COPING STYLES AND PROTECTIVE FACTORS AS MODERATORS OF ADJUSTMENT AFTER TRAUMA EXPOSURE

By

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A thesis

Presented to the faculty of

Towson University

in partial fulfillment

of the requirements for the degree

Master of Arts

Department of Psychology

Towson University

Towson, Maryland 21252

May, 2018

TOWSON UNIVERSITY

OFFICE OF GRADUATE STUDIES

THESIS APPROVAL PAGE

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Entitled:

Coping Styles and Protective Factors as Moderators of Adjustment After Trauma Exposure

Has been approved by the thesis committee as satisfactory completing the thesis requirements for the degree: Master of Arts

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Abstract

Over 50% of individuals experience at least one traumatic event in their lifetime which can range widely from a car accident to torture. These experiences are extremely aversive and result in negative life outcomes including Post Traumatic Stress Disorder (PTSD). It is believed that some individuals possess traits and characteristics, such as adaptive coping styles, that act in compensatory or buffering ways to reduce PTSD symptoms. This study examined how coping styles interact with a traumatic event to influence PTSD symptoms. Participants included 390 college students from an East Coast University. Compensatory effects revealed humor and trauma coping self-efficacy reduced PTSD symptoms while self-blame, substance use, avoidance, and distraction lead to increased PTSD symptoms. Buffering effects found active coping, acceptance, and trauma coping-self efficacy weakened the relationship between trauma and PTSD symptoms. Findings indicate the importance of adaptive coping styles when faced with aversive events in life.

Keywords: Trauma, PTSD, Coping Styles

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Introduction

According to the American Psychological Association (APA), over 50% of the population is affected by at least one traumatic event throughout their lifetime ("American Psychological Association: Facts about women and trauma", 2016). A traumatic event can include a wide range of experiences. Some examples are natural disasters, sexual violence, abuse, neglect, kidnapping, death, and combat. Additionally, the lifetime prevalence of Posttraumatic Stress Disorder (PTSD) by age 75 is 8.7% in the United States. Prevalence rates vary across cultures and age groups, with individuals whose vocation increases the risk of traumatic exposure being most at risk for developing PTSD (American Psychiatric Association, 2013). In the population, if over 50% of individuals are exposed to a traumatic event while only 8.7% develop PTSD, it is important to consider the mechanisms that lead to the development of PTSD, and other factors that either exacerbate or help ameliorate the potential negative effects of these aversive life events.

Overview of the Literature

In the following section, types of trauma will be discussed along with the link between trauma and PTSD, depression, and anxiety with relevant links to previous research. After this has been established a brief history of coping will be discussed along with two ways in which coping can affect a situation (i.e. compensatory effects and buffering effects). After this has been discussed, more specific types of coping will be discussed along with how these coping styles act in either compensatory of buffering ways.

Types of Trauma

When the word trauma is used, many individuals automatically think of violent traumas, such as rape or childhood abuse. It is important to keep in mind that although these are terrible acts, there are other more common= events that occur which also are described as traumatic. Wolfe and Kimerling (1997) describe 29 situations which are deemed traumatic. These range from what is typically construed as trauma such as physical or sexual abuse but also includes events that may be thought of as more typical such as money problems, divorce, and death of a loved one. For the purposes of this study, the definition of a traumatic event is any situation or event that an individual could develop an adverse reaction to and subsequently exhibit poor life outcomes. Reasoning for why the range of traumatic events varies so widely can be due to individual's varied reactions to these events.

With individuals experiencing diverse physical, emotional, and behavioral responses to the same event, research has started to focus on the subjective nature of trauma (Boals, 2017; Weinberg & Gil, 2016). What one person may describe as incapacitating, another may be unaffected by. The difference in perspective can be influenced by both genetic and environmental differences in individuals. Subjective nature of the trauma includes experiencing the event as a threat, and an individual's estimated proximity to the event, both physical and emotional (Weinberg & Gil, 2016). This type of research advocates including a wide range of events when asking about trauma because researchers cannot know what others define as a traumatic experience.

Because traumatic events can vary so widely in type, researchers have considered a broad distinction between interpersonal and non-interpersonal traumas. Interpersonal

trauma is a trauma that is actively being done to a person. Examples include rape, sexual harassment, and abuse. These tend to be more severe in nature creating more aversive reactions (Charuvastra & Cloire, 2008) but that is not always the case. Non-interpersonal traumas are traumas that occur without another person being directly involved. Examples of these include a natural disaster, abortion, and serious accidents. Regardless of the category, if an individual describes the event as a threat and has an emotional reaction to the situation, it can be considered a form of trauma.

Stressful Life Events and Negative Outcomes After Trauma

For individuals who have been through what they determine to be a traumatic event, certain predictable negative outcomes can be expected. The most common symptoms experienced are those of Posttraumatic Stress Disorder, depression, and anxiety. A study done by Wang, Tsay and Bond (2005) investigated psychological effects of severe traffic accidents in Taiwan. Six weeks after the accident, 83% of the participants were still experiencing PTSD symptoms, 63% were experiencing depression, and 60% were experiencing anxiety. Those who reported PTSD symptoms were also more likely to report having depression and anxiety. These symptoms were negatively correlated to quality of life.

In a second study, Goenjian et al. (2000) examined the effects of two different types of trauma on distressful outcomes over time. These authors researched survivors of a severe earthquake, a form of non-interpersonal trauma, and survivors of either actual or witnessed severe physical violence, a form of interpersonal trauma. The violence included torture, stabbing, burning, and murder. Participants in this study were contacted one and a half years after the incident and again four and a half years after. Ratings for

PTSD, depression, and anxiety were collected at both times. Results indicated that within the three-year gap, mean ratings on all scales decreased, but participants in both groups who experienced clinical levels of PTSD, depression, and anxiety at one and a half years were also experiencing clinical levels at four and a half years. There was not a difference in severity of PTSD between interpersonal and non-interpersonal trauma types. This study shows that symptoms after traumatic events can remain fairly stable over time. Without an intervention, it is unlikely these symptoms will decrease significantly. Again, in this study all three outcome variables were positively intercorrelated, showing that traumatic events can impact an individual's life negatively in several ways. Understanding the underlying mechanisms that are producing and maintaining these symptoms is important in regards to future treatment of the symptoms.

There are many other studies that replicate this finding that traumatic events lead to negative outcomes, namely PTSD, in populations such as women (Schumm, Briggs-Phillips & Hobfoll, 2006), prisoners (Komarovaskaya, Loper, Waren, & Jackson, 2011), and firefighters (Meyer et al., 2012). These outcomes can also be found with a many different types of trauma such as sexual assault (Frazier, Mortenson, & Steward 2005; Ullman & Filipas, 2005), natural disasters (Cofini, Carbonelli, Cecillia, Binkin, & Di Orio, 2015), motor vehicle accidents (Cieslak, Benight, & Lehman, 2008;Wang, Tsay, & Bond 2005), torture (Goenjian et al., 2000; Nickerson et al., 2016), combat (Hassija, Jakupcak, Maguen, & Shipherd, 2012), and more. It is well established that traumatic events lead to negative outcomes and result in poorer life functioning after the event.

Even though individuals can experience several negative outcomes after traumatic events, such as anxiety and depression, it is PTSD that is unique to experiencing

traumatic events. In order for an individual to develop PTSD they have to be involved in or witness a trauma. Depression and anxiety can be caused by many other factors and a trauma does not need to take place to constitute these disorders. There is something unique about traumatic events that leads to PTSD and distinct intrusive symptoms such as flashbacks, distressing memories, and distress caused by cues that symbolize the event. Individuals also experience negative changes in mood or cognitions and avoidance of stimuli associated with the event. This unique relationship makes studying the interaction between trauma and PTSD and factors that can influence the relationship even more important.

Variables with Potential to Influence Trauma and PTSD

Having established the link between trauma exposure and development of PTSD, it is important to look at variables that have a relationship with PTSD symptoms, either protecting the individual or increasing their risk, and variables that may change the relationship between trauma and PTSD symptoms. These variables are collectively termed coping mechanisms and are various skills people use to try to deal with the trauma. Coping mechanisms that reduce PTSD symptoms are typically thought of as adaptive and can also be called protective factors. Those that increase PTSD symptoms are known as maladaptive. An individual who is able to use coping mechanisms that protect the individual from negative life outcomes, like PTSD, may be considered resilient. If a person is lacking protective factors they are less resilient and subsequently more prone to negative outcomes such as PTSD. Important coping mechanisms include active coping, acceptance, humor, social support, and trauma coping self-efficacy.

The Processes of Protective Factors: Preventative, Compensatory, or Buffering

Along with understanding if a variable has the ability to act as a protective factor in a traumatic situation, it is also important to understand how this variable is able to be protective. According to Rosenthal and Wilson (2008) mechanisms can be protective in three ways: preventive, compensatory, and buffering. In a typical relationship among variables there is a trigger and a response to the trigger, or an outcome. For example, stress leads to poor sleep. There are also things that can affect this relationship making sleep quality worse or better. Something will act in a preventative manner in this relationship if it directly effects stress which subsequently will make sleep better or worse. Exercise is an example. If an individual exercises (or uses some other form of self-care) it will reduce their stress and as a result they will have a better night sleep. This is also called an indirect effect because exercise is indirectly affecting sleep. Sleeping pills can also affect sleep. Regardless whether an individual is stressed, they can take a sleeping pill and increase their sleep quality. This is called a compensatory effect. The sleeping pill is directly addressing the outcome. The last way the relationship can be affected is if the relationship between stress and poor sleep is changed. An example of a factor that may influence the relationship is a person's belief in their ability to handle the stress. If an individual is stressed but they know they will get through it, their sleep quality would likely be more like times when they are not stressed. This is called a buffering effect because the individual's self-efficacy is protecting them during times when they are specifically dealing with stress.

This idea can also be applied to the relationship between trauma and PTSD or distress. A protective factor would act in a preventive way if it acts directly on the

trauma to reduce the level of exposure and subsequently reduce the level of PTSD symptoms. An example of protective factors that reduces trauma exposure are living in a safe area and being male. These individuals are less likely to experience a trauma and therefore are less likely to suffer from PTSD. Coping mechanisms can act in compensatory or buffering ways. Take a positive outlook for example. If a person generally tends to look on the bright side of things they are likely to be happier, experience less distress and PTSD symptoms regardless of if they are using their positive outlook to deal with the trauma. This is a compensatory effect because the positive outlook is directly affecting the PTSD or distress and does not take into account the trauma. A positive outlook can also have a buffering effect, if the person is using that mechanism to deal with the trauma. To act as a buffer, the person must look on the bright side when specifically thinking about the traumatic situation. They would have thoughts such as, “I may have been robbed, but at least I did not get hurt”. This would change the relationship between trauma and the PTSD so that he or she experiences less PTSD or distress These types of processes have been discussed as early as 1993 (Coie et al., 1993).

The same three effects could also work the same way for maladaptive coping styles, but in the opposite direction. The mechanism could act directly on the trauma and instead of reducing the level of exposure, increase the level. Examples would be being a first responder, or being in the military. Maladaptive coping mechanism could act as a main effect directly increasing symptoms, or change the relationship between PTSD and trauma where the relationship is strengthened. Individuals that use self-blame in most aspects of their life are likely to have more distress or PTSD regardless of if they are using self-blame as a way to deal with trauma. This is a compensatory effect. It becomes

a moderating effect when the person also uses self-blame when dealing specifically with a trauma. All three types are important to understand and study to better understand how to best use certain coping styles, but for the purpose of this study only compensatory and buffering interactions will be examined. The nature of the study was not conducive to examining preventive effects.

Brief History of Coping Research Since 1980

When the idea of coping styles was first introduced around the late 1970's, Folkman and Lazarus described coping in two main ways: emotion-focused coping and problem-focused coping (Folkman & Lazarus, 1980). Emotion-focused coping includes mechanisms that serve to regulate the emotions ones feels when faced with stress. Problem-focused coping styles are those that change the relationship between the person and the stressor such as actively doing something about the problem. The initial research on coping has expanded in several ways. Problem-focused coping has expanded to include task-oriented coping (Higgins & Endler, 1995), and approach-oriented coping (Elzy, Clark, Dollard, Hummer, 2013). These three types of coping still tend to focus on one's ability to actively solve problems and have stayed relatively consistent. Emotion-focused coping expanded in more diverse directions. Higgins and Endler (1995) describe emotion-oriented coping as strategies like day dreaming, ruminating, and negative emotional responses which increase PTSD. On the other hand, Carver, Scheier, and Weintraub (1989) describe emotion-focused coping as including seeking emotional support, acceptance, and turning to religion that lead to fewer PTSD symptoms.

