

Effects of Deployment on Student Veterans' Levels of Perceived Stress, Coping Styles,
Sense of Coherence, and Perceived Quality of Life

by

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A Thesis Submitted in Partial Fulfillment
of the Requirements for the Degree of
Master of Arts in Psychology

Middle Tennessee State University
December 2013

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I would like to dedicate this research to my daughter, Drew, and to all of the Warriors I
have had the privilege to serve with.

ACKNOWLEDGMENTS

I would like to thank my daughter, family, and friends for their love and support throughout this process. I am indebted to my Advisor, Dr. Gloria Hamilton, for her invaluable support, wisdom, and guidance during this project. I would like to express my deepest thanks to Dr. Kelly and Dr. Kim for being such a helpful part of my Thesis Committee. I would also like to thank all of the student veterans that took time out of their day to make this research happen. Thank you all for your time and support.

ABSTRACT

Since the attacks on September 11, 2001 and the start of the War on Terror, the frequency and length of deployment of our military have increased dramatically. Existing research indicates that longer and more frequent deployments are predictors of greater psychological distress (Adler et al., 2005; Spera et al., 2011). This research was designed to examine the role of deployment type (to a combat zone or not) on perceived stress levels and coping strategies employed by student veterans. Additionally, it investigated their sense of coherence and quality of life. It was hypothesized that differences would be found in level of perceived stress, quality of life, sense of coherence, and coping mechanisms between those who have been deployed or not deployed to a combat zone. Analyses determined a number of differences between the groups, demonstrating significant impact of having served in a combat zone. The findings underscore the need for and importance of providing support services for all returning student veterans, and especially those who have been deployed to combat zones.

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CHAPTER I

INTRODUCTION

The primary aim of this research was to examine the role of deployment type (to a combat zone or not) on perceived stress levels and coping strategies used by student veterans. Additionally, this study was designed to investigate the relationship between student veterans' perceived quality of life and sense of coherence. It was hypothesized that those deployed to a combat zone would differ in level of perceived stress, coping styles, perceived quality of life, and sense of coherence as compared to a combined group of those who have either not deployed or deployed to a noncombat zone.

Since the attacks on September 11, 2001 and the start of the War on Terror, deployment of our military has increased dramatically. The frequency and length of these deployments have increased as well. Existing research suggests longer and more frequent deployments are predictors of greater psychological distress (Adler, Huffman, Bliese, & Castro, 2005; Spera, Thomas, Barlas, Szoc, & Cambridge, 2011).

Each student veteran carries a level of perceived stress. This stress level may include intrusive thoughts concerning the traumatic or stressful event, avoidance of anything that remind them of the event, and/or one of six symptoms of hyperarousal. Hyperarousal symptoms include anger, irritability, hypervigilance, difficulty concentrating, and heightened startle response (Weiss & Marmar, 1997).

The emotional rollercoaster of a deployment is a disruptive and life-altering transition for those veterans who are attending classes (Schlossberg, Waters, & Goodman, 1995). While veterans are found to be more mature and academically focused

than the average college student (American Council of Education [ACE], 2008), they face stressors when returning to college that the average student does not face. These stressors may include reintegration into their social and family life on top of taking notes and studying for tests (Knox et al., 2010).

There are many ways of coping with the stressors that arise. Individuals may use maladaptive ways to deal with situations such as distracting oneself, hiding in denial and substance abuse, blaming oneself, or just giving up all together. Some tackle the stressors they face head on in a much more adaptive way by actively changing the situation, or rely on their family and friends for emotional support by using them to vent their frustrations, get their advice, or to find humor in the situation. Others may attempt to plan out a solution, or try to see the situation in a more positive light. Seeking the help of a higher power or just outright acceptance of the situation is used as well (Carver, 1997). The methods veteran students use to deal with the stressors that arise in daily life affect how they view their quality of life and their feeling of belonging to campus society. Additionally, feelings of ambivalence and of no longer having an important job can plague a student veteran who has recently returned from a deployment.

Sorting through this morass of stresses and ambivalence of feelings can be difficult for even the most stable of individuals as they attempt to succeed in an academic environment as they have done in a military setting. Antonovsky (1987) postulated a construct, *sense of coherence*, as important to an individual's experience of well-being. Sense of coherence encompasses the personality traits of comprehensibility, manageability, and meaningfulness as markers of a healthful life. Comprehensibility

refers to individuals' ability to make sense of self and environment as orderly, consistent, and over all understandable. This gives a person confidence in the face of even the toughest stressors. Manageability is the degree that individuals feel they have the resources to cope with the stressors they face, both internally and in their environment. Meaningfulness is defined as feeling that life is meaningful and worth time and effort.

Student veterans' perceived quality of life may be affected by deployment. Perceived quality of life refers to perception of one's position in life within the culture and values system in which they live. It is related to what they want out of life and what they are worried about (Patrick, Kinne, Engelberg, & Pearlman, 2000). Student veterans often feel very different from their nonveteran student peers because civilians often do not understand what those with military service have experienced (Armstrong, Best, & Domenici, 2006). Veteran students' feelings of not belonging to the campus society could impact their grades and retention.

Due to the Post-9/11 Veterans Educational Assistance Act of 2008, the number of veterans enrolling in higher education is likely to grow dramatically in the coming years. There are over two million veterans from Operation Enduring Freedom (OEF) and Operation Iraqi Freedom (OIF) alone (ACE, 2008). This number does not include veterans from previous wars or conflicts who are just now deciding to attend college. Stress is common to us all, but to a veteran entering campus life these stressors can be multiplied by feelings of isolation and financial worries that the veteran believes the average college student does not face. These student veterans must go through every class, all the while knowing they might be deployed before the end of the semester and

not able to return for a year or more. The stressors student veterans face, paired with high deployment rotation, may lead to a lower retention and graduation rate for these veterans.

Veterans are a special group within the general campus population. There is not a lot of past research concerning how veterans fare in a campus setting. Therefore, in general, this literature review will consist of research relating to just veterans or just college students.

Measures of Stress

The Impact of Events Scale-Revised, IES-R (Weiss & Marmar, 1997) has not been used with student veterans. A study by Taylor et al. (2009) involved Navy Men in Survival, Evasion, Resistance, and Escape Training (SERE). This study followed Navy men in SERE to measure whether perceived stress and coping style were associated with acute stress symptoms. Perceived stress was measured by the Perceived Stress Scale-10 (PSS-10). The Ways of Coping Questionnaire was used to determine coping style.

