized medical clinics or VA primary care; and

from 45-50 VA or civilian specialty mental health clinics. The cut off for this research was set at 40 following the guidelines of the National Center for PTSD.

2.4.2. Post Traumatic Growth Inventory (PTGI)

The Post-Traumatic Growth Inventory (PTGI) (Tedeschi & Calhoun, 1996) is the standardized inventory most often used to measure growth that follows a traumatic life event.

The PTGI is a 21-item self-reported inventory and is scored using a 6-point Likert format scale ranging from 0 ("I did not experience this change as a result of my crisis") to 5 ("I experienced this change to a very great degree as a result of my crisis"). Intermediate scores are given for a small degree (1), a small degree (2), a moderate degree (3) and a great degree (4). The total score ranges from 0 to 105 and, in addition, separate scores are available for five subscales: 'Relating to other' (6 items, questions 6, 8, 9, 15, 16, 20); 'New possibilities' (5 items, questions 3, 7, 11, 14, 17); 'Personal strength' (4 items, questions 4, 10, 12, 19) 'Spiritual change' (2 items, questions 5, 18) and 'Appreciation of life' (3 items, questions 1, 2, 13).

The PTGI has demonstrated adequate internal consistency (0.9) and acceptable test-retest reliability (0.71) and has been used internationally with a number of different traumatized populations, including those who have survived sexual assault, military combat, bereavement, natural disaster and serious injury (Tedeschi & Calhoun, 1996).

2.4.3. Responses to Stressful Experiences Scale (RSESS)

The Response to Stressful Experiences Scale (RSES) is a measure of individual differences in cognitive, emotional, and behavioral responses to stressful life events. The 22-items Response to Stressful Experiences Scale (RSES) is intended to complement existing measures of resilience by providing a measure that focuses on how an individual characteristically responds during and immediately after life's most stressful events.

Items on the RSES are rated on a scale of 0 (not at all) to 4 (exactly like me). The resulting 22-item scale demonstrated sound internal consistency (a = 0.91-0.93) and good test-retest reliability (r = 0.87). Factors analysis and related constructs examined in this scale include 5 protective factors: (a) meaning-making and restoration, (b) active coping, (c) cognitive flexibility, (d) spirituality, and (e) self-efficacy. The items are scored 0-4 and the total score is calculated by summing all 22 RSES item.

This study used a score range from 0 to 88 (low resilience 0-49; moderate resilience 50-70; high resilience 71-88), (Johnson, Polusny, Erbes, Kin, king, Litz, Schnurr, Friedman, & Southwick, 2008).

2.4.4. Self -Compassion Scale (SCS)

Participants were given the 26-item Self-Compassion Scale (SCS) (Neff, 2003a), which includes the 5 item Self-Kindness subscale (e.g., "I try to be understanding and patient toward aspects of my personality I don't like"), the 5-item Self-Judgment subscale (e.g., "I'm disapproving and judgmental about my own flaws and inadequacies"), the 4-item Common Humanity subscale (e.g., "I try to see my failings as part of the human condition"), the 4-item Isolation subscale (e.g., "When I think about my inadequacies it tends to make me feel more

separate and cut off from the rest of the world"), the 4-item Mindfulness subscale (e.g.,"When something painful happens I try to take a balanced view of the situation"), and the 4-item Over-Identification subscale (e.g., "When I'm feeling down I tend to obsess and fixate on everything that's wrong").

Responses are given on a 5-point scale from "Almost Never" to "Almost Always." Mean scores on the six subscales are then averaged (after reverse-coding negative items) to create an overall self-compassion score.

Average scores tend to be around 3.0 on the 1-5 scale, so that is easy to interpret the total self-compassion score accordingly. A score of 1-2.5 indicates low in self-compassion, 2.5-3.5 indicates moderate, and 3.5-5.0 means high.

Initial scale validation research for the SCS (Neff, 2003a) indicated that all six subscales were highly inter-correlated, and confirmatory factor analyses determined that a single higher-order factor of self-compassion explained these inter-correlations. This structure is interpreted to indicate that self-compassion is best considered a second-order trait that arises from a combination of sub-traits rather than a pre-existing trait that leads to greater mindfulness, more kindness toward the self, and so on.

In past research, the SCS has demonstrated good internal consistency reliability (.92), as well as good test–retest reliability (.93) (Neff, 2003a).

2.4.5. Multidimensional Scale of Perceived Social Support (MSPSS)

The Multidimensional Scale of Perceived Social Support (MSPSS) measures perceived social support (Zimet, Dahlem, Zimet, & Farley,1988).

The MSPSS provides assessment of three sources of support: family (FA), friends (FR), and significant other (SO). MSPSS is 12 items in total and is ideal for research that requires assessment of multiple variables and population, which, for one reason or another, cannot tolerate a long questionnaire. Respondents are asked to choose from seven possible responses from 1 to 7, where 1 is "very strongly disagree" and 7 is "very strongly agree" and there are no right or wrong answer to the statements. Higher scores suggesting greater levels of perceived social support (Canty-Mitchell & Zimet, 1990).

Total score for the MSPSS is the sum of all 12 items, possible range for total is 7-84: low acuity= 12-48; moderate acuity= 49-68; high acuity= 69-84. All items are scored as follows: Very Strongly Disagree= 1; Strongly Disagree= 2; Mildly Disagree= 4; Neutral= 4; Mildly Agree= 5; Strongly Agree= 6; Very Strongly Agree= 7.

MSPSS items are easy to understand (requiring just fourth grade reading level) and are therefore suitable for young populations or populations with limited literacy level. However, despite being a brief instrument, MSPSS measures support from three sources, and in particular, the SO subscale is rather unique among measures in the field. SO subscale is a strong supplement to the family and the friends subscales because it taps a different support source for the adolescent, such as boyfriend/girlfriend, teacher and counselor (Kazarian & McCabe, 1991). Dahlem and colleagues (1991), found a mean of 66.96 (5.58 average score for each question multiplied by 12 questions), while this study found a mean of 70.72 (5.89 average score for each question multiplied by 12 questions).

2.4.6. Center for Epidemiological Studies Depression Scale (CES-D)

The Center for Epidemiological Studies Depression Scale (CES-D) is a 20-item, self-report depression inventory with possible scores ranging from 0 to 60. The CES-D was designed to assess depressive symptomatology in the general population, and emphasizes depressed mood.

Individuals rate how each item has applied to them over the past two weeks using a 0 to 3 scale, where 0= "rarely or none of them", 1= "some or a little of the time", 2= "occasionally or a moderate amount of the time", and 3= "most or all of the time". However, items 4, 8, 12, 16 are phrased positively, and thus are score in opposite order: 3="rarely or none of them, 2= "some or little of the time, 1="occasionally or moderate amount of the time", and 0= "most or all the time"

The CES-D has 4 separate factors: depressive affect, somatic symptoms, positive effect, and interpersonal relations. The psychometric properties of CES-D have been well studied, and tend to be fairly consistent across different populations (Coyle & Roberge, 1992; Devins et al., 1988; Knight, Williams, McGee & Olaman, 1977; Zich, Attkinson & Greenfield, 1990). Most studies have found Cronbach's alpha coefficients above 0.80 for the general population, and 0.90 for inpatient samples (Coyle & Roberge, 1992; Radloff, 1977; Zich, Attkinson, & Greenfield, 1990)

The CES-D is scored by summing all of the items, with the exception of item 4, 8, 12, and 16, which are reverse scored. In most studies a score of 16 is used as a cut-off point to identify subjects with clinically relevant levels of depressive symptomatology (Berkman et al., 1986) and this cutoff score was adopted for this study.

2.4.7. Traumatic Event Questionnaire (TEQ)

The Traumatic Event Questionnaire (TEQ) lists 19 traumatic events such as receiving news of serious injury or death of someone, experiencing a natural disaster, being victim of car accident, seeing someone killed, or being a victim of physical or sexual abuse (Lauterbach, & Vrana, 1996)

Respondents are asked to choose from three possibilities: "I personally experienced this event"; "I directly witnessed this event happen to someone"; "I learned about the occurrence of this event from someone else".

2.5. Statistical Analysis

2.5.1. Descriptive

Preliminary analysis was conducted to assess assumptions of normality, linearity and multicollinearity. Variables failing assumptions of normality (e.g., age, PCL-C, PTGI, etc.) were evaluated for transformation. Minimal skewness was observed and no data transformations were performed. To facilitate comparison between measures scaled to different ranges, T-Scores were created. T-Scores are standardized scores on each dimension for each type. A score of 50 represents the mean. A difference of 10 from the mean indicates a difference of one standard deviation. Data is presented as *M*, *SD* or frequency and percent, where appropriate. For data presented as T-Scores, 25th, 50th (median), and 75th percentiles are provided.

Two additional variables were created for PCL-C based on a dichotomous split for scores above and below PCL-C > 40 and PCL-C scores tertiles (thirds) at PCL-C values ≤ 26, 27-47, and > 47 based on PCL-C total scores for all participants.

2.5.2. Introductory statistical analysis

Introductory statistical analysis consisted of Pearson's Product Moment Correlations. Correlation analyses were performed to assess the relationship between measures (i.e., PCL-C, PTGI, RSES, SCS, MSPSS) to observe initial bivariate relationships and confirmation of measure validity. Given the scale difference in scoring between measures, reported critical values and p-values are those of either the pooled variance method (assuming equal variance) or the Satterthwaite correction (assuming unequal variance).

To correct for different scale values for measurement scores, the non-parametric Spearman Rank Correlation Coefficient was calculated. The coefficients are converted using Fisher's z-transformation with standard errors. The two transformed values are then compared using a standard normal procedure.

2.5.3. Regression

Initially, the regression strategy focused on modeling the association between each measure and others versus select measure. For example, an initial model would include PCL-C as the dependent variable (DV) with SCS as the independent variable (IV). This process was repeated for each additional measure. To understand the effects of each selected demographic variable (e.g., age, race, marital status, etc.), demographic variables were subsequently included in each model to assess the additive effects. Given the sample size and to elucidate as much information from the dataset, a hierarchical regression approach was utilized to examine the effects of adding parameters to each subsequently model. As done in the earlier regression, each measure served as a DV.

Results were generated using a multivariate generalized linear models (GLM) were used to model the association of select parameters on the total scores of each measure (i.e., PCL-C, PTGI, RSES, MSPSS, CE-S-D, SCS). Individual model coefficients, both unstandardized and standardized, are included as well as model summary statistics (i.e., R^2, adjusted R^2) and model change statistics (i.e., R^2 change, p-values for a statistically significant change in F). For the hierarchical regression, three modeling strategies were used for each measure: 1) all other measures included, 2) demographic variables only, and 3) all other measures and demographic variables combined. Models included covariates such as age (in years), gender (female vs. male), race (white, black, Hispanic vs. other) and marital status (married, single vs. divorced). For demographic variables, male, un-married, and other served as the referent groups for gender, marital status, and race, respectively. Statistical significance was considered for p-values $\leq .05$, two-tailed.

All analyses were conducted in MS Excel 2010 (ver. 14.0, Microsoft Corporation) and SAS Statistics (ver. 9.2, Cary, NC) and statistical significance was considered for $p\leq .05$, two-tailed.

Data is presented as *M, SD* or frequency and percent, where appropriate. The distributions of all data were examined and all continuous data was examined for departures from normality. Two additional variables were created for PCL-C based on a dichotomous split for scores above and below PCL-C=40 and PCL-C scores based on tertiles (thirds) at PCL-C values ≤ 26, 27-47, and > 47.

Statistical analysis consisted of Pearson's Product Moment Correlations and Student's t-test. Reported critical values and p-values are those of either the pooled variance method (assuming equal variance) or the Satterthwaite correction (assuming unequal variance). To

correct for different scale values for measurement scores, the non-parametric Spearman Rank Correlation Coefficient was calculated. The coefficients are converted using Fisher's z-transformation with standard errors. The two transformed values are then compared using a standard normal procedure. Lastly, multivariate generalized linear models were used to model the association of select parameters on the total scores of each measure (i.e., PCL-C, PTGI, RSES, MSPSS, CES-D, SCS). Individual model coefficients, both unstandardized and standardized, are included as well as model summary statistics (i.e., R^2, adjusted R^2) and model change statistics (i.e., R^2 change, p-values for a statistically significant change in F).