These definitions of problem focused and emotion focused coping are still used, but research is also concerned with if the style of coping is helpful or harmful, and thus

the development of adaptive and maladaptive coping terms. Problem-focused coping is typically defined as adaptive (Higgins & Endler, 1995). Emotion focused coping is not as easily defined as adaptive or maladaptive since there are many types of emotional coping. Looking at coping as either adaptive or maladaptive allows researchers to look at specific variables such as religion, or social support and better understand how the specific variables help or hurt when recovering from trauma. Looking at specific factors also lets us understand how they influence PTSD symptoms and if the coping style is acting in a compensatory or buffering way. For the purposes of this project, specific types of both positive and negative forms of coping will be examined by using the brief COPE, a self-report measure that looks at 14 different coping styles.

Adaptive Coping Styles and the Relationship with PTSD Symptoms

Active Coping. Active coping is defined as techniques that focus on actively doing something about the situation which is identical to task-oriented coping mentioned by Higgins and Endler (1995) and is included in the broad category of problem-focused coping. Studies have shown that actively doing something about the situation acts in a compensatory way, directly reducing PTSD symptoms irrespective of the trauma (Hassija, Garvert & Cloitre, 2015; Rauch, Defever, Oetting, Graham-Bermann, & Seng, 2013). Buffering effects have been found by Gudiño, Stiles, & Diaz, (2017) but results showed active coping strengthened the relationship between trauma and PTSD which researchers explained may be due the Latino culture and types of traumas the sample was exposed to. Marginalized youth may feel that the traumas they face are uncontrollable which reduces the effectiveness of active coping mechanisms.

Social Support. Social support is a widely studied topic in trauma research. There are different types of social support (i.e. instrumental and emotional) and social support given by different support systems (i.e. family, peers, coworkers, and significant others). Instrumental social support is support that is given in tangible means such as offering help, services, or problem solving (Mikulincer & Florian, 1997). An example would be an individual's parents helping them to afford a new car after a bad accident. Emotional support can be found from friends, family, or anyone who can offer comfort during times of distress. Emotional support is something that is perceived, not concrete and includes such things as feeling listened to, feeling as if someone else cares for your well-being, and feeling understood (Lincoln, 2000). Social support has been found to predict fewer PTSD symptoms in many populations (compensatory effect; Cox, Bakker, & Naifeh, 2017; Littleton, Grills-Taquechel, Axsom, Bye & Buck 2012; Moore, et al., 2017; Weinberg, 2017).

When examining buffering effects of social support, the research is less conclusive. For every study that supports a buffering effect (Arnberg, Hultman, Michel, & Luntin, 2012; Gabert-Quillen et al., 2012; Glass, Perrin, Campbell, & Soeken, 2007; Rosenthal & Wilson, 2008; Schwarzer, Cone, Li, & Bowler, 2016) there are just as many studies that can be found to contradict the evidence (Beeble, Bybee, Sullivan, & Adams, 2009; Burton, Stice, & Seeley, 2004; Cox, Buhr, Owen, & Davidson 2015; Krause, 2004; Stroebe, Zech, Stroebe, & Abakoumkin, 2005). To add to the disparaging evidence, Wilson and Scarpa (2014) examined social support with two types of interpersonal trauma, childhood physical abuse and childhood sexual assault. Social support acted as a buffer only against physical abuse.

Acceptance. Acceptance as a form of coping mechanism is about recognizing that the trauma is real and learning to live with it (Carver, 1989). Several studies have found compensatory effects in varying populations (Armour, 2010; Butler, et al., 2005; Parappully, Rosenbaum, van den Daele & Nzewi, 2002; Roussi, Krikeli, Hatzidimitriou, Koutri, 2007; Somer, Ruvio, Sever, & Soref, 2007), meaning that greater acceptance was associated with fewer PTSD symptoms after a traumatic event.

Little has been done to explore if acceptance can moderate the relationship between experience of a stressful event and the subsequent development of PTSD symptoms. There has been research of acceptance as a buffer between maladaptive thinking in soldiers who came back from deployment. Results suggested that the relationship between maladaptive thinking and PTSD was partially moderated by acceptance (Shipherd & Salters-Pedneault, 2018).

Humor. In the Brief COPE and subsequently this study, humor is defined as being able to make fun of the situation. Across only a few studies, research has shown fairly consistently that humor is capable of acting as both a buffer and a compensatory variable (Sliter, Kale, & Yuan, 2014; Besser, Weinberg, Zeigler-Hill, & Neria, 2015). Individuals who laugh and are generally able to take life less seriously have fewer PTSD symptoms when they face trauma regardless of if they are also able to make fun of the traumatic event. Research shows if individuals are able to make jokes out of the event (regardless of if they have this general life outlook), they also have fewer PTSD symptoms because the relationship between trauma and PTSD is weakened.

Religion. According to Bryant-Davis and Wong (2013) religious coping can encompass endorsing religious beliefs, engaging in religious behaviors, like attending

church, and reaching out for support from a religious community. Individuals who use religious coping may see it as a support system, similar to the idea of social support. There has been evidence of a compensatory effect (Fallot & Heckman, 2005) Interestingly, Fallow and Heckman (2005) found that religion only helped for individuals who experienced a small number of traumas. After many traumas, individuals turned to negative religious coping (seeing God as punishing, feeling abandoned by God). Few studies have specifically looked at religion for buffering effects and an effect was not found (Fabricatore, Randal, Rubio, Gilner, 2004). With that said, a similar construct, spirituality, has been shown to moderate the same relationship (Fabricatore, Handal, & Fenzel, 2000).

Maladaptive Coping Mechanisms and the Relationship with PTSD Symptoms

Distraction and Avoidant Coping. Main types of avoidant coping strategies include distraction, denial, and behavioral disengagement. These strategies are avoidant because individuals are attempting to escape negative affect that often accompanies trauma. The use of these strategies may seem helpful to individuals in the short term, but studies have shown that individuals who use these strategies have poorer outcomes, including higher rates of PTSD (Frazier, Mortenson & Steward, 2005; Ullman, 1996).

Substance use. Similar and sometimes included in avoidant coping is substance use. Substance use is prevalent with one recent population-based study showing rates of 10% of traumatized individuals using substances to mitigate PTSD symptoms. Not surprisingly, results also found a negative compensatory effect for substance abuse, suggesting that those who used substances had more PTSD symptoms compared to

individuals who did not (Delker & Freyd, 2014). It is also not uncommon for individuals who have PTSD to also have a comorbid substance use disorder.

Venting. The Brief COPE describes venting as letting out negative emotions to other people or things (Carver 1997). This type of venting as a form of coping has been shown to have a negative compensatory effect, increasing PTSD in several types of trauma (Cofini, Carbonelli, Cecillia, Binkin, & Di Orio, 2015; Saxon et al., 2017; Xia, Ding, Hollon, & Yi, 2015). One study did find an opposite effect with women who were pregnant during hurricane Katrina. Those who used venting to cope were less likely to have stress and pregnancy complications (Oni & Xiong, 2015).

Self-Blame. Self-blame is defined as feeling like the trauma was your fault or that you could have changed the outcome. This can often be associated with guilt. Similar to the other maladaptive coping mechanisms described, self-blame has a compensatory effect on PTSD increasing symptoms in military personnel (Ullman, Townsend, Filipas & Starzynski, 2007), adult sexual assault survivors (Ullman, Peter-Hagene & Relyea, 2014), and natural disasters (Cofini, Carbonelli, Cecillia, Binkin, & Di Orio, 2015), women (Ullman & Filipas, 2005) and college students (Filipas & Ullman, 2006).

Trauma Coping-Self Efficacy

Having certain coping styles has shown to be an important part of the recovery process for individuals suffering from the negative effects of trauma. Along with specific coping mechanisms, general self-efficacy or a belief in yourself has also been shown to increase general well-being after trauma (Shakespeare-Finch, Rees, Armstrong, 2015). A more specific type of self-efficacy, coping self-efficacy (CSE) has also been shown to be important in trauma research. CSE is defined as the perceived ability to manage both

internal and external demands of recovering from trauma (Benight & Bandura, 2004). Low coping self-efficacy has been shown have a compensatory effect for negative outcomes such as greater PTSD symptoms. Benight et al. (2015) even found coping self-efficacy to be a more important predictor than social support. This finding that CSE predicts PTSD symptoms has been found in numerous trauma populations including childhood sexual abuse, motor vehicle accidents (Cieslak, Benight, & Lehman, 2008), terrorist attacks (Benight et al., 2000), and natural disasters like hurricanes (Benight, Ironson, &Durham, 1999).

Before 2015 either general self-efficacy measures were used to capture CSE or event specific measures were used. For example, Benight and Bandura (2004) used a CSE measure specifically for those who had experienced domestic violence trauma. In 2015, Benight et al., created a measure of CSE to be used across all trauma types including trauma in a college population. The measure was found to be an adequate measure of CSE across trauma type. The measure has been used in one study examining a wide range of trauma survivors and their CSE. Among trauma survivors, those with higher self-reported levels of trauma-coping self-efficacy also reported fewer posttraumatic stress symptoms. They also found that CSE mediated the relationship (Samuelson, Bartel, Valadez, Jordan 2016). There are no studies which examine the buffering effect of CSE between trauma and PTSD.

Goals and Hypotheses of the Current Study

The present study aimed to expand on the previous research examining trauma exposure and adjustment outcomes in two ways. First, we used a college student population, who have rarely been studied with regard to trauma exposure, but who do

experience significant negative life events (Boyraz, Baker, Tidwell & Waits, 2016) across a range of severity and hence may demonstrate adjustment challenges in the face of trauma exposure. Additionally, it is important to compare the adjustment profiles of college students exposed to trauma versus individuals in the general population. Secondly, this was one of few studies that attempted to combine multiple moderating variables. Most studies choose to focus on one or two moderating variables such as broad coping styles (problem- focused and emotion-focused), a single specific coping style, or self-efficacy. This study attempted to examine multiple specific coping styles and to discover which ones may be most important in the relationship between trauma and PTSD symptoms.

The current study made the following specific hypothesis. First, we hypothesized that individuals who have experienced a traumatic event will have worse outcomes than individuals who did not report a traumatic event. Specifically, individuals reporting higher frequency of traumatic events will have more PTSD symptoms. Second, we hypothesized that the use of more favorable coping mechanisms including seeking social support, active coping, humor, and acceptance will predict fewer PTSD symptoms in trauma-exposed participants such that those who score high on the favorable protective factors will report fewer PTSD symptoms than those who score low on these protective factors (i.e., compensatory effects of coping on PTSD symptomology). Along with coping styles, trauma coping self-efficacy will also predict fewer PTSD symptoms. Third, we did exploratory analyses to examine if the coping mechanisms, and trauma coping self-efficacy acted as buffers (i.e. moderate the relationship) between trauma frequency

and PTSD symptoms. Finally, if coping mechanisms did moderate the relationship we explored which would be the most important.

Method

Participants

Participants included 390 individuals from a medium sized university in the Mid-Atlantic region of the United States. Participants were collected through the university's research pool system. Students were offered one credit of participation for completing the survey. Age ranges from 18 to 34 years (M = 19.8, SD = 2.38). A majority of participants identified as female (79.25%), 20.45% identified as male, and 0.29% identified as transgender. Out of all participants, 57.92% of participants were Caucasian, 22.19% African American, 6.05% Asian/Pacific Islander, and 6.92% identified as other. The majority of participants were Freshman (46.67%) but the remainder of participants were evenly dispersed as Sophomores (20.58%), Juniors (16.22%) and Seniors (16.52%).

Procedure

The research methodology for this project was comprised completely of self-report measures that were combined to form one survey that participants completed through Qualtrics®. Participants were recruited through the university's online portal. Those who signed up for the study met with a research assistant, who led them into a room with a single computer. Participants read the consent form on the computer and clicked a box which indicated they consented. They were not asked their names for the purpose of anonymity, so that there was no way to link their responses to their name. They were asked to write their names on a piece of paper that was put directly into an

envelope, solely for the purpose of assigning credit. The remainder of the research process was strictly anonymous, and the researcher had no way to pair the name of the participant to their responses. The computer where the responses were given was a shared computer at the university also making it impossible to match participants and their answers via IP address. The compiled measures took about 30 minutes to complete and consisted of measures that assessed trauma, anxiety, depression, attachment, coping styles, protective factors, well-being, and post-traumatic stress symptoms. For the purpose of this study, only measures assessing coping styles, trauma, and PTSD were examined. Once participants completed the battery, they were debriefed and given resources to the counseling center on campus in case the questions triggered a negative emotional response. Once participants left, the names were taken from the envelope, class credit was given to individuals who participated, and their names were immediately shredded to maintain anonymity. No other compensation was given.