Acute Stress symptoms were measured by the Clinician-Administered Dissociative States Scale (CADSS) and the IES-R. Perceived stress levels were higher when the men used passive or emotion-focused coping styles. These styles were associated with higher acute stress symptoms in these same men. However, the men that used active and problem-focused coping styles did not have lower acute stress levels than the group that used the passive or emotion-focused coping styles. Perceived stress and coping style were found to be related to stress levels, but more research is needed to determine the exact relationship.

A study by Beck et al. (2008) examined the factor structure, internal consistency, concurrent validity, discriminative validity, and the influence of social desirability of the Impact of Events Scale-Revised. This was measured using a sample of people after a serious motor vehicle accident. Measures included the Motor Vehicle Accident interview (MVA), the Clinician-Administered Post-Traumatic Stress Disorder Scale (CAPS), the original Impact of Event Scale (IES), Post-Traumatic Stress Disorder Symptom Scale-Self Report (PSSR-SR), State Trait Anxiety Inventory (STAI), Beck Anxiety Inventory (BAI), Beck Depression Inventory-II (BDI-II), and the Marlow-Crowne Social Desirability Scale (M-C).

The factor structure of the IES-R's three subscales of Intrusion, Avoidance, and Hyperarousal was supported, as was internal consistency as adequate for the subscales. Concurrent validity of the IES-R was supported for both forms of the scale. Discriminative validity was supported for the IES-R. The subscales were not significantly correlated with social desirability as measured by the M-C. Those with Post-Traumatic Stress Disorder (PTSD) did show higher scores on this measure than those without a PTSD diagnosis, especially on the Intrusion and Hyperarousal subscale. The IES-R highly correlates with other measures that have matching subscales, such as the CAPS, and the PSSR-SR. It can differentiate between those with PTSD and those without.

Measures of Coping Strategies

The Brief COPE (Carver, 1997) has not been used with student veterans. Carver explains how the original Full COPE was revised to create the Brief COPE, a version

with less time commitment. The Full COPE has 15 scales and 4 items per scale. This 60 item scale was considered too lengthy for some situations, so it was reduced to 14 scales and to 2 items per scale, the Brief COPE. The Restraint Coping and Suppression of Competing Activities scales were deleted and 3 other scales were revised. A Self-Blame scale was added as well. To determine the reliability of this scale, the Brief COPE was administered three times to a sample of 168 people affected by Hurricane Andrew. This shorter measure of coping reactions is a much quicker measure. This study supports the internal reliability and shows it consistent with the Full COPE (Carver, 1997).

A study by Hariju and Bolen (1998) compared the Brief COPE to the Life Orientation Test LOT-R. The LOT-R measures and categorizes optimism into the 3 levels of high, middle, and low in undergraduate students. An untested scale was used to measure subjective quality of life factors. Results showed perceived quality of life and coping styles were different when compared to the level of optimism felt by the student. Those with high optimism levels had an effective coping style (use of action and reframing), and a high level of perceived quality of life. Students with only moderate optimism levels still had high levels of quality of life, but they were lower than those with a higher level of optimism. These students also used less effective coping styles, like more alcohol usage. The pessimistic group had a lower overall quality of life and also used more alcohol, as well as other less effective coping styles.

This study (Hariju and Bolen, 1998) showed gender differences among level of optimism, quality of life, and coping styles. Women students used more religion, venting, and emotion-focused coping styles. Men students used more acceptance and

humor. Women also had a significantly higher quality of life, while men were less satisfied with their quality of life. Women had a lower level of optimism than men.

Moore, Varra, Michael, and Simpson (2010) studied veterans that were receiving treatment from a mental health care facility to determine whether Stress Related Growth (SRG) after a traumatic event makes a difference in the severity of posttraumatic stress symptoms, such as PTSD, Depression and Disorders of Extreme Stress Not Otherwise Specified (DENOS). The study also investigated whether the difference was related to the coping strategies used to deal with the trauma. Measures administered were the Stress-Related Growth Scale-short form (SRGS), the Traumatic Life Events Questionnaire (TLEQ), the Brief COPE, the Post-Traumatic Stress Disorder Checklist-Civilian Version (PCL-C), and the Structured Interview for Disorders of Extreme Stress (SIDES).

The SRG was uniquely related to the severity of post-trauma symptoms. A curvilinear relationship was evident when controlling for coping style, where the participants with only moderate stress related growth had the most symptomology. Those with the lowest and highest SRG actually had less severe posttraumatic symptoms. The authors found that the participants with low SRG and low distress did not actually view the event as traumatic. Results also suggested that use of the coping styles of emotional processing and positive reframing had greater SRG.

Measures of Well-Being

The Sense of Coherence Scale (SOC; Antonovsky, 1987) has not been used with student veterans. The study by Frenz, Carey, and Jorgensen (1993) used a sample of

clinical as well as nonclinical participants to examine the psychometric properties of the SOC. The clinical sample consisted of short term psychotherapy patients, long term psychotherapy patients, and chronic psychotherapy patients. The nonclinical participants were undergraduate students, graduate students, and social services employees.

Measures used also included the Perceived Stress Scale (PSS), the State-Trait Anxiety Inventory (STAI-T), the Beck Depression Inventory (BDI), the Quantity-Frequency-Variability Questionnaire (QFV) to survey drinking practices, the Social Desirability Scale (SDS), and the Shipley Institute of Living Scale (SILS) to assess intellectual functioning.

The study showed the SOC scale to have high level of internal consistency as well as high test-retest reliability. The authors controlled for alcohol consumption and intelligence. There was a significantly lower SOC score in the clinical group than the nonclinical group as well as an inverse relationship with the SOC score and perceived stress, trait anxiety, depression, and social desirability.

The study by McSherry and Holm (1994) used undergraduate students to investigate whether SOC is related to psychological and physiological symptoms before, during, and after a stressful encounter. Measures used included the SOC, State-Trait Personality Inventory (STPI), the Stress Arousal Checklist (SACL), the Dakota Cognitive Appraisal Inventory (DCAI), and the Dimensional Coping Checklist (DCC) and were administered twice. Various measures were used to collect the physiological data as well.

