

EXPLORING GENDER DIFFERENCES IN THE PRESENTATION OF SYMPTOMS IN  
POST TRAUMATIC STRESS DISORDER

By

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### **Abstract**

The researchers examined the relationship of gender and the presentation of symptoms for individuals with Posttraumatic Stress Disorder (PTSD). The researchers used an online survey to examine the presentation of clusters of PTSD symptoms: intrusion, avoidance, negative alterations in cognitions and mood, and alterations in arousal and reactivity. It was hypothesized that women would display more symptoms in the clusters of avoidance and alterations in reactivity and arousal, and that men would display more symptoms in intrusion and changes in cognition. Additionally, the PTSD Checklist for DSM-5 (PCL-5) was used to assess the symptoms and the categories of PTSD symptoms that were exhibited by the participants. The survey was distributed through social media and local healthcare practitioners. There were fifteen participants included in the study: two males and thirteen females. The results demonstrated that females when compared to males had more intrusive symptoms and more severe symptoms in all of the four symptom categories. The results of this study can be used to address the gap in the PTSD literature and better understand how PTSD affects individuals as a whole and from a gender perspective. As the knowledge about PTSD advances, it will be easier for medical practitioners and individuals with PTSD to understand how the disorder will affect their life and what treatment is most appropriate.

## Exploring Gender Differences in the Presentation of Symptoms in PTSD

### Introduction

According to National Center for PTSD (2015a), more than half of Americans are exposed to a trauma during their lifetime. Posttraumatic Stress Disorder (PTSD) affects approximately 8 million Americans annually (National Center for PTSD [NCPTSD], 2015a). Roughly 8% percent of Americans will develop PTSD at one point during their lifetime. From a gender perspective, women are more than twice as likely to develop the disorder (NCPTSD, 2015a). According to the National Center for PTSD (2015b), women with PTSD are more likely to avoid things that remind them of their trauma, have emotional numbness, and to feel on edge or easily startled. Men were found to be more likely to feel angry and to engage in risky or harmful activities such as drug and alcohol abuse (NCPTSD, 2015).

Previously, PTSD was categorized as an anxiety disorder; however, it is now classified as a stress disorder (American Psychiatric Association, 2013). The *Diagnostic and Statistical Manual of Mental Disorders-V* (DSM-5) includes eight specific criterion for diagnosis of PTSD. The first criterion, Criterion A, involves the trauma type an individual experiences or was exposed to and categorizes the form of exposure to trauma. The following four criterion describe the symptoms of PTSD: B) intrusion, C) avoidance, D) negative alterations in cognitions and mood, and E) alterations in arousal and reactivity. The remaining three criterion that are used to diagnose PTSD include Criterion F, G, and H and set standards for time, severity, and misdiagnosis (American Psychiatric Association, 2013).

Clinicians use Criterion A to determine if trauma experienced by a client is related to their PTSD symptoms (American Psychiatric Association, 2013). PTSD can result from direct exposure or indirect exposure to trauma. For example, PTSD can occur if an individual is the

victim of sexual abuse, undergoes a life threatening scenario such as threatened death or sexual abuse, or witnesses a traumatic event. Additionally, indirect exposure to trauma, hearing of a traumatic event occurring to a close family member or friend, is included in the DSM-5. Those who face repeated exposure to indirect trauma such as first responders or professionals who work with victims of child abuse could also develop PTSD (American Psychiatric Association, 2013).

Clinicians use Criteria B to assess symptoms related to clients' intrusive thoughts and the reliving of a traumatic event through nightmares and/or flashbacks (American Psychiatric Association, 2013). Intrusive thoughts may occur when the individual experiences unwarranted and involuntary recollections of the traumatic event, but is aware of their current environment. The individual may have nightmares about the traumatic event or similar events. Dissociative reactions, commonly called flashbacks, can occur when triggered by an environmental stimulus such as a sound, smell, or sight. Flashbacks can be experienced on a continuum ranging from a brief episode to complete loss of consciousness. Intrusive symptoms can also be displayed through intense and prolonged distress or physiological reactions to a stimulus related to the traumatic event (American Psychiatric Association, 2013).

Clinicians utilize Criteria C to screen clients' for symptoms of avoidance (American Psychiatric Association, 2013). Symptoms within avoidance can refer to a number of things that involves avoiding stimuli related to the traumatic event. Avoidance can be symptomatic through a individual avoiding stressful thoughts and memories related to their trauma. They may also avoid the fact they experienced a trauma. One may alter their lifestyle to avoid of people, places, activities that may remind them of the trauma (American Psychiatric Association, 2013).

Clinicians utilize Criterion D to determine if clients' are experiencing changes in cognition and mood category due to PTSD (American Psychiatric Association, 2013). Continued

and often distorted negative views about oneself, others, or the world around them can be evidence of an individual experiencing symptoms within Criterion D. Feeling as if oneself or others are to blame for the trauma or the resulting consequences may occur for an individual with PTSD. One may feel persistent negative emotions such as horror, shame, guilt, or anger. For some, activities that previously were enjoyed may no longer be of interest. A sense of detachment and alienation may occur for an individual who has experienced a change in mood or cognition. One may have difficulty feeling positive emotions, such as love or happiness (American Psychiatric Association, 2013).

The final criterion that clinicians use to assess client symptoms is Criterion E. This criterion covers symptoms resulting from changes to reactivity and arousal (American Psychiatric Association, 2013). These behaviors either began or were intensified after experiencing the traumatic event. Changes in sleeping patterns, difficulty concentrating, or constant defensiveness are possible changes in arousal and reactivity that an individual with PTSD might express. Hyper-vigilance is a symptom that arises from a change in reactivity and arousal. It causes an individual to feel on edge and overly alert. One may also display an exaggerated startle response. Changes in reactivity and arousal can lead to reckless or self-destructive behaviors, and in some individuals irritable or aggressive behaviors may become prominent (American Psychiatric Association, 2013).

The three criterion following symptomology are the final requirements used to by clinicians to diagnose PTSD are Criteria F, G, and H (American Psychiatric Association, 2013). Criterion F requires that an individual with PTSD have symptoms in each of the four Criterion B, C, D, and E for at least one month. For an individual to meet Criterion G, they must have significant distress or impairment from symptoms. Criterion H is the final criteria for PTSD

diagnosis. It states that the symptoms and resulting distress must not be due to substance use, medications, or another illness (American Psychiatric Association, 2013).

Although PTSD is classified as a mental disorder, it can alter an individual's body as well as their mind. For example, PTSD can affect individual's brain development depending on the age of the individual (Bremner, 2006). Bremner (2006) found that adolescents with PTSD had changed hippocampal volumes while those who had panic disorders without trauma did not. In his study, he found an increased function in the amygdala and decreased medial prefrontal (anterior cingulate) functioning, which is consistent with other researchers findings. The changes in brain activity resulted in an interference with the individual's fear and fear extinction response (Bremner, 2006).