Self-Report Measures

Life Stressor Checklist Revised (LSC-R).

To assess trauma exposure, we used the Life Stressor Checklist-Revised (Wolfe and Kimerling, 1997). This instrument was chosen because it is an excellent measure to capture a wide range of traumatic events, including interpersonal and non-interpersonal, and allows the participants to describe how traumatic the event was to them. The Life Stressor Checklist-Revised (LSC-R) is a 30-item measure used to report various traumatic events. Along with indicating if an event has occurred, participants are also asked more specific details about the event including at what age it occurred and if they experienced intense feelings of helplessness or fear at the time of the event. Individuals

are then asked to rate how much this event has affected their life in the past year on a scale from 1 (not at all) to 5 (extremely affected). Examples of interpersonal types of trauma asked about include, “Have you ever been robbed, mugged, or physically attacked (not sexually) by someone you did not know?” and “Have you ever been emotionally abused or neglected (for example, being frequently shamed, embarrassed, ignored, or repeatedly told that you were ‘no good’)?”. Examples of non-interpersonal traumas include, “Have you ever had a very serious accident of accident-related injury (for example, a bad car wreck or an on-the-job accident)?”, “Did your parents ever separate or divorce while you were living at home?”. This scale was originally developed to use with women and reports good criterion validity among a wide range of women and test-retest reliability. In a study conducted by McHugo et al. (2005) a sample of community women were tested and then tested again seven days later to establish an acceptable item test-retest reliability which ranged from .52 to .95. Face validity was established in a population of Columbian women by asking them the open-ended question, “How easy was it for you to answer the questions on this survey”? Most answers ranged from very easy to easy (Humphreys et al. 2011). Even though this scale is most commonly used with female samples, questions asked in the measure apply to both men and women and other studies with diverse gender populations have used this scale (Ponce-Garcia, Madewell, & Kennison 2015). We adapted the measure to be used with both men and women in our sample, directing men to skip the items applicable only to women (i.e., “have you ever had an abortion”).

Brief COPE. The Brief COPE (Carver, 1997) is derived from the original COPE (Carver, Scheier & Weintraub, 1989) which was a 60-item measure with 15 subscales.

Researchers have argued that the original COPE is long and redundant making a shorter version of the scale useful. The shorter version contains 14 subscales each with only two items creating a 28-item assessment. The scales on the Brief COPE include: Active Coping, Planning, Positive Reframing, Acceptance, Humor, Religion, Emotional Support, Instrumental Support, Self-Distraction, Denial, Venting, Substance Use, Behavioral Disengagement, and Self-Blame. The Self-Blame subscale is the only subscale added to this assessment that was not previously on the COPE. Sample items include, "I have been giving up trying to deal with it (behavioral disengagement)" and, "I've been getting help and advice from others (Instrumental Support). Participants rate these statements on a scale ranging from 0 (I haven't been doing this at all) to 3 (I've been doing this a lot). Psychometrics were done through a large questionnaire given to the community after Hurricane Andrew. Internal reliability was found to be acceptable ranging from $\alpha = .50$ (venting scale) to $\alpha = .90$ (substance use scale) (Carver, 1997). More recently, the Brief COPE was administered to a group of medical students and showed a strong total internal consistency ($\alpha = .85$) and good construct validity. This study gives confidence when using this measure in student samples and shows that the Brief COPE can generalize across populations (Yusoff, 2010).

Previous research has used this measure in several different ways either by preforming as exploratory factor analysis (Miyazaki, Bodenhorn, Zalaquett, & Kok-Mun, 2008), using all subscales individually (Brownley, Fallot, Berley, & Himelhoch, 2015; Cofini, Carbonelli, Cecillia, Binkin & Di Orio, 2015) or grouping the coping mechanisms into two broader groups of adaptive and maladaptive strategies (Ered, Gibson, Maxwell, Cooper & Ellman, 2017; Read, Griffin, Wardell, Ouimette, 2014; Reynolds et al, 2017).

Researchers in this study thought it would be best to perform an exploratory factor analysis to identify the most distinguishable factors. We used principal axis factoring with oblimin rotation (because we assumed some of the coping mechanisms might correlate with each other) and results showed nine interpretable factors (with eigenvalues greater than 1.0), collectively accounting for 70.43% of the total variance. Items loading most highly on each factor were averaged to create each style. Across these coping styles, there were no items that demonstrated cross loadings. Factors included: active coping (α = .83), social support (α = .89), substance abuse (α = .95), self-criticism (α = .71), religion (α = .86), avoidance (α = .65), humor (α = .84), acceptance (α = .77), and distraction (α = .66; see table 1).

Trauma Coping Self-Efficacy (CSE-T). The Trauma Coping Self-Efficacy (CSE-T; Benight, Shoji, James, Waldrep & Delahanty, 2015) scale is a brief 9-item assessment intended to measure one's ability to cope specifically during times of trauma. This is currently the only scale of its kind. There are other coping self-efficacy measures (CSE) that measure general coping strategies used under various day to day stressors. It is argued this scale should not be used for a trauma population, because these individuals have undergone more extreme stress. Participants were asked to rate nine posttraumatic demands on a 7-point scale ranging from 1 (not at all capable) to 7 (totally capable). Types of statements found on this measure include, "Be optimistic since the traumatic experience" and "Get help from others about what happened". To establish psychometric properties for this assessment three different populations were used. These groups are hospitalized trauma patients, disaster survivors, and an undergraduate sample who experienced trauma. The test retest reliability was done for both the hospital setting and

disaster survivors. Both exhibited good test retest reliability with the strongest being the disaster survivors between two weeks (r = .80), one month (r = .81) and two months (r = .76). Criterion validity was established in all samples by comparing CSE-T with posttraumatic stress symptoms. In all samples, there was a negative correlation between the CSE-T and PTSD symptoms (student group r = -.60). The student group was also compared with a psychological well-being scale and analysis showed the two were significantly positively correlated (r = .49) (Benight, Shoji, James, Waldrep & Delahanty, 2015). This scale demonstrated excellent internal consistency in our sample as well (α = .91).

PTSD Checklist for DSM-5 (PCL-5). The PTSD Checklist for DSM-5, also known as the PCL-5 (Weathers, Litz, Keane, Palmieri, Marx, & Schnurr, 2013) has been recently updated to coincide with the new Diagnostic and Statistical Manual of Mental Disorders-5 (DSM-5). The new version has a total of 20-items that assess criteria of PTSD. Sample items include, “Repeated, disturbing dreams of the stressful experience”, and “Irritable behavior, angry outburst, or acting aggressively”. Individuals are asked to indicate the level they have been experiencing each item in the past month on a 5-point scale ranging from not at all to extremely. According to authors of this measure, a cut-off score for predicting PTSD diagnosis has not yet been established. The original PCL measure was established for both military and civilian populations and its psychometrics have been thoroughly examined and found to be very good. The new PCL-5 has added three items to account for the three new PTSD symptoms of blame, negative emotions, and self-destructive behavior. Also, all versions of the PCL, the PCL-M, PCL-C and PCL-S have been combined into one and follow the PCL-S wording. The PCL-5

psychometric properties were assessed using an undergraduate sample who reported a stressful life event at a large university. The internal consistency of the PCL-5 was consistent with previous versions (α = .94). The PCL-5 was re-administered to a subsection of the sample after one week which resulted in an adequate test-retest reliability (r = .82). Convergent validity was found using other PTSD measures; the PCL, Posttraumatic Diagnostic Scale (PDS) and Detailed Assessment of Posttraumatic Stress (DAPS) were used. All measures of PTSD, the PCL (r = .85), PDS (r = .85) and DAPS (r = .84) were positively correlated with the PCL-5 as expected. To show discriminant validity a personality assessment, the Personality Assessment Inventory (PAI) was used. It was hypothesized that subsections of the PAI, like mania, which research has shown is not related to PTSD would have weak correlations with the PCL-5. This hypothesis was supported establishing discriminant validity (Blevins, Weathers, Davis, Witte & Domino, 2015). Reliability analysis was conducted to determine the internal consistency of the PCL-5 for our sample and it was found to be excellent and consistent with previous research (α = .93).

Plan of Analysis

To analyze our data, SPSS version 24 was used. First, the frequency of traumatic events was explored to better understand the amount of trauma experienced by the sample and the frequency of occurrence of each type of trauma. Then, correlations were run including among trauma frequency, coping mechanisms, trauma coping self-efficacy, and PTSD symptoms to make sure variables were correlated in expected directions and to test for multicollinearity. Trauma frequency was measured by summing across all types of trauma an individual endorsed on the LSC-R measure. Next, we ran a simultaneous

multiple regression analysis to explore which coping styles predicted PTSD symptoms (i.e. compensatory effects). Within this regression analysis, we also checked the variance inflation factors (VIF), to again rule out any multicollinearity among coping factors. After compensatory effects were examined, we explored moderating effects of coping styles and trauma coping self-efficacy using PROCESS, a macro developed by Hayes (2013), which allowed us to examine singular and multiple moderator models. Finally, we attempted to characterize which moderators exert the strongest influence in changing the relationship between trauma exposure and negative life outcomes.

Results

Frequency of Trauma

Out of a total sample of 390 participants 97.67% of individuals reported experiencing at least one traumatic event. Trauma frequency ranged from zero to 19 traumas, with the modal number of traumatic events experienced being four (15.13%) and the most frequently reported event being death of someone close (see table 2). Over half of the sample reported experiencing five or more different traumatic events in their lifetime.

Correlations among Trauma Frequency, Coping Mechanisms, Trauma Coping Self-efficacy and PTSD Symptoms

Correlations were examined to better understand the relationship between trauma, coping, and PTSD (see table 3). Trauma frequency, distraction, avoidance, self-blame, substance use, and active coping were all positively associated with PTSD symptoms. Trauma coping self-efficacy was negatively correlated with PTSD symptoms. When examining the relationships among the coping mechanisms to explore multicollinearity,

no problems were detected (see table 3). The highest correlations were between active coping and social support ($r = .56$, $p < .001$) and active coping and acceptance ($r = .44$, $p < .001$). Because neither of these variables had correlations higher than .6 we felt they were distinct enough to be treated as separate coping styles without fear of problematic overlap among variables.

Regression Analyses Linking Coping Self-Efficacy, Coping Mechanisms and PTSD Outcomes

A simultaneous multiple regression was run to determine which coping mechanisms, found in exploratory factor analysis, led to either increased or decreased PTSD symptoms. First, VIF tests were run to confirm results from previous correlations that no factors were too similar to each other to confound results. No VIF tests were above 2.0 indicating no problem with multicollinearity. Next, factors were analyzed simultaneously to allow variables to control for each other, indicating which coping mechanisms were unique significant predictors. The overall model was significant (see Table 4). Results revealed one adaptive coping mechanisms, humor and trauma coping self-efficacy decreased PTSD symptoms. Four maladaptive coping mechanisms self-blame, avoidance, substance use, and distraction increased PTSD symptoms (see table 4).

Moderation Analysis Exploring Roles of Coping Self-Efficacy and Coping Mechanisms

Moderation analyses were done to determine which variables could possibly influence the relationship between trauma frequency and PTSD symptoms. Moderation variables tested included the nine factors found from the Brief COPE, and Trauma Coping Self-efficacy. Analyses revealed the overall model and interaction effect between

Trauma frequency, two coping mechanisms (Acceptance and Active Coping) and Trauma Coping Self-Efficacy were significant (see table 5; figure 1; figure2; figure3). All significant variables, Acceptance, Active Coping, and Coping Self-efficacy weakened the relationship between experiencing trauma and developing PTSD symptoms. No other results were significant.

We then put both significant moderators from the Brief COPE, into another moderation model to indicate which factor was the most important moderator between trauma and PTSD symptoms. It was found that when both acceptance and active coping were added into a moderation simultaneously, neither remained a significant moderator of PTSD symptoms, B = -.003, t = -1.14, p = .255 (active coping), B = -.013, t = -1.69, p = .092 (acceptance).

Discussion

Review of Findings

This study attempted to examine which types of coping mechanisms were most protective in guarding an individual against the effects of PTSD. Several different specific coping styles were examined including substance abuse, denial, self-criticism, social support, active coping, and acceptance. As seen from our sample of participants, trauma prevalence was extremely high with over half of the sample experiencing five or more events, and 97.67% endorsed at least one event. This number is much higher than previously estimated prevalence rates (“American Psychological Association: Facts about women and trauma”, 2016). There could be two reasons for this finding. The first is that traumatic events have become more prevalent due to video games creating myths around rape and leading to increased tolerance of sexual harassment in both girls and boys.