Three modeling strategies were used for each measure: 1) all other measures included, 2) demographic variables only, and 3) all other measures and demographic variables combined. Models included covariates such as age (in years), gender (female vs. male), race (white, black, Hispanic vs. other) and marital status (married, single vs. divorced). Statistical significance was considered for *p*-values $\leq .05$, two-tailed.

CHAPTER 3

RESULTS

3.1. Descriptive data

Participants were young (*M* = 23.0, *SD* = 8.4 years), prevalently female (90.4%) students, including mainly Juniors (*N*= 26, 22.6%). and Seniors (*N*= 81, 70.4%) (Table 1). They primarily reported *car accident (N*= 27, 23.5%) as the most traumatic event experienced, followed by *sexual abuse /physical attack* (*N*= 26, 22.6%) and *sudden and unexpected death of someone close* (*N*= 26, 22.6%). Participant instrument scores are presented in Table 2. Participant PCL-C scores averaged *M* = 39.0, *SD* = 16.78 with 40.9% (*N*= 47) of participants exceeding the probable PTSD criterion threshold of PCL-C > 40. When PCL-C scores were divided by tertiles (thirds), PCL-C criteria were 26 and 47. Participant scores on the RSES and CES-D averaged *M* = 61.3, *SD* = 21.3 and *M* = 19.0, *SD* = 14.4, respectively.

Participants PCL-C Cluster scores dichotomized by probable PTSD are presented in Table 3. Probable PTSD criteria of 28, 40, and 44 yield 58.3% (*N*=67), 41.7% (*N*=48), and 39.1% (*N*=45), respectively. When a PCL-C criterion of 50 is utilized, 30.4% (*N*=35) of participants present scores consistent with probable PTSD.

The PCL-C > 40 criterion was met by 63.5% (*N*= 73) participants for *re-experiencing*, 43.5% (*N*= 50) participants for *avoidance* and 47.0% (*N*= 54) participants for *hyper-arousal* sub-domains (Table 3).

When participants were stratified by traumatic event experienced, a similar age distribution was observed for traumatic event experienced; participants ranged from 24 to 26

years of age for traumatic events with the exception of life threatening illness (*M* = 34.3, *SD* = 10.4) (Table 4).

A large disparity in the proportion of participants above the PCL-C > 40 criterion was observed for *sexual abuse / physical attack* (*N*= 16, 61.5%) versus other traumatic events in which participants averaged 31% of participants above the threshold (Table 4).

When comparing the highest PCL-C tertile (PCL-C > 47), only *sexual abuse / physical attack* (*N*= 15, 57.7%) and *threatened with a weapon* (*N*= 3, 50.0%) were the traumatic events in which a majority of victims (≥ 50%) reported PCL-C scores > 47; *sexual abuse / physical attack* (*N*= 26, with 15 participants obtaining PCL-C scores > 47) and *threatened with a weapon* (*N*= 6, with 3 participants obtaining PCL-C scores > 47) (Table 4).

Instrument correlation coefficients are presented in Table 5. PCL-C total scores were significantly positively correlated with CES-D (r = .69, N= 115, p< .001). Higher PCL-C scores (>40) were associated with higher CES-D scores (> 27). PCL-C scores were significantly negatively associated with other instrument scores such as PTGI (r = -.27, N=115, p< .01), RSES (r = -.54, N=115, p< .001), SCS (r = -.67, N = 115, p< .001), MSPSS (r = -.55, N = 115, p < .001).

RSES and PTGI scores were strongly correlated (r = .76). The most significant correlation was found for the PTGI Appreciation of Life subscale (r = .78), followed by Relating to Others (r = .68) and New Possibilities (r = .61), while Personal Strength (r = .05) and Spiritual Change (r = .17) were irrelevant.

RSES and MSPSS were strongly correlated (r = 0.63). The highest correlations were found for Friends (r = .60) and Other (r = .60) subscales, while a lower correlation was obtained for the Family (r = .53) subscale. MSPSS and PCL-C were strongly negatively correlated (r = -

0.55). The MSPSS Friends subscale was the most significantly negatively correlated (r = -0.52) followed by Other (r = -0.50) and Family subscales (r= -0.49) (Table 2.a).

All PCL-C clusters (B, C, D) were negatively correlated with SCS score, with values ranging from r = -0.66 for C criterion (avoidance), r = -0.64 for D criterion (hyper-arousal) to r = -0.60 for B (re-experiencing).

Re-experiencing (B criterion) and hyper-arousal (D criterion) were more negatively correlated with SCS in the group PCL-C $\geq$ 40 while avoidance (C criterion) was more negatively correlated with SCS in the group PCL $\leq$ 40 (Table 3.a).

Correlations were stronger than those reported by Thompson and Waltz (B: r= -0.16; C: r= -0.24; D: r= -0.20), probably because PTSD criteria were met by 42% of the participants in my study, while by 22% of the participants in Thompson and Waltz study.

Median and interquartile range instrument scores for gender, race, and marital status are presented in Table 6. The median PCL-C score for female participants was 34 (interquartile range, 25 – 54) versus 28 (interquartile range 23 – 50) for men. Male participants reported higher median scores for PTGI (85; interquartile range, 55 – 97), RSES (77; interquartile range, 50 – 82) compared to women (PTGI (63; interquartile range, 34 – 83), RSES (67; interquartile range, 48 – 76). When looking at Race, Asian (N= 3) presented a very high Median score 62 (range 53-73), African American N= 19 median 34 (range 28-51), Caucasian N= 76 median 31 (range 25-54) and Hispanic N= 10 median 28 (range 22-47). The highest scoring group in post-traumatic growth where Caucasian median 70 compared to 19 of Asian, 50 of Hispanic, 57 of African American. The highest Social Support was found in African American 72, followed by Caucasian 71, Hispanic 66 and last by Asian 16. Resilience was scored highest by African

American median 73,versus Asian 36. Depression CES-D symptoms were most scored by Asian 46, followed by Caucasian 16, Hispanic 14 and African Americans 11.

As regards marital status, the median for singles (N = 78) was the highest (median= 41, range 25 – 55), followed by divorced (N= 8, median= 33, range 26 – 46) and married (N= 29, median= 27, range 27 – 40). The highest post-traumatic growth was scored by married (median= 71), followed by divorced (median= 67) and singles (median= 63). The same occurred for RSES, with married (median= 75) scoring higher than divorced (median= 73) and singles (median= 66). However, singles scored the highest in CES-D depression symptoms with a median of 17 while divorced scored 9 and married 11.

PCL-C clusters for probable PTSD by gender, race and marital status are presented in Table 7. Females, although a larger proportion of the study sample, presented with a greater proportion above probable PTSD criteria of 28 (N = 63, 41.4% versus N= 4, 36.4%), 40 (N = 43, 41.4% versus N = 4, 36.4%), and 44 (N=43, 41.4% versus N= 4, 36.4%). Depending on the probable PTSD criterion selected, African-American participants comprised a larger proportion of probable PTSD than Caucasian or Hispanic participants and participants reporting their marital status as 'single' also comprised a greater proportion with probable PTSD.

3.2. Prediction of PTSD scores, Resilience, Post-trauma Growth scores

A hierarchical regression model was used to model the association of depression, self-compassion, post-traumatic growth, resilience and social support on PCL-C scores (Table 8). The overall model significantly predicted PCL-C symptoms, $F(5,109) = 32.19$, $p < .001$, and explained a significant proportion of variance, $R^2 = .596$. Depression was the largest significant

predictor of post-traumatic stress, b = .336, t(109) = 2.359, p< .020. Depression also explained a significant proportion of variance in post-traumatic stress, R^2 = .475, F(5,109) = 32.19, p < .001.

A second hierarchical regression model was to model the association of age, race, gender and marital status on PCL-C Scores (Table 9). The overall model significantly predicted PCL-C symptoms, F(6,108) = 3.39, p < 0.05, and explained a minimal amount of variance, R^2 = .117. Only age was a significant predictor of post-traumatic stress, b = -.554, t(109) = -2.463, p < .015. Age also explained the largest proportion of variance in post-traumatic stress, R^2 = .08, F(6,108) = 3.39, p < 0.05.

A third hierarchical regression model was to model the association of age, race, gender and marital status combined with depression, self-compassion, growth, resilience and social support on PCL-C scores (Table 10). The overall model significantly predicted PCL-C symptoms, F(12, 102) = 13.55, p < .001, and explained a significant amount of variance, R^2 = .614. After adjustment for age, race, gender and marital status, depression, b = .360, t(102) = 2.457, p < .016, self-compassion, b = -7.664, t(102) = -3.518, p < .002, and growth, b = .255, t(102) = 4.318, p < .000, significantly predicted post-traumatic stress. Depression, self-compassion, and growth also explained the largest proportion of variance in post-traumatic stress, R^2 = .559, F(12,102) = 13.35, p < 0.01.

A hierarchical regression model was used to model the association of resilience, PCL-C, self-compassion, social support and depression on post-traumatic growth (Table 11). The overall model significantly predicted post-traumatic growth, F(5,109) = 46.79, p < .001, and explained a significant proportion of variance, R^2 = .682. Resilience was the largest significant predictor of post-traumatic growth, b = .957, t(109) = 7.865, p < .000. Resilience also explained a significant proportion of variance in post-traumatic growth, R^2 = .579, F(5,109) = 46.79, p < .001.

A hierarchical regression model was used to model the association of age, race, gender and marital status combined with depression, self-compassion, resilience, PCL-C scores and social support on post-traumatic growth (Table 13). The overall model significantly predicted PCL-C symptoms, $F(12, 102) = 20.60$, $p < .001$, and explained a significant amount of variance, $R^2 = .708$. Resilience, PCL-C scores and self-compassion, also explained the largest proportion of variance in post-traumatic growth, $R^2 = .669$.

A hierarchical regression model was used to model the association of post-traumatic growth, PCL-C, self-compassion, social support and resilience on CES-D scores (table 17). The overall model significantly predicted depression, $F(5,109) = 70.94$, $p < .001$, and explained a significant proportion of variance, $R^2 = .765$. Self-compassion was the largest significant predictor of depression, $b = -7.584$, $t(109) = -5.455$ $p = .000$. Self-compassion also explained a significant proportion of variance in resilience, $R^2 = .666$.

A hierarchical regression model was used to model the association of age, race, gender and marital status combined with resilience, self-compassion, post-traumatic growth, PCL-C scores and social support on CES-D scores (Table 19). The overall model significantly predicted depression symptoms, $F(12, 102) = 29.18$, $p < .001$, and explained a significant amount of variance, $R^2 = .774$. Self-compassion, resilience, and PCL-C scores also explained the largest proportion of variance in depression, $R^2 = .760$.

A hierarchical regression model was used to model the association of post-traumatic growth, depression, PCL-C, self-compassion, and social support on resilience (Table 23). The overall model significantly predicted resilience, $F(5,109) = 66.95$, $p < .001$, and explained a significant proportion of variance, $R^2 = .754$. Post-traumatic growth was the largest significant predictor of resilience, $b = .378$, $t(109) = 7.865$, $p < .000$. Post-traumatic growth also explained a

significant proportion of variance in resilience, R^2 = .579, F(5,109) = 66.95, p < .001. Post-traumatic growth, CES-D and PCL-C scores also explained the largest proportion of variance in resilience, R^2 = .751.

A hierarchical regression model was used to model the association of age, race, gender and marital status combined with depression, self-compassion, post-traumatic growth, PCL-C scores and social support on resilience (Table 25). The overall model significantly predicted PCL-C symptoms, F(12, 102) = 30.39, p < .001, and explained a significant amount of variance, R^2 = .781.

CHAPTER 4

DISCUSSION AND CONCLUSION

4.1 Research achievements

The purpose of my study was to investigate how college nursing students deal with trauma and the psychological factors that are associated with the development of post-traumatic symptoms, resiliency, and with the occurrence of PTG. Even though many studies have already used these constructs together, the aim of this study was to add the SCS and the MSPSS scales to better understand the role of self-compassion and family/friends support in overcoming PTSD and their relationship with post trauma reactions.

In particular, I explored the relationships between resiliency factors, (including social support, religion and spirituality, positive emotions, cognitive flexibility, self-efficacy and coping) and growth factors as identified on the PTGI (new possibilities, personal strength, spiritual change, appreciation of life, and relationships to others).