The results suggested that SOC is related to how people assess and cope with stressful situations. Low levels of SOC are associated with significantly more distress, anxiety, and anger than those with medium or high levels SOC. Participants with low levels of SOC were also significantly less likely to believe they had the resources to cope with the stressful situation than those with higher levels of SOC. Those with lower levels of SOC used less of an approach oriented coping style and chose more maladaptive coping strategies. Physiologically, only people with high levels of SOC had a significant change in heart rate before and after the stressor. High levels of SOC were related to a decrease in heart rate before and after the stressful event, and a higher heart rate during the event. The authors suggested this was because those with higher levels of SOC used this time before the event to gather their resources and make a plan, while those with low levels of SOC had already given up so they had no change in heart rate.

The Flannery R. B., Perry, Penk, and Flannery, G. J. (1994) study used a sample of undergraduate students to determine the relationship between SOC, coping styles, and psychological distress symptoms. Measures used were the SOC, the Hassles Scale to measure ordinary life stress, Taylor Manifest Anxiety Scale (TMAS), the Beck Depression Inventory (BDI), the Internal/External Locus of Control Scale, and the Social Support Index.

Results show that higher levels of SOC are related to better coping with ordinary life stressors and with lower levels of anxiety and depression. SOC was more strongly related to anxiety and depression than Locus of Control or the Social Support Index.

Smith and Meyers (1997), in a study using undergraduate students, wanted to determine the relationship between SOC, locus of control, self-efficacy, learned helplessness, hardiness, stressful events, and life stressors. Participants were also asked how many illnesses they had in the past 6 months and how resistant they thought they were to colds. Measures used were the SOC, the Internal Control Index, the Self-Efficacy Scale (SES), the Mastery Orientation Inventory, the Personal Views Survey, the Hassles Scale, and the Perceived Stress Scale.

SOC is similar in theory to hardiness, locus of control, self-efficacy, and learned helplessness. Higher levels of SOC were related to the participants being more hardy, having more of an internal locus of control, being more generally and socially self-efficacious, and having less learned helplessness. They also had less ordinary life stressors, less perceived stress, and fewer instances of colds. Those with higher levels of SOC believed themselves to be more resistant to illness than those with lower levels of SOC. More females than males believed themselves to be less resistant to becoming ill.

Measure of Perceived Quality of Life

The Perceived Quality of Life Scale (PQoL; Patrick et al., 2000) has not been used with student veterans. The Patrick et al. (2000) study included two samples, one with chronic mobility limitations and the other without any chronic conditions. The study investigated the relationship between self-reported functional status and perceived quality of life. Measures used included the PQoL, the Sickness Impact Profile (SIP), and the Center for Epidemiological Studies Depression scale (CED-D). The highest levels of perceived quality of life was in older and younger adults with no health issues, while the

lower levels were from participants with AIDS, stroke, and mobility limitations. There is an inverse relationship between sickness level and perceived quality of life. The participants that were older, had a higher functional status, and had fewer depressive symptoms reported a higher perceived quality of life than those of a similar age with a lower functional status. Functional status and perceived quality of life are associated, but it was not the only factor in determining quality of life. Depressive symptoms, chronic illnesses, health status, age, and outside factors also contributed.

To summarize the main points of the literature review, the four factors covered in the scales can be hypothesized to contribute to a student veteran's college experience and the effect a military deployment may have on this experience. The research on the IES-R was found to be related to stress levels (Taylor et al., 2009). The results of the Brief COPE research suggested that coping styles, perceived quality of life, and optimism level were related (Hariju & Bolen, 1998). Flannery R. B., Perry, Penk, and Flannery, G. J. (1994) suggested that the level of SOC is related to coping style. Perceived quality of life is related to functional status and depressive symptoms (Patrick et al., 2000)

The following hypothesis were tested:

H1: Student veterans who were deployed to a combat zone would differ in their level of perceived stress, as measured by the IES-R, from a combined group of student veterans who were either not deployed or deployed to noncombat zones.

H2: There would be a difference between the types of coping strategies used by student veterans deployed to a combat zone and a combined group of those either not deployed or deployed to noncombat zones, as measured by Brief COPE.

H3: There would be a positive relationship between the level of perceived quality of life, as measured by the PQoL, and the level of sense of coherence, as measured by the SOC, for both the group that were deployed to a combat zone and the combined group of those either not deployed or deployed to noncombat zones.

CHAPTER II

METHOD

Participants

This study included only student veterans. A total of 168 participants were asked to complete the anonymous questionnaires. Participants were recruited from veterans of all branches of the United States Armed Forces who are attending a state university in the southeastern United States. The participants completed the questionnaires in person using pencil and paper.

Participants were recruited in three ways. First, they were recruited in person from the Veterans only classes at MTSU. Secondly, an email was forwarded from the veteran Administration Official's private Listserv requesting veterans to contact the researcher. Lastly, using the student veteran association's on campus organization called BRAVO, there was an email sent through their listserv, a personal request made at a monthly meeting, and a post made on the organization's Facebook page.

Participants included both males and females, ages eighteen and older. It consisted of two groups. Group one was those veterans who have deployed to combat zones. Group two was a combined group of student veterans who have deployed to non combat zones or have not deployed at all.

Instruments

Impact of Events Scale-Revised (IES-R) (Weiss & Marmar, 1997)

The student veterans' current perceived level of distress for their deployment or military service was measured by the self-report IES-R questionnaire. This questionnaire

is not a diagnostic tool for PTSD. Past research shows it can differentiate between those with PTSD and those without (Beck et al. 2008), though it is not the best tool available for this purpose. This is a revised version of the IES (Horowitz, Wilner, & Alvarez, 1979). The original scale was revised to better capture the DSM-IV criteria for PTSD. Several questions were revised and reworded. The hyperarousal section was also added.