Driesmans, Vandenbosch, & Eggermont (2015) found that after playing a video games with a sexualized character, both girls and boys were more tolerant of sexual harassment. Our study showed sexual harassment as one of the highest reported traumas. Graphic video games and movies could influence behavior and ideas of what is acceptable behavior. Secondly, the chosen measure was able to capture a wide range of these events, likely more so than reflected in previous studies of trauma among college students. It is possible those studies did not ask for more common events such as money problems, having parents who are divorced, being responsible for other's care and having an abortion. With 29 different items to endorse it increases the chances individuals have been through at least one, inflating the prevalence. With that said, there was still high percentage of people who experienced more severe interpersonal traumas such as rape and physical abuse.

Not surprisingly, results showed trauma frequency was associated with PTSD symptoms in college students. Those reporting more events had an increase in PTSD symptoms. This adds to the literature concerning trauma in a college population and supports the findings of various other research with different populations (Cieslak, Benight, & Lehman, 2008; Cofini, Carbonelli, Cecillia, Binkin, & Di Orio, 2015; Frazier, Mortenson, & Steward 2005; Goenjian et al., 2000; Meyer et al., 2012; Schumm, Briggs-Phillips & Hobfoll, 2006). While some may think of individuals who are in college as successful and well-adjusted, this finding shows that many of these individuals are struggling with PTSD symptoms and are just as important and in need of treatment as other populations such as first responders. Trauma frequency was also associated with less adaptive coping mechanisms such as avoidance, self-blame, substance use, and

distraction. Individuals endorsing home trauma and more distress also are using more maladaptive coping strategies and less adaptive strategies.

Our analyses revealed that several different coping mechanisms, such as humor, substance use, self-blame, avoidance, and distraction as well as trauma coping self-efficacy were unique predictors of PTSD symptomology.. Previous research has chosen to focus on only one coping skill at a time such as humor (Besser, Weinberg, Zeigler-Hill, & Neria, 2015) or self-blame (Ullman, Townsend, Filipas, & Starzynski, 2007) but this study shows it is important to look at multiple coping styles. Especially with maladaptive coping skills, the more the individual uses, the more likely he or she is to exhibit worse PTSD symptoms. When looking at multiple skills at once and pitting them against each other it was shown that several are uniquely important. It is possible that similar to a dose response of traumatic events (Cloitre, et al., 2009), there could be a similar dose response for coping skills. For each maladaptive coping skill an individual uses, such as distraction, avoidance, and self-blame their PTSD symptoms could increase in severity. Similarly, the same could be true for adaptive coping skills that more use of these different skills weakens PTSD symptom severity.

When exploring moderation analyses, three variables proved to weaken the relationship between trauma and PTSD symptoms: acceptance, active coping, and trauma coping self-efficacy. Trauma Coping Self-Efficacy, described as the belief in one's ability to cope with trauma, supported initial our hypotheses. General self-efficacy has previously been shown to reduce effects of trauma (Shakespeare-Finch, Rees, Armstrong, 2015). Benight et al. (2015) argued a specific belief in your ability to cope with the individual trauma is more important than general self-efficacy when dealing with

traumatic events. Having a greater belief in your sense to overcome the trauma appears to help trauma survivors experience fewer PTSD symptoms. It is likely that trauma coping self efficacy is the first step in the healing process and is a mechanism that allows an individual to use adaptive coping styles. In order to overcome a trauma you first have to have the belief that it is something that is able to be overcome. If there is no belief you can cope the coping skills you use would not be effective.

It should also be noted the direction of the relationship between trauma coping self-efficacy and PTSD symptoms is not clear from our cross-sectional results. It may be easier for those with fewer PTSD symptoms to use coping skills effectively, which in turn increases their belief they can cope and decreases their PTSD symptoms. It could also be that their belief in their ability could allow them to cope effectively which then subsequently reduces PTSD. More exploration with this variable within a longitudinal research framework would have to be done in order to obtain a clearer understanding of nature of the relationship among these variables.

From the brief COPE, two factors were found to be significant moderators, active coping and acceptance. This finding adds to the literature on which adaptive coping skills are most helpful when dealing with trauma. When both factors were simultaneously added into the moderation model, neither showed to be more significant than the other. It could be that acceptance is a type of active coping. The items for acceptance in the brief COPE focus on accepting the reality of the trauma, that it has happened and learning to live with it. Theses phrases are active forms of acceptance and revolve around actively coming to terms with the situation. These two factors were moderately correlated with each other, supporting this idea.

Although previous research lacks moderation analyses and consistent results, the success of acceptance and commitment therapy can help support the finding that using acceptance and active coping as strategies to help deal with trauma can be beneficial. Acceptance and commitment therapy is a third wave therapy that promotes cognitive flexibility and nonjudgmentally existing in the present moment. Studies have found this treatment effective for PTSD through traditionally individual therapy (Woidneck, Morrison, & Twohig, 2014) and web-based therapy (Fiorllo, McLean, Pistorello, Hayes, Follette, 2017).

A surprising variable that did not act as a compensatory variable or a buffer was social support. Research on the moderation effect of social support was mixed, but there was more clear research supporting a main effect of social support on PTSD symptoms (Cox, Bakker, & Naifeh, 2017; Littleton, Grills-Taquechel, Axsom, Bye & Buck 2012; Moore, et al., 2017; Weinberg, 2017). One reason for this could be the type of trauma could limit your ability to receive positive social support. For individuals who experienced sexual assault or abuse, if the perpetrator was their primary form of social support, going to them may not be effective (Brand & Alexander, 2003). Similarly, if the individual who passed away was the main form of social support the individual would feel as if they have no one to turn to. Trauma type is important when considering the effect of social support. Many of the traumas reported in this sample included death of a loved one and emotional abuse. Another reason could be their perceived social support. If they anticipate the social support to be negative an individual would be less likely to use social support as a way to deal with the trauma (Nickerson et al., 2017) . Items on the social support factor include, “I’ve been getting help and advice from other people”, and

"I've been getting emotional support from other people". If the individual carries assumptions that his or her friends will not understand or be able to help because they have not been through a similar situation, they will be less likely to disclose the trauma, reducing their ability to cope based on these assumptions.

Limitations

Although this study found important links between exposure to trauma, coping mechanisms, and PTSD symptomology within a college student population, a number of limitations should be noted about the procedures of the study. First, this study was limited by the nature of the sample used. This study was conducted using only college students from a medium sized university on the East Coast. Those who have the ability to apply, be accepted and involved in college are most likely inherently better adjusted in spite of the aversive events they have endured. They may be using different coping styles than others who would be less well-adjusted. Studying such a sample may make the results have limited generalizability as college students may be using different strategies than others. If a person is already well adjusted the use of types of coping mechanisms may change.

A second limitation is that the time frame that the traumatic event had to occur was not specified. Individuals were able to report on any and all traumatic events that happened throughout their 18 to 34 years of life. This allowed us to capture many traumatic events and report the prevalence of trauma but may distort the coping styles. Some research indicates that coping styles used over time change based on the time since the trauma (Gutner, Rizi, Monson, & Resick, 2006). Individuals who have experienced a trauma within one year are likely to cope differently than people who have experienced

trauma over five years ago. It is likely individuals were reporting on the coping styles they currently use to deal with the trauma instead of coping mechanisms they used directly following the incident.

In our sample we did not ask them to specify the time of the trauma, making it unclear what stage of the coping process they were in. It could be possible those using maladaptive coping strategies have just experienced the event and are having trouble processing the situation and those that are using more adaptive strategies have already had time to come to terms with situation. Although this is possible, and an answer cannot be determined from this study, past research shows that those who experience PTSD closely after the event can also continue to exhibit clinical levels years after (Goenjian et al., 2000). This would support the idea that the time since the trauma may be less important. Regardless, it would have been an insightful addition to the study.

We also did not assess previous treatment history. Since there is an unknown amount of time since the trauma, it is possible individuals have been in treatment for an unspecified amount of time. This would both decrease their PTSD symptoms and change their ways and ability to cope with the trauma. Individuals who are in or have been through therapy would report less PTSD and more adaptive forms of coping than individuals who have not been in treatment or who have just experienced the trauma.

Choosing a measure of coping styles that captured 14 different styles of coping in only 28 questions is fourth limitation of the study. Researchers use the shorter Brief COPE because the original version, the COPE, is long and redundant (Carver, 1997); however, having only two items and so many subscales may fail to capture all aspects of those subscales and limit reliability of the measure. Additionally, researchers have used

the scale in several different ways leading to various results each time. The lack of consistency with how this scale is used can lead to contradicting results being reported and a lack of faith in the measure. Although not intentional, with such flexibility in a scale, researchers can find the results they want by using it in the best way that fits them and not how the scale should be used based on past theory.

Along the same idea of using such a wide measure for coping, a final limitation could have been the scale used to study trauma. The LSC-R is a very comprehensive measure capturing an extremely wide range of traumatic events. This is both positive and negative feature of the measure. A good reason to use this measure is it is able to tap into all types of trauma and is able to capture the notion that what constitutes a traumatic experience can be quite subjective. The measure includes items like a parent's divorce or money problems that may or may not be considered traumatic by all individuals. Regardless, this scale taps into these events and lets the individual answer how traumatic it was for themselves. There is not necessarily a stringent preconceived notion of what a trauma is and is not. The downside to having such a broad measure is that people will most likely endorse multiple items and have varying levels of reaction to them. It is likely that people have witnessed an accident, had money problems, had parents go through divorce or had a loved one pass away. These events are relatively common, varying the level people have been affected by them. When individuals endorse several items and have not been tragically affected by them, it changes results. Allowing trauma to be so inclusive may have affected results.

Implications

This study has both clinical and research implications. With such a high number of individuals reporting trauma in this study and in the population as a whole, it is common to expect many people in therapy have been through a traumatic event as well. Among a population of severe mental illness (defined as having a diagnosis over one year and a Global Assessment of Functioning score above 60) as many as 72% of people experienced some type of physical abuse and 49% experienced sexual abuse (Mauritz, Goossens, Draijer, & Van Archterberg, 2013). Based on this it is possible to conclude the rates of non-interpersonal trauma are high as well in those severely impaired and those with minor impairment. With so many people being exposed to trauma it is essential clinicians know how to help individuals deal with such events. This study allows clinicians to gain insight on what strategies may be helpful for clients to use to protect themselves against further development of PTSD symptoms. This is especially true if the trauma happens while the individual is in college. This study suggests they should encourage individuals to accept the trauma as a life event that has happened and use humor to help reframe the event if possible and appropriate. Using these two strategies may help the individual to gain skills to move past the event.

This study builds upon previous research that has been done in the field and brings in a new moderator of trauma coping self-efficacy. Previous research showed general self-efficacy, or a belief in yourself and your abilities was a factor in overcoming trauma. This study was able to show that a more specific self-efficacy, a belief in yourself that you can handle or overcome the trauma, is very important when dealing with traumatic life events. Holding this belief can prevent a person from developing as many PTSD symptoms.

Studies such as these are important to continue to validate and support past research that has been done in the field. This study aimed to narrow down the types of adaptive coping strategies that are specific to helping individuals overcome negative outcomes after stressful events. The study found that acceptance was the most important coping mechanism that influences the relationship between trauma and the development of PTSD symptoms.

Future Directions

This study should be replicated among the college population to build confidence in the findings. The ability to validate the same specific coping mechanisms as moderators between trauma and PTSD is an important improvement upon research in the trauma field. It would also be beneficial to see if this relationship is able to be replicated with other negative outcomes such as depression and anxiety symptoms.

It is also important to work towards generalizing these findings in different populations such as the military. Gaining more insight into preventative measures against PTSD is extremely important for a population that has one of the highest rates of PTSD symptoms with a prevalence of 14-16% (Gates, et al., 2012). Understanding what additional mechanisms individuals can possess to reduce the amount of PTSD symptoms would positively impact military members. If we can understand how to better prevent PTSD from occurring, we can add these skills into training courses before deployment and can train military psychologist that deploy with a team skills to better guard the team against negative symptoms occurring.

Finally, it would be informative to conduct a longitudinal study of individuals who experience a wide variety of trauma within the same time frame. Although

challenging, finding individuals who have experienced trauma in a close time frame would allow researchers not only to better understand the type of coping mechanisms used directly after trauma depending on severity, but also allow researchers to track how coping changes at various time points. This would also allow us to better understand the process of dealing with trauma, what is productive and what is ultimately unproductive.