Low perceived social support has been identified as the strongest predictor of PTSD (Brewin, Andrews, & Valentine, 2000; Grasso et al., 2011; Ozer, Best, Lipsey, & Weiss, 2003). Results from my study highlighted and supported previous notions about the importance of social support both perceived (Asberg, Bowers, Renk, & McKinney, 2008) and received (Eurelings-Bontekoe, Diekstra, & Verschuur, 1995). As expected, RSES and MSPSS scores were significantly correlated. However, the largest significant correlation was found for Friends subscale, while a lower correlation was found for Family. The same occurred when analyzing the MSPSS and PCL-C scores, where the most significant negative correlation was obtained for the Friends subscale.

My results indicate that nursing students who report more significant relationships with friends as part of their social support were less likely to develop PTSD after having experienced a traumatic event, in line with previous studies that have found that social support and meaningful relationships, with at least one peer or family member, are consistent with resilient outcomes (Flach, 1997; Richardson, 2002; Tusaie & Dyer, 2004). High perceived social support facilitates the natural course of recovery from trauma exposure by confirming the perception that if one belongs to a solid social network, the world is less dangerous. This suggests that individuals' perception of their social support adequacy may have a significant effect on their experience of post-traumatic stress.

Very few studies in the PTSD literature have considered self-compassion. One such study, carried out by Thompson and Waltz (2008), reported that exposure to trauma and subsequent post-traumatic stress symptoms may be associated with self-criticism and avoidance of internal exposure. Their finding showed that PTSD "Avoidance" symptoms were significantly correlated with self-compassion, whereas re-experiencing and hyper-arousal were not. All PCL-C clusters (B, C, D) were negatively correlated with SCS score, C (avoidance) more strongly than B (re-experiencing) and D (hyper-arousal).

My study explored the distribution of SCS scores in groups of nursing students above and below the 40-point criterion on PCL-C. Re-experiencing (B criterion) and hyper-arousal (D criterion) were more negatively correlated with SCS in the group PCL-C > 40 while avoidance (C criterion) was more negatively correlated with SCS in the group PCL $\leq$ 40. I found a strong correlation between SCS and MSPSS supporting previous studies wherein high self-compassion in individuals had been linked to increases in social connectedness, and decreases in self-criticism, rumination, thought suppression, and anxiety (Neff, Kirkpatrick, & Rude, 2007).

Furthermore, the objective was to investigate which factors of PTG were linked to coping success and resilience, with the expectation of finding a correlation between RSES and PTG, Previous research suggests that some factors contributing to PTG, such as personal strength, relating to others, and new possibilities, are positively correlated with resilience, whereas other factors such as appreciation of life and spiritual change are positively correlated with PTSD symptoms (Daisuke et al., 2010). In my study, RSES and PTG were strongly correlated. The most significant correlation was found in subscale Appreciation of Life followed by Relating to Others and New Possibilities. On the other hand, Personal Strength and Spiritual Change showed smaller correlations, contrary to previous research.

I also explored which subjects developed more symptoms of PTSD, which are more resilient to trauma and which ones we would expect to evidence psychological growth after trauma exposure. Correlation and regression analyses yielded several predictors of PCL-C. Based on the regression analysis equation for PCL-C, the predictor that accounted for the largest amount of variance was CES-D. Therefore, depression is the single most important predictor of PTSD symptoms. The importance of depression on the outcome of PTDS symptoms has been analyzes and proven in many studies. Previous research found that victims with higher post-traumatic stress symptoms tended to have higher depressive symptoms (Taft, Resick, Watkins, & Panuzio 2009). I found that the most significant correlation was between PTSD symptoms and depression. This association between PTSD and depression suggests that after a trauma there is a possible vulnerability, which may lead to depression. It might also reflect the large number of shared items that make up a diagnosis of depression and a diagnosis of PTSD.

I attempted to analyze and predict which subjects are more resilient and which showed the greatest psychological growth. The regression analysis revealed that the strongest predictor of

Resilience was PTG, followed by CES-D. The overall model positively explained the largest amount of variance. When I tried to predict which subject might demonstrate psychological growth after a traumatic event, the regression analysis of the data yielded that the strongest predictor of PTG was resilience followed by PCL-C.

4.2 Study limitations

Results of my study must be interpreted in light of a number of limitations. The first limitation is the retrospective nature of the PCL-C score after the event. My results are therefore subject to error in memory and should be interpreted with caution. Also, there are many areas of the trauma that this study did not investigate such as the severity and duration of the trauma. Inclusion of these indicators may change the results. For example, certain types of trauma (i.e. sexual abuse, threatened with a weapon) may be more strongly linked to adverse outcomes and may better explain the variance in symptomatology.

I utilized nursing college students as a sample, which may not be generalizable to other populations such as veterans or populations with a high frequency of trauma. Further studies may utilize other populations to see if these predictor variables, specifically self-compassion, social support, and depression, remain significant. Also, variables were only assessed at one time using self-reported questionnaires, and perhaps a longitudinal design would illuminate how new experiences of trauma impacts functioning and growth. Furthermore, my study was based solely on self-reports and participants may not have been forthcoming or candid with all traumatic events or symptomatology. Despite these limitations, perceived social support, self-compassion, resilience, growth and depression may still need to be assessed in trauma survivors who come to the attention of professionals as these variables may influence the development of symptoms.

4.3 Conclusions

Self-compassion is a potentially important construct related to self-care for future nurses and mental health professionals. A strong social support network and emotional support from nursing colleagues have also been found to be crucial elements in the development of resilience in the workplace to maintain a healthier psychological profile. Communication techniques and talking with coworkers and experienced staff, humor, teamwork, and timeouts should be applied as coping strategies to be used by nurses. Resilience has been identified as an essential attribute assisting nurses to adapt to the physical and emotional demands of their profession. All these aspects will contribute to the management of depression symptoms which may have an important role in developing and/or preventing PTSD.

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LIST OF TABLES

Table 1.
Demographics, All Subjects (N = 115)

Characteristic	N	%
Age (yrs, *M, SD*)	26.69	8.43
Gender		
Female	104	90.4
Male	11	9.6
Race		
African American	19	16.5
Asian	3	2.6
Caucasian	76	66.1
Hispanic	10	8.7
Other/Declined	7	6.1
Marital Status		
Single	78	67.8
Married	29	25.2
Divorced	8	7.0
Year in College		
Freshman	2	1.7
Sophomore	6	5.2
Junior	26	22.6
Senior	81	70.4
Traumatic Event - Recoded		
Car accident	27	23.5
Life threatening illness	14	12.2
Other	16	13.9
Sexual abuse / physical attack	26	22.6
Sudden & unexpected death of someone close	26	22.6
Threatened with a weapon	6	5.2

Note. Values are frequency and percent unless otherwise noted.

Table 2
Instrument Scores, All Subjects (n=115)

Instrument	Median	25th PCTL	75th PCTL	M	SD	Min	Max
PCL-C Total Score	33.0	25.0	52.0	39.02	16.78	17.0	77.0
Repetitive Thoughts	2.0	2.0	3.0	2.65	1.25	1.0	5.0
Dreams	2.0	1.0	3.0	2.45	1.22	1.0	5.0
Flashbacks	2.0	1.0	3.0	2.25	1.23	1.0	5.0
Upset at Reminders	3.0	2.0	4.0	2.67	1.21	1.0	5.0
Physiologic Reactions	2.0	1.0	3.0	2.25	1.23	1.0	5.0
Avoid Thoughts	2.0	1.0	4.0	2.50	1.31	1.0	5.0
Avoid Activities	2.0	1.0	3.0	2.41	1.29	1.0	5.0
Differential Recall	2.0	1.0	3.0	2.12	1.23	1.0	5.0
Loss of Interest	2.0	1.0	3.0	2.17	1.26	1.0	5.0
Feels Distant	2.0	1.0	3.0	2.22	1.28	1.0	5.0
Numbing	2.0	1.0	3.0	2.10	1.24	1.0	5.0
Short Future	2.0	1.0	3.0	2.02	1.18	1.0	5.0
Sleep Disturbance	2.0	1.0	3.0	2.23	1.14	1.0	5.0
Irritable & Angry	2.0	1.0	3.0	2.19	1.12	1.0	5.0
Decreased Concentration	2.0	1.0	3.0	2.29	1.24	1.0	5.0
Hypervigilance	2.0	1.0	3.0	2.34	1.28	1.0	5.0
Startle	2.0	1.0	3.0	2.17	1.23	1.0	5.0
B, Re-experiencing	1.0	0.0	5.0	12.29	5.36	5.0	23.0
C, Avoidance	2.0	0.0	5.0	15.53	7.18	7.0	32.0
D, Hyperarousal	1.0	0.0	4.0	11.21	5.14	5.0	24.0
PTGI Total Score	64.0	36.0	85.0	59.85	29.73	0.0	105.0
Relating to Others	21.0	7.0	21.0	19.07	10.86	0.0	35.0
New Possibilities	14.0	6.0	14.0	13.30	7.56	0.0	25.0
Personal Strength	14.0	6.0	14.0	12.01	6.19	0.0	20.0
Spirit Change	7.0	2.0	7.0	5.56	3.69	0.0	10.0
Appreciation for Life	12.0	6.0	12.0	9.92	4.52	0	15
SCS Total Score	3.2	2.4	3.8	3.12	0.86	1.2	4.8
Self-Kindness	3.0	2.4	3.6	3.01	1.01	1.0	5.0
Common Humanity	3.3	2.3	4.0	3.08	1.08	1.0	5.0
Mindfulness	3.3	2.3	4.0	3.09	1.09	1.0	5.8

Instrument	Median	25th PCTL	75th PCTL	M	SD	Min	Max
Self-Judgment	3.0	2.0	3.8	2.97	1.03	1.0	5.0
Isolation	2.5	1.8	3.8	2.74	1.15	1.0	5.0
Over Identification	2.8	2.0	3.5	2.73	0.97	1.0	5.0
MSPSS Total Score	70.0	48.0	78.0	64.17	17.22	12.0	84.0
Family	23.0	15.0	27.0	20.77	6.96	4.0	28.0
Friends	23.0	16.0	26.0	21.23	5.60	4.0	28.0
Other	24.0	16.0	28.0	22.16	6.18	4.0	28.0
RSES Total Score	68.0	48.0	77.0	61.29	21.26	0.0	88.0
CES-D Total Score	16.0	7.0	27.0	19.03	14.41	0.0	53.0

Note. PCL-C, Posttraumatic Checklist-Civilian; SCS, Self-Compassion Scale; MSPSS, Multidimensional Scale of Perceived Social Support; RSES, Response to Stressful Events Scale; CES-D, Center for Epidemiologic Studies Depression Scale

Table 2.a
Correlation between PTGI Subscales an RSES total score

Varialbe	*With Variable*	*N*	*Sample Corr*	*Fisher'sZ*	*Bias Adj*	*Corr. Estim.*	*P Value for H0:Rho=0*
PTGI tot. score	RSES tot. score	115	0.75067	0.97449	0.00329	0.74923	<.0001
PTGI rel. oth.	RSES tot. score	115	0.68434	0.83724	0.00300	0.68275	<.0001
PTGI new poss.	RSES tot. score	115	0.61404	0.71538	0.00269	0.61236	<.0001
PTGI pers.str.	RSES tot. score	115	0.05629	0.05635	0.00024	0.05605	0.5509
PTGI spir.cha	RSES tot. score	115	0.17144	0.17315	0.00075	0.17071	0.0669
PTGI app.life	RSES tot. score	115	0.78745	1.06468	0.00345	0.78613	<.0001

Correlation between MSPSS Subscales and RSES total score and PCL-C total score

MSPSS tot. score	RSES tot. score	115	0.62961	0.74077	0.00276	0.62794	<.0001
MSPSS family	RSES tot. score	115	0.53248	0.59360	0.00234	0.53080	<.0001
MSPSS friends	RSES tot. score	115	0.60241	0.69692	0.00264	0.60072	<.0001
MSPSS other	RSES tot. score	115	0.60767	0.70522	0.00267	0.60599	<.0001
MSPSS tot. score	PCL-C tot. score	115	-0.55041	-0.61897	-0.00241	-0.54872	<.0001
MSPSS family	PCL-C tot. score	115	-0.49023	-0.53637	-0.00215	-0.48860	<.0001
MSPSS friends	PCL-C tot. score	115	-0.52059	-0.57715	-0.00228	-0.51892	<.0001
MSPSS other	PCL-C tot. score	115	-0.50884	-0.56116	-0.00223	-0.50718	<.0001

Note. PCL-C, Posttraumatic Checklist-Civilian; SCS, Self-Compassion Scale; MSPSS, Multidimensional Scale of Perceived Social Support; RSES, Response to Stressful Events Scale; CES-D, Center for Epidemiologic Studies Depression Scale