The study completed by De Bellisa, et al. (2002) examined the brain structures of adolescents that had PTSD resulting from maltreatment found differing results. Adolescents were found to have intracranial and cerebral volumes that were 6% smaller than the control group. However, the researchers did not find a decreased hippocampal volume as predicted. The brain volumes of participants were found to have a positive correlation in regards to the age of the trauma and a negative correlation with duration of the trauma. Individuals were found to have greater rates of childhood depression and lower IQ scores. As measured by the Global Assessment of Function scale, individuals with PTSD were found to have significantly lower scores. Participants were found more likely to internalizing and externalizing symptoms. The study found an indication that the male participants were more likely than the female counterparts to have more severe effects on brain development (De Bellisa et al., 2002).

From a physiological perspective, PTSD can increase levels of cortisol in an individual's body system (Bremner, 2006). Cortisol is an important hormone that aids in regulating the

body's functions. Over an extended period of time, excessive amounts of cortisol can lead to detrimental effects on the body (Aronson, 2009). Common negative effects associated with increased levels of cortisol include weight gain, high blood sugar, decreased function of the immune system, infertility, increased risk for cardiovascular disease, and/or gastrointestinal issues (Aronson, 2009).

In addition to the emotional, cognitive, physiological, and behavioral impact on individuals, PTSD has a staggering financial impact on the United States. Nearly half of all outpatients seeking mental health treatment have PTSD (PTSD United, 2013). In 2012, the Congressional Budget Office released that the average cost for the first year of treatment for the 103,500 overseas contingency operation patients is \$8,300 which totals to roughly \$859,050,000. In 2013, the United Organization stated that the cost of anxiety disorders, which at the time included PTSD, cost over \$42.3 billion.

Research exploring how gender effects the presentation of symptoms in PTSD is limited. A study by Galovski, Mott, Young-Xu, and Resick (2010) examined gender differences in presentation of PTSD in male and female participants that had experienced interpersonal assault. The study concluded that presentation of PTSD as well as depressive symptoms displayed similarly in both female and male participants. However, it did find that the female participants were more likely to report significantly more health related complaints than the male counterparts. Additionally, the male participants displayed higher reports of anger as measured by the State-Trait Anger Expression Inventory (Galovski, Mott, Young-Xu, & Resick, 2010).

Fullerton et al. (2001) investigated the effect of PTSD after experiencing a serious motor vehicle accident based on gender. The researchers also investigated peritraumatic dissociation. The study included 122 participants between the ages of eighteen and sixty-five. The researchers

utilized the DSM-III criterion for PTSD. The researchers concluded that women were more likely to experience symptoms from Criterion C, which covered avoidance and feelings of numbness. Researchers concluded that when compared to men, women were more likely to experience symptoms of arousal utilizing Criterion D. There were no significant differences reported based on gender Criterion B in relation to general symptoms of re-experiencing the traumatic event. When female participants were compared to male participants, females were found to more likely experience symptoms and distress in situations that were similar to the traumatic event that caused their PTSD (Fullerton et al., 2001).

The purpose of the study was to investigate if gender affects the presentation of symptoms in individuals with PTSD caused from any form of trauma. Research that examines PTSD in relation to gender and presentation of symptoms is limited and a research gap exists that the researchers sought to address with this study. The researchers specifically sought to determine if the findings by Fullerton et al. in 2001 could be replicated with the DSM-V and other trauma types for individuals with PTSD.

## **Methods**

### **Research Design**

Before the researchers collected data, institutional review board approval was obtained through East Carolina University's University and Medical Center Institutional Review Board (see Appendix A). The researchers used an anonymous survey that was constructed using Qualtrics (2017). The survey included demographic questions and the PTSD Checklist for DSM-5 (PCL-5). The demographic questions included were age, PTSD diagnosis status, and gender. Additionally, participants were asked if they were interested in being entered to win a gift card.

In the event participants experienced distress due to questions, a list of local resources were provided and the crisis line.

### **Funding**

To improve the likelihood of participation, a research incentive was offered. The final questions of the end of study allowed individuals that wished to be entered in a raffle to receive a gift card were given the option to do so by providing their name and an email address. Eight participants were selected at random to receive a \$100 Target gift card. Target gift cards were provided and purchased through two separate grants. The Department of Recreation and Leisure Studies Undergraduate Student Research Awards was awarded and utilized to purchase five of the eight \$100 Target gift cards. The remaining three \$100 Target gift cards were purchased using funds from the Scholarly Activity Awards for Students.

### **Participants**

The study was completed in eastern North Carolina. Participants in eastern North Carolina were targeted, but the study was not exclusive to the area. Convenience sampling was used to recruit participants for the study. Local health care practitioners in eastern North Carolina were contacted and used to recruit participants. Social media was used to seek participants in and outside of eastern North Carolina. A total of fifteen participants enrolled and completed the study.

Four of the fifteen participants did not identify as having an official diagnosis of PTSD. Three of the four participants without a diagnosis were female and one was male. When utilizing the score systems for the PCL-5, the three female participants displayed a high probability of having PTSD and therefore remained in the study population. The male participant without a

diagnosis displayed a possibility of having PTSD, but would need further testing to confirm. Due to having symptoms in each of the four criteria he remained a participant in the study.

Two of the fifteen participants identified their gender as male and thirteen identified as females. All participants identified as being at least eighteen years or older. Eleven of the fifteen participants submitted their name and email to be entered to win a \$100 gift card for Target.

### **Instruments**

The survey was composed of twenty-seven questions (see Appendix B for complete survey). Of the twenty-seven questions included in the survey, twenty questions were directly derived from the PTSD Checklist for DSM-5 (PCL-5). The PCL-5 is a standardized self-assessment that can be used to screen individuals for PTSD. It breaks down questions into the four different criterion categories from the DSM-5: Criterion B, C, D, and E. In the PCL-5 assessment, questions one through five address Criterion B, questions six through seven address Criterion C, questions eight through fourteen address Criterion D, and questions fifteen through twenty addresses Criterion E. The PCL-5 utilized a Likert scale that provides its users with five options: 0) not at all, 1) a little bit, 2) moderately, 3) quite a bit, and 4) extremely. These options are assigned a numerical value from 0-5. The other 7 questions utilized nominal questions such as are you male or female and do you consent to the survey. Fill in the blank responses were used for the other category in trauma type and for those who wished to be entered for compensation.

### **Procedures**

The survey was created electronically utilizing Qualtrics, which is an online survey system offered through East Carolina University (2017). To contact potential research participants, local health practitioners were sent emails using a predetermined and IRB approved email template that included attachments for a flyer and a resource list for individuals with

PTSD. To view the attachments distributed to health care practitioners see Appendices C, D, and E. Additionally, social media was utilized to reach participants. PTSD groups on Facebook were contacted using the same IRB approved email template, flyer, and resource list. The lead investigator posted a digital copy of the flyer on her Facebook account, which was then shared electronically by various individuals.

Participants were given the option to remain completely anonymous or give their name and an email address to be entered for the chance to win a gift card through random selection. For those who entered to win a gift card, their answers remained anonymous otherwise. The names and email addresses were only used to send the gift cards to those who were selected to win a gift card.

### **Data Analysis**

Descriptive data was collected. Counts and frequencies were used to compare scores between male and female participants. The sum score was calculated for the overall PCL-5 as well as each of the four symptom criteria. Mean scores are reported and standard deviations. Additional means were used for each symptom criteria for the four participants who experienced combat trauma.