Conclusion

As a whole the sample experienced a high amount of trauma, with varying types and reactions. This study found several variables that acted in a compensatory manner on PTSD symptoms to either increase or decrease symptoms. Self-blame, distraction, substance use, and avoidance predicted higher PTSD symptoms while active coping and humor predicted lower PTSD symptoms. Trauma coping self-efficacy, humor, and acceptance exhibited a buffering effect, weakening the relationship between experiencing a trauma and developing PTSD symptoms.

This study added to the small pool of research examining trauma in a college population. Trauma is still prevalent in this population adding to the importance of conducting research among college students. Furthermore, this study also allows us to better understand how these individuals experience traumatic events and strategies they use to cope that are both effective and ineffective.

Table 1

Factors Loadings for Exploratory Factor Analysis with Oblimin Rotation of BRIEF Cope

Factor Name	Item	Factor Loading
Active Coping	I've been concentrating my efforts on doing something about the situation I'm in	.74
	I've been taking action to try to make the situation better	.64
	I've been trying to come up with a strategy about what to do	.63
	I've been thinking hard about what steps to take	.51
	I've been looking for something good in what is happening	.43
	I've been trying to see it in a different light, to make it seem more positive	.42
Social Support	I've been getting emotional support from others	-.90
	I've been getting comfort and understanding from someone	-.84
	I've been getting help and advice from other people	-.83
	I've been trying to get advice or help from other people about what to do	-.77
Substance Use	I've been using alcohol or drugs to make myself feel better	.98
	I've been using alcohol or other drugs to help me get through it	.97
Self-criticism	I've been criticizing myself	.82
	I've been blaming myself for things that happened	.81
	I've been saying things that let my unpleasant feelings escape	.52
	I've been expressing my negative feelings	.48
Religion	I've been trying to find comfort in my religion or spiritual beliefs	.96
	I've been praying or meditating	.92
Avoidance	I've been refusing to believe what has happened	.79
	I've been saying to myself "this isn't real"	.77
	I've been giving up the attempt to cope	.58
	I've been giving up trying to deal with it	.39
Humor	I've been making fun of the situation	.93
	I've been making jokes about it	.92
Acceptance	I've been learning to live with it	.82
	I've been accepting the reality of the fact that it has happened	.82
Distraction	I've been turning to work or other activities to take my mind off things	-.77
	I've been doing something to think about it less, such as going to movies, watching TV, reading, daydreaming, sleeping or shopping	-.75

Table 2

Percentage of Reported Traumas

Trauma Type (Non Interpersonal)	**Frequency(%)**	**Trauma Type (Interpersonal)**	**Frequency**
Death	62.44	Emotional abuse/emotional neglect	33.94
Serious accident witness	46.89	Sexually harassed	26.94
Sudden death	44.04	Physically attacked under 16	13.47
Parents divorce while child in the home	32.90	Sexually touched under 16	11.40
Witness violence between family members while under 16	28.76	Physically attacked	8.55
Natural disaster	27.72	Robbed/mugged	7.25
Family in jail	25.39	Raped	7.25
Serious accident	21.24	Sexually touched	6.99
Responsible for other's care	16.58	Raped under 16	6.22
Serious physical/mental illness	16.32	Sexual touching	6.99
Money problems	15.80	Physical Neglect	3.66
Witness robbery/mugging	14.25	Adoption/foster care	3.11
Abortion/miscarriage	3.58	Separated from child	0.00
Divorced	1.30		
Jail	1.30		
Child handicapped	0.00		

Table 3

Correlations among Trauma variable, Trauma Coping Self-efficacy, Brief COPE, and PTSD Symptom

	Trauma Frequency	Trauma Coping Self-efficacy	Acceptance	Active Coping	Avoidance	Distraction	Humor	Religion	Self-Blame	Social Support	Substances	PTSD
Trauma Frequency	1	-.23***	.05	.08	.18***	.14**	.03	.01	.27***	.05	.19***	.41***
Trauma Coping Self-efficacy		1	.24***	.22***	-.35***	-.01	.03	.15**	-.34***	.18***	-.20***	-.48***
Acceptance			1	.44***	-.13*	.27***	.22***	.17**	.12***	.35***	-.09	.00
Active Coping				1	.03	.40***	.32***	.27***	.23***	.56***	.06	.10*
Avoidance					1	.20***	.03	.06	.37***	-.02	.26***	.50***
Distraction						1	.25***	.12*	.32***	.32***	.13*	.30***
Humor							1	-.05	.25***	.19***	.11*	.03
Religion								1	.04	.23***	-.13*	.06
Self-blame									1	.20***	.28***	.54***
Social Support										1	-.02	.04
Substance Use											1	.34***
PTSD Symptoms												1

*** = $p < .001$, ** = $p < .01$, * = $p < .05$

Table 4

Simultaneous Multiple Regression Analysis Predicting PTSD Symptoms from Coping Factors and Coping Self-Efficacy

Predictor Variable	**R^2**	**Beta**	***F/t***	**sr^2**	**p-value**
Overall Model	.50		37.55		.000
Trauma Coping Self-Efficacy		-.28	-6.42	-.24	.000
Acceptance		.04	0.98	.04	.327
Active Coping		.05	1.05	.04	.293
Avoidance		.24	5.59	.21	.000
Distraction		.14	3.17	.12	.002
Humor		-.11	-2.70	-.10	.007
Religion		.07	1.70	.06	.091
Self-Blame		.29	6.42	.24	.000
Social Support		-.04	-0.92	-.03	.359
Substance Use		.15	3.71	.14	.000

Table 5

Moderation Analysis Predicting PTSD from Interaction of Coping Factors with Trauma Frequency

Variable	Total R^2	B	*F/t*	*p*-value
Trauma Coping Self-efficacy				
Total Model***	.33		62.74	.000
Trauma Frequency		.18	4.33	.000
Trauma Coping Self-efficacy		-.15	-2.93	.004
Trauma frequency X Trauma coping self-efficacy		-.02	-2.45	.015
Acceptance* **				
Total Model	.18		27.89	.000
Trauma Frequency		.21	5.00	.000
Acceptance		.08	1.93	.054
Trauma Frequency X Acceptance		-.02	-2.54	.012
Active Coping* **				
Total Model	.18		27.23	.000
Trauma Frequency		.19	4.63	.107
Active Coping		.04	2.56	.011
Trauma Frequency X Active Coping		-.01	-2.09	.038
Avoidance				
Total Model	.36		71.03	.000
Trauma Frequency		.12	3.47	.001
Avoidance		.20	5.10	.000
Trauma Frequency X Avoidance		-.01	-0.99	.322
Distraction				

Total Model	.23		36.76	.000
Trauma Frequency		.08	1.90	.058
Distraction		.10	2.28	.023
Trauma Frequency X Distraction		.00	0.36	.717
Humor				
Total Model	.17		26.09	.000
Trauma Frequency		.13	4.92	.000
Humor		.04	1.01	.314
Trauma Frequency X Humor		-.01	-0.97	.332
Religion				
Total Model	.17		26.89	.000
Trauma Frequency		.11	4.07	.000
Religion		.02	0.67	.502
Trauma Frequency X Religion		-.00	-0.08	.937
Self-blame	.37		73.08	.000
Total Model				
Trauma Frequency		.11	3.39	.001
Self-blame		.17	6.44	.000
Trauma Frequency X Self-blame		-.00	-1.20	.233
Social Support				
Total Model	.17		26.48	.000
Trauma Frequency		.16	4.88	.000
Social Support		.03	1.67	.096

Trauma Frequency X Social Support		-.01	-1.71	.089
Substance Use				
Total Model	.24		40.98	.000
Trauma Frequency		.13	4.82	.000
Substance Use		.24	3.95	.000
Trauma Frequency X Substance Use		-.01	-1.33	.183

Figure 1. *Buffering Effect of Acceptance on Trauma at Low, Medium, and High Levels*

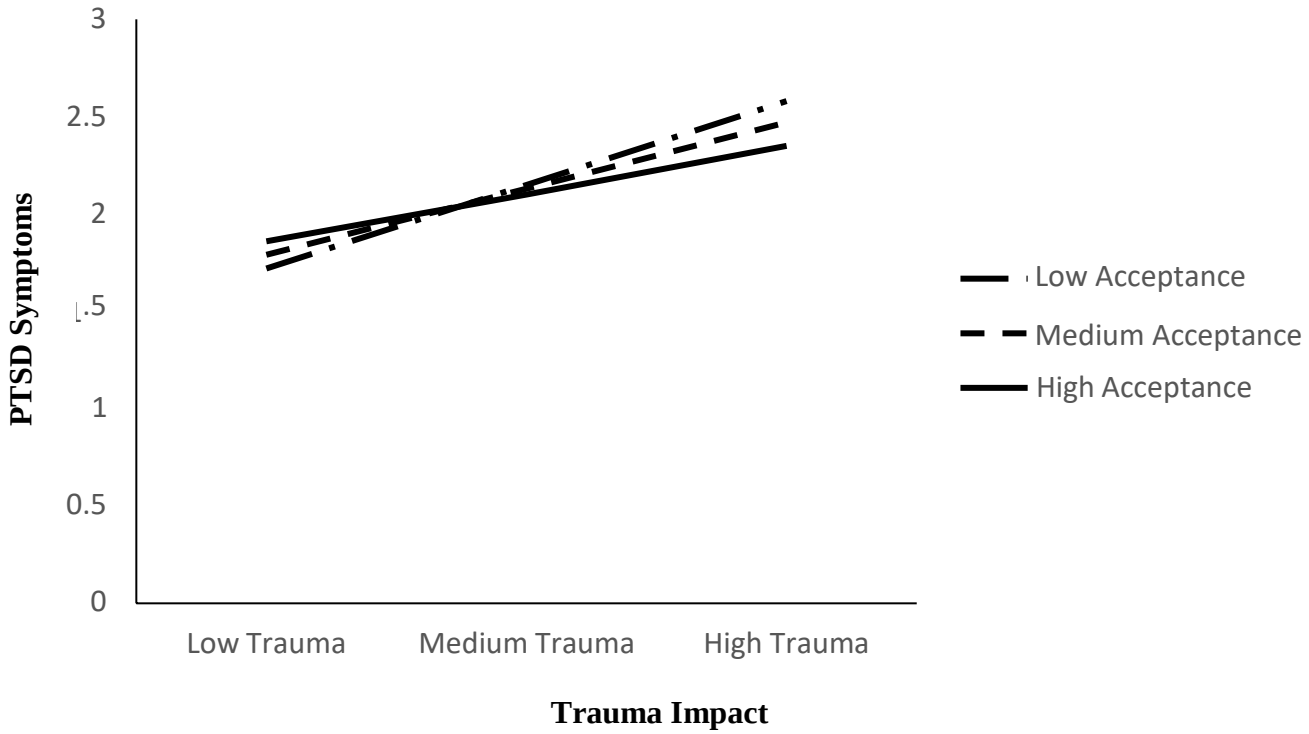


Figure 2. *Buffering Effect of Active Coping on Trauma at Low, Medium and High Levels*

