DEPRESSION, ALCOHOL CONSUMPTION, AND SOCIAL SUPPORT

IN COLLEGE STUDENT VETERANS

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ABSTRACT

Military veterans attending college may encounter difficulties transitioning from a structured military environment to college life. The current study examined self-reported depression, anxiety, alcohol consumption, and social support in this population. Student veterans ($N = 120$) completed an online survey, providing information about basic demographics, details regarding military service, psychiatric issues, depression, anxiety, social support, and alcohol consumption. Students were highly heterogeneous with respect to age, military service, and deployment experience. Depression, anxiety, social support, and alcohol use did not differ as a function of deployment or combat experience. Regressions were used to determine relationships between levels of depression and anxiety, and length of service, deployment, social support, and alcohol consumption. Due to collinearity between anxiety and depression, separate regressions were performed for these variables. A positive relationship was observed between depression and alcohol consumption and a negative relationship was observed between depression and social support. For anxiety, only a negative relationship between depression and social support was noted. These results converge with studies in non-veteran populations linking depression and anxiety to social support. However, they differ in that they do not link alcohol consumption to anxiety. A better understanding of veteran student health, as well as positive and negative coping behaviors will provide universities and colleges with much-needed information to improve campus resources and organizations that cater to veteran students.

LITERATURE REVIEW

Veteran mental health is an issue of interest in psychological research. Studies have been conducted on military veterans both in the general population, and on college campuses in an attempt to understand the underlying difficulties that veterans face when they end their service and return to civilian life. Returning to higher education after service is a trend that is being seen due to the financial aid offered by the U.S. military. When veterans return to university life after service, it is important for institutions to understand the unique needs of veterans due to the life experiences they have had. Veterans make up a large portion of the U.S. population; therefore, addressing both veterans' mental health is beneficial to the psychological field as it may help to inform treatment and intervention options, identify barriers to care, and improve support services offered to veterans.

Prior research suggests post-traumatic stress disorder (PTSD), anxiety disorders, and depression symptoms lead to a variety of coping behaviors to manage negative emotions. A well-researched negative coping behavior is alcohol abuse, which can lead to negative psychological and physical outcomes. On the other hand, a positive coping behavior is seeking out and maintaining a strong social support network. These disorders, symptoms, and coping behaviors manifest in different ways depending on the individual. It is important to understand demographics of the U.S veterans and know that while this is a large portion of the population these people are all individuals who have different psychological profiles and coping mechanisms.

The branch of the U.S. military in which one serves may affect one's mental health, as could other variables including deployment and combat exposure. As of 2016,

it has been noted that 7% of the United State population consists of military veterans (Bialik, 2017). Although this percentage is not as high as it was in the 1980's, at 18% of the population, it is a significant portion of U.S citizens (Bialik, 2017). According to the United States Census Bureau, the 2016 U.S. population was 322,324,514. Using this population estimate, it can be calculated that roughly 22,562,716 of the individuals in the 2016 census were military veterans. A study done by U.S. Department of Veterans Affairs (USDVA) analyzed combat exposure and enrollment in specific branches of service. In the 2011 study, 50% were Army veterans, 24% Navy, 20% Air Force, 10% Marines, 1% Coast Guard, and 27% were affiliated with other areas of specialty (USDVA, n.d.). In regard to combat exposure, 39% of military veterans reported serving in combat zones and 36% reported serving in direct combat (USDVA, n.d.). Direct combat was defined as exposure to death or severe injury in the war zones. Exposure to intense situations such as combat can result in a multitude of mental and physical health concerns.

Mental health research on veterans is heavily focused on PTSD. The USDVA (2018) reported that 20% of individuals who served in Operation Iraqi Freedom, 12% of those in the Gulf War, and 15% of those who served in the Vietnam War have been clinically diagnosed with PTSD. According to the National Institute for Mental Health (NIMH), PTSD develops from experiencing a frightening or life-threatening event and can become dangerous when a trigger is present (NIMH, n.d.). Symptoms of PTSD include reliving the event through nightmares or flashbacks, avoidance of situations similar to the traumatic event, negative changes in relationships, paranoia, anger, irritability, hypervigilance, and hyperarousal (NIMH, n.d.). Triggers are memory cues

that cause the individual to feel as if the event is happening again and range from sounds to entire situations. For example, an individual who was in a dangerous car accident, being in a car can lead to a re-experiencing of the trauma where memories elicited by the trauma cause the individual to relive the experience. Research has shown a connection between PTSD, homelessness, traumatic brain injuries, suicide, violence, and physical injury (Oster, Morello, Venning, Redpath, & Lawn, 2017). This connection is significant because it illuminates how life-altering PTSD can be.

An overall finding that emerges in the literature is that research on veteran mental health is focused primarily on PTSD. The majority of studies included in this literature review discussed comorbidity of other mental health disorders with PTSD; however, they did not fully explore the independent effects of other disorders such as anxiety and depression in this population. Oster et al. (2017) conducted a meta-analysis of research on mental health in veterans focusing primarily on PTSD, while only briefly touching on anxiety and depression disorders as associated comorbidities. The study by Oster et al. (2017) shows a need for further analysis specifically on depression and anxiety in veterans. Although there is extensive research regarding PTSD in veteran populations, further understanding of the role of anxiety and depression disorders can help clinicians diagnose and treat psychological malfunction more effectively and efficiently in the veteran population.