Table 2.b
Instrument T- Scores, All Subjects (n=115)

Instrument	Median	25th PCTL	75th PCTL	Min	Max
PCL-C Total Score	46	42	58	37	73
B, Re-experiencing	44	40	63	40	63
C, Avoidance	48	40	59	40	66
D, Hyperarousal	46	41	60	41	65
PTGI Total Score	51	42	58	30	65
Relating to Others	52	39	59	32	65
New Possibilities	51	40	59	32	65
Personal Strength	53	40	58	31	63
Spirit Change	54	40	59	35	62
Appreciation for Life	55	41	29	28	61
SCS Total Score	50	44	56	30	70
Self-Kindness	50	44	56	30	70
Common Humanity	52	42	59	31	68
Mindfulness	51	42	58	31	74
Self-Judgment	50	41	58	31	70
Isolation	48	41	58	31	70
Over Identification	50	43	58	32	73
MSPSS Total Score	53	41	58	20	62
Family	53	42	59	26	60
Friends	53	41	59	19	62
Other	53	40	59	21	59
RSES Total Score	53	44	57	21	63
CES-D Total Score	48	42	56	37	74

Note. PCL-C, Posttraumatic Checklist-Civilian; SCS, Self-Compassion Scale; MSPSS, Multidimensional Scale of Perceived Social Support; RSES, Response to Stressful Events Scale; CES-D, Center for Epidemiologic Studies Depression Scale

Table 3.
PCL-C Cluster Scores

Parameter	N	%
PCL-C > 28		
No	48	41.7
Yes	67	58.3
PCL-C > 40		
No	67	58.2
Yes	48	41.7
PCL-C > 44		
No	70	60.9
Yes	45	39.1
PCL-C > 50		
No	80	69.5
Yes	35	30.4
PCL-C Tertiles		
PCL-C ≤ 26	32	27.8
PCL-C 27-47	42	36.6
PCL-C > 47	41	35.7
PCL Domain		
B, Re-experiencing	73	63.5
C, Avoidance	50	43.5
D, Hyperarousal	54	47.0

Note. PCL-C, Posttraumatic Checklist-Civilian;

Table 3.a

Correlations and proportion of explained variance for SCS and PCL-C scores. The negative correlation is present in both subgroups (PCL-C > 40, N= 67) and (PCL-C ≤ 40, N= 48) only for the C criterion (avoidance).

		SCS and re-experiencing	SCS and avoidance	SCS and hyperarousal
PCL-C all	r =	-0,597	-0,658	-0,644
	r^2 =	0,356	0,432	0,414

		SCS and re-experiencing with PCL < 40	SCS and avoidance with PCL <40	SCS and hyper-arousal with PCL <40
PCL-C < 40	r =	0,081	-0,204	-0,038
	r^2 =	0,007	0,042	0,001
		SCS and re-experiencing with PCL > 40	SCS and avoidance with PCL >40	SCS and hyper-arousal with PCL >40
PCL-C ≥ 40	r =	-0,227	-0,156	-0,252
	r^2 =	0,051	0,024	0,064

Table 4.
Frequency of Traumatic Events

Event	Car accident N=27	Life threatening Illness N=14	Other N=16	Sexual abuse / Physical attack N=26	Sudden unexpected death of someone close N=26	Threatened with weapon N=6
PCL-C > 28						
No	11 (40.7)	8 (57.1)	7 (43.8)	9 (34.6)	11 (42.3)	2 (33.3)
Yes	16 (59.3)	6 (42.9)	9 (56.3)	17 (65.4)	15 (57.7)	4 (66.7)
PCL-C > 40						
No	18 (66.7)	9 (64.3)	9 (56.3)	10 (38.5)	18 (69.2)	3 (50.0)
Yes	9 (33.3)	5 (35.7)	7 (43.8)	16 (61.5)	8 (30.8)	3 (50.0)
PCL-C > 44						
No	19 (70.4)	10 (71.4)	9 (56.3)	10 (38.5)	19 (73.1)	3 (50.0)
Yes	8 (29.6)	4 (28.6)	7 (43.7)	16 (61.5)	7 (26.9)	3 (50.0)
PCL-C > 50						
No	19 (70.4)	12 (85.7)	10 (62.5)	13 (50.0)	21 (80.8)	5 (83.3)
Yes	8 (29.6)	2 (14.3)	6 (37.5)	13 (50.0)	5 (19.2)	1 (16.7)
PCL-C Tertiles						
PCL-C ≤ 26	8 (26.9)	5 (35.7)	6 (37.5)	4 (15.4)	7 (26.9)	2 (33.3)
PCL-C 27-47	11 (40.7)	7 (50.0)	4 (25.0)	7 (26.9)	13 (50.0)	1 (16.7)
PCL-C > 47	8 (29.6)	2 (14.3)	6 (37.5)	15 (57.7)	6 (23.1)	3 (50.0)
PCL Domain						
B, Re-experiencing	15 (55.6)	8 (57.1)	9 (56.3)	19 (73.1)	18 (69.2)	4 (66.7)
C, Avoidance	8 (29.6)	4 (28.6)	9 (56.3)	16 (61.5)	10 (38.5)	3 (50.0)
D, Hyperarousal	11 (40.7)	5 (35.7)	8 (50.0)	16 (61.5)	10 (38.5)	4 (66.7)

Note. PCL-C, Posttraumatic Checklist-Civilian

Table 5
Pearson Product Moment Correlation Matrix, Instrument Total Scores

Item	Instrument	1	2	3	4	5	6
1	PCL-C Total Score	1.000					
2	PTGI Total Score	-.265**	1.000				
3	SCS Total Score	-.669***	.625***	1.000			
4	MSPSS Total Score	-.551***	.556***	.663***	1.000		
5	RSES Total Score	-.537***	.760***	.698***	.629***	1.000	
6	CES-D Total Score	.689***	-.557***	-.816***	-.649***	-.757***	1.000

Note. PCL-C, Posttraumatic Checklist-Civilian; SCS, Self-Compassion Scale; MSPSS, Multidimensional Scale of Perceived Social Support; RSES, Response to Stressful Events Scale; CES-D, Center for Epidemiologic Studies Depression Scale
* $p<0.05$; ** $p<0.01$; *** $p<0.001$

Table 6.
Instrument quartiles gender, race, marital status

Instrument	Gender		Race					Marital Status		
	Female N=104	Male N=11	Asian N=3	Afric/Amer N=19	Hispanic N=10	Other N=7	Caucasian N=76	Divorced N=8	Married N=29	Single N=78
PCL-C	25/34/54	23/28/50	53/62/73	28/34/51	22/28/47	22/46/56	25/31/54	26/33/46	25/27/40	25/41/55
B, Re-experiencing	0/2/5	0/0/5	5/5/5	0/2/5	0/1/5	0/4/5	0/1/5	0/1/3	0/0/4	0/3/5
C, Avoidance	0/2/5	0/0/4	6/7/7	0/2/6	0/1/4	0/3/5	0/2/5	0/1/5	0/0/2	0/3/6
D, Hyperarousal	0/1/4	0/0/5	4/5/5	0/2/5	0/0/2	1/3/4	0/1/4	0/1/3	0/0/2	0/2/5
PTGI Total Score	34/63/83	55/85/97	18/19/21	27/57/92	19/50/81	57/66/79	44/70/85	31/67/79	43/71/86	33/63/84
Relating to Others	1/3/4	2/4/5	1/1/1	1/2/4	0/2/4	2/3/4	2/4/4	1/3/4	1/3/4	1/3/4
New Possibilities	1/3/4	3/4/4	0/1/1	1/2/4	1/3/3	3/3/4	1/3/4	1/3/4	2/3/4	1/3/4
Personal Strength	3/5/5	3/5/5	1/1/5	5/5/5	2/5/5	3/4/5	3/4/5	3/5/5	4/5/5	3/5/5
Spirit Change	2/4/5	4/5/5	0/1/1	5/5/5	0/4/5	2/3/4	2/4/5	2/4/5	2/4/5	2/4/5
Appreciation for Life	2/4/4	3/5/5	1/1/1	2/3/4	1/2/5	2/5/5	3/4/5	1/4/5	3/4/4	2/4/5
SCS Total Score	2/3/4	3/4/4	1/2/3	2/3/4	3/3/4	2/3/3	2/3/4	3/4/4	3/4/4	2/3/4
Self-Kindness	2/3/4	3/4/5	1/2/4	2/3/5	2/3/3	3/3/4	2/3/4	3/3/4	3/3/4	2/3/4
Common Humanity	2/3/4	3/4/5	1/2/3	2/3/4	2/3/4	3/3/4	2/3/4	2/3/4	3/4/4	2/3/4
Mindfulness	2/3/4	3/4/5	1/2/3	2/4/5	2/3/4	3/4/4	3/3/4	3/3/4	3/4/4	2/3/4
Self-Judgment	2/3/4	2/2/3	3/4/5	2/3/4	2/2/4	3/4/4	2/3/4	2/2/3	2/3/4	2/3/4
Isolation	2/3/4	2/2/2	4/5/5	2/3/4	2/2/4	3/4/4	2/3/3	2/2/3	2/2/3	2/3/4
Over Identification	2/3/4	2/2/4	4/4/5	2/3/4	2/3/3	3/3/4	2/3/4	1/2/3	2/3/3	2/3/4
MSPSS Total Score	47/71/78	54/69/84	28/45/46	42/72/78	45/66/81	41/65/78	59/71/79	49/70/73	66/72/80	45/68/78
Family	16/24/27	13/23/28	4/11/15	13/23/26	13/21/28	4/18/27	18/24/27	14/22/25	20/24/26	14/23/27
Friends	16/23/26	17/24/28	9/15/21	13/24/27	17/22/28	19/23/24	18/23/26	17/24/24	18/24/27	16/22/26
Other	16/24/28	19/26/28	8/15/21	14/24/27	16/22/26	17/28/28	20/24/28	18/24/25	21/26/28	16/24/28
RSES Total Score	48/67/76	50/77/82	16/36/37	40/73/76	51/70/77	53/69/76	54/68/78	55/73/74	61/75/79	47/66/76
CES-D Total Score	8/17/27	4/8/16	25/46/51	6/11/39	8/14/27	9/14/24	7/16/27	5/9/24	8/11/19	6/17/28

Note. Values are M, SD. PCL-C, Posttraumatic Checklist-Civilian; SCS, Self-Compassion Scale; MSPSS, Multidimensional Scale of Perceived Social Support; RSES, Response to Stressful Events Scale; CES-D, Center for Epidemiologic Studies Depression Scale; 25th/50th/75th percentile

Table 7.
PCL-C criterion by gender, race, marital status

Parameter	Gender		Race					Marital Status		
	Female N=104	Male N=11	Asian N=3	Afric/Amer N=19	Hispanic N=10	Other N=7	Caucasian N=76	Divorced N=8	Married N=29	Single N=78
PCL-C > 28										
No	42 (40.4)	6 (54.6)	0 (.0)	4 (21.1)	6 (60.0)	2 (28.6)	35 (46.1)	2 (25.0)	17 (58.6)	29 (37.2)
Yes	62 (59.6)	5 (45.5)	3 (100.0)	14 (73.7)	4 (40.0)	5 (71.4)	41 (53.9)	6 (75.0)	12 (41.4)	49 (62.8)
PCL-C > 40										
No	60 (57.7)	7 (63.6)	0 (.0)	10 (52.6)	6 (60.0)	2 (28.6)	49 (64.5)	6 (75.0)	22 (75.9)	39 (50.0)
Yes	44 (42.3)	4 (36.4)	3 (100.0)	9 (47.4)	4 (40.0)	5 (71.4)	27 (35.5)	2 (25.0)	7 (24.1)	39 (50.0)
PCL-C > 44										
No	63 (60.6)	7 (63.6)	0 (.0)	10 (52.6)	7 (70.0)	3 (42.9)	50 (65.8)	6 (75.0)	22 (75.9)	42 (53.9)
Yes	41 (39.4)	4 (36.4)	3 (100.0)	9 (47.4)	3 (30.0)	4 (57.1)	26 (34.2)	2 (25.0)	7 (24.1)	36 (46.1)
PCL-C > 50										
No	71 (68.3)	9 (81.8)	0 (.0)	13 (68.4)	8 (80.0)	5 (71.4)	54 (71.1)	6 (75.0)	23 (79.3)	51 (65.4)
Yes	33 (31.7)	2 (18.2)	3 (100.0)	6 (31.6)	2 (20.0)	2 (28.6)	22 (28.9)	2 (25.0)	6 (20.7)	27 (34.6)
PCL-C Criterion										
B, Re-experiencing	68 (65.4)	5 (45.5)	3 (100)	12 (63.2)	6 (60.0)	5 (71.4)	47 (61.8)	5 (62.5)	12 (41.4)	56 (71.8)
C, Avoidance	45 (43.3)	5 (45.6)	3 (100)	9 (47.4)	3 (30.0)	4 (57.1)	31 (40.8)	3 (37.5)	7 (24.1)	40 (51.3)
D, Hyperarousal	50 (48.1)	4 (36.4)	3 (100)	10 (52.6)	4 (40.0)	5 (71.4)	32 (42.1)	3 (37.5)	11 (37.9)	40 (51.3)

Note. PCL-C, Posttraumatic Checklist-Civilian; values expressed are frequency and percent.