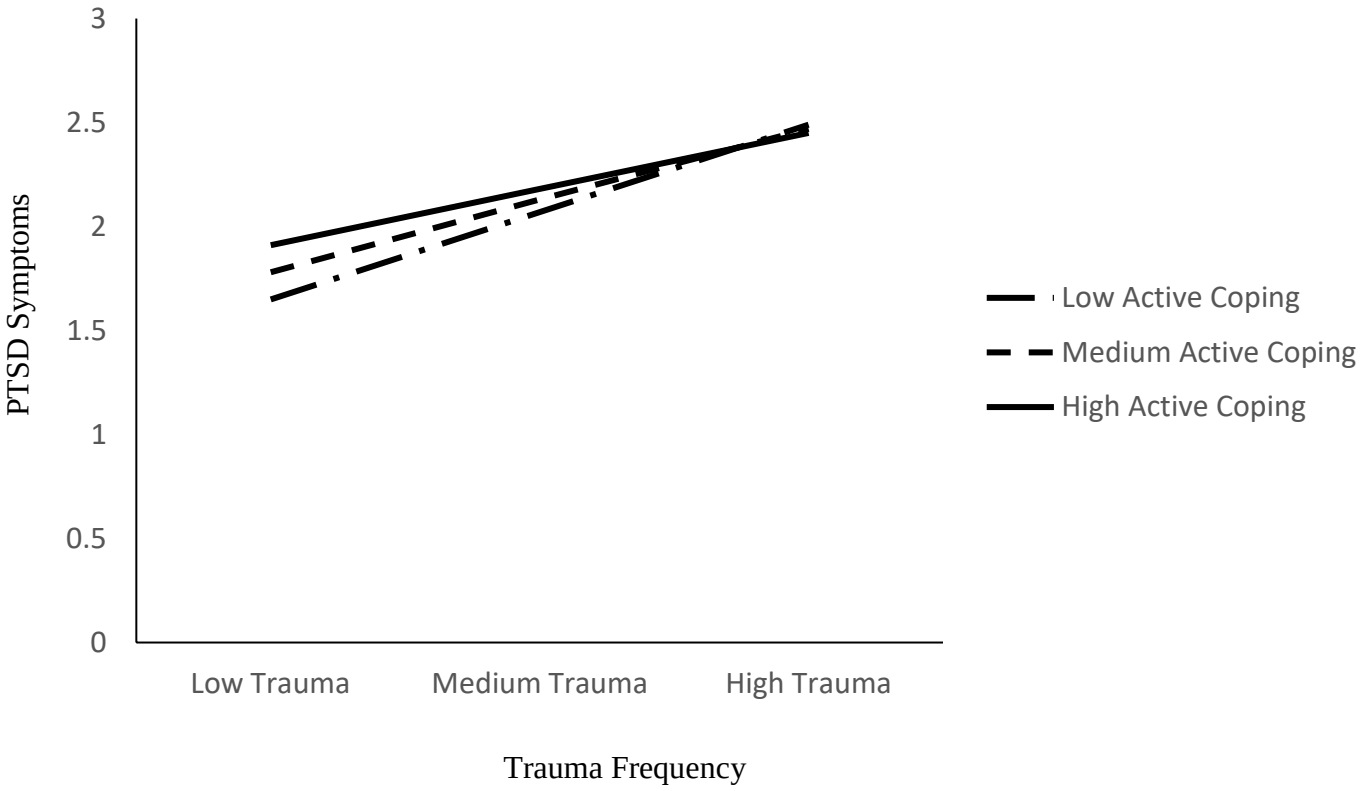
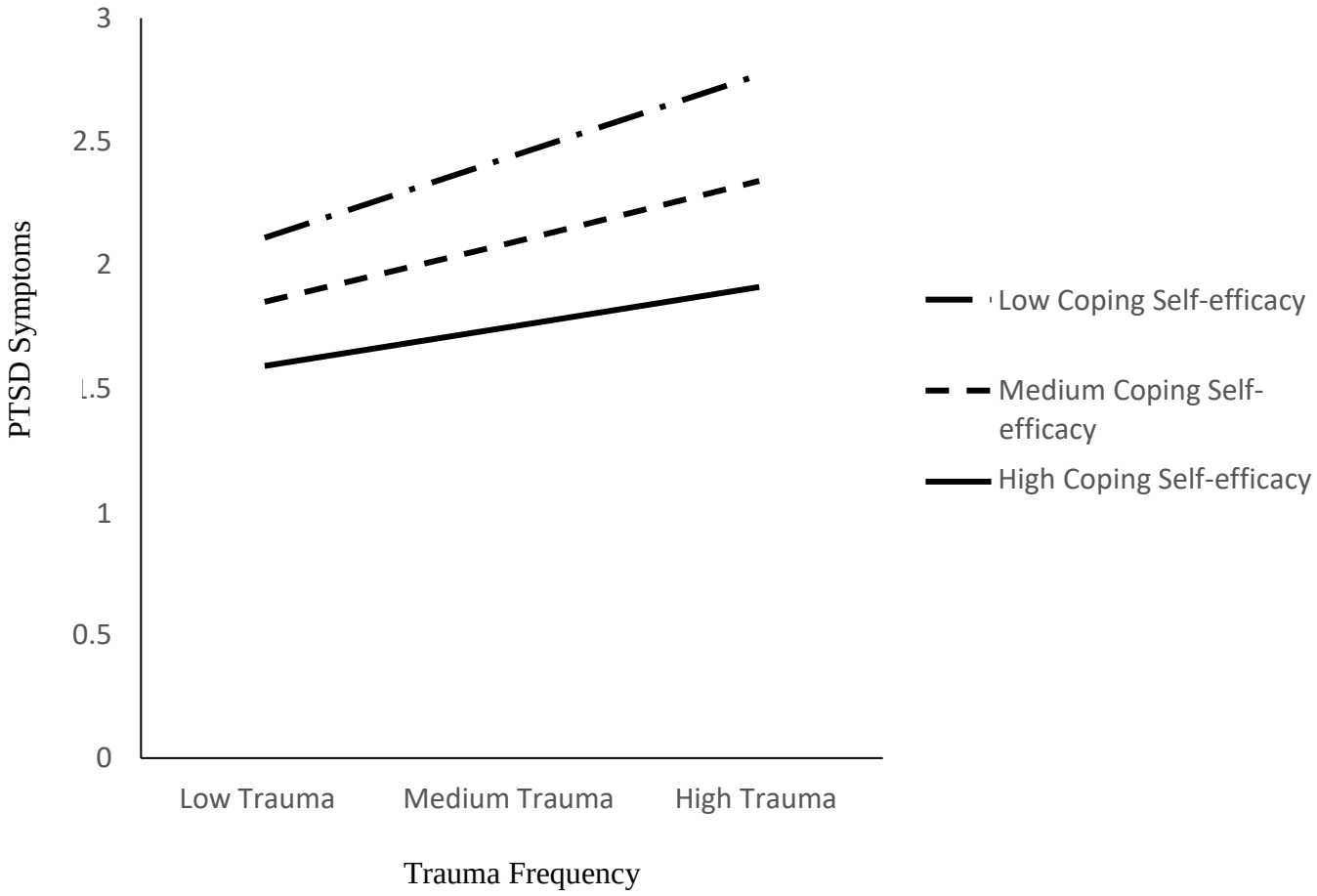


Figure 3. *Buffering Effect of Trauma Coping Self-efficacy on Trauma at Low, Medium, and High Levels*



Appendix A

Life Stressor Checklist Revised

1. Have you ever been in a serious disaster (for example, a massive earthquake, hurricane, tornado, fire, or explosion)? YES NO
    a. How old were you when it began?_____. When it ended? _____
    b. At the time of the event did you believe that *you or someone else* could be *killed* or seriously *harmed?* YES NO
    c. At the time of the event did you experience feelings of *intense helplessness, fear or horror?* YES NO
    d. How upsetting was the event at the time?
        1= Not at all 2 3= Moderately 4 5= Extremely
    e. How much has it affected your life in the past year?
        1= Not at all 2 3= Moderately 4 5= Extremely

2. Have you ever seen a serious accident (for example, a bad car wreck or an on-the-job accident)?
    a. How old were you when it began?_____. When it ended? _____
    b. At the time of the event did you believe that *you or someone else* could be *killed* or seriously *harmed?* YES NO
    c. At the time of the event did you experience feelings of *intense helplessness, fear or horror?* YES NO
    d. How upsetting was the event at the time?
        1= Not at all 2 3= Moderately 4 5= Extremely
    e. How much has it affected your life in the past year?
        1= Not at all 2 3= Moderately 4 5= Extremely

3. Have you ever had a very serious accident or accident-related injury (for example, a bad car wreck or an on the job accident)?
    a. How old were you when it began?_____. When it ended? _____
    b. At the time of the event did you believe that *you or someone else* could be *killed* or seriously *harmed?* YES NO
    c. At the time of the event did you experience feelings of *intense helplessness, fear or horror?* YES NO
    d. How upsetting was the event at the time?
        1= Not at all 2 3= Moderately 4 5= Extremely
    e. How much has it affected your life in the past year?
        1= Not at all 2 3= Moderately 4 5= Extremely

4. Was a close family member ever sent to jail?
    a. How old were you when it began?_____. When it ended? _____

   b. At the time of the event did you believe that *you or someone else* could be *killed* or seriously *harmed?* YES NO
   c. At the time of the event did you experience feelings of *intense helplessness, fear or horror?* YES NO
   d. How upsetting was the event at the time?
      1= Not at all 2 3= Moderately 4 5= Extremely
   e. How much has it affected your life in the past year?
      1= Not at all 2 3= Moderately 4 5= Extremely

5. Have you ever been sent to jail?
   a. How old were you when it began?_____. When it ended? _____
   b. At the time of the event did you believe that *you or someone else* could be *killed* or seriously *harmed?* YES NO
   c. At the time of the event did you experience feelings of *intense helplessness, fear or horror?* YES NO
   d. How upsetting was the event at the time?
      1= Not at all 2 3= Moderately 4 5= Extremely
   e. How much has it affected your life in the past year?
      1= Not at all 2 3= Moderately 4 5= Extremely

6. Were you ever put in foster care or put up for adoption?
   a. How old were you when it began?_____. When it ended? _____
   b. At the time of the event did you believe that *you or someone else* could be *killed* or seriously *harmed?* YES NO
   c. At the time of the event did you experience feelings of *intense helplessness, fear or horror?* YES NO
   d. How upsetting was the event at the time?
      1= Not at all 2 3= Moderately 4 5= Extremely
   e. How much has it affected your life in the past year?
      1= Not at all 2 3= Moderately 4 5= Extremely

7. Did your parents ever separate or divorce while you were living with them?
   a. How old were you when it began?_____. When it ended? _____
   b. At the time of the event did you believe that *you or someone else* could be *killed* or seriously *harmed?* YES NO
   c. At the time of the event did you experience feelings of *intense helplessness, fear or horror?* YES NO
   d. How upsetting was the event at the time?
      1= Not at all 2 3= Moderately 4 5= Extremely
   e. How much has it affected your life in the past year?
      1= Not at all 2 3= Moderately 4 5= Extremely

8. Have you ever been separated or divorced?
    a. How old were you when it began?_____. When it ended? _____
    b. At the time of the event did you believe that *you or someone else* could be *killed* or seriously *harmed?* YES NO
    c. At the time of the event did you experience feelings of *intense helplessness, fear or horror?* YES NO
    d. How upsetting was the event at the time?
        1= Not at all 2 3= Moderately 4 5= Extremely
    e. How much has it affected your life in the past year?
        1= Not at all 2 3= Moderately 4 5= Extremely

9. Have you ever had serious money problems (for example, not enough money for food or place to live)?
    a. How old were you when it began?_____. When it ended? _____
    b. At the time of the event did you believe that *you or someone else* could be *killed* or seriously *harmed?* YES NO
    c. At the time of the event did you experience feelings of *intense helplessness, fear or horror?* YES NO
    d. How upsetting was the event at the time?
        1= Not at all 2 3= Moderately 4 5= Extremely
    e. How much has it affected your life in the past year?
        1= Not at all 2 3= Moderately 4 5= Extremely

10. Have you ever had a very serious physical or mental illness (for example, cancer, heart attack, serious operation, felt like killing yourself, hospitalized because of nerve problems)?
    a. How old were you when it began?_____. When it ended? _____
    b. At the time of the event did you believe that *you or someone else* could be *killed* or seriously *harmed?* YES NO
    c. At the time of the event did you experience feelings of *intense helplessness, fear or horror?* YES NO
    d. How upsetting was the event at the time?
        1= Not at all 2 3= Moderately 4 5= Extremely
    e. How much has it affected your life in the past year?
        1= Not at all 2 3= Moderately 4 5= Extremely

11. Have you ever been emotionally abuse or neglected (for example, being frequently shamed, embarrassed, ignored, or repeatedly told that you were “no good”)?
    a. How old were you when it began?_____. When it ended? _____
    b. At the time of the event did you believe that *you or someone else* could be *killed* or seriously *harmed?* YES NO

c. At the time of the event did you experience feelings of *intense helplessness, fear or horror?* YES NO
d. How upsetting was the event at the time?
1= Not at all 2 3= Moderately 4 5= Extremely
e. How much has it affected your life in the past year?
1= Not at all 2 3= Moderately 4 5= Extremely

12. Have you ever been physically neglected (for example, not fed, not properly clothes, or left to take care of yourself when you were too young or ill)?
a. How old were you when it began?_____. When it ended? _____
b. At the time of the event did you believe that *you or someone else* could be *killed* or seriously *harmed?* YES NO
c. At the time of the event did you experience feelings of *intense helplessness, fear or horror?* YES NO
d. How upsetting was the event at the time?
1= Not at all 2 3= Moderately 4 5= Extremely
e. How much has it affected your life in the past year?
1= Not at all 2 3= Moderately 4 5= Extremely

13. WOMEN ONLY: have you ever had an abortion or miscarriage (lost your baby)?
a. How old were you when it began?_____. When it ended? _____
b. At the time of the event did you believe that *you or someone else* could be *killed* or seriously *harmed?* YES NO
c. At the time of the event did you experience feelings of *intense helplessness, fear or horror?* YES NO
d. How upsetting was the event at the time?
1= Not at all 2 3= Moderately 4 5= Extremely
e. How much has it affected your life in the past year?
1= Not at all 2 3= Moderately 4 5= Extremely