The IES-R uses a Likert scale from 0 (*not at all*) to 4 (*extremely*) to describe the level of distress felt toward the event over the past week. The scale has three subscales measuring symptoms of avoidance, intrusion, and hyperarousal. Also available is a total impact of event score using the mean of all 22 items. The avoidance subscale has eight items and measures the avoidance of situations that reminds the participant of the event. An example is *I felt as if it hadn't happened or wasn't real...* The intrusion scale has eight items and measures intrusive thoughts. An example is *I had trouble staying asleep*. The hyperarousal scale has six items and measures the participant's irritability, anger, heightened startle response and hyperarousal. An example is *I felt irritable and angry*. The scale does not correlate exactly with the PTSD diagnosis in the DSM-IV, so it should not be used to diagnose PTSD. It can however, be used as a repeated measure to monitor progress concerning subjective distress in regards to a specific traumatic event over time. A few authors suggest a cut-off score of 33 (Creamer, Bell, & Failla, 2003) would signify the need for treatment. The author of the scale, however, offers no such cut-off score. There is evidence of adequate reliability and validity for this questionnaire (Weiss & Marmar, 1997).

Brief COPE (Carver, 1997)

Coping strategies was assessed using the Brief COPE. Student veterans reported the strategies used most frequently when dealing with stressful events over the last four months. The questions are answered on a 5-point Likert scale from 1 (*I haven't been doing this at all*) to 5 (*I've been doing this a lot*). This scale was created from the original COPE (Carver, Scheier, & Weintraub, 1989). This questionnaire has 60 items with four items each. An abbreviated version was needed for those with time constraints. The Brief COPE has 28 items and 14 subscales. Each subscale has two items. The subscales included are active coping, planning, positive reframing, acceptance, humor, religion, using emotional support, using instrumental support, self-distraction, denial, venting, substance use, behavioral disengagement, and self-blame. Examples include *I've been criticizing myself*, *I've been learning to live with it*, and *I've been making fun of the situation*. The author does not sponsor an overall score (Carver, 1997). Each subscale is designed to stand on its own. The scale has an adequate reliability and validity (Carver et al., 1989).

Sense of Coherence (SOC) (Antonovsky, 1987)

The "Can Do Attitude" of the student veteran was investigated by using SOC. This scale is a shorter version of the original same named scale with 29 items (Antonovsky, 1987). The 13 item scale is used to create a global picture of the SOC a person feels. This SOC is formed by combining meaningfulness, manageability, and comprehensibility. Examples include *Do you have the feeling that you don't really care about what goes on around you?* and *Do you have very mixed-up feelings and ideas?*.

This is measured on a Likert scale from 1 to 7. Five of the items are reverse-scored so that all of the ratings contribute to higher levels of SOC. With a possible score from 13 to 91, the mean score is generally close to 44, standard deviation of 8.2, with the higher scores indicating a higher SOC level. The validity and reliability are adequate (Antonovsky, 1998).

Perceived Quality of Life (PQoL) (Patrick et al., 2000)

In an effort to understand the perceived quality of life of the student veterans, the PQoL is a scale expanded from its original 12 item version (Patrick, Danis, Southerland, & Hong, 1988) to include a single global item concerning happiness and an evaluation with the areas of functional status. There are three subscales in addition to the global happiness question. The subscales include items concerning physical, social, and cognitive health satisfaction. Examples include *How dissatisfied or satisfied are you with your physical health?* and *How dissatisfied or satisfied are you with the way your income meets your needs?* A Likert scale was used with an 11 point response system with zero meaning *Extremely dissatisfied/unhappy* and ten meaning *Extremely satisfied/happy*. A general cut off of a score lower than 7.5 is Dissatisfied while higher than 7.5 is Satisfied for each question. The global item *How happy are you?* is used to compare the mean score of the three subscales or the Perceived Quality of Life level with the veteran's overall level of happiness. These two scores are shown to correlate and adequate reliability and validity have been established (Patrick et al., 1988).

Procedure

Veterans signed an informed consent form at the start of the research. There were no incentives offered. Each participant completed four questionnaires. The questionnaires should have taken a total of approximately 15 minutes to complete. Data collection involved personal contact with participants completing the questionnaires using paper and pencil.

Data Analysis

All statistical procedures performed were done with a correlational design. The four questionnaires, IES-R, Brief COPE, SOC, and PQoL, were compared to the demographic data collected. Demographic data included: age, gender, marital status, children, race/ethnicity, highest level of education obtained, current GPA, military branch, number of times deployed, time since last deployment, nature of deployment, reserve/national guard, and medications. In H1, the level of perceived stress, measured by the IES-R, for those deployed to a combat zone was compared to a combined group of student veterans who were either not deployed or deployed to noncombat zones. In H2, the types of coping strategies, measured by the Brief COPE, was compared between the student veterans deployed to a combat zone and a combined group of those either not deployed or deployed to noncombat zones. In H3, the level of perceived quality of life, measured by the PQoL, and the level of sense of coherence, measured by the SOC, was compared for both the group that was deployed to a combat zone and the combined group of those either not deployed or deployed to noncombat zones. It was hypothesized that this would be a positive relationship.

CHAPTER III

RESULTS

The demographic makeup of these 168 college students consists of only veterans in the student body attending a state university in the southeastern United States.

Personal variables are displayed by group (see Table 1). Military variables are displayed by group (see Table 2). Demographics for student veterans from group 1, the noncombat group, include a range in age from 19 to 55 with an average age of 30 ($SD = 8.29$). The gender of the group included 58 males and 20 females. Student veterans in this group stated that 9 were divorced or separated, 41 were single, and 28 were married. The racial/ethnic makeup of the group was African American (24), American Indian (5), Asian American (6), Caucasian (41), and Latino/Latina (2). The educational background of this group of student veterans were 51 completed their high school degree or GED and some college, 14 completed their Associates, while 13 had completed their Bachelor's Degree and were working on a Graduate Degree. These student veterans had an average GPA of 3.23 ($SD = 0.56$). Of these student veterans, 37 had minor children, while 53 did not. Most of the participants were not on any medication (62) while 16 were taking medication on a regular basis.

A majority of the Noncombat student veterans were from the Army (33), with 24 from the Navy, 13 Air Force, 7 Marines, and 1 Coast Guard. Most of these student veterans had been deployed only one time or less, for an average of 37.44 months ago. When these veterans deployed, most were in an active duty capacity and not a Reservist (4) or National Guard (9).