Table 8
Summary of Hierarchical Regression Estimates for the Prediction of PCL-C

Parameter	*B*	*SE B*	*β*	*T*	*p*	R^2	*Adj* R^2	R^2 *Change*	*Significant F Change*
CES-D Total Score	.336	.143	.289	2.359	.020	.475	.470	.475	.000
SCS Total Score	-8.226	2.261	-.420	-3.638	.000	.509	.500	.034	.006
PTGI Total Score	.257	.056	.455	4.611	.000	.559	.547	.050	.001
RSES Total Score	-.208	.095	-.263	-2.189	.031	.582	.566	.022	.017
MSPSS Total Score	-.168	.085	-.173	-1.988	.049	.596	.578	.015	.049

Note. N = 115. PCL-C, Posttraumatic Checklist-Civilian; SCS, Self-Compassion Scale; MSPSS, Multidimensional Scale of Perceived Social Support; RSES, Response to Stressful Events Scale; CES-D, Center for Epidemiologic Studies Depression Scale; PTGI, Post Traumatic Growth Inventory
Overall model, $F(5,109) = 32.19$

Table 9
Summary of Hierarchical Regression for the Demographic Prediction of PCL-C

Parameter	*Estimate*	*SE B*	*β*	*t*	*P*	R^2	*Adj* R^2	R^2 *Change*	*Significant F Change*
Age, years	-.544	.221	-.273	-2.463	.015	.080	.072	.080	.002
Hispanic	-13.450	7.442	-.227	-1.807	.074	.089	.072	.009	.303
Caucasian	-9.337	5.489	-.265	-1.701	.092	.095	.070	.006	.391
African American	-9.297	6.574	-.207	-1.414	.160	.115	.083	.020	.113
Female	2.640	5.342	.046	.494	.622	.117	.077	.002	.633
Married	-.885	4.331	-.023	-.204	.838	.117	.068	.000	.838

Note. N = 115. PCL-C, Posttraumatic Checklist-Civilian
Overall model, F(6,108) = 3.39

Table 10
Summary of Hierarchical Regression for the Prediction of PCL-C

Parameter	*Estimate*	*SE B*	*β*	*t*	*P*	R^2	*Adj* R^2	R^2 *Change*	*Significant F Change*
CES-D Total Score	.360	.146	.309	2.457	.016	.475	.470	.475	.000
SCS Total Score	-7.664	2.427	-.392	-3.158	.002	.509	.500	.034	.006
PTGI Total Score	.255	.059	.452	4.318	.000	.559	.547	.050	.001
RSES Total Score	-.168	.102	-.213	-1.637	.105	.582	.566	.022	.017
MSPSS Total Score	-.176	.090	-.181	-1.955	.053	.596	.578	.015	.049
Age, years	-.262	.183	-.132	-1.431	.155	.605	.583	.009	.129
Caucasian	-5.127	3.841	-.145	-1.335	.185	.606	.580	.001	.654
African American	-5.975	4.650	-.133	-1.285	.202	.608	.578	.002	.428
Hispanic	-4.791	5.224	-.081	-.917	.361	.611	.578	.003	.354
Single	-4.466	4.790	-.125	-.932	.353	.612	.575	.001	.588
Married	-3.512	4.513	-.091	-.778	.438	.614	.573	.002	.437
Female	-.192	3.853	-.003	-.050	.960	.614	.569	.000	.960

Note. N = 115. PCL-C, Posttraumatic Checklist-Civilian; SCS, Self-Compassion Scale; MSPSS, Multidimensional Scale of Perceived Social Support; RSES, Response to Stressful Events Scale; CES-D, Center for Epidemiologic Studies Depression Scale; PTGI, Post Traumatic Growth Inventory
Overall model, $F(12,102) = 13.55$

Table 11
Summary of Hierarchical Regression Estimates for the Prediction of PTGI

Parameter	*B*	*SE B*	*β*	*T*	*p*	R^2	*Adj* R^2	R^2 *Change*	*Significant F Change*
RSES Total Score	.957	.122	.684	7.865	.000	.579	.575	.579	.000
PCL-C Total Score	.635	.138	.358	4.611	.000	.608	.601	.029	.005
SCS Total Score	13.989	3.516	.403	3.978	.000	.669	.660	.061	.000
MSPSS Total Score	.247	.133	.143	1.857	.066	.678	.666	.009	.082
CES-D Total Score	.280	.228	.136	1.227	.222	.682	.668	.004	.222

Note. N = 115. PCL-C, Posttraumatic Checklist-Civilian; SCS, Self-Compassion Scale; MSPSS, Multidimensional Scale of Perceived Social Support; RSES, Response to Stressful Events Scale; CES-D, Center for Epidemiologic Studies Depression Scale; PTGI, Post Traumatic Growth Inventory
Overall model, $F(5,109) = 46.79$

Table 12
Summary of Hierarchical Regression for the Demographic Prediction of PTGI

Parameter	*Estimate*	*SE B*	*β*	*t*	*P*	R^2	*Adj* R^2	R^2 *Change*	*Significant F Change*
Age, years	.839	.394	.238	2.132	.035	.048	.040	.048	.018
Female	-19.503	9.527	-.194	-2.047	.043	.079	.062	.030	.058
Caucasian	10.190	9.790	.163	1.041	.300	.096	.072	.018	.143
African American	6.379	11.726	.080	.544	.588	.101	.068	.005	.449
Married	-4.794	7.725	-.070	-.621	.536	.104	.063	.003	.522
Hispanic	-4.189	13.273	-.040	-.316	.753	.105	.055	.001	.753

Note. N = 115. PTGI, Posttraumatic Growth Inventory
Overall model, F(6,108) = 2.12

Table 13
Summary of Hierarchical Regression for the Prediction of PTGI

Parameter	*Estimate*	*SE B*	*β*	*t*	*P*	R^2	*Adj* R^2	R^2 *Change*	*Significant F Change*
RSES Total Score	.958	.129	.685	7.434	.000	.579	.575	.579	.000
PCL-C Total Score	.606	.140	.342	4.318	.000	.608	.601	.029	.005
SCS Total Score	13.646	3.681	.394	3.707	.000	.669	.660	.061	.000
Hispanic	-9.956	8.027	-.095	-1.240	.218	.680	.668	.011	.051
Female	-9.839	5.861	-.098	-1.679	.096	.689	.675	.009	.083
MSPSS Total Score	.229	.140	.133	1.640	.104	.698	.682	.009	.069
CES-D Total Score	.299	.231	.145	1.299	.197	.704	.684	.005	.165
Single	5.866	7.395	.093	.793	.429	.705	.683	.002	.433
Caucasian	4.779	5.955	.076	.803	.424	.707	.682	.001	.489
African American	3.492	7.219	.044	.484	.630	.707	.679	.001	.671
Married	2.626	6.974	.039	.377	.707	.708	.676	.000	.702
Age, years	.073	.285	.021	.256	.798	.708	.674	.000	.798

Note. N = 115. PCL-C, Posttraumatic Checklist-Civilian; SCS, Self-Compassion Scale; MSPSS, Multidimensional Scale of Perceived Social Support; RSES, Response to Stressful Events Scale; CES-D, Center for Epidemiologic Studies Depression Scale; PTGI, Post Traumatic Growth Inventory
Overall model, $F(12,102) = 20.60$

Table 14
Summary of Hierarchical Regression Estimates for the Prediction of MSPSS

Parameter	*B*	*SE B*	*β*	*T*	*p*	R^2	*Adj* R^2	R^2 *Change*	*Significant F Change*
SCS Total Score	4.007	2.634	.200	1.521	.131	.440	.435	.440	.000
RSES Total Score	.088	.107	.109	.822	.413	.494	.485	.054	.001
PCL-C Total Score	-.208	.105	-.203	-1.988	.049	.507	.494	.013	.088
PTGI Total Score	.124	.067	.214	1.857	.066	.521	.503	.013	.082
CES-D Total Score	-.173	.162	-.145	-1.071	.287	.526	.504	.005	.287

Note. N = 115. PCL-C, Posttraumatic Checklist-Civilian; SCS, Self-Compassion Scale; MSPSS, Multidimensional Scale of Perceived Social Support; RSES, Response to Stressful Events Scale; CES-D, Center for Epidemiologic Studies Depression Scale; PTGI, Post Traumatic Growth Inventory
Overall model, $F(5,109) = 24.17$

Table 15
Summary of Hierarchical Regression for the Demographic Prediction of MSPSS

Parameter	*Estimate*	*SE B*	*β*	*t*	*P*	R^2	*Adj* R^2	R^2 *Change*	*Significant F Change*
Caucasian	9.040	5.860	.250	1.543	.126	.020	.011	.020	.136
Married	3.905	4.624	.099	.844	.400	.033	.016	.013	.216
Hispanic	6.933	7.944	.114	.873	.385	.038	.012	.005	.452
African American	4.267	7.018	.092	.608	.544	.042	.007	.004	.514
Female	-2.650	5.702	-.045	-.465	.643	.044	.000	.002	.624
Age, years	.061	.236	.030	.258	.797	.044	-.009	.001	.797

Note. N = 115. MSPSS, Multidimensional Scale of Perceived Social Support
Overall model, F(6,108) = .83

Table 16
Summary of Hierarchical Regression for the Prediction of MSPSS

Parameter	*Estimate*	*SE B*	*β*	*t*	*P*	R^2	*Adj* R^2	R^2 *Change*	*Significant F Change*
SCS Total Score	4.593	2.703	.229	1.699	.092	.440	.435	.440	.000
RSES Total Score	.134	.111	.166	1.207	.230	.494	.485	.054	.001
Age, years	-.423	.195	-.207	-2.168	.032	.514	.500	.019	.037
PCL-C Total Score	-.205	.105	-.200	-1.955	.053	.531	.514	.018	.044
PTGI Total Score	.112	.068	.193	1.640	.104	.543	.522	.012	.091
Married	8.174	4.811	.207	1.699	.092	.552	.527	.009	.148
Caucasian	3.030	4.165	.084	.728	.469	.562	.533	.010	.126
CESD Total Score	-.175	.162	-.147	-1.084	.281	.567	.534	.005	.284
Female	4.594	4.128	.079	1.113	.268	.571	.534	.004	.323
Single	4.256	5.168	.116	.823	.412	.574	.533	.003	.366
Hispanic	.870	5.653	.014	.154	.878	.574	.529	.000	.794
African American	-.504	5.052	-.011	-.100	.921	.574	.524	.000	.921

Note. N = 115. CES-D, CES-D, Center for Epidemiologic Studies Depression Scale
Overall model, F(12,102) = 11.47

Table 17
Summary of Hierarchical Regression Estimates for the Prediction of CES-D

Parameter	*B*	*SE B*	*β*	*T*	*p*	R^2	*Adj* R^2	R^2 *Change*	*Significant F Change*
SCS Total Score	-7.584	1.390	-.451	-5.455	.000	.666	.663	.666	.000
RSES Total Score	-.260	.058	-.383	-4.446	.000	.735	.730	.069	.000
PCL-C Total Score	.144	.061	.168	2.359	.020	.760	.754	.025	.001
PTGI Total Score	.049	.040	.100	1.227	.222	.762	.754	.002	.290
MSPSS Total Score	-.060	.056	-.072	-1.071	.287	.765	.754	.002	.287