As mentioned, there is a lack of research primarily focused on anxiety in veterans, with the prevalence of anxiety in this population reviewed largely in the context of the comorbidity of anxiety with PTSD. Espejo, Castriotta, Bessonnov, Kawamura, Werdowatz, and Ayers (2016) explored various types of psychotherapies related to

treating anxiety, depression, alcohol abuse, and PTSD. In the study there were 51 veteran participants, all of whom were currently seeking treatment at an anxiety disorders clinic (Espejo et al., 2016). Veterans were given multiple diagnostic assessments and later referred to treatment based on the results of their assessments. After 12 weeks of treatment, veterans were re-assessed. The results from Espejo et al.'s (2016) study showed that 72.4% of participants screened positive for more than one anxiety-related disorder. The percentage of those who received a primary diagnosis of anxiety (31.0%) was higher than those who received a primary diagnosis of PTSD (12.2%), suggesting that it may be beneficial to understand anxiety disorders independently from PTSD in veterans. Since this sample of veterans had higher levels of anxiety than PTSD (Espejo et al., 2016), it is possible that anxiety screenings along with PTSD screenings can help practitioners differentiate between diagnoses and determine the best treatment for the individual.

Since there is sparse research that discusses anxiety in veterans independently from PTSD, research that examines anxiety in the context of PTSD can help to inform our understanding of anxiety in veterans. Knowles, Sripada, Defever, and Rauch (2018) looked at the relationship between PTSD, anxiety disorders, and mood disorders. According to their results, there was a significant difference in mood disorders and anxiety disorders between those who were diagnosed with PTSD and those who were not (Knowles et al., 2018). Specifically, Knowles et al, (2018) found that individuals with PTSD were more likely to have a social anxiety disorder than those who did not have PTSD. The results of Knowles et al. (2018) further solidify those of Espejo et al. (2016) in that they both illustrate a connection between anxiety and PTSD. Research suggests a

strong relationship between anxiety and PTSD; however, focusing on anxiety solely with respect to PTSD prevents an understanding of anxiety in veterans as a separate disorder that may place veterans at risk for negative health outcomes. It is important to remember that anxiety and PTSD are different mental health issues and should be treated as such.

Not only are anxiety disorders understudied among the veteran community, but research relating specifically to depression remains sparse. In particular, studies that examine depression in veterans as it relates to suicide may be crucial to the field of psychology and veteran health. More data regarding depression and suicide in this population may provide insights that could lead to improvements in suicide prevention and treatment programs for depression. One study in particular done by Yossi and Gadi (2018) observed depression and suicidal ideation in individuals who were exposed to combat that resulted in moral injury. Moral injuries were described as deep moral violations committed by oneself or another who is close in relation during high stress situations (Yossi & Gadi, 2018). The results indicated that moral injury was a contributing factor to depression and suicidal ideation that also gave rise to PTSD, further solidifying the relationship between variables such as PTSD, anxiety, and depression.

Results from other studies also support the links between PTSD, anxiety, and depression. In a mailed survey with a participant pool of 725 veterans, PTSD and depression were linked significantly to suicidal ideation (Arenson, Whooley, Neylan, Maguen, Metzler, and Cohen, 2018). Arenson et al. (2018) found that 19% of the population met criteria for both PTSD and depression, while 49% of those in the PTSD and depression category reported symptoms of suicidal ideation. The results of Arenson et al. (2018) and Yossi and Gadi (2018) suggest that depression and PTSD result in

symptoms that make individuals vulnerable to suicidal thoughts and sometimes, actions. Although this relationship between PTSD, depression, and suicidal ideation is important, more research is required that specifically focuses on depression in veterans, especially depression in the absence of PTSD. In the study done by Knowles et al. (2018), the researchers reported that those with PTSD were not more likely to have depression than those who did not screen positive for PTSD. These results suggest that more research focusing on depression as a separate disorder of interest is necessary because Knowles et al. (2018) did not find a connection between depression and PTSD. This inconsistency leads to the question of whether it is the symptoms of depression or PTSD that are more highly associated with suicidal ideation.

It would be informative if research was conducted specifically on depression and anxiety to determine how veterans cope with the negative emotions associated with these disorders without the presence of PTSD, as it is possible that the use of different coping behaviors contributes to mental health outcomes. Coping behaviors are ways in which one reacts to the mental or physical stress one is experiencing (Peterson, 1986). Coping behaviors can be either negative, which has the potential to worsen symptom severity and negative affect an individual may already be experiencing; or they can be positive, leading to the relief of symptoms and negative emotions. If negative coping behaviors are used to regulate emotions, this could lead to intensification of symptoms and suicidal ideation; however, if coping behaviors are positive, there would be a relief from symptoms. Understanding how coping behaviors affect mental health outcomes is key for treatment development and implementation because it informs psychologists' decisions regarding therapy. Two coping behaviors among the veteran community that have

received attention are seeking a strong social network (a positive coping behavior) and alcohol abuse (a negative coping behavior).

Social support is a positive coping behavior that alleviates mental health distress (e.g., Laffaye, Cavella, Drescher, & Rosen, 2008). Laffaye et al. (2008) found a connection between PTSD symptoms and a lack of social support among veterans. Veterans who took part in a residential treatment program for PTSD were mailed a survey after their completion of the program. Results indicated that veterans with strong social networks had symptoms of PTSD that were less severe than those who had weaker networks (Laffaye et al., 2008). This relationship between PTSD and social support indicates that social support may be effective when treating symptoms of PTSD. In an attempt to link social support to other variables associated with veterans' mental health, Ren, Skinner, Lee, and Kazis (1999) examined depression, combat, and anxiety as they relate to social networking. The study used data from a Veterans Health Study and focused on three types of social support: living arrangement, perceived social support, and group activity participation. The study also examined general mental health, depression, PTSD, and alcohol consumption. Veterans with strong social networks had overall improved mental health after a 12-month follow-up (Ren et al., 1999). Interestingly, social support was significantly related with all of the measured scales except for alcohol consumption (Ren et al., 1999). These results suggest that social networking is effective in relieving symptoms of anxiety and depression.