Demographics for student veterans from group 2, the combat group, include a range in age from 20 to 51 with an average age of 30 ($SD = 7.18$). The gender of the group included 81 males and 9 females. Student veterans in this group stated that 13 were divorced or separated, 37 were single, and 40 were married. The racial/ethnic makeup of the group was African American (38), American Indian (1), Asian American (5), Caucasian (46), and Latino/Latina (0). The educational background of this group of student veterans were 50 completed their high school degree or GED and some college, 13 completed their Associates, while 27 had completed their Bachelor's Degree and were working on a Graduate Degree. These student veterans had an average GPA of 3.14 ($SD = 0.61$). Of these student veterans, 53 had minor children, while 37 did not. Most of the participants were not on any medication (80) while 10 were taking medication on a regular basis.

A majority of the Combat student veterans were from the Army (61), with 12 from the Navy, 8 Air Force, 8 Marines, and 1 Coast Guard. Most of these student veterans had been deployed 1.41 times, an average of 56.46 months ago. When these veterans deployed, most were in an active duty capacity and not a Reservist (4) or National Guard (3).

Table 1
Personal Variables by Group.

Variables	<u>NonCombat</u> Mean	<u>Combat</u> Mean
Age	30.00	30.61
GPA	3.23	3.14
Gender		
Male	58	81
Female	20	9
Marital Status		
Divorced/Separated	9	13
Single	41	37
Married	28	40
Race/Ethnicity		
African American	24	38
American Indian	5	1
Asian American	6	5
Caucasian	41	46
Latino/Latina	2	0
Education		
Associates	14	13
HS or GED/Some College	51	50
Bachelors Finished/Graduate Program	13	27
Minor Children		
No	41	37
Yes	37	53
Medications		
No	62	80
Yes	16	10

Note: Noncombat $N = 78$. Combat $N = 90$.

Table 2
Military Variables by Group.

Variables	NonCombat Mean	Combat Mean
Military Branch		
Army	33	61
Navy	24	12
Air Force	13	8
Marines	7	8
Coast Guard	1	1
Number of Times Deployed	0.81	1.41
Months Since Last Deployed	37.44	56.46
Reservist During Deployment		
No	74	84
Yes	4	6
National Guard During Deployment		
No	69	87
Yes	9	3

Note: Noncombat $N = 78$. Combat $N = 90$.

Table 3
Descriptive Statistics and Welch t -Test Results for Scales of IES-R

Descriptive Statistics and Welch's Test Results for Scales of IES-R								
Measure	NonCombat		Combat		<i>t</i> (<i>df</i>)	<i>p</i>	95% CI for Difference	
	Mean	<i>SD</i>	Mean	<i>SD</i>			LL	UL
IES-R								
Intrusion Total	4.81	5.22	8.74	8.67	-3.62 (149)	.001	6.09	1.79
Avoidance Total	2.94	4.16	6.32	6.73	-3.98 (151)	.001	5.07	1.70
Hyperarousal Total	4.55	4.64	9.62	8.16	-5.03 (145)	.001	7.06	3.08
Summed Total	14.28	21.93	24.64	21.99	-3.05 (163)	.003	17.07	3.66

Note: Noncombat $N = 78$. Combat $N = 90$. CI = confidence interval; LL = lower limit; UL upper limit. Bold p values are significant at $\alpha = .05$.

Table 4
Descriptive Statistics and Welch t-Test Results for Scales of Brief Cope.

Measure	NonCombat		Combat		<i>t</i> (<i>df</i>)	<i>p</i>	95% CI for Difference	
	Mean	<i>SD</i>	Mean	<i>SD</i>			LL	UL
<u>Brief COPE</u>								
<u>Adaptive Styles</u>								
Active Coping	4.13	1.67	4.97	1.75	-3.18 (164)	.002	1.36	0.32
Emotional Support	4.13	1.80	5.10	1.73	-3.55 (160)	.001	1.51	0.43
Instrumental Support	3.96	1.50	5.00	1.78	-4.11 (166)	.001	1.54	0.54
Positive Reframing	3.73	1.57	4.38	1.50	-2.73 (160)	.007	1.12	0.18
Planning	3.99	1.82	4.69	1.65	-2.61 (157)	.010	1.23	0.17
Humor	3.65	1.59	4.07	1.41	-1.76 (155)	.080	0.88	0.05
Acceptance	3.69	1.56	4.49	1.48	-3.39 (160)	.001	1.26	0.33
Religion	4.46	2.03	4.79	2.13	-1.02 (164)	.310	0.96	0.31
<u>Maladaptive Styles</u>								
Self-Distracton	4.18	1.65	5.54	3.50	-3.31 (131)	.001	2.18	0.55
Denial	2.33	0.77	2.47	1.21	-0.86 (153)	.389	0.44	0.17
Substance Use	2.86	1.22	3.44	1.77	-2.52 (153)	.013	1.05	0.13
<u>Behavioral</u>								
Disengagement	2.26	0.67	2.61	1.14	-2.50 (148)	.014	0.64	0.06
Venting	2.92	1.18	3.44	1.49	-2.52 (165)	.013	0.93	0.11
Self-Blame	2.63	1.20	2.92	1.52	-1.40 (164)	.163	0.71	0.12

Note: Noncombat *N* = 78. Combat *N* = 90. CI = confidence interval; LL = lower limit; UL upper limit. Bold *p* values are significant at $\alpha = .05$.

Data were analyzed using SPSS software Version 20. Descriptive Statistics and Welch *t*-Test Results for Scales of IES-R are included in Table 3. Hypothesis 1 stated that student veterans who were deployed to a combat zone would differ in their level of perceived stress, as measured by the IES-R, from a combined group of student veterans who were either not deployed or deployed to noncombat zones. Using an alpha of .05, Welch *t* test for independent samples indicated the level of Intrusive Thoughts for student veterans deployed to a combat zone ($M = 8.74$, $SD = 8.67$, $n = 90$) was significantly different than the level of Intrusive Thoughts for the combined group of student veterans

who were either not deployed or deployed to noncombat zones ($M = 4.81$, $SD = 5.22$, $n = 78$), $t(149) = -3.62$, $p < .001$.

Using an alpha of .05, Welch t test for independent samples indicated the level of Avoidance for student veterans deployed to a combat zone ($M = 6.32$, $SD = 6.73$, $n = 90$) was significantly different than the level of Avoidance for the combined group of student veterans who were either not deployed or deployed to noncombat zones ($M = 2.94$, $SD = 4.16$, $n = 78$), $t(151) = -3.98$, $p < .001$.

Using an alpha of .05, Welch t test for independent samples indicated the level of Hyperarousal for student veterans deployed to a combat zone ($M = 9.62$, $SD = 8.16$, $n = 90$) was significantly different than the level of Hyperarousal for the combined group of student veterans who were either not deployed or deployed to noncombat zones ($M = 4.55$, $SD = 4.64$, $n = 78$), $t(145) = -5.03$, $p < .001$.

Using an alpha of .05, Welch t test for independent samples indicated the level of Total Subjective Stress for student veterans deployed to a combat zone ($M = 24.64$, $SD = 21.99$, $n = 90$) was significantly different than the level of Total Subjective Stress for the combined group of student veterans who were either not deployed or deployed to noncombat zones ($M = 14.28$, $SD = 21.93$, $n = 78$), $t(163) = -3.05$, $p = .003$.

Hypothesis 2 stated there would be a difference between the types of coping strategies used by student veterans deployed to a combat zone and a combined group of those either not deployed or deployed to noncombat zones, as measured by Brief COPE. Descriptive Statistics and Welch t -Test Results for Scales of Brief Cope are included in Table 4. Using an alpha of .05, Welch t test for independent samples indicated the level

of Self-Distracton for student veterans deployed to a combat zone ($M = 5.54$, $SD = 3.50$, $n = 90$) was significantly different than the level of Self-Distracton for the combined group of student veterans who were either not deployed or deployed to noncombat zones ($M = 4.18$, $SD = 1.65$, $n = 78$), $t(131) = -3.31$, $p = .001$.

Using an alpha of .05, Welch t test for independent samples indicated the level of Active Coping for student veterans deployed to a combat zone ($M = 4.97$, $SD = 1.75$, $n = 90$) was significantly different than the level of Active Coping for the combined group of student veterans who were either not deployed or deployed to noncombat zones ($M = 4.13$, $SD = 1.67$, $n = 78$), $t(164) = -3.18$, $p = .002$.

Using an alpha of .05, Welch t test for independent samples indicated the level of Denial for student veterans deployed to a combat zone ($M = 2.47$, $SD = 1.21$, $n = 90$) was not significantly different than the level of Denial for the combined group of student veterans who were either not deployed or deployed to noncombat zones ($M = 2.33$, $SD = 0.77$, $n = 78$), $t(153) = -0.86$, $p = .389$.

Using an alpha of .05, Welch t test for independent samples indicated the level of Substance Use for student veterans deployed to a combat zone ($M = 3.44$, $SD = 1.77$, $n = 90$) was significantly different than the level of Substance Use for the combined group of student veterans who were either not deployed or deployed to noncombat zones ($M = 2.86$, $SD = 1.22$, $n = 78$), $t(153) = -2.52$, $p = .013$.

Using an alpha of .05, Welch t test for independent samples indicated the level of Emotional Support for student veterans deployed to a combat zone ($M = 5.10$, $SD = 1.73$, $n = 90$) was significantly different than the level of Emotional Support for the combined

group of student veterans who were either not deployed or deployed to noncombat zones ($M = 4.13$, $SD = 1.80$, $n = 78$), $t(160) = -3.55$, $p = .001$.

Using an alpha of .05, Welch t test for independent samples indicated the level of Instrumental Support for student veterans deployed to a combat zone ($M = 5.00$, $SD = 1.78$, $n = 90$) was significantly different than the level of Instrumental Support for the combined group of student veterans who were either not deployed or deployed to noncombat zones ($M = 3.96$, $SD = 1.50$, $n = 78$), $t(166) = -4.11$, $p = .001$.

Using an alpha of .05, Welch t test for independent samples indicated the level of Behavioral Disengagement for student veterans deployed to a combat zone ($M = 2.61$, $SD = 1.14$, $n = 90$) was significantly different than the level of Behavioral Disengagement for the combined group of student veterans who were either not deployed or deployed to noncombat zones ($M = 2.26$, $SD = 0.67$, $n = 78$), $t(148) = -2.50$, $p = .014$.

Using an alpha of .05, Welch t test for independent samples indicated the level of Venting for student veterans deployed to a combat zone ($M = 3.44$, $SD = 1.49$, $n = 90$) was significantly different than the level of Venting for the combined group of student veterans who were either not deployed or deployed to noncombat zones ($M = 2.92$, $SD = 1.18$, $n = 78$), $t(165) = -2.52$, $p = .013$.

Using an alpha of .05, Welch t test for independent samples indicated the level of Positive Reframing for student veterans deployed to a combat zone ($M = 4.38$, $SD = 1.50$, $n = 90$) was significantly different than the level of Positive Reframing for the combined group of student veterans who were either not deployed or deployed to noncombat zones ($M = 3.73$, $SD = 1.57$, $n = 78$), $t(160) = -2.73$, $p = .007$.

Using an alpha of .05, Welch t test for independent samples indicated the level of Planning for student veterans deployed to a combat zone ($M = 4.69$, $SD = 1.65$, $n = 90$) was significantly different than the level of Planning for the combined group of student veterans who were either not deployed or deployed to noncombat zones ($M = 3.99$, $SD = 1.82$, $n = 78$), $t(157) = -2.61$, $p = .010$.

Using an alpha of .05, Welch t test for independent samples indicated the level of Humor for student veterans deployed to a combat zone ($M = 4.07$, $SD = 1.41$, $n = 90$) was not significantly different than the level of Humor for the combined group of student veterans who were either not deployed or deployed to noncombat zones ($M = 3.65$, $SD = 1.59$, $n = 78$), $t(155) = -1.76$, $p = .080$.

Using an alpha of .05, Welch t test for independent samples indicated the level of Acceptance for student veterans deployed to a combat zone ($M = 4.49$, $SD = 1.48$, $n = 90$) was significantly different than the level of Acceptance for the combined group of student veterans who were either not deployed or deployed to noncombat zones ($M = 3.69$, $SD = 1.56$, $n = 78$), $t(160) = -3.39$, $p = .001$.