Note. N = 115. PCL-C, Posttraumatic Checklist-Civilian; SCS, Self-Compassion Scale; MSPSS, Multidimensional Scale of Perceived Social Support; RSES, Response to Stressful Events Scale; CES-D, Center for Epidemiologic Studies Depression Scale; PTGI, Post Traumatic Growth Inventory
Overall model, $F(5,109) = 70.94$

Table 18
Summary of Hierarchical Regression for the Demographic Prediction of CES-D

Parameter	*Estimate*	*SE B*	*β*	*t*	*P*	R^2	*Adj* R^2	R^2 *Change*	*Significant F Change*
Age, years	-.523	.192	-.306	-2.729	.007	.074	.066	.074	.003
Female	5.468	4.637	.112	1.179	.241	.089	.072	.014	.186
Caucasian	-3.935	4.765	-.130	-.826	.411	.092	.068	.004	.507
Married	2.325	3.760	.070	.618	.538	.095	.062	.003	.579
Hispanic	-3.657	6.460	-.072	-.566	.572	.096	.054	.001	.734
African American	-2.850	5.707	-.074	-.499	.619	.098	.048	.002	.619

Note. N = 115. CES-D, CES-D, Center for Epidemiologic Studies Depression Scale
Overall model, F(6,108) = 1.95

Table 19
Summary of Hierarchical Regression for the Prediction of CES-D

Parameter	*Estimate*	*SE B*	*β*	*t*	*P*	R^2	*Adj* R^2	R^2 *Change*	*Significant F Change*
SCS Total Score	-7.756	1.483	-.462	-5.229	.000	.666	.663	.666	.000
RSES Total Score	-.260	.063	-.383	-4.111	.000	.735	.730	.069	.000
PCL-C Total Score	.155	.063	.181	2.457	.016	.760	.754	.025	.001
Married	3.290	2.955	.100	1.113	.268	.763	.754	.003	.248
PTGI Total Score	.054	.042	.112	1.299	.197	.765	.755	.003	.279
Hispanic	5.247	3.406	.103	1.541	.126	.769	.756	.003	.228
MSPSS Total Score	-.065	.060	-.078	-1.084	.281	.771	.756	.002	.307
African American	3.508	3.059	.091	1.147	.254	.772	.754	.001	.576
Caucasian	2.525	2.532	.083	.997	.321	.773	.754	.002	.353
Single	1.864	3.154	.061	.591	.556	.774	.752	.001	.570
Female	.872	2.529	.018	.345	.731	.774	.750	.000	.738
Age, years	.013	.122	.008	.107	.915	.774	.748	.000	.915

Note. N = 115. PCL-C, Posttraumatic Checklist-Civilian; SCS, Self-Compassion Scale; MSPSS, Multidimensional Scale of Perceived Social Support; RSES, Response to Stressful Events Scale; CES-D, Center for Epidemiologic Studies Depression Scale; PTGI, Post Traumatic Growth Inventory
Overall model, $F(12,102) = 29.18$

Table 20
Summary of Hierarchical Regression Estimates for the Prediction of SCS

Parameter	*B*	*SE B*	*β*	*T*	*p*	R^2	*Adj* R^2	R^2 *Change*	*Significant F Change*
CES-D Total Score	-.028	.005	-.475	-5.455	.000	.666	.663	.666	.000
PTGI Total Score	.009	.002	.314	3.978	.000	.708	.703	.042	.000
PCL-C Total Score	-.013	.004	-.258	-3.638	.000	.745	.738	.037	.000
MSPSS Total Score	.005	.003	.104	1.521	.131	.750	.741	.005	.149
RSES Total Score	-.004	.004	-.105	-1.101	.273	.752	.741	.003	.273

Note. N = 115. PCL-C, Posttraumatic Checklist-Civilian; SCS, Self-Compassion Scale; MSPSS, Multidimensional Scale of Perceived Social Support; RSES, Response to Stressful Events Scale; CES-D, Center for Epidemiologic Studies Depression Scale; PTGI, Post Traumatic Growth Inventory
Overall model, $F(5,109) = 66.26$

Table 21
Summary of Hierarchical Regression for the Demographic Prediction of SCS

Parameter	*Estimate*	*SE B*	*β*	*t*	*P*	R^2	*Adj* R^2	R^2 *Change*	*Significant F Change*
Age, years	.023	.012	.225	1.833	.070	.069	.060	.069	.005
Caucasian	.436	.281	.242	1.552	.124	.111	.095	.042	.023
Female	-.551	.274	-.190	-2.009	.047	.115	.091	.004	.454
Married	-.072	.329	-.037	-.218	.827	.118	.086	.003	.546
Single	-.159	.346	-.087	-.461	.646	.124	.084	.006	.385
African American	.435	.343	.189	1.269	.207	.137	.089	.013	.204
Hispanic	.546	.378	.180	1.443	.152	.138	.081	.000	.827

Note. N = 115. SCS, Self-Compassion Scale
Overall model, F(7,107) = 2.44

Table 22
Summary of Hierarchical Regression for the Prediction of SCS

Parameter	*Estimate*	*SE B*	*β*	*t*	*P*	R^2	*Adj* R^2	R^2 *Change*	*Significant F Change*
CES-D Total Score	-.027	.005	-.458	-5.229	.000	.666	.663	.666	.000
PTGI Total Score	.009	.002	.302	3.707	.000	.708	.703	.042	.000
PCL-C Total Score	-.012	.004	-.227	-3.158	.002	.745	.738	.037	.000
Female	-.220	.148	-.076	-1.479	.142	.751	.742	.006	.100
Single	-.322	.185	-.176	-1.742	.084	.758	.747	.007	.083
MSPSS Total Score	.006	.004	.120	1.699	.092	.765	.752	.007	.072
Hispanic	.295	.202	.097	1.458	.148	.769	.754	.004	.191
Age, years	-.005	.007	-.046	-.644	.521	.772	.755	.003	.234
RSES Total Score	-.003	.004	-.080	-.799	.426	.773	.754	.001	.409
Married	-.132	.176	-.067	-.749	.456	.775	.753	.001	.440
African American	.142	.182	.062	.783	.436	.776	.752	.001	.534
Caucasian	.075	.151	.042	.500	.618	.776	.750	.001	.618

Note. N = 115. PCL-C, Posttraumatic Checklist-Civilian; SCS, Self-Compassion Scale; MSPSS, Multidimensional Scale of Perceived Social Support; RSES, Response to Stressful Events Scale; CES-D, Center for Epidemiologic Studies Depression Scale; PTGI, Post Traumatic Growth Inventory
Overall model, $F(12,102) = 29.46$

Table 23
Summary of Hierarchical Regression Estimates for the Prediction of RSES

Parameter	*B*	*SE B*	*β*	*T*	*p*	R^2	*Adj* R^2	R^2 *Change*	*Significant F Change*
PTGI Total Score	.378	.048	.529	7.865	.000	.579	.575	.579	.000
CES-D Total Score	-.591	.133	-.400	-4.446	.000	.740	.735	.161	.000
PCL-C Total Score	-.203	.093	-.160	-2.189	.031	.751	.744	.011	.029
SCS Total Score	-2.591	2.353	-.104	-1.101	.273	.753	.744	.002	.320
MSPSS Total Score	.070	.085	.056	.822	.413	.754	.743	.002	.413

Note. N = 115. PCL-C, Posttraumatic Checklist-Civilian; SCS, Self-Compassion Scale; MSPSS, Multidimensional Scale of Perceived Social Support; RSES, Response to Stressful Events Scale; CES-D, Center for Epidemiologic Studies Depression Scale; PTGI, Post Traumatic Growth Inventory
Overall model, F(5,109) = 66.95

Table 24
Summary of Hierarchical Regression for the Demographic Prediction of RSES

Parameter	*Estimate*	*SE B*	*β*	*t*	*P*	R^2	*Adj* R^2	R^2 *Change*	*Significant F Change*
Age, years	1.206	.306	.478	3.944	.000	.124	.116	.124	.000
Single	11.272	8.492	.249	1.327	.187	.145	.130	.022	.095
Female	-3.168	6.726	-.044	-.471	.639	.149	.126	.003	.505
Caucasian	6.064	6.894	.136	.880	.381	.150	.119	.001	.730
Hispanic	7.281	9.280	.097	.785	.434	.151	.112	.002	.648
African American	6.037	8.411	.106	.718	.474	.155	.108	.004	.477
Married	2.876	8.071	.059	.356	.722	.156	.101	.001	.722

Note. N = 115. RSES, Response to Stressful Events Scale
Overall model, F(7,107) = 2.83

Table 25
Summary of Hierarchical Regression for the Prediction of RSES

Parameter	*Estimate*	*SE B*	*β*	*t*	*P*	R^2	*Adj* R^2	R^2 *Change*	*Significant F Change*
PTGI Total Score	.367	.049	.513	7.434	.000	.579	.575	.579	.000
CES-D Total Score	-.548	.133	-.371	-4.111	.000	.740	.735	.161	.000
Age, years	.465	.171	.184	2.723	.008	.753	.747	.014	.015
PCL-C Total Score	-.153	.093	-.120	-1.637	.105	.761	.752	.008	.064
Single	4.511	4.567	.100	.988	.326	.766	.755	.005	.147
Female	5.819	3.630	.081	1.603	.112	.771	.758	.005	.123
Hispanic	4.643	4.982	.062	.932	.354	.776	.762	.006	.106
MSPSS Total Score	.105	.087	.085	1.207	.230	.779	.762	.002	.282
SCS Total Score	-1.933	2.418	-.078	-.799	.426	.780	.761	.001	.409
Caucasian	-2.066	3.690	-.046	-.560	.577	.781	.760	.001	.430
Married	.658	4.317	.014	.152	.879	.781	.758	.000	.876
African American	-.371	4.471	-.007	-.083	.934	.781	.756	.000	.934

Note. N = 115. PCL-C, Posttraumatic Checklist-Civilian; SCS, Self-Compassion Scale; MSPSS, Multidimensional Scale of Perceived Social Support; RSES, Response to Stressful Events Scale; CES-D, Center for Epidemiologic Studies Depression Scale; PTGI, Post Traumatic Growth Inventory
Overall model, $F(12,102) = 30.39$

Figure 1
Participant Self-Reported Marital Status

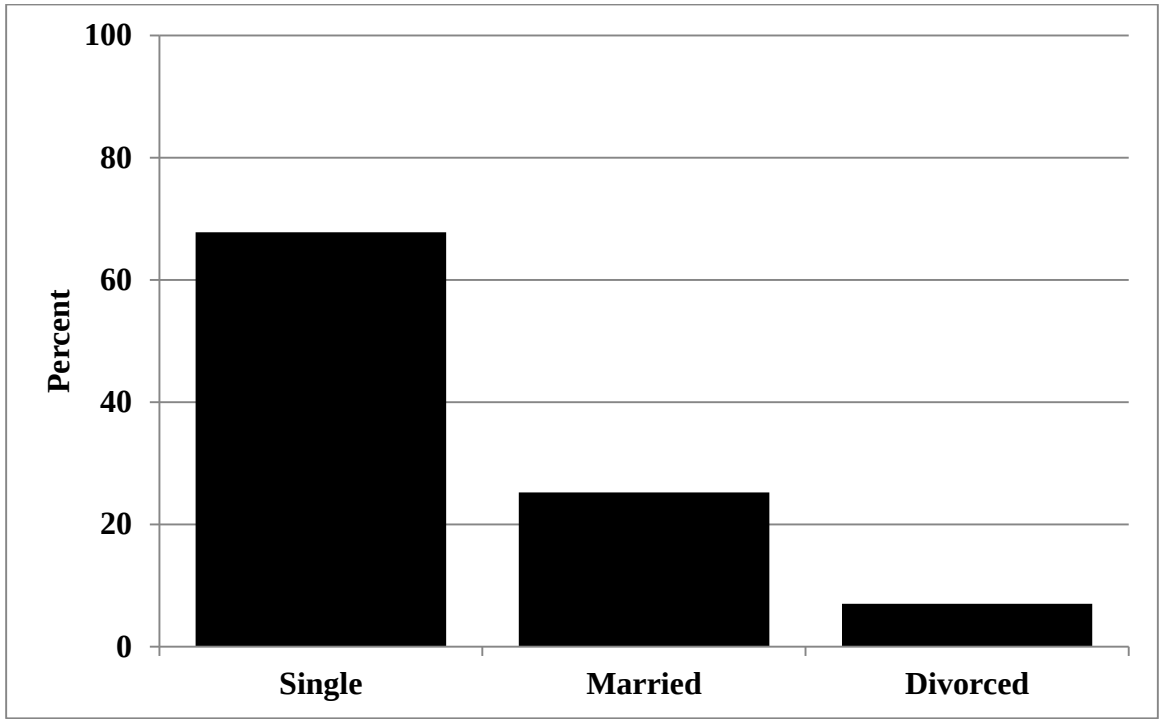


Figure 2
Participant Self-Reported Race

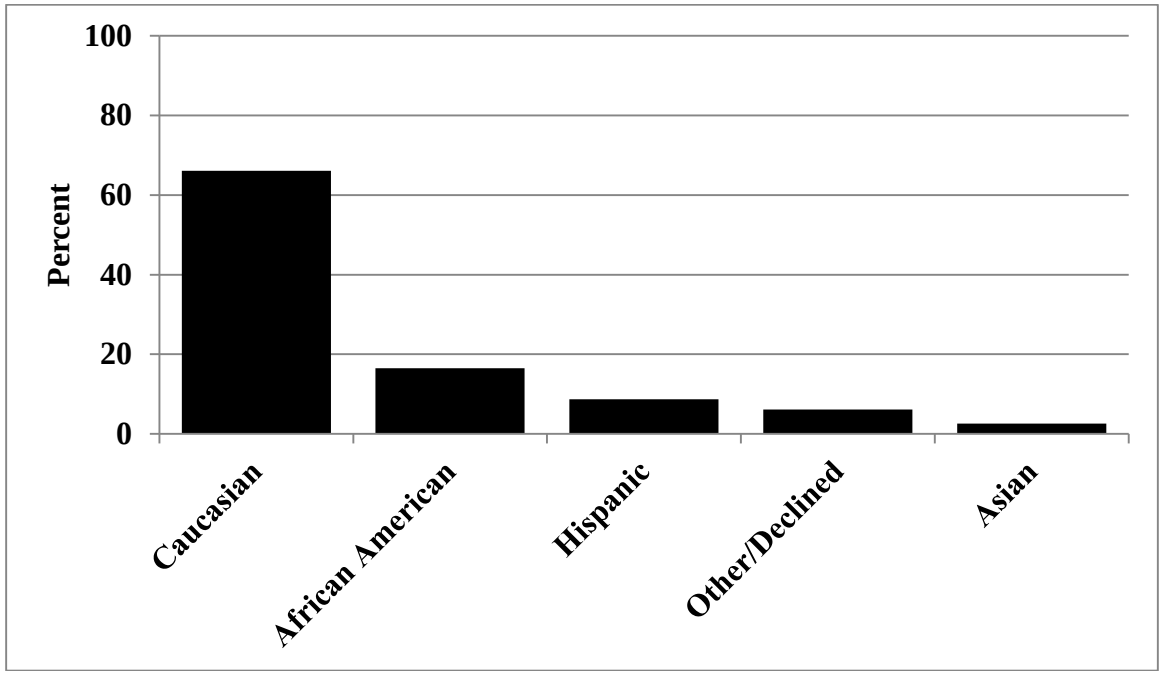


Figure 3.
Participant Self-Reported Traumatic Event

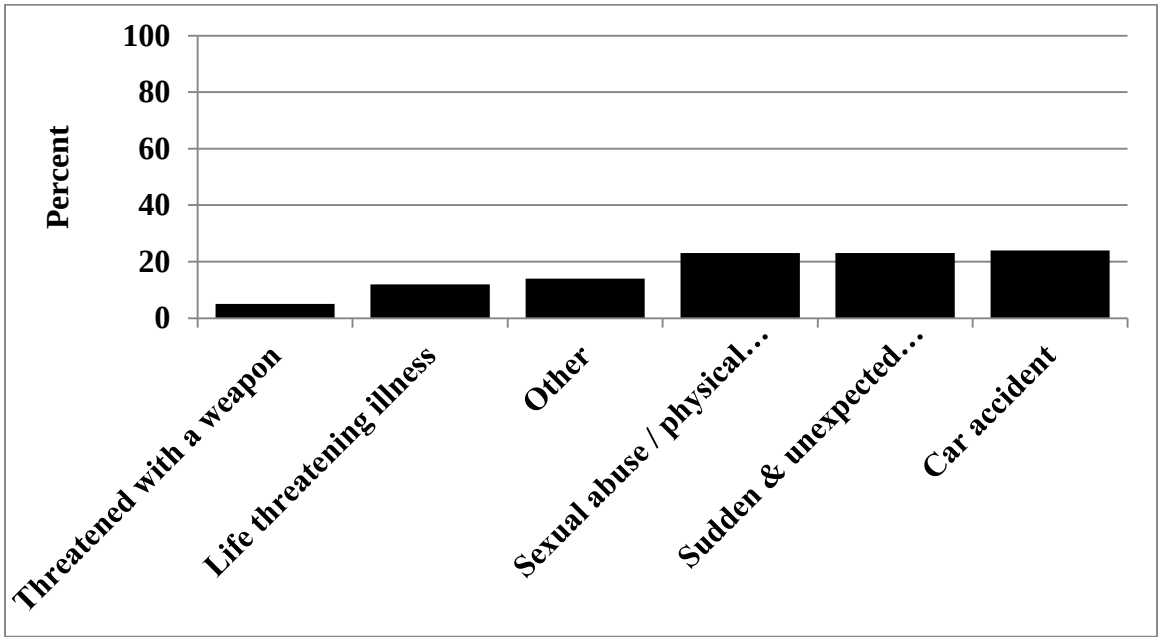
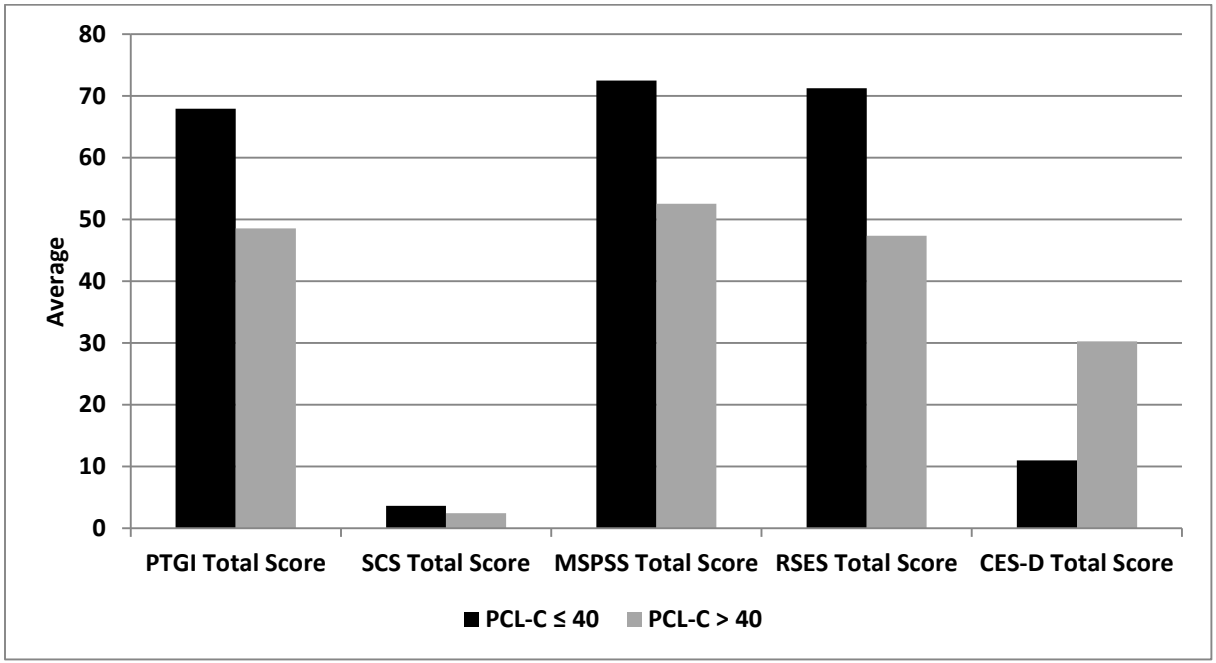


Figure 4
Participant Average instrument Scores per PCL-C > 40 or ≤ 40



APPENDIX A: RECRUITMENT FLYER

Are you interested in participating in a research study that examines nursing student's psychological reaction to life's trauma?

If yes,

Read the following requirements

This study will include undergraduate students, age 18 and above, enrolled at USF College of Nursing.
Participants will be selected among those who have stated they have had at least one self-reported traumatic event in their life and are willing to share the trauma experiences completing a battery of on-line questionnaires. The study is completed at USF. Students will need about 30 minutes to fill in all the questions as listed in the Survey monkey questionnaire
After the completion of the survey packets, participants will be paid $10 as an incentive by a gift card.

If you are interested or would like to find out more about this research opportunity, please contact Elena Rebulla at erebulla@health.usf.edu

Informed Consent to Participate in Research
Information to Consider Before Taking Part in this Research Study

IRB Study # 00005431

You are being asked to take part in a research study. Research studies include only people who choose to take part. This document is called an informed consent form. Please read this information carefully and take your time making your decision. Ask the researcher or study staff to discuss this consent form with you, please ask him/her to explain any words or information you do not clearly understand. We encourage you to talk to your family and friends before you decide to take part in this research study. The nature of the study, risks, inconveniences, discomforts, and other important information about the study are listed below:

There may be some momentary discomfort that can be experienced during the recall of the traumatic event(s). The risk is considered minimal.

We are asking you to take part in a research study called:

Psychological reaction to life's traumas: well-being and trauma among college nursing students

The person who is in charge of this research study is Dr. Edward Hickling**.** This person is called the Principal Investigator. However, other research staff may be involved and can act on behalf of the person in charge. Elena Rebulla is being guided in this research by Dr. Edward Hickling.

The research will be conducted at USF – College of Nursing

Purpose of the study

The purpose of this study is to:

1- How college level student nurses deal with trauma
2- Exploration of psychological factors that are associated with resiliency and with the occurrence of post traumatic growth
3- Investigation about the relationships among ways of reacting to stressors/traumas: negative reactions, resilience and growth.

Study Procedures

If you take part in this study, you will be asked to:

Fill in all the questions as listed in the Survey Monkey questionnaire. Participants will be selected among those who have stated they have had a traumatic event and that are willing to share the trauma experiences completing the battery of questionnaires.

Therefore, the inclusion criteria is for nursing students who have experienced at least one traumatic event and the exclusion criteria is for nursing students who have never experienced any self- reported traumatic event. You must be at least 18 years of age to participate in the study.

This study will use survey methodology. We will include standardized scales of psychological functioning and trauma history. Students will need about 30 minutes to complete these on-line questionnaires.

While the subject may agree to participate in the study, subjects may withdraw at any time. The identity of participants will be protected by keeping subject's name separate from stored data. To protect the identity of the subject records will be kept in the computer file storage. The survey will be anonymous. Participants do not write their name on the survey. Each participant will be able to either fill in the questionnaires anonymously or to list their ID student number in case they want to receive $10 incentive gift card, in which case the ID number will be destroyed right after receiving the gift card. Participants should understand that eventually listing their ID may link the study to them. Only the investigative staff will have access to the data. However it is not the purpose of the research to keep identifiers and all data will be disseminated in aggregate form. When the project is over, data collected will be reviewed by study personnel for completeness and it will be used for correlational and descriptive analyses. Data will be kept in the computer file storage for 6 years; after all they will be destroyed.

Total Number of Participants
About 200 hundreds of participants will take part in this study at USF
Alternatives
This is a voluntary study. You have to feel free to participate or stop it at any time.
Benefits
We are unsure if you will receive any benefits from taking part in this research study.

Risks or Discomfort
This research is considered to be minimal risk. That means that the risks associated with this study are the same as what you face every day. There are no known additional risks to those who take part in this study.
There may be some momentary discomfort that can be experienced during the recall of the traumatic event(s). The risk is considered minimal and participants can stop at any point of the questionnaires. Study personnel will be available to answer any questions.
Compensation
All participants, after the completion of survey packets, will be compensated with a $10 gift card for partaking in this study.
Participants will receive their incentive providing their ID number to the study personnel.
Cost
There are no costs involved for you to take part in this study.
Conflict of Interest Statement
There are no conflicts or potential conflicts of interest in this study.
Your Rights:
You can refuse to sign this form. If you do not sign this form you will not be able to take part in this research study and therefore not be able to receive the research related interventions. However, your health care outside of this study and benefits will not change.
How Do I Withdraw Permission to Use My Information?

You can revoke this form at any time by sending a letter clearly stating that you wish to withdraw your authorization to use of your health information in the research. If you revoke your permission:

- You will no longer be a participant in this research study;
- We will stop collecting new information about you;
- We will use the information collected prior to the revocation of your authorization. This information may have already been used or shared with others, or we may need it to complete and protect the validity of the research;
- Staff may need to follow-up with you if there is a medical reason to do so.

To revoke this form, please write to:

Principal Investigator	Edward Hickling at edhickling@health.usf.edu
or	
Co-Investigator	Elena Rebulla at erebulla@health.usf.edu

While we are conducting the research study, we cannot let you see or copy the research information we have about you. After the research is completed, you have a right to see the information about you, as allowed by USF policies.

Privacy and Confidentiality

We will keep your study records private and confidential. Certain people may need to see your study records. By law, anyone who looks at your records must keep them completely confidential. The only people who will be allowed to see these records are:

The research team, including the Principal Investigator, study coordinator, research nurses, and all other research staff**.**

Certain government and university people who need to know more about the study. For example, individuals who provide oversight on this study may need to look at your records. This is done to make sure that we are doing the study in the right way. They also need to make sure that we are protecting your rights and your safety.

Any agency of the federal, state, or local government that regulates this research. This includes the Department of Health and Human Services (DHHS) and the Office for Human Research Protection (OHRP).
The USF Institutional Review Board (IRB) and its related staff who have oversight responsibilities for this study, staff in the USF Office of Research and Innovation, USF Division of Research Integrity and Compliance, and other USF offices who oversee this research.
We may publish what we learn from this study. If we do, we will not include your name. We will not publish anything that would let people know who you are.

Voluntary Participation / Withdrawal

You should only take part in this study if you want to volunteer. You should not feel that there is any pressure to take part in the study. You are free to participate in this research or withdraw at any time. There will be no penalty or loss of benefits you are entitled to receive if you stop taking part in this study. *"Decision to participate or not to participate will not affect your student status (course grade) or job status."*

You can get the answers to your questions, concerns, or complaints

If you have any questions, concerns or complaints about this study, or experience an adverse event or unanticipated problem, e-mail to Elena Rebulla at erebulla@health.usf.edu or call at 305-951-3360.
If you have questions about your rights as a participant in this study, general questions, or have complaints, concerns or issues you want to discuss with someone outside the research, call the USF IRB at (813) 974-5638.

It is up to you if you want to take part in this study. Please understand that by proceeding with the online survey you are agreeing to participate in the research.

APPENDIX C: DEMOGRAPHIC QUESTIONNAIRE

*Student ID number*_____ (Only necessary if you wish to receive $10 gift card)

1. AGE _____
2. GENDER _____
3. RACE _____

_____a. African American _____b. Caucasian _____c. Hispanic

_____d. Indian _____e. Native American _____f. Asian _____g. Other

Years in College:

1. Freshmen _____ 2.Sophomore _____ 3. Junior _____ 4. Senior _____

Marital status:

Single _____ 2. Married _____ 3. Divorced _____

Geographic location of residence: _____

APPENDIX D: TRAUMATIC EVENT QUESTIONNAIRE

Traumatic Event Questionnaire

Listed below are a number of traumatic life events which people sometimes experience. Please read over this list carefully, and mark only those events that describe a *significant event* that have experienced. By significant event, we are referring to events which resulted in *considerable emotional distress at the time* and may *continue to result in ongoing distress*.

	I *personally* experienced this event	**I *directly* witnessed this event happen to someone**	**I learned about the occurrence of this event from someone else**
1. Natural Disaster (e.g., flood, hurricane, earthquake)			
2. Car accident			
3. Plane crash			
4. Drowning or near drowning			
5. Machinery accident			
6. Explosion			
7. Home fire			
8. Chemical Leak or exposure to radiation			
9. Warfare or combat			
10. Sudden AND unexpected death of someone close to you			
11. Life threatening illness			
12. Threatened with a weapon			
13. Physical attack (kicked, punched, beaten up) when you were *under age 18*			
14. Physical attack (kicked, punched, beaten up) when you were *over age 18*			
15. Seeing someone killed			
16. Someone threatening to seriously harm or kill you			
17. Sexual abuse, sexual assault, or rape when you were *under age 18*			
18. Sexual abuse, sexual assault, or rape when you were *over age 18*			
19. Other traumatic event not yet mentioned (Please describe):			

APPENDIX E: PTSD Checklist – Civilian Version (PCL-C)

Instruction to patient: Below is a list of problems and complaints that veterans sometimes have in response to stressful life experiences. Please read each one carefully, put and X in the box to indicate how much you have been bothered by that problem in the last month.

RESPONSE	Not at all (1)	A little bit (2)	Moderately (3)	Quite a bit (4)	Extremely (4)
1.Repeated, disturbing *memories, thoughts, or images* of a stressful experience from the past?					
2.Repeated, disturbing *dreams* of a stressful experience from the past?					
3.Suddenly *acting* or *feeling* as if a stressful experience *were happening* again (as if you were reliving it)?					
4.Feeling *very upset* when *something reminded* you of a stressful experience from the past?					
5.Having *physical reactions* (e.g., heart pounding, trouble breathing, or sweating) when *something reminded* you of a stressful experience from the past?					
6.Avoid *thinking about* or *talking about* a stressful experience from the past or avoid *having feelings* related to it?					
7.Avoid *activities* or *situations* because they *remind you* of a stressful experience from the past?					
8.Trouble *remembering important parts* of a stressful experience from the past?					
9.Loss of interest in things that you used to enjoy?					
10.Feeling *distant* or *cut* off from other people?					
11.Feeling *emotionally numb* or being unable to have loving feelings for those close to you?					
12.Feeling as if your future will somehow be cut short?					
13.Trouble *falling* or *staying asleep*?					
14.Feeling *irritable* or having *angry outbursts*?					
15.Having *difficulty concentrating*?					
16.Being *"super alert"* or watchful on guard?					
17.Feeling *jumpy* or easily startled?					

APPENDIX F: POSTTRAUMATIC GROWTH INVENTORY (PTGI)

Please indicate for each of the statements below the degree to which this change occurred in your life as result of your traumatic experience, using a scale of 0 – 5 where 0= "I did not experience this change as a result of my traumatic experience" and 5 ="I experienced this change to a very great degree as a result of my traumatic experience.

	0 no change	1 a very small degree	2 a small degree	3 a moderate degree	4 a great degree	5 a very great degree
1.My priorities about what is important in life						
2.An appreciation for the values of my own life						
3.I developed new interests						
4.A feeling of self-reliance						
5.A better understanding of spiritual matters						
6.Knowing that I can count on people in times of trouble						
7.I established a new path for my life						
8.A sense of closeness with others						
9.A willingness to express my emotions						
10.Knowing I can handle difficulties						

11.I'm able to do better things with my life						
12. Being able to accept the way things work out						
13.Appreciating each day						
14. New opportunities are available which wouldn't have been otherwise						
15.Having compassion for others						
16.Putting effort into my relationships						
17.I'm more likely to try to change things which need changing						
18.I have a stronger religious faith						
19.I discovered that I am stronger than I thought I was						
20.I learned a great deal about how wonderful people are						
21. I accept needing others						

APPENDIX G: MULTIDIMENSIONAL SCALE OF PERCEIVED SOCIAL SUPPORT (MSPSS)

Instructions: We are interested in how you feel about the following statements. Read each statement carefully. Indicate how you feel about each statement.

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

APPENDIX H: SELF-COMPASSION SCALE (SCS)

HOW I TYPICALLY ACT TOWARDS MYSELF IN DIFFICULT TIMES. Please read each statement carefully before answering. To the left of each item, indicate how often you behave in the stated manner, using the following scale:

Almost never				Almost always
1	**2**	**3**	**4**	**5**

_____ 1. I'm disapproving and judgmental about my own flaws and inadequacies.

_____ 2. When I'm feeling down I tend to obsess and fixate on everything that's wrong.

_____ 3. When things are going badly for me, I see the difficulties as part of life that everyone goes through.

_____ 4. When I think about my inadequacies, it tends to make me feel more separate and cut off from the rest of the world.

_____ 5. I try to be loving towards myself when I'm feeling emotional pain.

_____ 6. When I fail at something important to me I become consumed by feelings of inadequacy.

_____ 7. When I'm down and out, I remind myself that there are lots of other people in the world feeling like I am.

_____ 8. When times are really difficult, I tend to be tough on myself.

_____ 9. When something upsets me I try to keep my emotions in balance.

_____ 10. When I feel inadequate in some way, I try to remind myself that feelings of inadequacy are shared by most people.

_____ 11. I'm intolerant and impatient towards those aspects of my personality I don't like.

_____ 12. When I’m going through a very hard time, I give myself the caring and tenderness I need.

_____ 13. When I’m feeling down, I tend to feel like most other people are probably happier than I am.

_____ 14. When something painful happens I try to take a balanced view of the situation.

_____ 15. I try to see my failings as part of the human condition.

_____ 16. When I see aspects of myself that I don’t like, I get down on myself.

_____ 17. When I fail at something important to me I try to keep things in perspective.

_____ 18. When I’m really struggling, I tend to feel like other people must be having an easier time of it.

_____ 19. I’m kind to myself when I’m experiencing suffering.

_____ 20. When something upsets me I get carried away with my feelings.

_____ 21. I can be a bit cold-hearted towards myself when I'm experiencing suffering.

_____ 22. When I'm feeling down I try to approach my feelings with curiosity and openness.

_____ 23. I’m tolerant of my own flaws and inadequacies.

_____ 24. When something painful happens I tend to blow the incident out of proportion.

_____ 25. When I fail at something that's important to me, I tend to feel alone in my failure.

_____ 26. I try to be understanding and patient towards those aspects of my personality I don't like.

APPENDIX I: RESPONSE TO STRESSFUL EXPERIENCE SCALE (RSES)

The following statements describe how some individuals may think, feel, or act during and after the most stressful events in life. Please indicate how well each of these statements describes you during and after life's most stressful events.

4	3	2	1	0

Exactly Like Me Not at Not At All Like Me

During and after life's most stressful events, I tend to ...

1… take action to fix things.

2 …not give up trying to solve problems I think I can solve.

3 …find a way to do what's necessary to carry on.

4 …pray or meditate.

5….face my fears.

6….find opportunity for growth.

7….calm and comfort myself.

8….try to "recharge" myself before I have to face the next challenge.

9….see it as a challenge that will make me better.

10...look at the problem in a number of ways.

11.. look for creative solutions to the problem.

12...put things in perspective and realize I will have times of joy and times of sadness.

13…be good at determining which situations are

14…find meaning from the experience.

15. ..find strength in the meaning, purpose, or mission of my life.

16. ..know I will bounce back.

17. ..expect that I can handle it.

18. ..learn important and useful life lessons.

19. ..understand that bad things can happen to anyone, not just me.

20. ..lean on my faith in God or a higher power.

21. ..draw upon lessons learned from failures and past mistakes.

22. ..practice ways to handle it better next time.

APPENDIX L: CENTER FOR EPIDEMIOLOGIC STUDIES DEPRESSION SCALE (CESD-D)

Below is a list of some of the ways you may have felt or behaved. Please indicate how often you have felt this way during the past week:

	Rarely or none (less than 1 day)	Some or a little (1-2 days)	Occasionally or moderate (3-4 days)	All of the time (5-7 days)
During the past week….				
1. I was bothered by things that usually don't bother me	0	1	2	3
2. I did not feel like eating, my appetite was poor	0	1	2	3
3. I felt that I could not shake off the blues even with help from my family	0	1	2	3
4. I felt like I was just as good as other kids	0	1	2	3
5. I had trouble keeping my mind on what I was doing	0	1	2	3
6. I felt depressed	0	1	2	3
7. I felt everything I did was an effort.	0	1	2	3
8. I felt hopeful about the future	0	1	2	3
9. I though my life had been a failure	0	1	2	3
10. I felt fearful	0	1	2	3

11. My sleep was restless	0	1	2	3
12. I was happy	0	1	2	3
13. I talked less than usual.	0	1	2	3
14. I felt lonely	0	1	2	3
15. People were unfriendly	0	1	2	3
16. I enjoyed life	0	1	2	3
17. I had crying spells	0	1	2	3
18. I felt sad	0	1	2	3
19. I felt that people disliked me	0	1	2	3
20. I could not “get going”	0	1	2	3