14. Have you ever been separated from your child against your will (for example, loss of custody, visitation, or kidnapping)?
a. How old were you when it began?_____. When it ended? _____
b. At the time of the event did you believe that *you or someone else* could be *killed* or seriously *harmed?* YES NO
c. At the time of the event did you experience feelings of *intense helplessness, fear or horror?* YES NO
d. How upsetting was the event at the time?
1= Not at all 2 3= Moderately 4 5= Extremely
e. How much has it affected your life in the past year?
1= Not at all 2 3= Moderately 4 5= Extremely

15. Has a baby or child of yours ever had a severe physical or mental handicap (for example, intellectual impairment, birth defects, blind, or deaf)?
    a. How old were you when it began?_____. When it ended? _____
    b. At the time of the event did you believe that *you or someone else* could be *killed* or seriously *harmed?* YES NO
    c. At the time of the event did you experience feelings of *intense helplessness, fear or horror?* YES NO
    d. How upsetting was the event at the time?
       1= Not at all 2 3= Moderately 4 5= Extremely
    e. How much has it affected your life in the past year?
       1= Not at all 2 3= Moderately 4 5= Extremely

16. Have you ever been responsible for taking care of someone close to you (not your child) who had a severe physical or mental handicap (for example, cancer, stroke, Alzheimer's disease, AIDS, felt like killing him/herself, hospitalized because of nerve problems, blind, deaf)?
    a. How old were you when it began?_____. When it ended? _____
    b. At the time of the event did you believe that *you or someone else* could be *killed* or seriously *harmed?* YES NO
    c. At the time of the event did you experience feelings of *intense helplessness, fear or horror?* YES NO
    d. How upsetting was the event at the time?
       1= Not at all 2 3= Moderately 4 5= Extremely
    e. How much has it affected your life in the past year?
       1= Not at all 2 3= Moderately 4 5= Extremely

17. Has someone close to you died suddenly or unexpectantly (for example, an accident, sudden heart attack, murder or suicide)?
    a. How old were you when it began?_____. When it ended? _____
    b. At the time of the event did you believe that *you or someone else* could be *killed* or seriously *harmed?* YES NO
    c. At the time of the event did you experience feelings of *intense helplessness, fear or horror?* YES NO
    d. How upsetting was the event at the time?
       1= Not at all 2 3= Moderately 4 5= Extremely
    e. How much has it affected your life in the past year?
       1= Not at all 2 3= Moderately 4 5= Extremely

18. Has someone close to you died (do not include those who died suddenly or unexpectantly)?
    a. How old were you when it began?_____. When it ended? _____

b. At the time of the event did you believe that *you or someone else* could be *killed* or seriously *harmed?* YES NO
c. At the time of the event did you experience feelings of *intense helplessness, fear or horror?* YES NO
d. How upsetting was the event at the time?
1= Not at all 2 3= Moderately 4 5= Extremely
e. How much has it affected your life in the past year?
1= Not at all 2 3= Moderately 4 5= Extremely

19. When you were young (before age 16) did you ever see violence between family members (for example, hitting, kicking, slapping, punching)?
a. How old were you when it began?_____. When it ended? _____
b. At the time of the event did you believe that *you or someone else* could be *killed* or seriously *harmed?* YES NO
c. At the time of the event did you experience feelings of *intense helplessness, fear or horror?* YES NO
d. How upsetting was the event at the time?
1= Not at all 2 3= Moderately 4 5= Extremely
e. How much has it affected your life in the past year?
1= Not at all 2 3= Moderately 4 5= Extremely

20. Have you ever seen a robbery, mugging, or attack taking place?
a. How old were you when it began?_____. When it ended? _____
b. At the time of the event did you believe that *you or someone else* could be *killed* or seriously *harmed?* YES NO
c. At the time of the event did you experience feelings of *intense helplessness, fear or horror?* YES NO
d. How upsetting was the event at the time?
1= Not at all 2 3= Moderately 4 5= Extremely
e. How much has it affected your life in the past year?
1= Not at all 2 3= Moderately 4 5= Extremely

21. Have you ever been robbed, mugged or physically attacked (not sexually) by someone you did not know?
a. How old were you when it began?_____. When it ended? _____
b. At the time of the event did you believe that *you or someone else* could be *killed* or seriously *harmed?* YES NO
c. At the time of the event did you experience feelings of *intense helplessness, fear or horror?* YES NO
d. How upsetting was the event at the time?
1= Not at all 2 3= Moderately 4 5= Extremely
e. How much has it affected your life in the past year?

1= Not at all 2 3= Moderately 4 5= Extremely

22. Before age 16, were you ever abused or physically attacked (not sexually) by someone you knew (for example, a parent, boyfriend, or husband, hit slapped, chocked, burned, or beat you up)?
    a. How old were you when it began?_____. When it ended? _____
    b. At the time of the event did you believe that *you or someone else* could be *killed* or seriously *harmed?* YES NO
    c. At the time of the event did you experience feelings of *intense helplessness, fear or horror?* YES NO
    d. How upsetting was the event at the time?
       1= Not at all 2 3= Moderately 4 5= Extremely
    e. How much has it affected your life in the past year?
       1= Not at all 2 3= Moderately 4 5= Extremely

23. After age 16, were you ever abused or physically attacked (not sexually) by someone you knew (for example, a parent, boyfriend, or husband, hit slapped, chocked, burned, or beat you up)?
    a. How old were you when it began?_____. When it ended? _____
    b. At the time of the event did you believe that *you or someone else* could be *killed* or seriously *harmed?* YES NO
    c. At the time of the event did you experience feelings of *intense helplessness, fear or horror?* YES NO
    d. How upsetting was the event at the time?
       1= Not at all 2 3= Moderately 4 5= Extremely
    e. How much has it affected your life in the past year?
       1= Not at all 2 3= Moderately 4 5= Extremely

24. Have you ever been bothered or harassed by sexual remarks, jokes, or demands for sexual favors by someone at work, or school (for example, a coworker, a boss, a customer, another student, or teacher)?
    a. How old were you when it began?_____. When it ended? _____
    b. At the time of the event did you believe that *you or someone else* could be *killed* or seriously *harmed?* YES NO
    c. At the time of the event did you experience feelings of *intense helplessness, fear or horror?* YES NO
    d. How upsetting was the event at the time?
       1= Not at all 2 3= Moderately 4 5= Extremely
    e. How much has it affected your life in the past year?
       1= Not at all 2 3= Moderately 4 5= Extremely

25. Before age 16, were you ever touched or made to touch someone else in a sexual way because he/she forced you in some way or threatened to harm you if you didn't?
    a. How old were you when it began?_____. When it ended? _____
    b. At the time of the event did you believe that *you or someone else* could be *killed* or seriously *harmed?* YES NO
    c. At the time of the event did you experience feelings of *intense helplessness, fear or horror?* YES NO
    d. How upsetting was the event at the time?
       1= Not at all 2 3= Moderately 4 5= Extremely
    e. How much has it affected your life in the past year?
       1= Not at all 2 3= Moderately 4 5= Extremely

26. After age is, were you ever touched or made to touch someone in a sexual way because he/she forced you in some way or threatened to harm you if you didn't?
    a. How old were you when it began?_____. When it ended? _____
    b. At the time of the event did you believe that *you or someone else* could be *killed* or seriously *harmed?* YES NO
    c. At the time of the event did you experience feelings of *intense helplessness, fear or horror?* YES NO
    d. How upsetting was the event at the time?
       1= Not at all 2 3= Moderately 4 5= Extremely
    e. How much has it affected your life in the past year?
       1= Not at all 2 3= Moderately 4 5= Extremely

27. Before age 16, did you ever have sex (oral, anal, genital) when you didn't want to because someone forced you in some way or threatened to harm you if you didn't?
    a. How old were you when it began?_____. When it ended? _____
    b. At the time of the event did you believe that *you or someone else* could be *killed* or seriously *harmed?* YES NO
    c. At the time of the event did you experience feelings of *intense helplessness, fear or horror?* YES NO
    d. How upsetting was the event at the time?
       1= Not at all 2 3= Moderately 4 5= Extremely
    e. How much has it affected your life in the past year?
       1= Not at all 2 3= Moderately 4 5= Extremely

28. After age 16, did you ever have sex (anal, oral, or genital) when you didn't want to because someone forced you in some way or threatened to harm you if you didn't?
    a. How old were you when it began?_____. When it ended? _____

b. At the time of the event did you believe that *you or someone else* could be *killed* or seriously *harmed?* YES NO
c. At the time of the event did you experience feelings of *intense helplessness, fear or horror?* YES NO
d. How upsetting was the event at the time?
   1= Not at all 2 3= Moderately 4 5= Extremely
e. How much has it affected your life in the past year?
   1= Not at all 2 3= Moderately 4 5= Extremely

29. Are there any other events we did not include that you would like to mention?
    a. What was the event? -

       _____

       _____
    b. How old were you when it began?_____. When it ended? _____
    c. At the time of the event did you believe that *you or someone else* could be *killed* or seriously *harmed?* YES NO
    d. At the time of the event did you experience feelings of *intense helplessness, fear or horror?* YES NO
    e. How upsetting was the event at the time?
       1= Not at all 2 3= Moderately 4 5= Extremely
    f. How much has it affected your life in the past year?
       1= Not at all 2 3= Moderately 4 5= Extremely

Appendix B

PCL- 5

In the past month, how much were you bothered by:

1. Repeated, disturbing, and unwanted memories of the stressful experience?
2. Repeated, disturbing dreams of the stressful experience?
3. Suddenly feeling or acting as if the stressful experience were actually happening again (as if you were actually back there reliving it)?
4. Feeling very upset when something reminded you of the stressful experience?
5. Having strong physical reactions when something reminded you of the stressful experience (for example, heart pounding, trouble breathing, sweating)?
6. Avoiding memories, thoughts, or feelings related to the stressful experience?
7. Avoiding external reminders of the stressful experience (for example, people, places, conversations, activities, objects, or situations)?
8. Trouble remembering important parts of the stressful experience?
9. Having strong negative beliefs about yourself, other people, or the world (for example, having thoughts such as: I am bad, there is something seriously wrong with me, no one can be trusted, the world is completely dangerous)?
10. Blaming yourself or someone else for the stressful experience or what happened after it?
11. Having strong negative feelings such as fear, horror, anger, guilt, or shame?
12. Loss of interest in activities that you used to enjoy?
13. Feeling distant or cut off from other people?
14. Trouble experiencing positive feelings (for example, being unable to feel happiness or have loving feelings for people close to you)?
15. Irritable behavior, angry outburst, or acting aggressively?
16. Taking too many risks or doing things that could cause you harm?
17. Being “superalert” or watchful or on guard?
18. Feelings jumpy or easily startled?
19. Having difficulty concentrating?
20. Trouble falling or staying asleep?

Rating scale:

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

Appendix C

Brief COPE

1. I've been turning to work or other activities to take my mind off things.
2. I've been concentrating my efforts on doing something about the situation.
3. I've been saying to myself "this isn't real".
4. I've been using alcohol or other drugs to make myself feel better.
5. I've been getting emotional support from others.
6. I've been giving up trying to deal with it.
7. I've been taking action to try to make the situation better.
8. I've been refusing to believe that it has happened.
9. I've been saying things to let my unpleasant feelings escape.
10. I've been getting help and advice from other people.
11. I've been using alcohol or other drugs to help me get through it.
12. I've been trying to see it in a different light, to try to make it seem more positive.
13. I've been criticizing myself.
14. I've been trying to come up with a strategy about what to do.
15. I've been getting comfort and understanding from someone.
16. I've been giving up the attempt to cope.
17. I've been looking for something good in what is happening.
18. I've been making jokes about it.
19. I've been doing something to think about it less, such as going to the moives, watching TV, reading, daydreaming, sleeping, or shopping.
20. I've been accepting the reality of that fact this it has happened.
21. I've been expressing my negative feelings.
22. I've been trying to find comfort in my religion or spiritual beliefs.
23. I've been trying to get advice or help from other people about what to do.
24. I've been learning to live with it.
25. I've been thinking hard about what steps to take.
26. I've been blaming myself for things that happened.
27. I've been praying or meditating.
28. I've been making fun of the situation.

Rating Scale- 1= I haven't been doing this at all

2= I've been doing this a little bit

3= I've been doing this a medium amount

4= I've been doing this a lot

Appendix D

Trauma Coping Self-Efficacy

1. Deal with my emotions (anger, sadness, depression, anxiety) since I experienced my trauma.
2. Get my life back to normal.
3. Not “lose it” emotionally.
4. Manage distressing dreams or images about the traumatic experience.
5. Not be critical of myself about what happened.
6. Be optimistic since the traumatic experience.
7. Be supportive to other people since the traumatic experience.
8. Control thoughts of the traumatic experience happening to me again.
9. Get help from others about what happened.

Rating Scale 1(not at all capable) - - - 7 (totally capable)

Appendix E

Research Questions

1. Does trauma predict PTSD symptoms?
2. What are some factors that influence the relationship between experiencing trauma and developing PTSD?
3. Will those higher amount of Active coping, and Trauma Coping Self-efficacy have fewer PTSD symptoms than individuals who are not high on these variables?
4. Does using more maladaptive coping lead to increased PTSD symptoms?
5. Is there one coping style that is more effective than others?

Appendix F

IRB Approval Letter

Office of Sponsored
Programs and Research

Towson University
8000 York Road
Towson, MD 21252-0001

t. 410 704-2236
f. 410 704-4494

APPROVAL NUMBER 1611009809

MEMORANDUM

TO: Jonathan Mattanah

FROM: Institutional Review Board for the Protection of Human Participants, Elizabeth Katz, Chair

DATE: November 21st, 2016

RE: Approval of Research Involving the Use of Human Participants

Thank you for submitting an Application for Approval of Research Involving the Use of Human Participants to the Institutional Review Board for the Protection of Human Participants (IRB) at Towson University. The IRB hereby approves your proposal titled:

Aversive Life Events and Adjustment to College: A Survey Study

Please note that this approval is granted on the condition that you provide the IRB with the following information and/or documentation:

N/A

If you should encounter any new risks, reactions, or injuries while conducting your research, please notify the IRB. Should your research extend beyond one year in duration, or should there be substantive changes in your research protocol, you will need to submit another application for approval at that time.

We wish you every success in your research project. If you have any questions, please call me at (410) 704-2236.

cc:

Date: November 21st, 2016

Office of Sponsored Programs and Research

Towson University
8000 York Road
Towson, MD 21252-0001

t. 410 704-2236
f. 410 704-4494

NOTICE OF APPROVAL

TO: Jonathan Mattanah DEPT: Psychology

PROJECT TITLE: Aversive Life Events and Adjustment to College: A Survey Study

SPONSORING AGENCY: N/A

APPROVAL NUMBER: 1611009809

The Institutional Review Board for the Protection of Human Participants has approved the project described above. Approval was based on the descriptive material and procedures you submitted for review. Should any changes be made in your procedures, or if you should encounter any new risks, reactions, injuries, or deaths of persons as participants, you should notify the Board.

A consent form	☑	is required of each participant
	☐	is not
Assent	☐	is required of each participant
	☑	is not

This protocol was first approved on 11/26/2016.
This research will be reviewed every year from the date of first approval.

Elizabeth Katz, Chair
Towson University Institutional Review Board, IRB

Appendix G

TOWSON UNIVERSITY
OFFICE OF GRADUATE STUDIES

THESIS COMMITTEE APPROVAL FORM

Student's Name

Erin Monahan

Chairperson, Thesis Committee

Signature — Jonathan Mattanah (Typed name)

Member — Signature — SANDRA LLERA (Typed name)

Member — Signature — Bethany Brand (Typed name)

Member — Signature — Typed name

Note: Please attach a description of the affiliation and credentials of any non-Towson University members of the Committee, and the members' *curriculum vita.*

Approved by

Graduate Program Director — Signature — 2/13/17 — Date

Elizabeth C. Katz, PhD

Department Chairperson

Signature — 2/21/17 — Date

Dean of Graduate Studies

Janet V. DeHaney — 2-24-17

Signature — Date

Note: It is the responsibility of the student to obtain all signatures *before beginning the proposal.*

Appendix H

Informed Consent Form

Aversive Life Events and Adjustment to College: A Survey Study Disclosure Letter

You have been asked to participate in a research study. Please read this form disclosure letter carefully and ask any questions you have before agreeing to continue in the study.
Purpose of the Study: This study is designed to examine students' exposure to a range of aversive and traumatic life events as well as their psychological and emotional adjustment to college.
Procedures: You will be asked to complete a lengthy survey on the computer, in which you will answer questions regarding exposure to aversive life events and trauma, coping strategies, styles of attachment, depression, self harm, anxiety, PTSD symptoms as well as overall well-being. The survey should take you about 60 minutes to complete.
Risks: There are *minimal* risks associated with participating in this study. If you find any of the questions of this survey stressful to answer, you may skip that question (leave it blank) or you can end your participation in the study at any time. If you do find yourself experiencing distress after completing this study, feel free to speak with one of the research assistants helping with this study who can give you information about supportive resources on Towson's campus to deal with these issues. One particularly useful resource is the Health and Counseling Center at Towson University, who can be reached at (410) 704- 2466.
Benefits: The results of the study will help researchers to understand how certain coping mechanisms and emotional resources can help individuals handle aversive life events.
Participation: Participation is completely voluntary and you can withdraw at any time without penalty, even after you start.
Compensation: There is no pay for doing this. Psychology students may elect to receive course credit for participation.
Anonymity: All information collected will be kept strictly anonymous. There will be no way to link your responses to this survey to your name at any time. No publications from this project will include any identifying information from any participant.
Statement of Consent: I have read the above information, and have received answers to any questions I asked. By clicking the appropriate response below, I agree to participate in this research study and affirm that I am at least 18 years of age.

If you have any questions regarding this study please contact Dr. Mattanah at 410-704-3208 or the Institutional Review Board Chairperson, Dr. Elizabeth Katz, Office of University Research Services, 8000 York Road, Towson University, Towson, Maryland 21252; phone (410) 704-2236.

THIS PROJECT HAS BEEN REVIEWED BY THE INSTITUTIONAL REVIEW BOARD FOR THE PROTECTION OF HUMAN PARTICIPANTS AT TOWSON UNIVERSITY.

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Erin E. Monahan

[redacted]

EDUCATION

Master of Arts in Psychology, Clinical Concentration
Towson University, Towson, MD, Expected May 2018
Thesis: *Coping styles and protective factors as moderators of adjustment after trauma*
Advisor: Jonathan Mattanah, Ph.D.
GPA: 3.9

Bachelor of Science in Psychology; Minor in Sociology
High Point University, High Point, NC, December 2015
Overall GPA: 3.84; Major GPA: 3.96

RESEARCH EXPERIENCE

Graduate Student Researcher
Towson University, Interprofessional Health Studies, February 2017-Present
Supervisor: Wayne Nelson, Ph.D. *Towson, MD*

- Aide chair of Interprofessional Health Studies on various parts of his multiple, on-going research projects involving skilled nursing home facilities and disaster preparedness

Research Assistant **August 2016-Present**
Towson University, Attachment Lab *Towson, MD*
Supervisor: Jonathan Mattanah, Ph.D.

- Conducting research for independent project pertaining to attachment style during stressful situations
- Developed project protocol, submitted IRB application, and conducted research for master's thesis
- Maintained study data base, cleaned, coded and analyzed data using SPSS and Hayes Process Macro

Research Assistant
High Point University, Psychology Department **August-December 2015**
Supervisor: Christopher Lootens, Ph.D. *High Point, NC*

- Completed training on neuropsychological tests and IQ subtests to prepare for administration
- Conducted hour-long testing sessions with study participants

Independent Research
High Point University, Psychology Department **January - May 2015**
Supervisor: Deborah Danzis, Ph.D. *High Point, NC*

- Completed literature review, data collection, analysis of results through SPSS, and reporting of results
- Analyzed the correlation between childhood trauma, disordered eating, and self-esteem in young adults through collection of questionnaires

PRESENTATIONS

Monahan, E.E. & Mattanah, J. (November, 2017). *Exposure to stressful life events and adjustment outcomes during emerging adulthood: The moderating role of trauma coping self-efficacy*. Paper presented at Society for the Study of Emerging Adulthood.
Mattanah, J. & **Monahan, E.E.** (November, 2017). *Parental attachment, stressful life events, and adjustment difficulties during emerging adulthood*. Paper presented at Society for the Study of Emerging Adulthood.
Monahan, E.E. & Danzis, D. (November, 2015). *Analysis of childhood trauma, self-esteem, and disordered eating*. Poster presented at State of North Carolina Undergraduate Research Symposium.

CLINICAL EXPERIENCE

Graduate Intern
The Maryland Anxiety Center (500 hours) **September 2017-Present**
Supervisor: Andrea G. Batton, LCPC *Towson, MD*

- Provide individual therapy for adolescents and adults struggling with Obsessive-Compulsive Disorder, anxiety disorders, depression, hoarding disorder, and psychological distress
- Conducted literature reviews on evidence-based research for well-being in the workplace, and Eye Movement Desensitization and Reprocessing
- Complete intake interviews using The Structured Clinical Interview for DSM-5 (SCID-5)
- Aide in creation of office program on psychological well-being in the workplace

Behavioral Interventionist **October 2016-August 2017**
Trellis Services *Sparks, MD*
Supervisor: Julia Balacer, BCBA

- Provided Applied Behavior Analysis (ABA) for children on the Autism spectrum both in home and in clinic working on daily living skills
- Gathered data on current goals of children to track progress in therapy
- Completed daily session notes and submitted billing information to insurance

Intern **May-August 2015**
Veterans Support Centers of America PAWS *Salisbury, MD*
Supervisor: George Mutter
- Helped at a transitional housing shelter for veterans to prepare them for reentry into civilian life
- Trained service dogs and taught veterans skills to utilize the dog
- Worked with the onsite psychologist to aid veterans in receiving disability aid from the Veterans Health Administration

Intern **August - December 2014**
DC Survivors and Advocates for Empowerment (DC SAFE), *Washington, DC*
Supervisor: Paige Allmendinger, M.A.
- Completed internship with DC SAFE, a nonprofit organization advocating for survivors of domestic violence
- Managed case load of up to 10 clients, assessing needs, creating safety plan, and directing them to further services such as Crime Victims Compensation and emergency shelter
- Aided clients in drafting of civil protection orders to provide protection from abusers
- Helped survivors through the court process, answering questions about protection orders and service of notice to respondent
- Gained crisis management skills by answering phone calls on a 24/7-crisis hotline to assist survivors in emergency situations and respond to police reports

Volunteer, High Point University **November 6, 2015**
Cornerstone Health Alzheimer's Screening Day *High Point, NC*
- Aided in administering a free psychological test to community members who feared they might suffer from Alzheimer's disease

Volunteer, OCD Mid-Atlantic **November 14, 2017**
OCD Capital Walk: Step Up, Speak Up *Washington, DC*
- Assisted at sign in table with check-in and t-shirt handout
- Disseminated information to participants about Obsessive-Compulsive Disorder

WORK EXPERIENCE

Towson University **September 2017-Present**
Graduate Assistant *Towson, MD*
Supervisor: Wayne Nelson, Ph.D.
- Assist Towson University's department of Interprofessional Health Studies with program management, research, and various duties as assigned
- Prepared IRB application, informed consent and study protocol to examine intentions to quit in Nursing Home Administrators
- Gathered participants for multi-state study, maintained large database and analyzed data in SPSS

AWARDS, HONORS, AND MEMBERSHIPS

- Graduate Student Association, Counsel Member, *Towson University, September 2016-Present*
- Psychology Graduate Student Association, Director of Communications, *Towson University,* October 2017-Present
- Presidential Scholar, *High Point University, August 2012- December 2015*
- Dean's List Award Recipient, *High Point University, 6 Semesters*
- National Society for Leadership and Success, *High Point University, February 2014- December 2015*
- Psi Chi- International Honor Society in Psychology, *High Point University, October 2014- December 2015*
- Strive for Pi- GPA over 3.14, *Alpha Gamma Delta, Gamma Eta Chapter, High Point University, May 2012-December 2015*

RESEARCH QUALIFICATIONS AND CLINICAL SKILLS

Computer Skills: SPSS • GPower • Familiar with Magnum Opus • Qualtrics Survey Software • Survey Monkey Software • Microsoft Office

Assessments: *International Personality Disorder Examination* (IPDE)• *Minnesota Multiphasic Personality Inventory-2 (*MMPI-2*)* • *NEO Personality Inventory (*NEO-*PI-3)* • *The Wechsler Adult Intelligence Scale-IV* (WAIS-IV) • *The Wechsler Intelligence Scale for Children* (WISC-5) • *Differential Ability Scale* (DAS-II) • *Structured Clinical Interview for DSM-5* (SCID-5)

Clinical Training: Cognitive Behavioral Therapy (CBT) • Applied Behavioral Therapy (ABA) • Unified Protocol • Motivational Interviewing • Semi-structured Bio-psycho-social interview • SCID-5 Domestic Violence Core Competency Training

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