Other studies have been focused on type of support received in an attempt to determine which relationships provide the most support for veterans. In Laffaye et al.'s (2008) study, a differentiation was made between social support from non-veterans and

support from fellow veterans. Results suggested that participants derived greater benefits when social support was from a fellow veteran. In particular, support from other veterans was said to be less stressful and more supportive when compared to support from other friends and family, possibly because of the commonality among the veteran's experiences (Laffaye et al., 2008). This suggests that when providing services to veterans, it is important to provide them with access to a community of fellow servicemen and women in order to derive maximal benefits of social support and relief of negative mental health symptoms.

In contrast to seeking social support (a positive coping behavior), a negative coping behavior exhibited by individuals in the veteran population is alcohol use. In a study done on alcohol consumption among veterans compared to civilians, researchers found that veterans were more likely to be moderate to heavy drinkers, whereas civilians were more likely to report being light drinkers (Richards, Goldberg, Rodin, & Anderson, 1989). By examining alcohol consumption in both populations, Richards et al. (1989) demonstrated that veterans are more likely to have higher rates of alcohol consumption. Drinking rates were also higher among active duty military members than their civilian equivalents, which may carry over from active duty to post-military life (Richards et al., 1989). One of the many reasons that it is important to understand alcohol consumption in veterans is because heavier alcohol use has been shown to have a relationship with PTSD (McFarlane, 1998). A study on firefighters revealed that traumatic events changed drinking habits, either increasing or decreasing use, depending on the person (McFarlane, 1998). Exposure to trauma caused the participants to either initiate or increase alcohol consumption or decrease frequency of consumption altogether (McFarlane, 1998).

Overall, the trauma changed the individual's perception of alcohol. While the connection between PTSD and alcohol abuse is important, solely focusing on PTSD ignores other mental health disorders that are common among the veteran population. Additional study is required to understand how anxiety and depressive disorders may be associated with alcohol abuse in the veteran population.

Calhoun, Wilson, Dedert, Cunningham, & Burroughs et al. (2018) studied alcohol consumption patterns in veterans and how use patterns were associated with other psychological health factors, specifically depression, PTSD, and physical health. Participants were mailed a survey asking them to self-report their drinking habits (Calhoun et al., 2018). The results illustrated a U-shaped curve as the moderate drinkers had low rates of depression and PTSD. Participants with high alcohol consumption and no consumption exhibited higher levels of PTSD and depression (Calhoun et al., 2018). In other words, non-drinkers and excessive drinkers were more likely to have PTSD and depression symptoms, suggesting that moderate drinking may not be associated with PTSD and depression in this population (Calhoun et al., 2018). The finding of the U-shaped curve converges with the results of McFarlane's 1998 study, which found that trauma led to changes in drinking habits that could be manifested as either increases or decreases in alcohol use depending on the individual. However, this does not explain the observation that depression has also been coupled with a U-shaped curve of alcohol consumption. Examining depression and alcohol abuse without the presence of PTSD could provide clarification of these results. Alcohol consumption as a negative coping behavior intensifies symptoms of a variety of mental health disorders, not just PTSD (Calhoun et al., 2018). Because many individuals may turn to this type of negative coping

behavior instead of seeking help from a professional, the use of substances like alcohol to cope with negative mood states can create barriers to care for student veterans.

Seeking help from mental health professionals carries a negative stigma among the veteran community (Wray, Pikoff, King, Hutchison, Beehler, & Maisto, 2016). Fear of consequences, limited access to resources, and negative attitudes about the treatment process have kept individuals from seeking needed help (Wray et al., 2016). Without proper coping strategies to help regulate symptoms of depression, PTSD, and anxiety, mild symptoms could be exacerbated or individuals may turn to negative coping behaviors for symptom relief. Another factor keeping veterans from seeking help is a fear that mental health professionals cannot understand the magnitude of the things they have witnessed; others feel as though they can mend the issue on their own or that the distress that they experience is normal (Wray et al., 2016). Assessing these concerns allows professionals to pinpoint ways to make treatment more accessible. Having a more complete understanding of the stigma associated with mental health can improve current initiatives for health promotion. Without proper social and institutional support, mental health difficulties can prove troublesome when integrating back into society, whether it be into a new profession or higher education.

It is not uncommon for people to enter the military in hopes of furthering their education. The United States Military offers programs that help with the financial burden of getting a college degree in return for service. The Post 9/11 GI Bill is one of many financial aid opportunities that allows veterans to attend college without taking on large accumulations of debt. This bill provides support for up to 36 months with benefits including a monthly housing allowance, supplies stipend, and tuition coverage at any

public institution in the U.S. (USDVA, 2015). For private institutions, tuition is much higher and will not be covered by the entire GI Bill. To aid veterans that aspire to attend a private university, the Yellow Ribbon Program was enacted. The Yellow Ribbon Program is administered by participating universities and the university and VA work together to cover the excess tuition that the GI Bill does not pay. The Hazelwood Act is a program that allows service members who were Texas residents when they entered the military to have full tuition coverage at Texas public universities. This act is different from the Yellow Ribbon Program because it limits the veteran to Texas public schools, and it does not cover supplies or housing fees. For those currently enlisted, Tuition Assistance (TA) is offered for active duty servicemen and women taking college courses while also performing regular work duties, allowing military members to save most of their GI Bill for after retirement (U.S. Department of Veteran Affairs, 2015). These initiatives have made higher education more accessible to veterans.

Due in part to these financial aid opportunities, veterans are returning to school. Student veterans make up 4% of the collegiate student body in the U.S. according to the American Council on Education's (ACE) survey in 2015 (Molina, 2015). Although this percentage appears small, the ACE expects about 5 million more student veterans to be attending college by 2020. Veteran students differ from typical college students in several ways. The average college student is between the ages of 18 and 24, whereas the average age of student veterans is 25 (Molina, 2015). Since veterans are entering college after service, they are often in a different stage of life than their peers. In the study by Molina and colleagues (2015), a large percent of student veterans (44%) were married and 52% had at least one dependent. These differences make it difficult for individuals to connect

with those who are in an earlier stage of life, as many college students have entered college immediately after high school and have not experienced the structured environment of the military. It is important for universities to understand veteran demographics and provide resources that allow veterans to build strong social networks, which have been found to improve overall health (Laffaye et al., 2018). Regardless of military service, college students in general struggle with a variety of mental health issues, such as hopelessness, depression, anxiety, and suicidal thoughts (American College Health Association; ACHA, 2018). Veteran students merging into this population are also subject to these issues, which could exacerbate pre-existing disorders like anxiety and depression stemming from prior military experience. Universities must acknowledge the research on both students, and veterans in order to accommodate the unique needs of student veterans.

As mentioned, understanding mental health in student veterans requires discussion of the challenges faced by all students regardless of military experience. An assessment done in Fall of 2018 by the American College Health Association (ACHA, 2018) found that students are showing alarming signs of poor mental health. Specifically, the assessment found that 85.5% of college students felt overwhelmed, 62.3% felt overwhelmed by anxiety specifically, 53.1% felt things were hopeless, 41.4% felt depressed to the point of a lack of function, and 11.3% attempted suicide. Pressure to perform well, time management challenges, financial difficulty, and lack of time for social interaction contribute to high incidence of anxiety and depression in college students (Abouserie, 1994). Therefore, it is possible that returning to college could intensify pre-existing symptoms of anxiety and depression among veterans. As

previously discussed, veterans also report high levels of depression and anxiety after

military service (Espejo et al., 2016; Knowles et al., 2018), which may be compounded

by the academic and financial challenges faced by all students. Although many of these

stressors cannot be easily altered, universities are encouraged to educate students about

healthy stress regulation (Abouserie, 1994). Universities have made efforts to improve

mental health on campuses, but counseling centers commonly struggle to meet the

demand for services. Students may have to be put on a wait list to receive help, slowing

access to acute care. In addition, student veterans may need a unique community and

treatment plan that includes peer support from other student veterans. As discussed by

Laffaye et al. (2018), veterans felt most comforted by fellow veterans due to their ability

to relate to one another. It is crucial that universities create campus organizations such as

support networks that cater to the needs of the veteran student population.

After reviewing the mental health of college students and veterans as separate

populations, it is important to note that veterans face both general academic challenges,

and unique challenges associated with military experience. A study done by Rudd,

Goulding, and Bryan (2011) examined psychological symptoms in student veteran and

non-student veteran populations. Working with The National Center for Student Veterans

(NCVS), the University of Utah research team was able to analyze trends in the

psychological health of a broad range of student veterans. Among this population of

student veterans, 35% experienced severe anxiety, 24% severe depression, 46%

symptoms of PTSD, and 46% had thoughts about suicide (Rudd et al., 2011). There was

also a close relationship between severe depression and suicidal thoughts or attempts

(Rudd et al., 2011). In comparison with the non-student veterans, these numbers from

student veterans were high, which suggests that returning to university study may be psychologically debilitating for this group. The suicide percentages observed in Rudd et al.'s (2011) study are alarming and call for an increase in veteran mental health services on campuses nationwide.

These findings make an important addition to what is currently known about suicide in veterans. Previous research like that of Yossi and Gadi (2018) found a significant correlation between PTSD and suicidal ideation but did not examine depression. There is a long-standing relationship between depression and risk for suicide that is reaffirmed in a study done by Rudd et al. (2011). Depression and anxiety were more prevalent in student veterans than veterans in the general population; however, there were no differences between these group on measures of alcohol abuse (Akins, Golub, & Bennett, 2015). For instance, Akins et al. (2015) reported that 28% of student veterans testing positive for an alcohol use disorder, however; this percentage was not significantly different from the veteran population at 29%. The levels of alcohol abuse were relatively similar in veterans and student veterans.

In summary, research is heavily focused on PTSD in the veteran population. PTSD research is important; however, anxiety and depression are of equal importance to the veteran community. Anxiety and depressive disorders have been briefly examined as factors causing mental distress in veterans, but these variables have not been extensively studied apart from PTSD. These mental health symptoms may lead to the development of either negative coping behavior. or positive coping behaviors. One negative coping behavior that has prior association in research regarding the veteran community is alcohol abuse. A positive coping behavior that has been associated with research in the veteran

community is seeking out and maintaining a strong social network. Both of these coping

behaviors have been linked, in different ways, to anxiety, depression, PTSD, and

deployment (Calhoun et al., 2018; Knowles et al., 2018). Maintenance of a strong social

network relieved symptoms of depression, anxiety, and PTSD (Laffaye et al., 2018);

whereas, increased alcohol use heightened symptoms of anxiety and depression (Calhoun

et al., 2018). Since veterans are returning to higher education, it is important to

understand how symptoms of anxiety and depression lead to different coping behaviors,

as the duties of being a student can increase preexisting mental discomfort.

Study rationale and hypothesis

The objective of the current study was to extend our understanding of mental

health in student veterans and to better understand the student veteran population at

Texas State University. Focusing on variables that have known relevance in the veteran

community such as depression, social support, anxiety, and alcohol abuse will allow for

the examination of relationships between negative health outcomes and coping behaviors.

These factors were chosen on the basis of previous research identifying depression and

anxiety as highly co-morbid with each other and with PTSD, as well as other research

linking better outcomes to positive coping behaviors such as social support and worse

outcomes to negative behaviors such as alcohol consumption. Anxiety, depression,

alcohol consumption, and perceived social support were examined using self-report

measures.

Three hypotheses were examined. First, being deployed raises the risk of being in

combat therefore raising risk of PTSD, which has been shown to be linked to negative

outcomes like depression and negative coping behaviors such as alcohol consumption

(Ren et al., 1999). Therefore, it was predicted that individuals who were deployed would have higher depression, anxiety, and alcohol use scores, and lower perceived levels of social support. The second hypothesis was based on the finding of strong associations between anxiety and depression in both students (Lakhiar et al., 2017), and student veterans (Koenig et al., 2018). In keeping with these findings, it was hypothesized that depression and anxiety would be highly and positively correlated. Lastly, the third hypothesis addressed the inter-relationships between depression and coping behaviors, and anxiety and coping behaviors, which have been noted in the literature. Previous research supports the notion that a strong social network can help one combat depression and anxiety (Ren et al., 1999). Research also suggests that high prevalence of depression and anxiety will result in greater alcohol abuse (Calhoun et al., 2018). With respect to depression, it was predicted that there would be a significant positive relationship between depression and alcohol consumption and a negative relationship between depression and social support. In other words, higher levels of depression should be associated with lower levels of social support and higher levels of alcohol consumption. Due to the high degree of correlation between depression and anxiety, similar results were hypothesized for anxiety, alcohol consumption, and social support. The results derived from this study will provide information about the veteran student population at Texas State University, their overall mental health and the use of positive and negative coping behaviors in daily life. This information can be used to inform best practices for university support services.

METHODS

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Participants

The sample used in this study consisted of 120 student veterans (52 females, 67 males, mean age = 34.8 years) attending Texas State University. Two data sets were utilized from previous research studies conducted at Texas State University; one set of data was collected in 2013, the other in 2016. Military veteran students were recruited through the Veteran's Alliance of Texas (VATS) office, mass email announcements, and word of mouth. All participants gave consent prior to completing an anonymous online survey containing quantitative and qualitative questions. Approval from the Texas State Institutional Review Board was obtained prior to secondary analysis of the data.

Self-report Measures

Demographics. The survey consisted of basic demographic information, details regarding military service, self-reported psychiatric diagnoses, including depression and anxiety, perceived social support, and alcohol consumption.

Depression. The Beck Depression Inventory (BDI) was used to measure self-reported symptoms of depression (Appendix A). The BDI consists of 21 questions that cover topics associated with depression such as suicidal thoughts, poor sleep habits, weight loss, etc. Internal consistency for this study has been shown to be between .73 and .92 (Beck, Steer, & Garbin, 1988).

Anxiety. The trait anxiety scale of the Spielberger State-Trait Anxiety Inventory (STAI) was used to measure individuals reported trait anxiety (Appendix B). STAI consists of 40 items total, 20 items to test for trait anxiety and 20 items to assess state anxiety (Spielberger, Gorsuch, Lushene, Vagg, & Jacobs, 1983). Each item is answered on a Likert scale of 1 being "not at all" to 4 being "very much so". Internal consistency

ranges from .86 to .95, making this self-reported measure a reliable index of anxiety

(Spielberger et al., 1983). Only trait anxiety was assessed in the current study.

    Alcohol consumption. The quantity and frequency index (QFI; Cahalan et al.,

1969) was used to measure weekly alcohol consumption over the past 6 months

(Appendix C). There are many measures that measure alcohol and substance abuse;

however, the QFI has been shown to be an appropriate measure for estimating alcohol

consumed within a specified time frame (Sobell & Sobell, 1995. Furthermore, it is used

widely in alcohol research and allows for direct comparisons across studies.

    Social support. To measure perceived social support, the Multidimensional Scale

of Perceived Social support was used (MSPSS; Appendix D). This scale consists of 12

statements and a Likert scale system of 1 meaning "very strongly agree" to 7 being "very

strongly disagree", in order to determine perceived social support. It can be further

divided into 3 subscales; support from significant others, support from family, and

support from friends. It has been proved to be valid in multiple languages as well as

English (Zimet, Dahlem, Zimet, & Farley, 1988).

    Clinical diagnoses were obtained via an open ended question that asked

participants to "please list any psychiatric illness you have been diagnosed with".

However, because this was a self-reported item and answers were not clinically

verifiable, this data was used as supplemental information in the current study.

Analytic Strategy

    All data was analyzed via SPSS Statistics software. Independent *t*-tests were run

in order to determine whether deployment was systematically related to differences in

BDI, STAI, QFI, and MSPSS scores. Bivariate correlations were also conducted to

examine relationships between variables and to identify collinearity that may affect

subsequent regressions. These correlations were also used to determine the degree of

association between depression and anxiety. Next, a linear regression was run using BDI

as a criterion variable and QFI, MSPSS total score, and age as predictors. Finally, anxiety

was run in a separate linear regression as the criterion variable; predictors were QFI,

MSPSS total score, and age. Age was included in order to eliminate any variance due to

differences in mental health caused by age. This is particularly important in regards to

alcohol consumption when conducting research on a collegiate sample as it was found

that the average age of student veterans is older than the average age of a civilian college

student.

RESULTS

Demographics

     The age range of participants was 21 years of age to 64 years of age, resulting in

an average age of 35 ($M = 34.8$, $SD = 10.7$). Only one individual did not report age. With

regard to race or ethnicity, 92% of participants were White/Caucasian, 18% were

Hispanic/Latinx, 3% were African American, 2% were Native American or Pacific

Islander, .8% were Asian, and 2% identified as Other, (1% opted out of the question

regarding race). Some participants reported more than one racial or ethnic affiliation

(18%). Gender representation was 43% female and 56% male; 1% did not report gender

information.

     Various branches of the military were represented in the data: 39% Army, 23%

Air Force, 19% Navy, 16% Marines, 10% National Guard, 9% Reserves, and .83% Coast

Guard. The years of service were reported as an average of 8 years per individual ($M =$ 8.1, $SD = 6.3$). Regarding deployment, 78% of the population reported being deployed during service while 62% reported involvement in combat during service.

In response to the question on clinical diagnoses, 22% reported a diagnosis of depression, 17% reported anxiety, 13% reported PTSD, 6% reported ADHD or ADD, 3% bipolar disorder, 2% borderline personality disorder, .8% adjustment disorder, and .8% traumatic brain injury. Sixty-four percent of participants opted out of this question or did not list any clinical diagnoses. These diagnoses were self-reported and could not be verified. Therefore, they were used merely for descriptive purposes and not examined further.

Effects of deployment

In order to eliminate deployment as a factor in depression, anxiety, and coping behaviors, independent *t*-tests were conducted for each of the self-report variables (BDI, STAI, QFI, and MSPSS scores) with deployment as a between-groups factor. MSPSS scores consisted of three subscales, social support from family (Supp_Fam), social support from significant others (Supp_SO), and social support from friends (Supp_Frnds). There were no significant differences noted as a function of deployment versus no deployment (see Table 1). This allowed for the elimination of deployment as contributing factor to mental health issues in the particular sample. Therefore, this variable was excluded from subsequent analyses.

Table 1. Comparisons of veterans as a function of deployment (independent t-tests)

	No Deployment (*n* = 93)	Deployment (*n* = 27)	*T*	*df*	*P*
BDI	11.31	13.11	.748	118	.456
STAI	40.42	41.15	.266	118	.791
QFI	.97	.92	-.286	118	.775
Supp_Fam	21.26	18.73	-1.778	110	.078
Supp_SO	21.26	20.65	-.556	110	.579
Supp_Frnds	20.22	19.23	-.661	110	.510

Relationships between self-report variables

Bivariate correlations were conducted to examine relationships between BDI, STAI, QFI, and MSPSS subscale scores and to identify any collinearities between variables prior to regression. As shown in Table 2, a high degree of collinearity was noted between anxiety and depression (STAI and BDI). Due to the strength of this collinearity, BDI and STAI were used as separate criterion variables in two subsequent linear regressions. Significant associations were also noted between the three social support subscales; family support, friend support, and support from significant others. Because of this, subscales were combined to create a single score for social support.

Table 2. *Bivariate correlation data results*

	1	2	3	4	5	6
(1) BDI	1.00	-	-	-	-	-
(2) STAI	.812**	1.00	-	-	-	-
(3) QFI	.232*	.155	1.00	-	-	-
(4) Supp_SO	-.314**	.324**	-.143	1.00	-	-
(5) Supp_Fam	-.500**	.446**	-.100	.544**	1.00	-
(6) Supp_Frnds	-.329**	.370**	-.004	.601**	.507**	1.00

* = Significant correlation < .05, ** = Significant correlation < .001

Linear regressions

The linear regression with BDI as the criterion variable, and social support, alcohol consumption, and age as predictors accounted for a significant amount of variance in depression scores (see Table 3). Examination of beta weights revealed that there was a significant negative relationship between depression and total support and a significant positive relationship between depression and QFI. Age was not associated with depression.

A separate linear regression was conducted using STAI scores as the criterion, and social support, alcohol consumption, and age as predictors. Results indicated good model fit (see Table 3); however, inspection of the beta weights indicated that the only significant association was a negative relationship between total social support and STAI data. These findings indicate that social support is a predictor of anxiety symptoms in this participant sample. There were no significant relationships found between QFI and age with respect to STAI scores.

Table 3. *Linear regressions for BDI and STAI data*

DV	IV	B	t	P
BDI	QFI	3.38	4.92	.015
	Tot_SS	-.272	-2.46	.000
	Age	.008	-5.08	.926
STAI	QFI	1.98	1.25	.215
	Tot_SS	-.316	-5.10	.000
	Age	-.044	-.430	.668

(BDI) $R^2 = .25$ ($p < .05$)
(STAI) $R^2 = .22$ ($p < .05$)

DISCUSSION

Veterans are vulnerable to high rates of PTSD, anxiety, depression and alcohol consumption, perhaps more so than the general population (Arenson et al., 2018; Knowles et al., 2018; Ren et al., 1999; Rudd et al., 2011), underscoring the importance of better understanding the unique mental health needs of veterans. Many studies have found that seeking out and maintaining a strong social network may help alleviate symptoms of poor mental health in veterans (Laffaye et al., 2018). If left unaddressed, these mental health complications could carry over into civilian life, especially if veterans return to higher education post-service, as collegiate life has been shown to have its own inherent stressors (Abouserie, 1994). The new stressors encountered as a student may exacerbate existing disorders, such as anxiety and depression. Current research is heavily

PTSD focused (Oster et al., 2017); the field of psychology would benefit from filling gaps in the research regarding anxiety and depression without comorbid PTSD. In the current study, 13% of respondents reported a diagnosis of PTSD, which was lower than those reporting anxiety (17%) and depression (22%). This suggests that anxiety and depression are more common among student veterans and are worthy of study in their own right, not merely as corollaries of PTSD. This study used quantitative analyses to determine relationships between anxiety, depression, deployment, and age and how these related to coping behaviors such as alcohol abuse and social networking in student veterans at Texas State University.

Several hypotheses were made. First it was predicted that participants who had been deployed would report higher levels of depression, anxiety, and alcohol abuse relative to those participants who had not been deployed. The hypothesis regarding deployment was not supported; there were no significant differences in depression, anxiety, social support, and alcohol abuse between participants who had or had not been deployed. The second hypothesis stated that there would be a strong positive relationship between anxiety and depression. This hypothesis was supported by the results of the study as there was strong collinearity between STAI and BDI scores, such that increased depression scores were associated with increased anxiety scores. Finally, the third hypothesis predicted that low levels of social support would predict high levels of depression and anxiety, and high levels of alcohol abuse would predict high levels of depression and anxiety. This hypothesis was supported for depression, but was not supported for anxiety. Depression scores were associated with both increased alcohol consumption and decreased perceived social support. Similar to depression, higher levels

of perceived social support were associated with lower trait anxiety; however, higher levels of alcohol consumption were not. The results are discussed further below.

The first hypothesis was that veterans who experienced deployment would differ significantly from those who did not deploy during service with respect to depression, anxiety, perceived social support, and alcohol use. Results indicated that mental health was not affected by deployment in this sample of Texas State University student veterans, which is somewhat inconsistent with previous research that suggests that deployment and exposure to combat should lead to negative health outcomes. For example, Yossi and Gadi (2018) found that those who experienced moral injury while deployed had greater occurrence of suicidal thoughts. Based on these findings (Yossi & Gadi, 2018), it was expected that similar differences in depression and anxiety between those who were deployed and those who were not would be seen in student veterans. This hypothesis was not supported in this study. A possible explanation for these results could be that those who experienced brutal combat and moral injury during deployment are less likely to return to higher education after service due to severity of mental health issues. Veterans who experienced traumatic levels of combat may face physical or psychological barriers that are not conducive to academic success. Therefore, it is possible that veterans who opt to pursue a college education after service may have had less extreme combat experiences, or may be more resilient, than those who opt out. Ren et al. (1999) found that veterans who experienced combat required more than a strong social network to relieve symptoms of depression and PTSD, these veterans required structured therapy sessions with a mental health professional. The implications of Ren et al.'s findings support the notion that veterans who experienced active combat may be under-

represented in the student veteran population because their mental or physical health needs present barriers to academia. Of the student veterans who participated in this study, 93/120 (77.5%) had not been deployed and 27/120 (22.5%) were deployed, lending some support to the possibility that veterans who were deployed may be less likely to seek opportunities in higher education after service. This possibility may be a fruitful line of inquiry in future studies examining barriers to higher education in the veteran population.

The second hypothesis predicted that anxiety and depression would be significantly and positively correlated. This hypothesis was supported in the current study; depression and anxiety had a strong positive linear relationship, suggesting that they are highly collinear. These findings converge with previous literature linking depression and anxiety in the civilian population (Lakhiar et al., 2017) and the veteran population (Arenson et al., 2018; Espejo et al., 2016; Knowles et al., 2018; Yossi & Gadi, 2018). For example, Koenig et al. (2018) conducted a study exploring depression, PTSD, anxiety, and religious affiliation in the veteran community, and found that when PTSD was separated from anxiety and depression, the latter two variables remained correlated. For this reason, Koenig et al. (2018) discussed anxiety and depression in combination rather than as separate variables due to their high collinearity. Similarly, Lakiar et al.'s (2017) results showed 66.7% of non-veteran students in their sample population had both anxiety and depressive disorders. Due to the strength of the relationship between anxiety and depression in both the veteran population, as well as the civilian population, it was not surprising that the scores for BDI and STAI were strongly and positively associated in the current participant sample.

The strong relationship between anxiety and depression led to the expectation that they would produce similar outcomes when run as criterion variables for the same set of predictor variables. The third hypothesis predicted that alcohol consumption would be positively related to anxiety and depression, and social support would be negatively related to anxiety and depression. The results indicated partial support of this hypothesis. High alcohol consumption and low social support were found to be significant predictors of depression. These relationships between depression, alcohol use, and social support were expected. Previous research suggests that alcohol use was greater among the veteran population when compared to the civilian population (Richards et al., 1989).

Literature also suggests that greater trauma exposure and depression led to a change in alcohol use whether it be a positive change or a negative change (Calhoun et al., 2018; McFarlane, 1998). The results of the current study found a linear relationship between depression and alcohol use, whereas other studies have found a curvilinear relationship (e.g., Calhoun et al., 2018; McFarlane, 1998). For example, Calhoun et al. (2018) found that those exhibiting depression and PTSD either did not drink, or drank excessively, suggesting a U-shaped relationship between alcohol use and depression. A possible explanation for this difference in relationships (linear vs. curvilinear) could be that the current study did not include PTSD as a variable in the analyses, even though some participants self-reported a PTSD diagnosis (which could not be clinically verified). Omitting the examination of PTSD in the current study may have obscured nuances in the relationship between depression and alcohol use. Alternatively, results may differ due to the samples used in the current study and in Calhoun et al. (2018). As mentioned previously, the current study did not find difference in depression, anxiety, alcohol

consumption, and social support as a function of deployment, a finding which may indicate that the student veteran population is systematically different from the general veteran population (e.g., exposed to fewer traumatic experiences during deployment, or perhaps more resilient). It is possible that the sample of student veterans in this study do not represent the extreme ends of the continuum (those who endured significant trauma and either dramatically increased or decreased use), leading to the appearance of a linear relationship rather than a curvilinear one. This issue awaits further investigation.

Literature not only supports the notion that depression and alcohol consumption are positively related, but it also supports the notion that depression and social support are negatively related (Laffaye et al., 2008; Ren et al., 1999). In a study done by Ren et al. (1999) researchers found an improvement of mental health after 12 months of engaging in a strong social network. Laffaye et al. (2008) also found that veterans received relief of negative mental health symptoms from a strong social network, in particular support from fellow veterans was the most beneficial. The hypothesis of the current study was supported; however, the effects of different sources of social support were not examined due to issues with collinearity. In the current study, different types of social support (i.e. familial support, support from friends, and support from significant others) were highly correlated, making it difficult to examine these variables separately because they were so inter-related. In addition, one difference between Laffaye et al. (2008) and this study was that the variable of social support, specifically from other veterans, was not assessed in the current study. Participants were only asked about support from family, friends, and significant others, but it was not specified if these

individuals were fellow veterans or civilians. Future studies focused on examining the role of social support from fellow veterans can help to resolve this issue.

The hypothesis pertaining to alcohol use and social support as predictors of depression was supported by the results of this study and that of previous literature. Interestingly however, the hypothesis that alcohol use and social support would also be similarly associated with anxiety was not supported. Excessive alcohol use was not found to predict high scores on measures of anxiety symptoms. Due to the strong collinearity between depression and anxiety found in the bivariate correlations, it was expected that anxiety and depression would have similar relationships between alcohol use and social support. As previously discussed, there is extensive literature linking anxiety and depression and suggesting that these two disorders often co-occur (Koenig et al., 2018; Lakhiar et al., 2017). One explanation for this finding could be that the current study included the measurement of only trait anxiety and not state anxiety. In a previous study by Welte (1985), individuals who experienced trait anxiety did not have greater incidence of alcohol abuse, consistent with the current study. It is possible that alcohol consumption is influenced more by acute states of anxiety rather than general tendencies to experience anxiety, or that the relationship between trait anxiety and alcohol consumption is mediated by other variables, such as anxiety sensitivity or sensation seeking (e.g., Comeau, Steward, & Loba, 2001). Further examination of both trait and state anxiety, measures of perceived stress (Perceived Stress Scale; Cohen, Kamarck, & Mermelstein, 1983), and other individual differences such as anxiety sensitivity (Peterson & Heilbronner, 1987) could provide clarification of these results. Although the lack of relationship between alcohol use and anxiety was surprising, the result of a negative

relationship between perceived social support and anxiety supported the expectation that higher levels of social support would be associated with reduced anxiety (Laffaye et al., 2008; Ren et al., 1999).

The findings of the current study converge with previous reports that social support buffers symptoms of anxiety, depression, and PTSD (Laffaye et al., 2018; Ren et al., 1999). Consistent with this notion, DeBeer, Kimbrel, Meyer, Gulliver, and Morisette (2014) explored social support networking as a remedy for PTSD and depression symptoms in post-deployment veterans. Their results indicated that PTSD and depression symptoms had little to no effect on those with strong social networks, whereas those with weak social networks had greater symptoms (DeBeer et al., 2014). Treatment research is leaning toward the addition of social interaction into treatment plans, and many innovative studies have shown an increase in psychological health after group intervention (e.g., Laffaye et al., 2008). Increasing social support is possible through a variety of techniques. Group therapy, inpatient treatment, and joining social groups for veterans and attending events regularly are all healthy ways to strengthen one's social network. It is the responsibility of the university to provide student veterans with opportunities to partake in these healthy remedies. Findings such as those in the current study and DeBeer et al.'s (2014) study provide a first step for universities to take in improving the mental well-being of their student veteran populations, such as the creation and institutional support of student veteran organizations, counselling services geared specifically toward veterans, and informational programs for faculty and traditional students to heighten awareness of the challenges faced by student veterans.

Information gleaned from research on student veterans is already informing the development of services designed specifically to support student veterans. Some universities have begun creating organizations tailored to their student veteran population. For example, Texas State University offers the Veteran Academic Success Center (VASC) as a resource for student veterans on campus. This center has a webpage that provides information on academic support, guidance, events, and employment opportunities on campus. Academic support includes tutoring from fellow veterans through the writing center, private tutors, and US 1100 resilience course. The resilience course is a seminar course to introduce students to academic life and promote success. A guidance program is offered that allows a student veteran to request a military-connected guide. These guides have knowledge about the transition from service to campus life as well as where to find veteran community in the area. There are multiple events offered to student veterans, including a Veterans Alliance of Texas State Golf Tournament, