

SOCIAL SUPPORT AS A MODERATING FACTOR BETWEEN MENTAL HEALTH  
DISRUPTION AND COLLEGE ADJUSTMENT IN STUDENT VETERANS

Robyn Campbell, B.A.

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APPROVED:

Shelley A. Riggs, Committee Chair  
Adriel Boals, Committee Member  
Timothy M. Lane, Committee Member  
Vicki L. Campbell, Chair of the Department of  
Psychology  
Mark Wardell, Dean of the Toulouse Graduate  
School

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Research has indicated that OEF/OIF veterans are experiencing mental health concerns following deployment. While there are increasing numbers of veterans returning to higher education institutions after discharging from the military, there is a scarcity of empirical research investigating student veterans' experiences as they transition into college. The purpose of the current study was to examine whether social support moderates the effects of psychological distress on college adjustment among a sample of student veterans. Participants were administered a Background Information Questionnaire, measures of psychological distress (i.e., GAD-7, PHQ-9, IES-R), Multidimensional Scales of Perceived Social Support, and the Student Adjustment to College Questionnaire. Multiple regressions revealed significant main effects for the variables of interest, but analyses failed to support the hypothesis that perceived social support would moderate the effects of psychological distress on college adjustment.

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## INTRODUCTION

As an influx of prior military service members are returning to college due to opportunities afforded through the GI Bill and other financial resources, veterans' mental health and readjustment should be a top priority of college officials and university departments. Yet, there is a dearth of knowledge concerning mental health and college adjustment among these veterans, which will hamper college administrator's efforts to provide appropriate services to veterans. The purpose of this study was to investigate the psychological functioning and academic difficulties among student veterans and examine whether perceived social support moderated the effects of psychological symptomatology on college adjustment.

Over two million service members have served in the conflicts in Afghanistan (Operation Enduring Freedom [OEF]) and Iraq (Operation Iraqi Freedom [OIF], Operation New Dawn [OND]) (Veterans Administration [VA] Office of Public Health and Environmental Hazards, 2010). Additionally, the VA Office of Public Health and Environmental Hazards (2010) reported that over 1.09 million service members who served in OEF/OIF have separated from the military and have been granted veteran status in the timeframe between 2001 and 2009. Military personnel are experiencing high levels of combat exposure (Hoge, Castro, Messer, McGurk, Cotting, & Koffman, 2004), which increases the risk for post-deployment mental health concerns. Hoge et al., (2004) reported that 17-19% of returning OIF military service members screened positive for psychological disruptions. Not surprisingly, mental health problems continue to be the second most common diagnosis within the VA (VA Office of Public Health and Environmental Hazards, 2010). Therefore, mental health disruptions within the veteran population should be a major concern, not only among mental health professionals within the VA health care systems, but also in the private practice and the community health sectors.

## Socio-contextual Factors of OEF/OIF Conflicts and Mental Health

The OEF/OIF conflicts differ substantially from the wars of previous generations. Military personnel are deploying at more frequent rates, facing longer deployments, as well as deploying multiple times to war torn lands. Contextually, there are no clearly defined front lines, and consequently military combat personnel and support personnel alike are exposed to combat situations, such as convoys in danger of improvised explosive devices (IEDs) and suicide bombings. In addition, enemy soldiers are difficult to distinguish from foreign civilians and military jobs may diverge from actual duties assigned while deployed. Moreover, the characteristics of people who serve in the military are changing. First, a greater number of women are joining the military, and due to the non-traditional nature of the conflicts in Iraq and Afghanistan, their exposure to combat is greater than in previous wars. Furthermore, the magnitude of reliance on the National Guard and Reserves is also more pronounced than ever before. National Guard and Reserve military tend to be older, married, have children, and hold civilian occupations that are left behind when called to active duty overseas. In comparison to their active duty counterparts, this segment of the military force faces unique challenges, such as lower levels of support within their military units (Polusny et al., 2009) and greater isolation among spouses and family members. These factors may further contribute to psychological distress (Polusny et al., 2009).

Finally, it is important to recognize that the social climate during the Vietnam War differs radically from the current social and political climate surrounding the conflicts in Iraq and Afghanistan. Whereas Vietnam soldiers returned to a nation that not only spoke out in protest against the war, but condemned those who served (Public Broadcasting Service [PBS], 2004), today many communities and the nation as a whole publicly support OEF/OIF veterans



regardless of personal feelings about the politics of the conflicts. Moreover, there have been drastic improvements in the GI Bill and other programs that assist veterans with the financial burden of college.

Keeping these factors in mind, combat and overseas deployments undoubtedly impact the psychological functioning and transition into civilian life for many veterans. As noted earlier, Hoge et al. (2004) reported that 17-19% of returning OIF military service members screened positive for posttraumatic stress disorder (PTSD), depression, and general anxiety disorders, while 11% of those returning from OEF and 8.5% returning from other operations screened positive for mental health concerns (Hoge, Auchterlonie, & Milliken, 2006). In another survey of Army soldiers 5 to 8 weeks after returning from a 12-month deployment to OIF ( $n = 2,275$ ) or OEF ( $n = 1,814$ ), Lapierre, Schwegler, and LaBauve (2007) found that 44% of OIF/OEF soldiers' reported PTSD symptoms, depressive symptoms, and/or both. Furthermore, PTSD and depression symptoms were positively associated, so participants reporting more posttraumatic stress symptoms also endorsed more symptoms of depression. Lapierre and colleagues found that marital separation or divorce was associated with increased reports of PTSD symptoms and depressive symptoms in both OIF and OEF samples. This may suggest that marriage (i.e., being in a close relationship) protects against psychological symptomatology, but the researchers also found that being single (versus being married) was associated with lower PTSD symptomatology for OEF veterans. Therefore, social support may not be the protective factor, but rather the absence of a significant disruption to a close relationship.

Deployment characteristics, such as prolonged combat exposure (Hoge, 2004; Mental Health Advisory Team – V [MHAT-V], 2008) and lengthy deployments (Adler, Huffman, Bliese & Castro, 2005) may increase the risk for negative consequences. Evidence shows that

prolonged combat exposure is linked to increases in mental health problems (Hoge, 2004; MHAT-V, 2008). In 2007, 48.6% of OIF soldiers surveyed reported the death of a unit member and this number increased to 73.4% in 2010 (MHAT-V, 2008). Slightly more than 29% reported shooting at the enemy in 2007, but this increased in 2010 to 78.5%. In addition, deployment length can have a negative impact on soldiers' psychological functioning. Adler, Huffman, Bliese and Castro (2005) surveyed 3,339 military personnel who had been deployed to the Balkan area and reported that longer deployments were associated with an increase in depression and posttraumatic stress symptomatology in male soldiers. Similarly, MHAT-V (2008) found that OIF soldiers' reports of work-related stress and mental health problems increased with each subsequent month of deployment.