### **Results**

Fifteen people participated: two males and thirteen females. All fifteen participants displayed 100% compliance. All participants identified themselves as eighteen years or older and consented to participate in the study. Despite being notified that participants could discontinue the survey at any time, the study had a 100% completion by all individuals.

The survey assessed Criteria A, B, C, D, and E. Due to the limited number of participants, statistical analysis could not be completed due to insufficient power. However,

results were determined through the use of frequency and descriptive data. A mean score, standard deviation, and sum were derived from the participants.

**Table 1: PCL-5 Results**

PCL-5 Results										
ID #	Gender	Official Diagnosis	Criterion A	B	C	D	E	Mean	Sum	Standard Deviation
1	Female	No	Other	14	6	12	6	9.50	38	3.57
2	Female	Yes	Combat	13	5	8	16	10.50	42	4.93
3	Female	Yes	Assault	12	4	4	12	8	32	4.62
4	Female	Yes	Sexual Trauma	15	7	19	16	14.25	57	5.12
5	Female	Yes	Combat	10	6	19	16	12.75	51	5.85
6	Female	Yes	Other	18	6	21	20	16.25	65	6.95
7	Female	Yes	Other	15	6	20	20	15.25	61	6.60
8	Female	No	Sexual Trauma	13	7	17	11	12	48	4.16
9	Female	Yes	Motor Vehicle Accident	5	3	17	12	9.25	37	6.45
10	Female	Yes	Sexual Trauma	13	8	26	17	16	64	7.62
11	Female	Yes	Other	10	4	12	11	9.25	37	3.59
12	Female	Yes	Other	6	5	11	6	7	28	2.71
13	Female	No	Other	16	2	13	7	9.50	38	6.24
14	Male	No	Combat	6	2	4	11	5.75	23	3.86
15	Male	Yes	Combat	3	6	15	11	8.75	35	5.32

The female individual participants outscored the male counterparts in all four of the specific criterion. All four of the highest specific criterion scores occurred from the three female participants with the highest scores. Participant #6 was a female and held the highest sum at sixty-five, and she also scored the highest in Criterion B and tied with another participant for highest score in Criterion E. Her score for Criterion B was eighteen out of a possible twenty in intrusive symptoms. Participant #10 was the second highest overall sum at sixty-four, and she was the highest scoring participant in Criterion C. Participant #10 scored and eight on Criterion C which is the highest score possible. She identified extreme distress for all avoidance based questions. Participant #7 held the third highest sum at sixty-one, and she tied participant #6 for

the highest score in Criterion E. The two participants scored twenty out of twenty-four possible points for changes in reactivity and arousal.

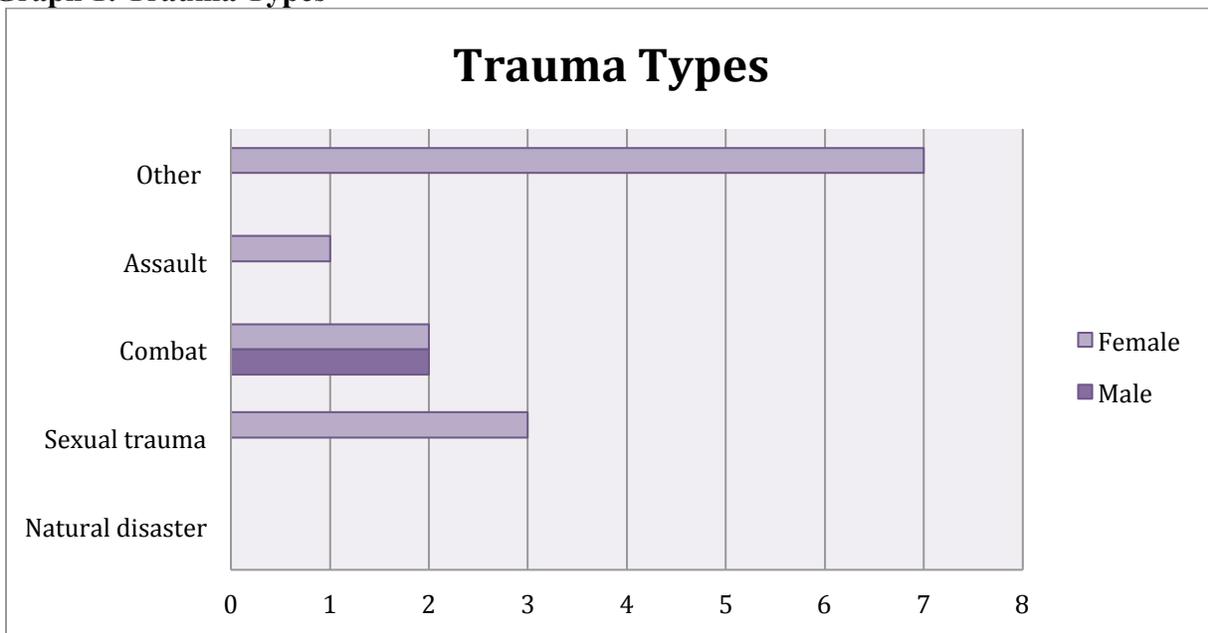
The lowest overall sum was that of one of the male participants, but individual criterion low scores varied between the genders. Participant #15, a male, had the lowest score for Criterion B. He scored three out of twenty possible points in the intrusive category. The lowest score in Criterion C was held participant #14, who was also a male. He scored two out of eight possible points for avoidance. Participant #14 had the lowest overall sum and tied with another participant for the lowest individual score in a Criterion D. Both participants scored four out of twenty-eight possible points in changes in cognition and mood. However, participant #3 was a female and #14 was a male. The lowest score for Criterion E was also a tie but between two female participants: #1 and #12. The two female participants scored six out of twenty-four on the reactivity and arousal symptoms. Three of the six participants who held or tied for the lowest scores were the three lowest sum scores. Participant #14 was a male scoring an overall sum of 23. The second and third lowest scores were both female participants. Participant #12 scored 28, and Participant #3 scored 32.

**Table 2: Combined Mean Scores**

<b>Combined Mean Scores for Genders</b>		
	Female	Male
<b>Criterion B</b>	12.31	4.50
<b>Criterion C</b>	5.31	4
<b>Criterion D</b>	15.31	9.50
<b>Criterion E</b>	13.08	11
<b>Sum</b>	46	29

The means of all female and male participants sums and individual criterion results were calculated. The female participants scored higher in all four criterion and overall sum. However, the male participants appeared to remain in the normal range for Criterion C and Criterion E. The female participants scored an average of 7.81 points higher than the males in Criterion B and 5.81 points higher in Criterion D.

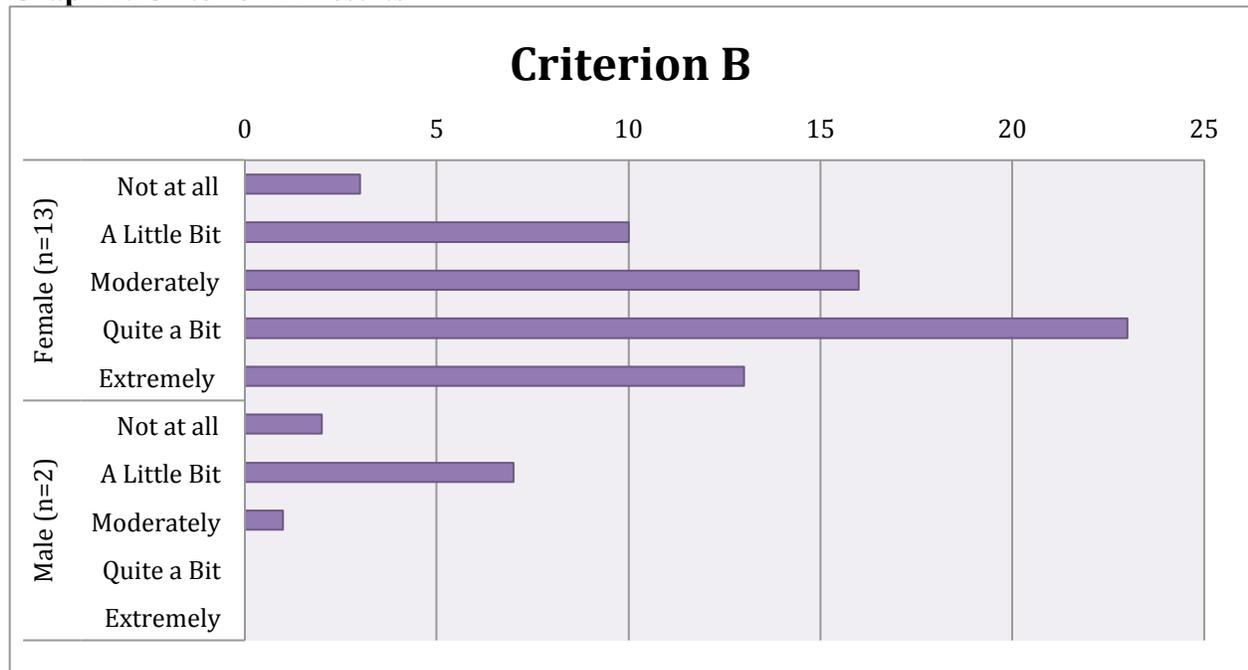
**Graph 1: Trauma Types**



The survey included one question pertaining to Criterion A and results can be found in Graph 1. It asked participants to select the type of trauma they have experienced. Participants were given the following choices: Natural disaster, sexual trauma, combat, assault, or other. Those who chose the other category were asked to briefly describe the trauma. The two males included in the study identified combat as the traumatic exposure to cause their PTSD. Of the thirteen female participants, three identified sexual trauma as the event related to their PTSD. Two selected combat as the traumatic event they experienced, and one chose assault. Out of fifteen participants, seven of them chose the other option.

Of the seven participants who chose other as their trauma type, all were female. Two of the female participants cited more than one trauma. One identified having experienced a natural disaster, sexual trauma, and assault. The other female participant identified her traumatic experiences to be emotional abuse and a motor vehicle accident. Two of the seven female participants identified childhood trauma, one of which specifically stated childhood abuse. Another female participant stated abuse as her trauma. One female participant cited a motor vehicle incident as her trauma source, and the final female participant listed traumatic medical conditions and procedures as her traumatic experience.

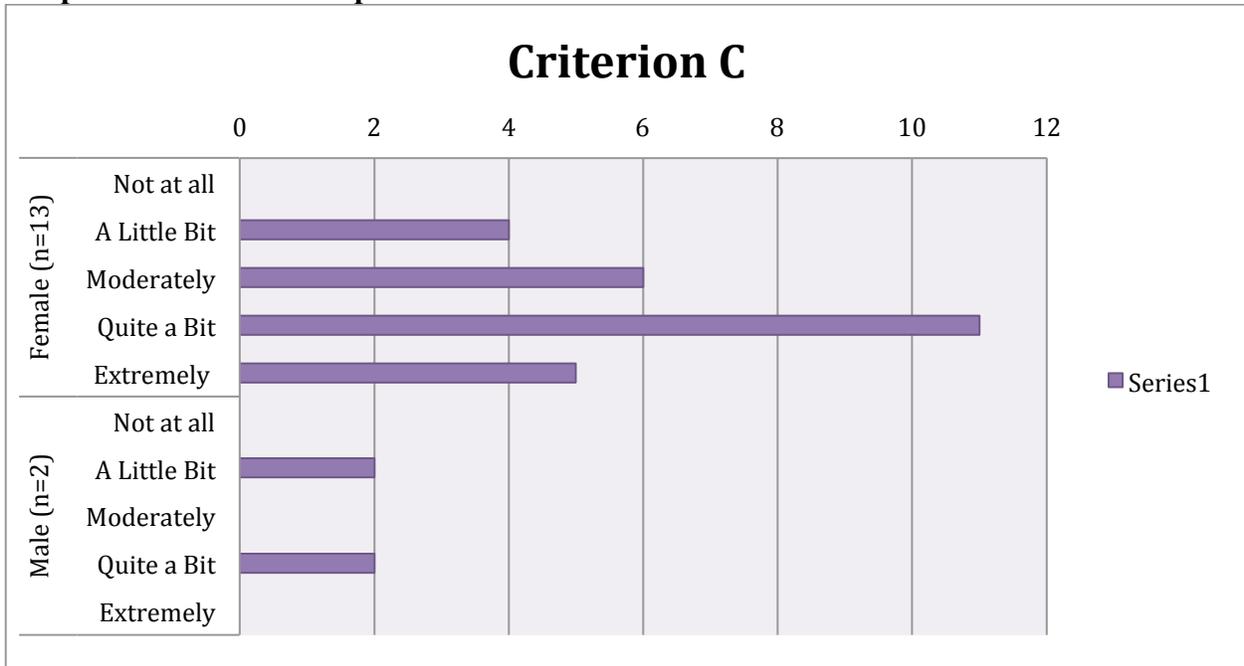
**Graph 2: Criterion B Results**



Criterion B demonstrated the most dramatic difference between males and female participants. Female participants appeared much more likely to exhibit distress caused from intrusive symptoms. The questions assessed intrusive memories, dreams, thoughts, flashbacks, and physiological reactions. Responses from the male participants ranged from not at all to moderately distressed, with only one of the males reaching moderate distress in criteria B on one

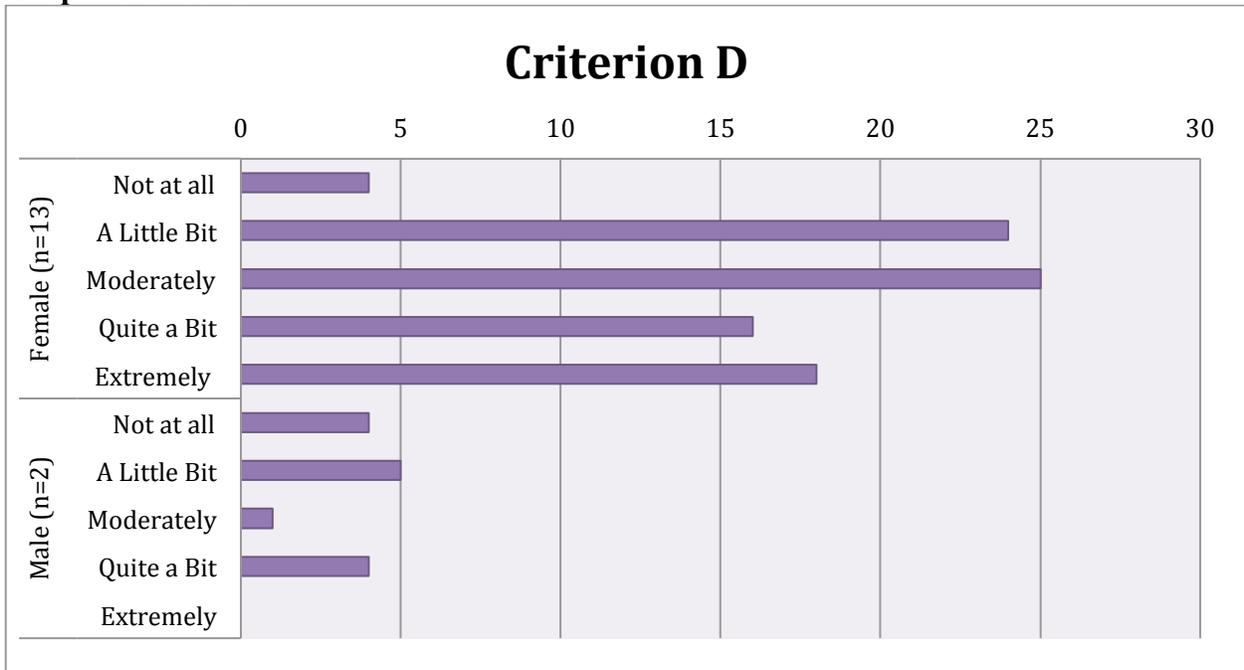
account. The female participant responses ranged from not having any symptoms to extreme distress caused from symptoms in Criterion B.

**Graph 3: Criterion C Responses**



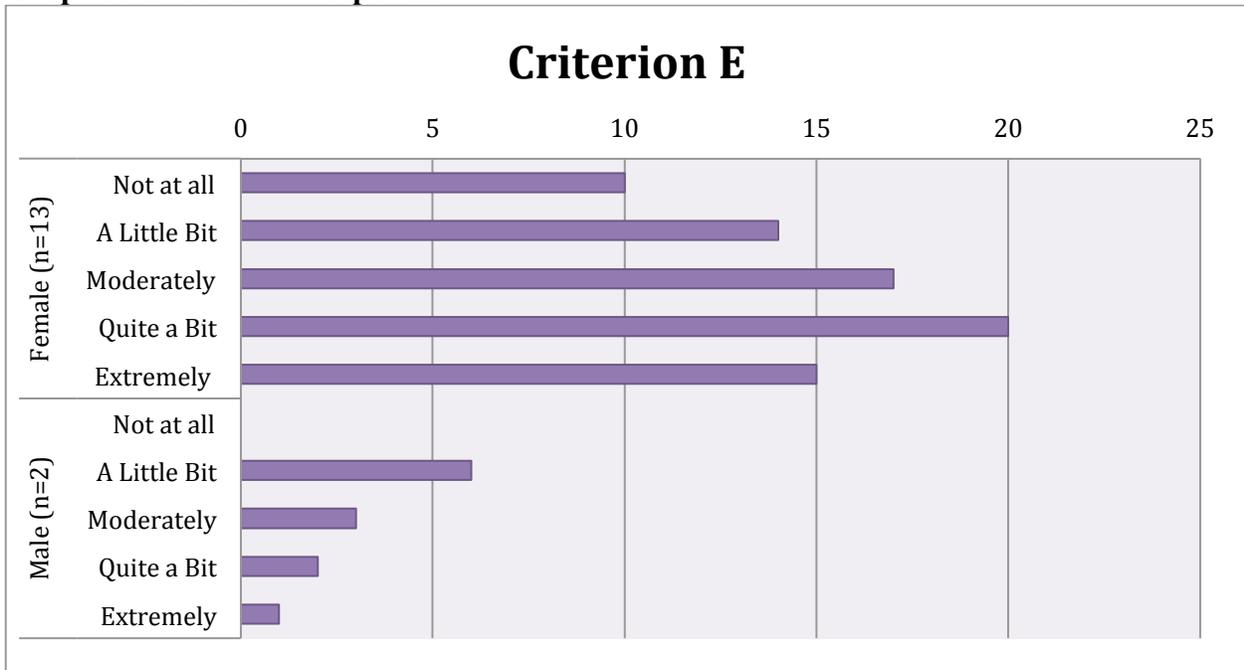
The second symptom criteria, Criterion C, covered the avoidance spectrum for participants. Female participants reported more severe symptoms of avoidance. Conversely, the male participants reported responses in the normal spectrum. At this time, there does not appear to be any clinical differences in the presentation of avoidance symptoms for individuals with PTSD.

**Graph 4: Criterion D**



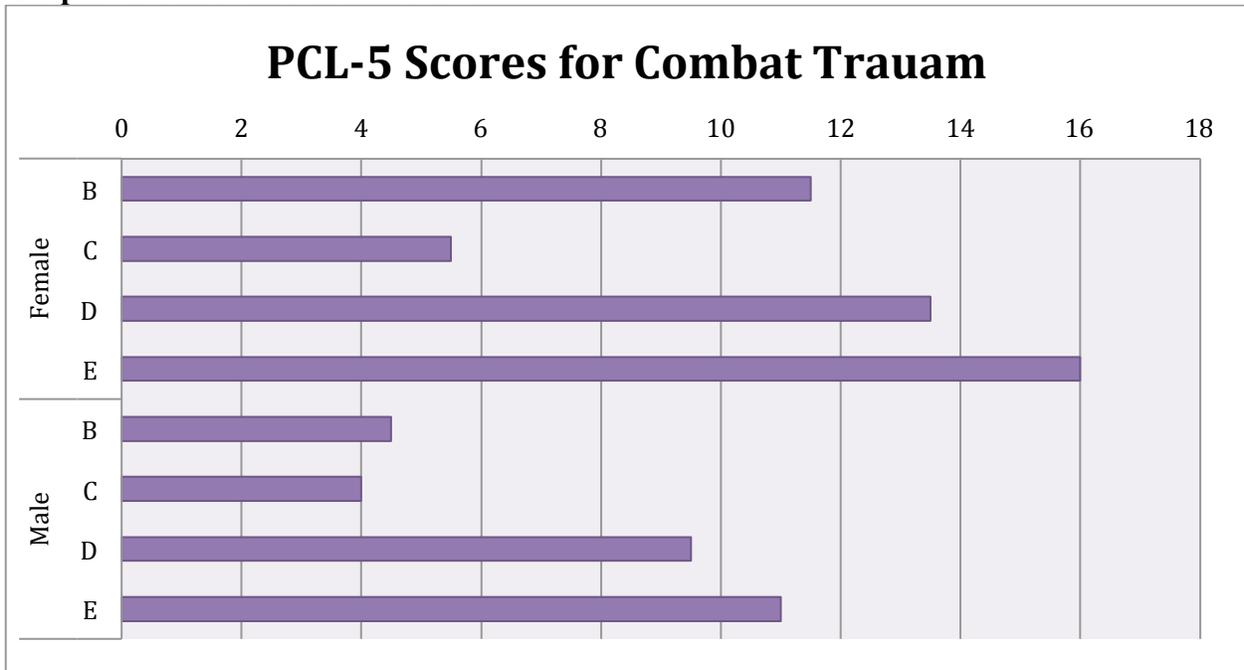
The Criterion D responses from participants assessed changes in their mood and cognition. The responses in this category did not appear to have any clinical differences between the male and female participants. The responses from the male participants appeared to be similar, but the women had slightly more severe symptoms. There were eighteen extreme responses from the female participants, and the male participants had no reports for extreme symptoms.

**Graph 5: Criterion E Responses**



The results for Criterion E, changes in participants’ reactivity and arousal, did not appear to show any differences between the males and females participants. The two male participants fell within the normal range of responses compared to the female participants. While the female participants appeared to have more severe symptoms, there were also ten responses that the females identified did not cause them any distress. The male participants identified to having at least a little bit of distress caused by each specific question relating to changes in reactivity and arousal.

**Graph 6: Combat Veteran Results**



When the mean scores for each criterion were taken from the two female and two male participants who identified their trauma as combat, the results differed than those from the general population of the study with various trauma types. The symptomology presented in similar patterns, but with the female participants reporting greater severity among all four categories. The intrusive category, Criterion B, continued to have the greatest difference in results between female and male participants. The female participants reported more intrusive symptoms due to combat related PTSD than their male counterparts and scored seven points, which was slightly less than the scores from the overall study population. The greatest difference between the combat participants and the combination of all participants is that female veterans reported having more severe symptoms in Criterion E. Criterion E was the highest scoring category for both male and female individuals with PTSD resulting from combat trauma.

### Discussion

Due to the uneven gender distribution and limited population, quantitative statistical analysis was not conducted. The hypothesis was that female participants would display greater symptomology in Criterion C and E, while the male participants present greater in Criterion B and D. In actuality, the female participants reported comparatively higher symptoms in all symptom categories, and presented the largest difference of symptoms in Criterion B. Female and male participants had similar symptom presentation and severity in Criterion C.

Results from the general study population displayed that the female participants were more likely to have intrusive symptoms and changes in mood and cognition. Scoring in Criterion B ranged from 0-20 points, and the female participants scored 7.81 points higher than the male participants. A similar clinical difference was apparent in Criterion D. Scoring in Criterion D ranged from 0-28 points, and the female participants scored 5.81 points higher than the male participants. There were little clinical differences in Criteria C and E, with the female participants only scoring 1.31 and 2.08 points above the male participants.

However, when certain participants who exhibited trauma were examined the results differed. The female participants were more likely to experience intrusive symptoms and displayed a 7.00 point difference over the male counterparts. The greatest changes in results occurred in Criteria D and E. The gap that had previously appeared between the male and female participants in Criterion D decreased. The female participants displayed higher scores in Criterion D, but the difference was reduced from 5.81 to 4.00 points. Criterion E was the highest scoring symptom for both female and male participants who had identified combat as their traumatic event. The female participants scored 5.00 points higher than the males, compared to the general study population that displayed a difference of 2.08 points between genders.

The consistent results for Criterion B between the general participants and those with combat trauma suggested that gender effected the presentation of symptoms, specifically those of intrusion. The changed responses for Criterion D and E between all trauma participants and combat trauma participants suggest that the type of trauma may have effected the presentation of symptoms in PTSD. Additional studies will need to be conducted to further examine the relationship between gender, trauma type, and symptomology in PTSD.

### **Limitations**

The researchers had a multitude of limitations when conducting the study. The most apparent limitation was the number of participants and gender distribution. While women are more than twice as likely to develop PTSD, the participants in the study were disproportionate of the statistical population. Thirteen out of the fifteen participants were females instead of the estimated ten females and five males. With such a small and disproportionate sample, it was not possible to statistically analyze the data. This also diminishes the generalizability of the results from study for the general population of PTSD. Low census was caused in part due to convenience sampling and limited resources.

Additionally, the type and amount of compensation may have been a limiting factor. Neither of the men submitted their information to be entered to win one of the gift cards. Perhaps a more universal compensation such as a Visa gift card would have been more sought after. The limited amount of compensation may have also been an issue. Participants may have thought they were competing with hundreds of people for eight gift cards. If all participants had been able to receive compensation, the number of participants may have increased.

The survey itself is a limiting factor. It utilized a self-assessment that was conducted anonymously online. With any form of a self-assessment, answers may be skewed. Participants

could underscore or over score the severity of their symptoms. While contact information and written instructions were provided, participants were not given any verbal instructions or able to ask the lead investigator questions directly. Due to the online nature and anonymity, there was no way for the investigator to confirm the accuracy of the responses or the appropriateness of the participants.

Distributing the survey online and utilizing local healthcare practitioners and social media limited the population and study. As demonstrated by four of the fifteen participants, many individuals are not diagnosed with PTSD and would therefore not be seeking treatment for it. Even for those diagnosed with PTSD, not all of them will be seeking active treatment. Utilizing Facebook to seek outside participants excluded those who may not have the means, skills, or desire to access social media.

However, the greatest limitation was time. The study was completed over the course of three semesters or roughly one year. A great portion of the time spent completing the study was spent in the planning process. The researchers only collected data for one semester. If the study had been completed over the course of a longer duration, data collection could have been prolonged and a greater number of participants could have been acquired. Additional time could have been utilized by the researchers to coordinate and partner with outside resources to increase the sample size of the study. Partnerships with organizations such as the Veterans Administration, Wounded Warriors, and/or Women Against Abuse would have been an excellent means to improve participant recruitment.

### **Future Research**

Future research should be conducted in a number of various topics within PTSD. Gender studies need to be continued and expanded. Gender studies need to be done on a larger scale.

They should extend to examine the effects of numerous trauma types as well as specific traumas such as combat versus sexual trauma. They should also be used to examine if increased cognitive and language skills in women play a role in the symptoms of PTSD presented.

PTSD studies need to be done on a larger scale to examine the effects of specific types of trauma, specifically for combat trauma and changes in reactivity and arousal. Researchers should examine the relationship of military training and/or combat trauma specifically on reactivity and arousal symptoms such as increased irritability, being easily startled, hypervigilance, and difficulty sleeping.

Researchers should also include the lesbian, gay, bisexual, transgender, and queer (LGBTQ) community. Researchers should push the boundaries of how gender identification and gender affects the presentation of PTSD symptoms. What was once simply male or female is no longer always the case, and research needs to adapt to fit the unique needs of gender identity and the LGBTQ community. Transgender studies could study the specific effects of PTSD based on gender identity versus biological sex. Transgender studies could also examine the effects of sex related hormones and if hormone therapy during different phases of individuals in transition have an effect on PTSD.

## References

- American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). Arlington, VA: American Psychiatric Publishing.
- Aronson, D. (2009). Cortisol: Its role in stress, inflammation, and indications for diet therapy. *Today's Dietitian*, 11(11), 38. Retrieved from <http://www.todaysdietitian.com/newarchives/111609p38.shtml>
- Bremner, J. D. (2006). Traumatic stress: Effects on the brain. *Dialogues in Clinical Neuroscience*, 8(4), 445–461. Retrieved from <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3181836/>
- Congressional Budget Office. (2012). The veterans health administration's treatment of PTSD and traumatic brain injury among recent combat veterans. *Congress of the United States*. Retrieved from <http://www.cbo.gov/sites/default/files/cbofiles/attachments/02-09-PTSD.pdf>
- De Bellisa, M. D., Keshavana, M. S., Shifflett, H., Iyengar, S., Beersa, S. R., Halla, J., & Moritza, G. (2002). Brain structures in pediatric maltreatment-related posttraumatic stress disorder: a sociodemographically matched study. *Biological Psychiatry*, 52(11), 1066-1078. DOI: [http://doi.org/10.1016/S0006-3223\(02\)01459-2](http://doi.org/10.1016/S0006-3223(02)01459-2)
- Fullerton, C. S., Ursano, R. J., Epstein, R. S., Crowley, B., Vance, K., Kao, T., Dougall, A. L., & Baum, A. S. (2001). Gender differences in posttraumatic stress disorder after motor vehicle accidents. *American Journal of Psychiatry*, 158(9), 1486-1491. <http://dx.doi.org/10.1176/appi.ajp.158.9.1486>

Galovski, T. E., Mott, J., Young-Xu, Y., Resick, P. A. (2010). Gender differences in the clinical presentation of PTSD and its concomitants in survivors of interpersonal assault. *Journal of Interpersonal Violence*. 26(4), 789-806. DOI:

10.1177/0886260510365865

National Center for PTSD. (2015). How common is PTSD?. *U.S Department of Veterans Affairs*. Retrieved from <http://www.ptsd.va.gov/public/PTSD-overview/basics/how-common-is-ptsd.asp>

National Center for PTSD. (2015). Women, Trauma, and PTSD. *U.S Department of Veterans Affairs*. Retrieved from <https://www.ptsd.va.gov/public/ptsd-overview/women/women-trauma-and-ptsd.asp>

National Center for PTSD. (2016). PTSD checklist for DSM-5. *U.S Department of Veterans Affairs*. Retrieved from <http://www.ptsd.va.gov/professional/assessment/adult-sr/ptsd-checklist.asp>

PTSD United. (2013). PTSD Statistics. *PTSD United, Inc*. Retrieved from <http://www.ptsdunited.org/ptsd-statistics-2/>

Qualtrics. (2017). *Qualtrics*. Retrieved from <https://www.qualtrics.com/>

Appendix A

4/25/2017

RX: Your study has been approved - Bramblett, Hannah Elisabeth

RX: Your study has been approved

umcirb@ecu.edu

Tue 09/27/2016 12:55 PM

To: Bramblett, Hannah Elisabeth <brambleth13@students.ecu.edu>;



**EAST CAROLINA UNIVERSITY**  
 University & Medical Center Institutional Review Board Office  
 4N-70 Brody Medical Sciences Building · Mail Stop 682  
 600 Moye Boulevard · Greenville, NC 27834  
 Office 252-744-2914 · Fax 252-744-2284 · [www.ecu.edu/irb](http://www.ecu.edu/irb)

**Notification of Initial Approval: Expedited**

**From:** Social/Behavioral IRB  
**To:** [Hannah Bramblett](#)  
**CC:** [Matthew Fish](#)  
**Date:** 9/27/2016  
**Re:** [UMCIRB 16-000176](#)  
 Exploring Gender Differences in Presentation of Symptoms in Post Traumatic Stress Disorder

I am pleased to inform you that your Expedited Application was approved. Approval of the study and any consent form(s) is for the period of 9/27/2016 to 9/26/2017. The research study is eligible for review under expedited category # 7. The Chairperson (or designee) deemed this study no more than minimal risk.

Changes to this approved research may not be initiated without UMCIRB review except when necessary to eliminate an apparent immediate hazard to the participant. All unanticipated problems involving risks to participants and others must be promptly reported to the UMCIRB. The investigator must submit a continuing review/closure application to the UMCIRB prior to the date of study expiration. The Investigator must adhere to all reporting requirements for this study.

Approved consent documents with the IRB approval date stamped on the document should be used to consent participants (consent documents with the IRB approval date stamp are found under the Documents tab in the study workspace).

The approval includes the following items:

Name	Description
Consent letter for expedited survey research	Consent Forms
Email	Recruitment Documents/Scripts
Final Proposal.docx	Study Protocol or Grant Application
PCL-5	Data Collection Sheet
PCL-5	Surveys and Questionnaires
Proposal Form	Study Protocol or Grant Application
Qualtrics Survey	Surveys and Questionnaires
Qualtrics Survey	Data Collection Sheet
Resource List	Additional Items

4/25/2017

RX: Your study has been approved - Bramblett, Hannah Elisabeth

Name	Description
Social Media Post/Flyer	Recruitment Documents/Scripts
The Chairperson (or designee) does not have a potential for conflict of interest on this study.	
IRB00000705 East Carolina U IRB #1 (Biomedical) IORG0000418 IRB00003781 East Carolina U IRB #2 (Behavioral/SS) IORG0000418	

—

Study.PI Name:  
Study.Co-Investigators:

## Appendix B

4/24/2017

Qualtrics Survey Software

**Introduction**

The purpose of this survey is to further the knowledge regarding Post Traumatic Stress Disorder. The research question at hand is if gender effects the presentation of PTSD symptoms. The results of this study will bring a better understanding on how PTSD effects individuals. This will benefit individuals with PTSD and medical professionals seeking to treat persons with PTSD.

Your results will remain anonymous. If you wish, you may discontinue the survey at any time. Thank you for choosing to participate in this study.

---

Do you understand your rights as a participant (your information will be kept anonymous and you may discontinue at any time)?

- I understand  
 I do not understand

---

In order to participate you must be at least 18 years old. Can you verify that you are 18 years or older?

- Yes, I am 18 or older  
 No, I am under 18

---

Have you been formally diagnosed with Post Traumatic Stress Disorder?

- Yes  
 No

---

Have you experienced symptoms of Post Traumatic Stress Disorder within the past month?

- Yes

4/24/2017

Qualtrics Survey Software

 No

What is your gender?

---

 Male Female

Please select the type of trauma you have experienced.

---

 Natural disaster Sexual trauma Combat Assault Other (please briefly describe) 

### PART 3

Below is a list of problems that people sometimes have in response to a very stressful experience. Keeping your worst event in mind, please read each problem carefully and then choose the right choice to indicate how much you have been bothered by that problem in the past month.

---

Repeated, disturbing, and unwanted memories of the stressful experience?

---

 Not at all A little bit Moderately Quite a bit Extremely

Repeated, disturbing dreams of the stressful experience?

---

 Not at all A little bit Moderately

4/24/2017

Qualtrics Survey Software

- Quite a bit
- Extremely

Suddenly feeling or acting as if the stressful experience were actually happening again (as if you were actually back there reliving it)?

---

- Not at all
- A little bit
- Moderately
- Quite a bit
- Extremely

Feeling very upset when something reminded you of the stressful experience?

---

- Not at all
- A little bit
- Moderately
- Quite a bit
- Extremely

Having strong physical reactions when something reminded you of the stressful experience (for example, heart pounding, trouble breathing, sweating)?

---

- Not at all
- A little bit
- Moderately
- Quite a bit
- Extremely

Avoiding memories, thoughts, or feelings related to the stressful experience?

---

- Not at all
- A little bit
- Moderately
- Quite a bit

4/24/2017

Qualtrics Survey Software

 Extremely

Avoiding external reminders of the stressful experience (for example, people, places, conversations, activities, objects, or situations)?

---

- Not at all
- A little bit
- Moderately
- Quite a bit
- Extremely

Trouble remembering important parts of the stressful experience?

---

- Not at all
- A little bit
- Moderately
- Quite a bit
- Extremely

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)?

---

- Not at all
- A little bit
- Moderately
- Quite a bit
- Extremely

Blaming yourself or someone else for the stressful experience or what happened after it?

---

- Not at all
- A little bit
- Moderately

4/24/2017

Qualtrics Survey Software

- Quite a bit
- Extremely

Having strong negative feelings such as fear, horror, anger, guilt, or shame?

---

- Not at all
- A little bit
- Moderately
- Quite a bit
- Extremely

Loss of interest in activities that you used to enjoy?

---

- Not at all
- A little bit
- Moderately
- Quite a bit
- Extremely

Feeling distant or cut off from other people?

---

- Not at all
- A little bit
- Moderately
- Quite a bit
- Extremely

Trouble experiencing positive feelings (for example, being unable to feel happiness or have loving feelings for people close to you)?

---

- Not at all
- A little bit
- Moderately
- Quite a bit
- Extremely

4/24/2017

Qualtrics Survey Software

Irritable behavior, angry outbursts, or acting aggressively?

- Not at all
- A little bit
- Moderately
- Quite a bit
- Extremely

Taking too many risks or doing things that could cause you harm?

- Not at all
- A little bit
- Moderately
- Quite a bit
- Extremely

Being "superalert" or watchful or on guard?

- Not at all
- A little bit
- Moderately
- Quite a bit
- Extremely

Feeling jumpy or easily startled?

- Not at all
- A little bit
- Moderately
- Quite a bit
- Extremely

Having difficulty concentrating?

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Qualtrics Survey Software

- Not at all
- A little bit
- Moderately
- Quite a bit
- Extremely

#### Trouble falling or staying asleep?

- Not at all
- A little bit
- Moderately
- Quite a bit
- Extremely

#### Closure

If you wish to be entered for the chance to win one of several \$100 eGift cards please enter your name and an email address that it can be sent to below. Your name and email provided will not be used for any other purpose than to send a prize if you are chosen. All results will remain anonymous.

- I do not wish to be entered for a prize.
- My name is
- An email I can be reached at is

#### Block 3

If this survey caused any distress, please use one of the following resources.

#### **Crisis Hotline Numbers**

Disaster Distress Helpline

1-800-985-5990

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Qualtrics Survey Software

National Domestic Violence Hotline

1-800-799-7233

National Sexual Assault Hotline

1-800-656-4673

National Suicide Prevention Lifeline

1-800-273-8255

National Veterans Foundation Hotline

1-888-777-4443

Rape, Abuse, and Incest National Network (RAIN)

1-800-656-4673

---

### **PTSD Support Groups in Eastern North Carolina**

Family Wellness Center

Dr. David Bell

252-207-0604

Insight Therapeutic and Counseling Services

Dr. Leon Johnson

252-392-9457

Wellspring Therapy Services

Alyssa Sugar

252-221-5750

There are various fees associated with each support group

---

### **Pitt County Veterans Services**

Contact information:

Channing Ford or Teresa Ball

252-902-3090

Services provided at no charge:

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Liaison between the U.S. Department of Veterans Affairs and persons submitting claims to the VA.

On-site counseling.

Assistance to veterans and their dependents in obtaining benefits from the U.S. Department of Veteran Affairs and the state of North Carolina to which they may be entitled.

---

Powered by Qualtrics

## Appendix C

Dear Dr. Smith,

My name is Hannah Bramblett, and I am a senior majoring in Recreational Therapy at East Carolina University. I am conducting a research project to examine if there are any differences in how symptoms of PTSD are presented based on gender.

I am looking for people that are over 18, formally diagnosed with PTSD, and have experienced symptoms within the past month to participate in the study. It consists of a survey that will last approximately 10 minutes, and all results will remain anonymous. Participants will be given the option to enter their email in order to be entered for the drawing of a Target gift card.

If you would be willing to share this with other medical practitioners or any candidates for participants, I would be incredibly grateful.

Thank you,

Hannah Bramblett  
Recreational Therapy Major  
Honors College  
East Carolina University  
(336) 307-6066  
brambleth13@ecu.edu

## Appendix D

## Gender Differences in Posttraumatic Stress Disorder Study

We want ***YOU*** to participate.

Enter to win one of eight **\$100 Target gift cards.**

### Eligibility requirements:

- ❖ Diagnosed with Posttraumatic Stress Disorder
- ❖ Have had at least one PTSD symptom within the past month.
- ❖ 18 years or older.

### What does the study entail?

- ❖ Completing a 10-minute online survey
- ❖ All data is completely confidential and your results will remain anonymous. Your privacy is extremely important to me.

To access the survey go to: <https://goo.gl/3JsPiq>

For more information, contact Hannah Bramblett  
[brambleth13@students.ecu.edu](mailto:brambleth13@students.ecu.edu)

## Appendix E

### Resource List for Persons with PTSD

#### **Crisis Hotline Numbers**

- Disaster Distress Helpline
  - 1-800-985-5990
- National Domestic Violence Hotline
  - 1-800-799-7233
- National Sexual Assault Hotline
  - 1-800-656-4673
- National Suicide Prevention Lifeline
  - 1-800-273-8255
- National Veterans Foundation Hotline
  - 1-888-777-4443
- Rape, Abuse, and Incest National Network (RAIN)
  - 1-800-656-4673

#### **PTSD Support Groups in Eastern North Carolina\***

- Family Wellness Center
  - Dr. David Bell
  - 252-207-0604
  - 1035 C Dir Ct. Greenville, NC 27858
- Insight Therapeutic and Counseling Services
  - Dr. Leon Johnson
  - 252-392-9457
  - 2231 W Nash St. Suite H Wilson, NC 27896
- Wellspring Therapy Services
  - Alyssa Sugar
  - 252-221-5750
  - 300 E Arlington Suite 9A Greenville, NC 27858

\*There are various fees associated with each support group

#### **Pitt County Veterans Services**

- Contact information:
  - Channing Ford or Teresa Ball
  - 252-902-3090
  - 1717 W. 5<sup>th</sup> St. Greenville, NC 27834
- Services provided at no charge:
  - Liaison between the U.S. Department of Veterans Affairs and persons submitting claims to the VA.
  - On-site counseling.
  - Assistance to veterans and their dependents in obtaining benefits from the U.S. Department of Veteran Affairs and the state of North Carolina to which they may be entitled.