Using an alpha of .05, Welch t test for independent samples indicated the level of Religion for student veterans deployed to a combat zone ($M = 4.79$, $SD = 2.13$, $n = 90$) was not significantly different than the level of Religion for the combined group of student veterans who were either not deployed or deployed to noncombat zones ($M = 4.46$, $SD = 2.03$, $n = 78$), $t(164) = -1.02$, $p = .310$.

Using an alpha of .05, Welch t test for independent samples indicated the level of Self-Blame for student veterans deployed to a combat zone ($M = 2.92$, $SD = 1.52$, $n = 90$)

was not significantly different than the level of Self-Blame for the combined group of student veterans who were either not deployed or deployed to noncombat zones ($M = 2.63$, $SD = 1.20$, $n = 78$), $t(164) = -1.40$, $p = .163$.

Table 5
Descriptive Statistics and Welch Anova Results for Scales of Sense of Coherence and Perceived Quality of Life.

Perceived Quality of Life.							
Measure	NonCombat		Combat		F	(df)	p
	Mean	SD	Mean	SD			
<u>SOC</u>							
Total Score	66.54	14.53	63.49	16.24	1.65	(1, 166)	.201
<u>PQoL</u>							
Global Happiness Score	7.35	2.01	6.61	2.27	4.97	(1, 166)	.027
Physical Health Score	33.94	9.36	32.10	8.65	1.75	(1, 166)	.188
Social Health Score	75.03	20.22	70.93	21.91	1.58	(1, 165)	.210
Cognitive Health Score	14.65	3.60	14.21	3.80	0.60	(1, 165)	.440
Food Satisfaction Score	6.55	2.29	5.84	2.33	3.92	(1, 164)	.049

Note: CI = confidence interval; LL = lower limit; UL upper limit. Bold p values are significant at $\alpha = .05$. Noncombat $N = 78$. Combat $N = 90$.

Descriptive Statistics and Welch Anova Results for Scales of Sense of Coherence and Perceived Quality of Life are included in Table 5. Hypothesis 3 stated there would be a positive relationship between the level of perceived quality of life, as measured by the PQoL, and the level of sense of coherence, as measured by the SOC, for both the group that were deployed to a combat zone and the combined group of those either not deployed or deployed to noncombat zones. Using a familywise alpha of .05, the Welch Anova indicated that deployment type was not a significant predictor of Sense of Coherence on the Sense of Coherence Scale, $F(1, 166) = 1.65$, $p = .201$.

Using a familywise alpha of .05, the Welch Anova indicated that deployment type was a significant predictor of Global Happiness on the Satisfaction with Health and Life Scale, $F(1, 166) = 4.97, p = .027$. Using a familywise alpha of .05, the Welch Anova indicated that deployment type was not a significant predictor of Physical Health on the Satisfaction with Health and Life Scale, $F(1, 166) = 1.75, p = .188$. Using a familywise alpha of .05, the Welch Anova indicated that deployment type was not a significant predictor of Social Health on the Satisfaction with Health and Life Scale, $F(1, 165) = 1.58, p = .210$. Using a familywise alpha of .05, the Welch Anova indicated that deployment type was not a significant predictor of Cognitive Health on the Satisfaction with Health and Life Scale, $F(1, 165) = 0.60, p = .440$. Using a familywise alpha of .05, the Welch Anova indicated that deployment type was a significant predictor of Food Satisfaction on the Satisfaction with Health and Life Scale, $F(1, 164) = 3.92, p = .049$.

CHAPTER IV

DISCUSSION

This study examined the role of deployment type (to a combat zone or not) on perceived stress levels and coping strategies used by student veterans. Additionally, this study was designed to investigate the relationship between student veterans' perceived quality of life and sense of coherence. It was hypothesized that those deployed to a combat zone would differ in level of perceived stress, coping styles, level of perceived quality of life, and sense of coherence as compared to a combined group of those who have either not deployed or deployed to a noncombat zone.

Hypothesis 1 examined whether student veterans who were deployed to a combat zone would differ in their level of perceived stress, as measured by the IES-R, from a combined group of student veterans who were either not deployed or deployed to noncombat zones. The cut-off score of 33 signifying the need for therapy (Creamer et al., 2003), was not reached by either the combat or the noncombat group. There was a significant difference in the level of perceived stress between the two groups on all subscales (intrusive thoughts, avoidance, hyperarousal, and total perceived stress). The group that deployed to a combat zone scored significantly higher on all scales than the group that had either never deployed or deployed to a noncombat zone.

Hypothesis 2 examined whether there was a difference between the types of coping strategies used by student veterans deployed to a combat zone and a combined group of those either not deployed or deployed to noncombat zones, as measured by Brief

COPE. The author states you should use your own data to determine the different patterns of relationships among the groups (Carver et al., 1989).

On the adaptive styles of coping, the group that deployed to a combat zone scored significantly higher than the noncombat group on the subscales of active coping, emotional support, instrumental support, positive reframing, planning and acceptance. There was no significant difference between the groups on the adaptive styles of humor and religion. On the maladaptive styles of coping, the group deployed to a combat zone scored significantly higher than the noncombat group on the subscales of self-distraction, substance use, behavioral disengagement and venting. There was no significant difference in denial and self-blame.

Hypothesis 3 stated there would be a positive relationship between the level of perceived quality of life, as measured by the PQoL, and the level of sense of coherence, as measured by the SOC, for both the group that were deployed to a combat zone and the combined group of those either not deployed or deployed to noncombat zones. There was not a positive relationship between the PQoL scores and the SOC scores for either group. The mean score for the SOC scale is generally 44, with a standard deviation of 8.2. A higher score indicates a higher sense of coherence. Both groups scored over the mean, with no significant difference between the group deployed to a combat zone and the group not deployed to a combat zone.

The PQoL scale has a general cutoff of 7.5. Scores higher than that tend to indicate satisfaction, while scores lower than this indicate dissatisfaction. Both groups were below this cutoff on all scales indicating dissatisfaction in their global happiness,

physical health, social health, cognitive health, and food satisfaction. In addition to this, there was a significant difference on the global happiness score and food satisfaction score for the combat group.

Limitations

Due to the self-selected, convenience sample of participants, the present study has limited generalizability. It is impossible to infer the findings to the general population. Another limiting factor in this study was the role that time since deployment played in the lives of these student veterans. This group of veterans was predominately male and Army. A larger group of student veterans with more diverse demographics would be needed to be able to generalize to a larger veteran population.

Future Directions for Research

Further study is needed to examine the difference between student veterans deployed to a combat zone and the specific situations faced during the deployment. A closer look at the role deployment length plays on stress level and coping styles would also be warranted. Taking into account the upcoming integration of women into combat arms units that were previously closed to them, a study on the role gender plays on the perceived stress levels and coping styles used within these units would be useful. A more thorough look at the specific challenges reserve and national guard members face when they are deployed that regular active duty do not would shine a light on the complexities of wearing dual hats. These complexities include being a member in the volunteer military reserve force and as a civilian with a career and family.

Take Away For Administration and Professors

This research is an effort to shine a light on the student veteran's experience on campus and how it differs when they were deployed to a combat zone and when they were not. University administrators can help the transition for these veterans by easing administrative burdens. Making all veterans automatically eligible for in-state tuition regardless of their home of record would be an important first step in this process. Having a means of open communication between the administrators and the veterans is another. These resources can provide the support of other veterans and a way to share experiences that regular college students would have a hard time understanding or relating to.

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APPENDICES

APPENDIX A

INFORMED CONSENT

Principal Investigator: ANGELA CHILDERS

Study Title: Effects of Deployment on Student Veteran's Levels of Perceived Stress, Coping Styles, Sense of Coherence, and Perceived Quality of Life

Institution: MIDDLE TENNESSEE STATE UNIVERSITY

The following information is provided to inform you about the research project and your participation in it. Please read this form carefully and feel free to ask any questions you may have about this study and the information given below. You may ask any questions, and your questions will be answered. You will be given a copy of this consent form. Your participation in this research study is voluntary. You are free to withdraw from this study at any time. For additional information about giving consent or your rights as a participant in this study, contact the MTSU Office of Compliance at (615) 494-8918.

- 1. Purpose of the study:** You are being asked to participate in a research study because the primary aim is to examine the role of deployment type (to a combat zone or not) on perceived stress levels and coping strategies used by student veterans.
- 2. Description of procedures to be followed and approximate duration of the study:** Participants will be asked to sign Informed Consent, then fill out a questionnaire. This process will take approximately 15 minutes.
- 3. Description of the discomforts, inconveniences, and/or risks that can be reasonably expected as a result of participation in this study:** Some questions may cause discomfort. Should you experience distress, contact MTSU counseling services (898-2670) or Volunteer Behavioral Health (800-704-2651).
- 4. Compensation in case of study-related injury:** MTSU will not provide compensation in the case of study related injury.
- 5. Anticipated benefits from this study:** The potential benefits to science and humankind that may result from this study are a greater understanding of the effects of deployment on the lives of student veterans.

6. **Compensation for participation:** None
7. **What happens if you choose to withdraw from study participation:** You are free to withdraw from the study at any time with no negative consequences.
8. **Contact Information.** If you should have any questions about this research study or possible injury, please feel free to contact **Angela Childers** at **615-898-2300** or my Faculty Advisor, **Dr. Gloria Hamilton** at **615-898-5745**
9. **Confidentiality.** Your identifying information will never be attached to the questionnaires you complete.
10. **STATEMENT BY PERSON AGREEING TO PARTICIPATE IN THIS STUDY**
I have read this informed consent document and the material contained in it has been explained to me verbally. I understand each part of the document, all my questions have been answered, and I freely and voluntarily choose to participate in this study.

Date

Signature of patient/volunteer

APPENDIX B

DEMOGRAPHICS

Effects of Deployment on Student Veteran's Levels of Perceived Stress, Coping Styles,
Sense of Coherence, and Perceived Quality of Life

Demographics

1. Age: _____ years
2. Gender: male female
3. Marital status: single married divorced/separated
4. Race/Ethnicity: White/Caucasian African American Hispanic Native
American Pacific Islander Other: _____
5. Highest level of education obtained: _____
6. Current GPA: _____
7. Military Branch: Army Navy Air Force Marine Corps Coast Guard
8. Year first enrolled in college: _____
9. Number of times Deployed: _____
10. Time since last Deployment: _____
11. Anticipated duration of deployment(s): _____
12. Actual length of deployment(s): _____
13. Nature of deployments: Combat Non-combat
14. Year(s) reenrolled in college: _____
15. At time of deployment, were you considered 'Reserve' personnel? Yes No
16. At time of deployment, were you considered 'National Guard' personnel? Yes No

APPENDIX C

IRB APPROVAL LETTER

November 27, 2012

Angela Childers, Gloria Hamilton
Department of Psychology
akg2n@mtmail.mtsu.edu, Gloria.Hamilton@mtsu.edu

Protocol Title: "Effects of Deployment on Student Veteran's Levels of Perceived Stress, Coping Styles, Sense of Coherence, and Perceived Quality of Life"

Protocol Number: 13-127

Dear Investigator(s),

The exemption is pursuant to 45 CFR 46.101(b) (2). This is because the research being conducted involves the use of educational tests, survey procedures, interview procedures or public behavior.

You will need to submit an end-of-project report to the Office of Compliance upon completion of your research. Complete research means that you have finished collecting data and you are ready to submit your thesis and/or publish your findings. Should you not finish your research within the three (3) year period, you must submit a Progress Report and request a continuation prior to the expiration date. Please allow time for review and requested revisions. Your study expires on **November 27, 2015**.

Any change to the protocol must be submitted to the IRB before implementing this change. According to MTSU Policy, a researcher is defined as anyone who works with data or has contact with participants. Anyone meeting this definition needs to be listed on the protocol and needs to provide a certificate of training to the Office of Compliance. **If you add researchers to an approved project, please forward an updated list of researchers and their certificates of training to the Office of Compliance before they begin to work on the project.** Once your research is completed, please send us a copy of the final report questionnaire to the Office of Compliance. This form can be located at www.mtsu.edu/irb on the forms page.

Also, all research materials must be retained by the PI or **faculty advisor (if the PI is a student)** for at least three (3) years after study completion. Should you have any questions or need additional information, please do not hesitate to contact me.

Sincerely,
Andrew W. Jones
Graduate Assistant
Compliance Office
615-494-8918
Compliance@mtsu.edu