Moreover, having been deployed to a combat zone multiple times also has been associated with increases in mental health disruptions. MHAT-V (2008) reported that non-commissioned officers (NCOs, i.e., ranks of E4 to E9) in combat units deployed for OIF were more likely to have served multiple deployments than junior enlisted (E1 to E3) soldiers. Moreover, mental health problems (defined as a combined measure of depression, anxiety, and acute stress) increased with multiple deployments. Slightly less than 12% of NCOs on their first deployment reported mental health problems while 18.5% of NCOs on their second deployment and 27.2% of NCOs on their third and fourth deployments reported mental health problems. These findings differ from those of Lapierre et al. (2007), who reported that ranks of NCO and officer (versus junior enlisted) were associated with lower reports of PTSD and depressive symptoms in OEF/OEF soldiers.

## Social Support

With these increases in mental health disruptions among returning service members, researchers have sought to identify protective factors against the debilitating effects of psychological distress. For example, social support has been consistently identified as a protective factor against the effects of stress (Cobb, 1976; Cohen & Wills, 1985). Cohen and Wills (1985) describe social support as a buffer whereby an individual who is experiencing a stressful event may perceive that others can provide necessary resources, which then may bolster their own perceived ability to cope with stressful demands. Cobb (1976) further suggested that social support is protective against the health consequences of life stress.

Research has documented the role of social support in PTSD symptomatology among combat veterans. For example, in a sample of 54 Vietnam veterans, Barrett and Mizes (1988) found that higher levels of combat exposure was associated with more PTSD symptoms, but veterans who reported high levels of social support also reported fewer symptoms of PTSD. Contrary to Cobb's (1976) suggestions regarding the protective role of social support, Barrett and Mizes (1988) did not find a significant interaction between combat level and social support on PTSD or depressive symptoms.

However, caution should be exercised when making inferences based on findings from studies surveying different generations of veterans. In particular, Laffaye et al. (2008) indicated that Vietnam veterans in their study had chronic PTSD and thus may have accumulated damage to their social systems of support (e.g., multiple divorces, conflicts with family members, disrupted friendships). Also, the social representation of war may influence systems of support. Vietnam veterans felt hostility when they returned to their communities (Friedman, as cited in PBS, 2004) through anti-war demonstrations that persecuted soldiers (Pomerantz, as cited in

PBS, 2004). These experiences and feelings of abandonment hindered the reintegration process for veterans (PBS, 2004) and could have affected their trust in others, thus decreasing search for social support.

Pietrzak, Johnson, Goldstein, Malley, and Southwick (2009) surveyed 272 OEF/OIF veterans (primarily National Guard/Reserve) who served from 2003 – 2007. They found that although combat exposure was positively associated with PTSD symptoms, post-deployment social support was negatively associated with PTSD symptoms. More recently, Wilcox (2010) indicated that among 83 married combat veterans (having served in combat within the last 7 years), higher levels of social support from family, significant others, and military peers were associated with lower levels of PTSD. However, social support from friends was not significantly related to PTSD symptomatology. Moreover, two meta-analyses found the lack of social support was the strongest predictor of PTSD following trauma (Brewin, Andrews, & Valentine, 2000; Ozer, Best, Lipsy, & Weiss, 2003).

### Student Veterans Adjustment to College

Previous research on student veterans' adjustment to college focused on post WWII and Vietnam veterans (Atkinson, 1950; Osborne, Greene, & Sanders, 1950; Joanning; 1975; O'Neill & Fontaine, 1973). Given the substantial differences between the wars, it is essential that we understand the stressful life transition to college for this newest generation of veterans.

Although a few qualitative studies have examined student veterans' experiences transitioning from the military to college (DiRamio, Ackerman & Mitchell, 2008; Zinger & Cohen, 2010), there have been no empirical studies published to date.

Most research conducted in the 1950s and 1970s concerning veterans' transition to college was focused on financial adjustment (Atkinson, 1950) or academic functioning defined by GPA (Osborne et al., 1950; Joanning, 1975). However, some research in the 1970s following the Vietnam War began to take into account the social and economic climate that veterans of this era encountered (O'Neill & Fontaine, 1973; Peter, 1975; Berry 1977). O'Neill and Fontaine (1973) found that 60% of a sample of 347 Vietnam veterans enrolled in college reported experiencing difficulties readjusting to civilian life. Specifically, 47% of the student veterans endorsed difficulties such as feeling physically tense, acting impulsively, or experiencing insomnia and nightmares. In addition, 19% of the sample reported difficulty relating to friends and adjusting to the faster pace of civilian life, while 14% reported academic indecision, such as difficulty choosing a particular field of study or deciding between obtaining an education and joining the workforce because they were unaware of the GI Bill to help with the financial cost of education.

DiRamio, Ackerman, and Mitchell (2008) interviewed 25 student veterans enrolled at three geographically diverse research institutions in order to learn about their experiences reintegrating into civilian life. Common themes in the personal accounts of these student veterans suggested that the most difficult adjustment was the transition to college. These student veterans indicated that they needed to relearn study skills, had difficulty connecting with their college peers, and worried about the financial burden of college.

In another qualitative study, Zinger and Cohen (2010) interviewed ten OEF/OIF veterans. Common themes found during the exploratory interviews were emotional distress (PTSD symptomatology and depression), physical injuries, and lack of structure in civilian life. Another theme that emerged was interpersonal difficulties within personal and social relationships,

particularly in feeling isolated and reconnecting with friends, family, and college peers.

Veterans also talked about the difficulty transitioning to role of student, feeling overwhelmed and problems concentrating on academic studies.

### Current Study

There is ample research on the effects of combat exposure, deployment length, and multiple deployments, as well as the effects that social support has on PTSD and depressive symptoms. However, there has been a dearth of studies on the adjustment challenges military service members may experience as they transition from military to civilian roles. The number of veterans returning to college following combat-related deployment is growing rapidly, but there is little empirical research examining veterans' transition from military life to college life (DiRamio, Ackerman & Mitchell, 2008; Zinger & Cohen, 2010). Thus, we know little about the factors that may mitigate or exacerbate difficulties during this transition. The purpose of the study was to examine the psychological functioning and college adjustment of student veterans. We expected that psychological distress (i.e., generalized anxiety, posttraumatic stress, depressive symptoms) and social support would be directly related to the college adjustment of student veterans. In addition, drawing upon research identifying social support as a protective or “buffering” effect between life stress and psychological symptoms (Cobb, 1976; Cohen & Wills, 1985; Dahlem, Zimet, & Walker, 1991), we also specifically investigated the hypothesis that a high level of perceived social support will reduce the negative effects of psychological distress on the college adjustment of student veterans.

## METHOD

### Participants

The current study used data from a larger project examining the psychological, relational, and academic functioning of college student veterans. The sample consisted of 165 military veterans who were currently enrolled as undergraduate or graduate students in a 4-year private or public college. The mean age of the sample was 31.8 years ( $SD = 7.4$ , Range = 20 – 53); with males comprising 78.3% ( $n = 126$ ) of the sample. In regards to race/ethnicity, 74.7% ( $n = 121$ ) were Caucasian, 8.6% ( $n = 14$ ) were Hispanic, 4.9% ( $n = 8$ ) were African American, 3.1% ( $n = 5$ ) were Asian/Pacific Islander, and 8.6% ( $n = 14$ ) identified as bi-racial/multi-racial or other. In terms of marital status, 48.5% ( $n = 80$ ) reported being married, 27.9% ( $n = 46$ ) were single (never married), 8.5% ( $n = 14$ ) were in a committed relationship of 6 or more months, 12.1% ( $n = 20$ ) were divorced or separated, and 3.0% ( $n = 5$ ) were cohabitating. In terms of military background, 39.6% ( $n = 65$ ) had served in the Army, 21.3% ( $n = 35$ ) indicated Navy, 22.6% ( $n = 37$ ) Marine Corps, and 16.5% ( $n = 27$ ) Air Force. Furthermore, 18.6% ( $n = 30$ ) indicated that they were activated as part of a Reserve component and 8.1% ( $n = 13$ ) were members of the National Guard. In regards to rank, 83.0% ( $n = 137$ ) reported being NCO (E4-E6), 6.1% ( $n = 10$ ) were junior enlisted (E3), 5.5% ( $n = 9$ ) were senior NCOs (E7-E9) and 5.5% ( $n = 9$ ) were the rank of officer. In regards to college enrollment, 74.5% of student veterans indicated that they had been enrolled in college for at least 5 months (or had completed approximately one semester at their current institution).

## Instruments

The Generalized Anxiety Disorder 7-item (GAD-7; Spitzer, Kroenke, Williams, & Lowe, 2006) is a 7-item self-report measure designed to assess generalized anxiety. Participants are asked to rate on a 4-point Likert scale (0 = *Not at all*, 3 = *Nearly every day*) how often they experience the 7 symptoms over the last 2 weeks. The score ranges from 0-21, with a cut-score of 10 indicating probable generalized anxiety. The GAD-7 demonstrates good internal consistency (Cronbach's  $\alpha = .92$ ), test-retest reliability (intraclass correlation = .83) and good validity (Spitzer, Kroenke, Williams, & Lowe, 2006). The current study produced a Cronbach alpha of .91.

The Impact of Event Scale – Revised (IES-R; Weiss & Marmar, 1997) is a 22-item self-report measure of the three diagnostic symptom clusters (i.e., intrusion, avoidance, and hyperarousal) of posttraumatic stress disorder (PTSD; American Psychiatric Association, 2000). The respondents are asked to indicate their subjective level of distress over the past 7 days on a 5-point Likert scale ranging from 0 (*not at all*) to 4 (*extremely*). Although there is no specific cut-off score, however Creamer, Bell, and Failla (2003) suggested a total raw score of 33 provided discriminant diagnostic ability. The measure demonstrates high internal consistency for the total scale, Cronbach's  $\alpha = .96$  (Creamer, Bell, & Failla, 2003), and good internal consistency for the subscales: the mean  $\alpha = .86$  for the IES-R intrusion subscale and the mean  $\alpha = .82$  for the IES-R avoidance subscale (Sundin & Horowitz, 2002) and the mean  $\alpha = .91$  for the hyperarousal subscale (Creamer, Bell, & Failla, 2003). In the current study, the IES-R total scale demonstrated strong reliability with Cronbach's  $\alpha = .96$ . IES-R subscales demonstrated strong reliabilities: Cronbach's  $\alpha = .93$  for the IES-R intrusion subscale, Cronbach's  $\alpha = .90$  for the IES-R avoidance subscale, and Cronbach's  $\alpha = .91$  for the IES-R hyperarousal subscale.



The Patient Health Questionnaire 9-item (PHQ-9; Kroenke, Spitzer, & Williams, 2001) is a 9-item self-report measure used to assess depression and depression severity. Participants are asked to rate on a 4-point Likert scale (0 = *Not at all*, 3 = *Nearly every day*) how often they experience the 9 symptoms over the last 2 weeks. Major depression is probable if 5 or more of the 9 symptoms have been present at least “more than half the days” while other depression is probable if 2, 3, or 4 depressive symptoms have been present for at least “more than half the days.” As a measure of depression severity, the score ranges from 0 to 27. PHQ-9 scores of 5, 10, and 15 represent mild, moderate, and severe depression, respectively. The PHQ-9 has been found to have good reliability and validity with a Cronbach’s  $\alpha$  of .89 in a primary care population (Kroenke, Spitzer, & Williams, 2001; Kroenke, & Spitzer, 2002). The PHQ-9 demonstrated strong reliability with a Cronbach’s alpha of .91.

The Multidimensional Scale of Perceived Social Support (MSPSS; Zimet, Dahlem, Zimet, & Farley, 1988) is a 12-item self-report measure that subjectively assesses social support within three domains: family, friends, and significant other. Participants are asked to rate on a 7-point Likert scale (1 = *Very strongly disagree*, 7 = *Very strongly agree*) how much they agree with the statements. The MSPSS demonstrates good reliability ( $r = .85$ ) and validity. Internal consistency for the total scale was good (Cronbach’s  $\alpha = .88$ ) (Zimet, Dahlem, Zimet, & Farley, 1988; Zimet, Powell, Farley, Werkman, & Berkoff, 1990). In the current study, Cronbach’s alpha for the total scale score of the MSPSS was .91. Internal reliability for the subscales ranged from .92 to .97.

The Student Adaptation to College Questionnaire (SACQ; Baker & Siryk, 1984; 1999) is a 67-item self-report questionnaire used to determine how well a student is handling the demands of college. The SACQ assesses overall adjustment to college, as well as adjustment in four

specific areas: Academic Adjustment, Personal-Emotional Adjustment, Social Adjustment, and Attachment (to institution). The Academic Adjustment subscale contains items that refer to “educational demands characteristic of the college experience,” the Social Adjustment subscale consists of items relevant to the “interpersonal-societal demands,” The Personal-Emotional Adjustment subscale examines the degree to which the student is experiencing psychological distress and/or somatic complaints, and the Goal Commitment/Institutional Attachment subscale “explores the student’s feelings about being in college, in general, and the college s/he is attending, in particular” (Baker & Siryk, 1999; p.1) Participants are asked to rate items on a 9-point scale ranging from “*Applies very closely to me*” to “*Doesn’t apply to me at all.*” Items are scored in the direction of positive adjustment to college, so that higher scores indicate better adjustment to college. In this study, Cronbach’s alpha for the Full Scale was .95 and Cronbach’s alphas for the subscales ranged from .83 to .90.

The background information questionnaire gathered demographic information such as age, gender, race/ethnicity, education, and relationship status. Other questions asked about military rank, previous deployment, and psychiatric history.

### Procedure

The procedures for data collection were reviewed and approved by the university’s Institutional Review Board. Student veterans were recruited for participation through email invitations. Since veteran status is confidential, the PI’s institution’s registrar’s office released student veterans email addresses directly to the PI for the sole intended purpose of study recruitment. Procedures at other institutions included the PI emailing a recruitment letter describing the study to college staff (e.g., Registrar, Veteran’s Center Director) to distribute as

they deemed appropriate to their institution's student veterans. In addition, fliers with study description and contact information were posted in campus facilities and sent to college officials to distribute to student organizations. Recruitment materials instructed eligible veterans to contact the PI to receive an access code for the online survey. The first page of the survey was an informed consent notice that included a description of the study, potential risks and benefits associated with the study, and investigator contact information. The survey included questionnaires that were standard and frequently used in clinical settings and for research purposes. Participants were provided with a list of mental health resources (i.e., university counseling centers, VAMCs, and community mental health clinics). Online survey administration time was expected to take 45 – 60 minutes. No compensation or course credit was given for participation in this study. However, in an effort to increase the sample size, some student veterans were compensated \$10 to complete this survey as a screening process to participate in a larger study.

Data from Survey Monkey were transferred to SPSS and analyses were conducted using SPSS statistical software. A total of 93 participants were removed from analyses due to (a) a failure to complete the majority of the measures (49 participants) and (b) a failure to meet eligibility requirements (i.e, not current students, active duty status or non-military). Missing data were analyzed with Little's MCAR test in SPSS and the data for the main independent variables were found to be missing at random. Estimation-Maximization was used to replace the missing data at the individual item level and was rounded to the nearest whole number. Little's MCAR test indicated that missing data for the dependent variable (i.e., SACQ) was determined not to be MCAR. Upon further examination, it appeared that student veterans advanced in their educational pursuits (upper-level undergraduate and graduate students) tended to have more

missing data. Missing data for this measure was handled according to the scoring recommendations provided in the manual (Baker & Siryk, 1999). When estimating correlations, pairwise deletion method was used and listwise deletion of cases was employed to estimate regression models. Shapiro Wilk's test of normality indicated that the independent variables were non-normal, but transformations of data had no effect on the outcomes of the analyses, so analyses using non-transformed data is reported.

## RESULTS

Means and standard deviations were computed for each scale (see Table 1). PHQ-9 produced a mean of 7.47 ( $SD = 6.48$ ), and 12.2% of the current sample met the screening cut-off for depression. GAD-7 produced a mean of 6.03 ( $SD = 5.41$ ), and 19.4% met the screening cut-off point for generalized anxiety disorders. IES-R total scale produced a mean of 4.10 ( $SD = 3.16$ ), the IES-R Intrusion subscale produced a mean of 1.43 ( $SD = 1.13$ ), the IES-R Avoidance subscale produced a mean of 1.33 ( $SD = 1.07$ ), and the IES-R Hyperarousal subscale produced a mean of 1.34 ( $SD = 1.17$ ). In the current sample, 25.5% met the cut-off point of 33 on the total IES-R indicating clinically significant posttraumatic stress symptomatology (Creamer, Bell & Failla, 2003). In terms of social support, MSPSS produced a mean of 5.27 ( $SD = 1.22$ ), and the total MSPSS and subscale means for this sample were above the theoretical midpoint of 3.5 suggested by Dahlem and colleagues (1991). SACQ total scale produced a mean of 396.28 ( $SD = 81.30$ ). Correlation coefficients were computed among the scales (see Table 1). All correlations for main variables were significant at the  $p < .05$  level or better, except the non-significant bivariate correlation for MSPSS and IES-R Hyperarousal subscale.

To determine whether demographic differences existed for the main variables of interest (i.e., depression, generalized anxiety, posttraumatic stress symptoms, social support and academic adjustment),  $t$ -tests were conducted. Race was collapsed into “white” and “non-white” given the small distribution for minority status. No significant differences were observed across the demographic variables on the main variables. However, Pearson correlations indicated that age was significantly and positively correlated with college adjustment ( $r = .18, p = .02$ ), therefore age was used as a control variable in the multiple regressions. No other significant correlations were observed.

Prior to testing hypotheses, the predictors were centered and interaction terms were created by taking the product of the two centered main effects. Three multiple regressions were conducted. Each model included one measure of psychological symptomatology (i.e., PHQ-9, GAD-7, or IES-R) and social support (MSPSS), as well as the relevant interaction term to predict college adjustment (SACQ Total).

As shown in Table 2, the first model using generalized anxiety as the main predictor accounted for a significant amount of the variance,  $F(4, 126) = 37.60, p < .001, R^2 = .530$ . Results indicated significant effects for generalized anxiety ( $\beta = -.554, p < .001$ ) and social support ( $\beta = .341, p < .001$ ); however, the interaction was non-significant ( $\beta = .041, p = .501$ ). Generalized anxiety accounted for 41.8% of the variance on SACQ Total Adjustment, and social support contributed to an additional 11.1% of the variance.

The second model using posttraumatic stress as the main predictor (see Table 2) also accounted for a significant amount of the variance,  $F(4, 93) = 13.00, p < .001, R^2 = .331$ . Results indicated a significant main effect for posttraumatic stress symptoms ( $\beta = -.289, p = .001$ ) and a significant main effect for social support ( $\beta = .437, p < .001$ ); however, the interaction was non-significant ( $\beta = .047, p = .603$ ). Posttraumatic stress symptoms accounted for 15.0% of the variance on SACQ Total Adjustment, and social support accounted for an additional 19.1% of the variance.

Similar to the previous models, the third model using depression as the predictor (see Table 2) accounted for a significant amount of the variance,  $F(4, 128) = 38.51, p < .001, R^2 = .532$ . Results indicated a significant main effect for depression ( $\beta = -.559, p < .001$ ) and a significant main effect for social support ( $\beta = .301, p < .001$ ); however, again the interaction was

non-significant ( $\beta = -.006, p = .923$ ). Depression accounted for 43.9% of the variance on SACQ Total Adjustment and social support contributed to an additional 7.8% of the variance.

Post-hoc regression analyses were conducted using the IESR subscales (i.e., intrusion, avoidance, hyperarousal) as independent variables to determine whether unique symptom clusters were independently associated with college adjustment and differentially interact with social support. The model accounted for a significant amount of the variance,  $F(8, 89) = 6.84, p < .001, R^2 = .325$ . Results indicated a significant main effect for the hyperarousal symptoms cluster ( $\beta = -.405, p = .04$ ), but the intrusion symptom cluster was non-significant ( $\beta = .094, p = .633$ ) as was the avoidance cluster ( $\beta = -.005, p = .976$ ). In addition, results indicated a significant main effect for social support ( $\beta = .463, p < .001$ ). However, the interactions between the PTSD symptom clusters and social support were non-significant, intrusion x social support ( $\beta = -.140, p = .421$ ), avoidance x social support ( $\beta = .142, p = .388$ ), and hyperarousal x social support ( $\beta = .079, p = .618$ ).

## DISCUSSION

Findings of the current study indicate that generalized anxiety, posttraumatic stress disorder (PTSD), and depressive symptoms have a direct effect and negative impact on student veterans' college adjustment. This finding is consistent with literature on psychological distress within the college student population (Gerdes & Mallinckrodt, 1994), and is not surprising considering the debilitating effects psychological distress can have on individual functioning, particularly during a stressful period such as the transition to college. The presence of depression, anxiety, and PTSD may affect the student veteran's ability to adjust to the demands of college. Specifically, symptoms commonly associated with depression, generalized anxiety, and PTSD (e.g., sleep and concentration difficulties, irritability, loss of interest in daily activities, fatigue) may impede studying, completing coursework, and attending class.

When PTSD symptom clusters were examined separately, only the hyperarousal cluster differentially predicted college adjustment. This finding may be due to the unique hyperarousal symptoms, such as sleep disturbances and concentration difficulties that directly interfere with studying and completion of college coursework. Moreover, hypervigilance and increased arousal may make sitting in lecture halls particularly difficult if student veterans are vigilant of their surroundings and/or easily startled which may further distract them from the lecture and inhibit absorption of material being presented. However, neither the intrusion cluster nor the avoidance cluster of PTSD differentially predicted college adjustment among student veterans. Symptoms of avoidance and intrusion may not have a direct impact on individual functioning that contributes to college adjustment. It is possible that studying and other school tasks are part of an attempt to avoid distressing thoughts and recollections of the trauma, in which case avoidance may actually facilitate successful adaptation in the college setting.



Contrary to hypotheses, moderator effects were not found for any of the measures of symptomatology on college adjustment (SACQ). However, social support had a direct effect on academic adjustment and significantly increased the variance accounted for beyond each symptom. While different from studies that support the protective or buffering effect of social support (Cobb, 1976; Cohen & Wills, 1985; Dahlem, Zimet, Walker, 1991), these results are in line with research that suggests perceived social support has a direct effect on individual functioning (Barrett & Mizes, 1988; Brewin, Andrews, & Valentine, 2000; Cohen & Wills, 1985; Ozer, et al., 2003). In particular, this finding is consistent with Cohen and Wills (1985) “main-effect model” of social support suggesting that social resources have a beneficial effect regardless of whether individuals are under immediate stress. The majority of student veterans surveyed in the current study had been in college a minimum of five months (i.e., approximately one semester). Thus, they may have adjusted to the transition to college and no longer perceived the transition as a stressful event.

The main-effect model differs from the “buffering” model, which proposes that social support protects individuals from the potentially adverse effects of stressful life events (Cohen & Wills, 1985). For example, Dahlem, Zimet, and Walker (1991) found social support to moderate depression only for the participants experiencing high levels of life stress further suggesting that social support may be especially effective in times of stress. However, much of the literature has examined the protective effects of social support after severe life stressors, such as combat or other significant trauma (Brewin, Andrews, & Valentine, 2000; Ozer, et al., 2003; Wilson & Scarpa, 2013). Our study examined social support as buffering the negative effects of psychological symptoms on the stressful life transition to college. Consequently, this difference may have contributed to our non-significant moderation findings. Furthermore, in the current

study we were interested in outcomes for adjustment to college. However, student veterans in this sample may have been exposed to combat, and therefore may have experienced combat trauma. Had we examined social support as a protective factor from the potential adverse effects of combat exposure, we may have found moderation.

There has been controversy over the varying definitions of social support. For example, social support has been defined as personal and social resources reciprocated by the environment (Hobfoll, Freedy, Lane, & Geller, 1990), or alternatively as information leading the individual to believe that s/he (a) is cared for and loved, (b) is esteemed and valued, and (c) belongs to a network of communication and mutual obligation (Cobb, 1976). Other variations on the construct of social support include instrumental or concrete support versus emotional support (Keane, Scott, Chavoya, Lamparski, & Fairbank, 1985), sources of social support and the subjective assessment of the adequacy of those sources (Zimet et al., 1988), and veteran-to-veteran sources of support (i.e., veteran peers or “unit support” within military nomenclature) (Laffaye, Cavella, Drescher & Rosen, 2008; Wilcox, 2010). In this study we used Zimet and colleagues (1988) construct of social support as the perceived or subjective assessment of support. Therefore, results may have differed had we used one of the other variations of social support.

Results from the current study can be used by college administrators and university counseling centers to improve service delivery and programming specifically for student veterans. Although social support predicted college adjustment beyond each symptom, generalized anxiety accounted for 41.8% of the variance on college adjustment and depression accounted for 43.9% of the variance – contributing to almost half the variance on college adjustment. University counselors should screen for these symptoms at the initial assessment

and plan treatment to reduce symptoms, if necessary. Additionally, 25.5% of this sample met the suggested cut-off on the IES-R indicating a high prevalence rate for PTSD symptoms.

University counselors should have knowledge regarding PTSD symptoms and how different symptom clusters may contribute to difficulties adjusting to college. Counselors should be familiar with evidence-based treatments for PTSD and/or be able to provide referrals to Veteran Administration hospitals for this treatment. Furthermore, it has been suggested that the transition from the military culture to college life can be thought of in terms as a cross-cultural transition (Black, Westwood, & Sorsdal, 2007). University officials, administrators, and university counselors should be competent in military culture and potential issues or difficulties related to the transition from the military environment to college life. For example, it is important to consider potential barriers to care because prior research has suggested that veterans may be hesitant to access mental health services (Hoge et al., 2004). Therefore it may be beneficial to design interventions and programs specifically aimed at veterans, or provide access to mental health services that are housed in Veteran Centers or Veteran's Affairs Offices located on campuses.

Despite the finding that the proportion of participants exceeding cut-off scores for generalized anxiety, depression, and PTSD symptoms are similar to the rates of psychological symptomatology reported by Hoge et al. (2004) in his sample of OEF/OIF veterans, participants in this sample reported above average levels of social support. This finding may be related to the majority of participants being enrolled in a university located in northern Texas which has a strong patriotic presence within the community at large, as well as many resources specifically tailored to student veterans such as a Veteran's Center, veteran-only fraternity, chapter of a national Student Veterans of America organization, and a ROTC program for which there is

visual presence of cadets in uniform. Furthermore, our sample of student veterans tended to be older and married, which may have contributed to high levels of perceived social support. It is also possible that veterans who choose to go to college have better coping skills and more encouragement from others to achieve in the academic setting compared to veterans who do not seek higher education. Thus, moderation findings in a non-college veteran sample may differ from current results.

Several limitations of this study should be considered. This study was cross-sectional in nature and included only those student veterans currently enrolled in courses. Therefore, we did not capture the students who may have dropped out of college or likewise, those who may have successfully graduated; both of these groups may look quite different from our sample. Next, participants were restricted to veterans in college in Texas, so these results may not generalize to other student veterans located outside this region and at other institutions that do not have readily available resources specifically designed to meet the needs of student veterans (e.g., online universities and 2-year colleges). Furthermore, we used self-report measures and did not obtain more objective measures of academic adjustment such as GPA. Finally, the SACQ was administered to better understand academic adjustment among student veterans. However, this instrument may not have been the most effective measure of college adjustment among student veterans because this population is generally made up of non-traditional students who tend to be older, married, have children, and are employed.

This was the first empirical study, to our knowledge, that sought to understand the experiences of student veterans as they transition to college. Research should continue to quantitatively understand the unique stressors and challenges or conversely, the factors that contribute to the strengths of this population as they transition to college. Prior research has

found that veterans reported having more veteran peers than nonveteran peers in their social network and relied more on their veteran peers for emotional support more frequently than other sources of support such as nonveteran peers, relatives, significant others (Laffaye et al., 2008). Future research should extend these findings to student veterans to determine whether student veterans discriminate between different sources of perceived social support. Another potential focus of study may investigate service utilization and barriers to care with the student veteran population.

Table 1

*Correlations, Means and Standard Deviations for Variables*

Variables	1	2	3	4	5	6	7	8
1. Depression (PHQ-9)	1.00							
2. Generalized Anxiety (GAD-7)	.797**	1.00						
3. Posttraumatic Stress Symptoms (IES-R)	.623**	.678**	1.00					
4. Intrusion (IES-R Subscale)	.610**	.659**	.952**	1.00				
5. Avoidance (IES-R Subscale)	.493**	.508**	.913**	.800**	1.00			
6. Hyperarousal (IES-R Subscale)	.688**	.724**	.946**	.875**	.778**	1.00		
7. Perceived Social Support (MSPSS)	-.348**	-.233**	-.228*	-.250*	-.235*	-.159	1.00	
8. Student Adaptation to College (SACQ)	-.659**	-.631**	-.383*	-.375**	-.342**	-.359**	.452**	1.00
M	7.47	6.03	4.10	1.43	1.33	1.34	5.27	396.28
SD	6.48	5.41	3.16	1.13	1.07	1.17	1.22	81.30

\*  $p < .05$ ; \*\*  $p < .01$

Table 2

*Multiple Regression Analyses Testing the Proposed Moderation Models*

	B	SE B	$\beta$
Model 1. Outcome: College Adjustment (SACQ Total)			
Age	1.09	.700	.095
Generalized Anxiety (GAD-7)	-8.37	.950	-.554***
Perceived Social Support (MSPSS)	23.73	4.41	.341***
GAD-7 $\times$ MSPSS	.561	.832	.041
Model 2. Outcome: College Adjustment (SACQ Total)			
Age	1.57	.884	.015
Posttraumatic Stress Symptoms (IES-R)	-7.39	2.25	-.289***
Perceived Social Support (MSPSS)	29.96	6.25	.437***
IES-R $\times$ MSPSS	.997	1.91	.047
Model 3. Outcome: College Adjustment (SACQ Total)			
Age	1.15	.674	.103
Depression (PHQ-9)	-7.15	.833	-.559***
Perceived Social Support (MSPSS)	21.22	4.67	.301***
PHQ-9 $\times$ MSPSS	-.072	.741	-.006

\*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$

APPENDIX A  
ADDITIONAL RESULTS

## Results for Original Hypotheses

The first model examined whether social support moderated the effects of generalized anxiety on academic adjustment. The model accounted for a significant amount of the variance,  $F(4, 126) = 18.12, p < .001, R^2 = .345$ . Results indicated a significant effect for generalized anxiety ( $\beta = -.400, p < .001$ ) and a significant main effect for social support ( $\beta = .303, p < .001$ ); however, the interaction was non-significant ( $\beta = .100, p = .169$ ). Generalized anxiety accounted for 23.9% of the variance in academic adjustment, but social support contributed to an additional 9.3% of the variance.

The second model examined whether social support moderated the effects of posttraumatic stress on academic adjustment. The model accounted for a significant amount of the variance,  $F(4, 93) = 8.45, p < .001, R^2 = .235$ . Results indicated a non-significant main effect for posttraumatic stress symptoms ( $\beta = -.133, p = .161$ ) and a significant main effect for social support ( $\beta = .407, p < .001$ ); however, the interaction was non-significant ( $\beta = .105, p = .275$ ). Surprisingly, posttraumatic stress symptoms did not have a direct effect on academic adjustment, but social support accounted for 18.2% of the variance.

The third model examined whether social support moderated the effects of depression on academic adjustment. The model accounted for a significant amount of the variance,  $F(4, 128) = 18.13, p < .001, R^2 = .342$ . Results indicated a significant main effect for depression ( $\beta = -.407, p < .001$ ) and a significant main effect for social support ( $\beta = .281, p < .001$ ); however, again the interaction was non-significant ( $\beta = .000, p = .996$ ). Depression was found to account for 25.4% and social support contributed to 6.9% of the variance.



Post-hoc analyses were conducted to examine whether social support moderated the effects of psychological symptomatology and the social adjustment and institutional affiliation subscales of the SACQ.

#### Social Support as a Moderator between Psychological Symptoms and Social Adjustment

The first model examined whether social support moderated the effects of generalized anxiety on social adjustment. The model accounted for a significant amount of the variance,  $F(4, 126) = 26.37, p < .001, R^2 = .438$ . Results indicated a significant effect for generalized anxiety ( $\beta = -.492, p < .001$ ) and a significant main effect for social support ( $\beta = .357, p < .001$ ); however, the interaction was non-significant ( $\beta = -.054, p = .424$ ). Generalized anxiety accounted for 33.6% of the variance in social adjustment, but social support contributed to an additional 11.2% of the variance.

The second model examined whether social support moderated the effects of posttraumatic stress on social adjustment. The model accounted for a significant amount of the variance,  $F(4, 93) = 9.15, p < .001, R^2 = .251$ . Results indicated a significant main effect for posttraumatic stress symptoms ( $\beta = -.289, p = .002$ ) and a significant main effect for social support ( $\beta = .370, p < .001$ ); however, the interaction was non-significant ( $\beta = .021, p = .820$ ). Posttraumatic stress symptoms accounted for 14.0% of the variance and social support accounted for an additional 13.2% of the variance.

The third model examined whether social support moderated the effects of depression on social adjustment. The model accounted for a significant amount of the variance,  $F(4, 128) = 27.27, p < .001, R^2 = .443$ . Results indicated a significant main effect for depression ( $\beta = -.499, p < .001$ ) and a significant main effect for social support ( $\beta = .304, p < .001$ ); however, again the

interaction was non-significant ( $\beta = .008, p = .905$ ). Depression was found to account for 36.4% and social support contributed to 8.1% of the variance.

#### Social Support as a Moderator between Psychological Symptoms and Institution Affiliation

The first model examined whether social support moderated the effects of generalized anxiety on institution affiliation. The model accounted for a significant amount of the variance,  $F(4, 126) = 18.55, p < .001, R^2 = .351$ . Results indicated a significant effect for generalized anxiety ( $\beta = -.452, p < .001$ ) and a significant main effect for social support ( $\beta = .291, p < .001$ ); however, the interaction was non-significant ( $\beta = .040, p = .577$ ). Generalized anxiety accounted for 28.3% of the variance on institution affiliation, but social support contributed to an additional 8.1% of the variance.

The second model examined whether social support moderated the effects of posttraumatic stress on institution affiliation. The model accounted for a significant amount of the variance,  $F(4, 93) = 6.73, p < .001, R^2 = .191$ . Results indicated a non-significant main effect for posttraumatic stress symptoms ( $\beta = -.16, p = .094$ ) and a significant main effect for social support ( $\beta = .400, p < .001$ ); however, the interaction was non-significant ( $\beta = -.014, p = .884$ ). Posttraumatic stress symptoms did not have a direct effect on institutional affiliation, but social support accounted for an additional 14.6% of the variance.

The third model examined whether social support moderated the effects of depression on institution affiliation. The model accounted for a significant amount of the variance,  $F(4, 128) = 18.13, p < .001, R^2 = .342$ . Results indicated a significant main effect for depression ( $\beta = -.435, p < .001$ ) and a significant main effect for social support ( $\beta = .282, p < .001$ ); however, again the interaction was non-significant ( $\beta = -.060, p = .414$ ). Depression was found to account for

28.6% of the variance on institution affiliation and social support contributed to an additional 6.1% of the variance.

APPENDIX B  
EXTENDED LITERATURE REVIEW

## Effects of Combat on Mental Health: A Brief History

Over 2 million service members have served in the conflicts in Afghanistan (Operation Enduring Freedom [OEF]) and Iraq (Operation Iraqi Freedom [OIF], Operation New Dawn [OND]) (Veterans Administration [VA] Office of Public Health and Environmental Hazards, 2010). Military personnel are experiencing high levels of combat exposure (Hoge et al., 2004), which increases the risk for post-deployment mental health concerns. Not surprisingly, mental health problems continue to be the second most common diagnosis within the VA (VA Office of Public Health and Environmental Hazards, 2008).

The VA Office of Public Health and Environmental Hazards (2010) reported that over 1.09 million service members who served in OEF/OIF have separated from the military and have been granted veteran status in the timeframe between 2001 and 2009. Therefore, mental health disruptions within the veteran population should be a major concern, not only among mental health professionals within the VA health care systems, but also in the private practice and the community health sectors. As an influx of prior military service members are returning to college due to opportunities afforded through the GI Bill and other financial resources, veterans' mental health and readjustment should be a top priority of college officials and university departments. Yet, there is a dearth of knowledge concerning mental health and college adjustment among these veterans, which will hamper college administrator's efforts to provide services to veterans.

## Effects of Combat on Mental Health: A Brief History

A long history of the effects of combat has been documented. "Soldier's Heart" was coined in the post-Civil War Era to explain physiological changes in the cardiovascular systems

of soldiers (Friedman, as cited in Public Broadcasting Service [PBS], 2004). Psychological changes were considered a form of “nostalgia” in which a soldier longed for their home (Friedman, as cited in PBS, 2004). With the advent of each subsequent war, new terms were created for physiological and psychological symptoms among soldiers that were difficult to explain. WWI physicians explained the visible symptoms such as tremors and nightmares as “shattered nerves” from the explosion of artillery that soldiers experienced on the front lines and consequently termed this “shell shock” (Herman, 1992). However, this could not explain why soldiers who were not on the front lines were experiencing similar symptoms.

By the WWII and Korean Wars, “combat fatigue” became the popular explanation for symptoms and the prescribed cure was rest, a hot meal, and relaxation. Military psychiatrists described symptoms as normal reactions to combat that were directly related to the severity of combat exposure (Herman, 1992). Psychiatrists at that time sought to identify protective factors to prevent soldiers from the combat-related collapse and discovered that the strongest protection from psychological breakdown was the emotional attachment felt among the soldier and his comrades (Herman, 1992).

Five years after the end of the war in Vietnam, the American Psychiatric Association (APA) added posttraumatic stress disorder (PTSD) to the *Diagnostic and Statistical Manual-III* (*DSM-III*; American Psychiatric Association, 1980) to describe the severe stress symptoms Vietnam veterans continued to experience long after returning home from combat. However, during this time period, still relatively little was understood about the disorder. Research from this era was conducted retrospectively years after the trauma exposure. The social context of the soldier’s homecoming may be related to perpetuating chronic psychological distress in Vietnam

veterans as they returned to a nation that not only spoke out against the war, but condemned those who served (PBS, 2004).

The contexts of the OEF/OIF conflicts differ from the wars of previous generations. Specifically, there are no clearly defined front lines, and consequently military combat personnel and support personnel alike are exposed to combat situations, such as convoys in danger of improvised explosive devices (IEDs) and suicide bombings. In addition, greater numbers of females are serving, and due to the non-traditional nature of the conflicts in Iraq and Afghanistan, female military personnel's exposure to combat is more pronounced than in previous wars. Furthermore, the enemy is difficult to distinguish from civilian and military jobs may differ from duties assigned while deployed.

The magnitude of reliance on the National Guard and Reserves is also more pronounced than ever before. National Guard and Reserve military personnel face unique reintegration challenges in comparison to their active duty counterparts. They tend to be older, married, have children, and hold civilian occupations that are left behind when called to active duty overseas. National Guard and Reserve members report lower levels of support within their military units (Polusny et al., 2009) and often their families report more isolation than spouses of active duty personnel. These factors may further contribute to psychological distress (Polusny et al., 2009).

Finally, it is important to recognize that the social climate that encompassed the Vietnam War markedly differs from the current social and political climate of the conflicts in Iraq and Afghanistan. Communities and the nation as a whole publicly support OEF/OIF veterans despite personal feelings about the politics of the conflicts. Furthermore, there have been drastic improvements in the GI Bill and more programs that assist veterans with the financial burden of college.

## Effects of Combat on Mental Health: Current Understanding

Systematic research on the effects of war began with studies on Vietnam veterans. It is important to keep in mind that when reviewing this research, the studies with Vietnam veterans were conducted years after the war ended. Dohrenwend and colleagues (2006) reported adjusted rates of posttraumatic stress disorder (PTSD) from the National Vietnam Veterans Readjustment Study (NVVRS) that 18.7% of Vietnam veterans had developed war-related PTSD during their lifetime and 9.1% had current PTSD 11 – 12 years following the war. These rates were adjusted from the NVVRS data, which initially estimated 30.9% for lifetime rates of PTSD and slightly over 15% for rates of current PTSD (Schlenger et al., 1992). Though the rates of PTSD estimated by Dohrenwend (2006) are less than originally estimated, the findings still suggest that combat trauma has a significant effect on psychological well-being years after the conclusion of war.

A more recent prevalence estimate comes from a study involving peacekeeping missions (Litz, Orsillo, Friedman, Ehlich & Batres, 1997). Litz and colleagues surveyed 3,461 service members five months after returning from a peacekeeping mission to Somalia (Operation Restore Hope/Operation Continue Hope). They reported that 8% of those surveyed had probable PTSD based on screening measures and that frequency of exposure to war-zone stressors best predicted PTSD symptom severity.

Hoge et al., (2004) reported that 17-19% of returning OIF military service members screened positive for PTSD, depression, and general anxiety disorders, while 11% of those returning from OEF and 8.5% returning from other operations screened positive for mental health concerns (Hoge, Auchterlonie, & Milliken, 2006). However, the lower rates of



psychological symptomatology found in OEF veterans may be due to the differences in combat intensity between the OIF and OEF conflicts when this study was conducted.

Lapierre, Schwegler, and LaBauve (2007) surveyed Army soldiers 5 to 8 weeks after returning from a 12-month deployment to OIF (n = 2,275) or OEF (n = 1,814). Their results indicated that 44% of OIF/OEF soldiers' reported PTSD symptoms, depressive symptoms, and/or both. Furthermore, PTSD and depression symptoms were positively associated, so participants reporting more posttraumatic stress symptoms were also reporting more symptoms of depression. Lapierre and colleagues found that marital separation or divorce was associated with increased reports of PTSD symptoms and depressive symptoms in both OIF and OEF samples. This may suggest that marriage (i.e., being in a close relationship) protects against psychological symptomatology, but the researchers also found that being single (versus being married) was associated with lower PTSD symptomatology for OEF veterans. Therefore, social support may not be the protective factor, but rather the absence of a significant disruption to a close relationship.

Deployment characteristics, such as prolonged combat exposure (Hoge, 2004; Mental Health Advisory Team – V [MHAT-V], 2008) and lengthy deployments (Adler, Huffman, Bliese & Castro, 2005) may have negative consequences on the psychological well-being of military members. Evidence shows that prolonged combat exposure is linked to increases in mental health problems (Hoge, 2004; MHAT-V, 2008). In 2007, 48.6% of OIF soldiers surveyed reported the death of a unit member and this number increased to 73.4% in 2010 (MHAT-V, 2008). Slightly more than 29% reported shooting at the enemy in 2007, but this increased in 2010 to 78.5%. In addition, deployment length can have a negative impact on soldiers' psychological functioning. Adler, Huffman, Bliese and Castro (2005) surveyed 3,339 military

personnel who had been deployed to the Balkan area and reported that longer deployments were associated with an increase in depression and posttraumatic stress symptomatology in male soldiers. Similarly, MHAT-V (2008) found that OIF soldiers' reports of work-related stress and mental health problems increased with each subsequent month of deployment.

Moreover, having been deployed to a combat zone multiple times also has been associated with increases in mental health disruptions. MHAT-V (2008) reported that non-commissioned officers ([NCOs] ranks of E5 to E9) in combat units deployed to OIF were more likely to have served multiple deployments than junior enlisted (E1 to E4) soldiers. Mental health problems (defined as a combined measure of depression, anxiety, and acute stress) increased with multiple deployments. Slightly less than 12% of NCOs on their first deployment reported mental health problems while 18.5% of NCOs on their second deployment and 27.2% of NCOs on their third and fourth deployments reported mental health problems. These findings differ from Lapierre et al. (2007) report that ranks of NCO and officer (versus junior enlisted) were associated with lower reports of PTSD and depressive symptoms in OEF/OEF soldiers.

### Social Support

With these increases in mental health disruptions among returning service members, researchers have sought to identify protective factors against the debilitating effects of psychological distress following deployment to a combat zone. For example, social support has been consistently identified as a protective factor against the effects of stress (Cohen & McKay, 1984; Ozer, Best, Lipsey & Weiss, 2003). Definitions of social support vary within the literature, ranging from resources provided by other persons (Cohen & McKay, 1984, Hobfoll, Freedy, Lane, & Geller, 1990) to more elaborate definitions such as information leading the

individual to believe that s/he (a) is cared for and loved, (b) is esteemed and valued, and (c) belongs to a network of communication and mutual obligation (Cobb, 1976). Other definitions include instrumental or concrete support versus emotional support (Keane, Scott, Chavoya, Lamparski, & Fairbank, 1985), sources of social support and the subjective assessment of the adequacy of those sources (Zimet, Dahlem, Zimet, & Farley, 1988), and veteran-to-veteran sources of support (i.e., veteran peers or “unit support” within military nomenclature) (Laffaye, Cavella, Drescher & Rosen, 2008; Wilcox, 2010).

Some studies have documented the role of social support in posttraumatic stress disorder (PTSD) symptomatology among combat veterans (Barrett & Mizes, 1988; Laffaye et al., 2008). For example, in a sample of 54 Vietnam veterans, Barrett and Mizes (1988) found that higher levels of combat exposure was associated with more PTSD symptoms, but veterans who reported high levels of social support also reported fewer symptoms of PTSD. In another study of 128 male veterans (primarily Vietnam veterans) with chronic PTSD, Laffaye and colleagues (2008) found that participants reported having more veteran peers than nonveteran peers in their social network and relied on their veteran peers for emotional support more frequently than other sources of support (e.g., nonveteran peers, relatives, significant others).

However, caution should be exercised when making inferences based on findings from studies surveying different generations of veterans. In particular, Laffaye et al. (2008) indicate that Vietnam veterans in their study had chronic PTSD and thus may have accumulated damage to their social systems of support (e.g., multiple divorces, conflicts with family members, disrupted friendships). Also, the social representation of war may influence systems of support. Vietnam veterans felt the enmity when they returned to their communities (Friedman, as cited in PBS, 2004) through anti-war demonstrations that persecuted soldiers (Pomerantz, as cited in

PBS, 2004). These experiences and feelings of abandonment hindered the reintegration process for veterans (PBS, 2004).

Pietrzak, Johnson, Goldstein, Malley, and Southwick (2009) surveyed 272 OEF/OIF veterans (primarily National Guard/Reserve) who served from 2003 – 2007. They found that although combat exposure was positively associated with PTSD symptoms, post-deployment social support was negatively associated with PTSD symptoms. The more recent work of Wilcox (2010) indicated that among 83 married combat veterans (having served in combat within the last 7 years), higher levels of social support from family, significant others, and military peers were associated with lower levels of PTSD. However, social support from friends was not significantly related to PTSD symptomatology.

#### Student Veterans Adjustment to College

Previous research on student veterans' adjustment to college has focused on post WWII and Vietnam veterans (Atkinson, 1950; Osborne, Greene, Sanders, 1950; Joanning; 1975; O'Neill & Fontaine, 1973). Given the differences between the wars, it is essential that we understand the effects of combat experiences and multiple deployments on the transition from military to civilian roles for this newest generation of veterans. Although a few qualitative studies have examined student veterans' experiences transitioning from the military to the role of college students (DiRamio, Ackerman & Mitchell, 2008; Zinger & Cohen, 2010), there have been no empirical studies published to date.

Most research conducted in the 1950s and 1970s concerning veterans' transition to college was aimed at financial adjustment (Atkinson, 1950) or academic functioning defined by GPA (Osborne et al., 1950; Joanning, 1975). However, some research in the 1970s following the

Vietnam War began to take into account the social and economic climate that veterans of this era encountered (O'Neill & Fontaine, 1973; Peter, 1975; Berry 1977).

O'Neill and Fontaine (1973) found that 60% of a sample of 347 Vietnam veterans enrolled in college reported experiencing difficulties readjusting to civilian life. Specifically, 47% of the student veterans endorsed personal stressors in which they were more likely to act impulsively, or experience insomnia and nightmares. In addition, 19% of the sample reported difficulty relating to friends and adjusting to the faster pace of civilian life, while 14% reported academic indecision, such as difficulty choosing a particular field of study or deciding between obtaining an education and joining the workforce because they were unaware of the GI Bill to help with the financial cost of education.

DiRamio, Ackerman, and Mitchell (2008) interviewed 25 student veterans enrolled at three geographically diverse research institutions in order to learn about their experiences transitioning into civilian life. Common themes in the personal accounts of these student veterans suggested that the most difficult adjustment was the transition to college. These student veterans indicated that they needed to relearn study skills, had difficulty connecting with their college peers, and worried about the financial burden of college.

In another qualitative study, Zinger and Cohen (2010) interviewed ten OEF/OIF veterans. Common themes found during the exploratory interviews were emotional distress (PTSD symptomatology and depression), physical injuries, and lack of structure in civilian life. Another theme that emerged was interpersonal difficulties within personal and social relationships, particularly in feeling isolated and reconnecting with friends, family, and college peers. Veterans also reported difficulty transitioning to role of student, feeling overwhelmed and problems concentrating on academic studies.

While these studies provide insight into some of the unique challenges and difficulties of OIF/OEF veterans transitioning to the role of student, the qualitative accounts are anecdotal in nature and may not reflect all student veterans' experiences. Hence, empirical research aimed to quantify a larger group of student veterans' experiences adjusting to college is warranted.

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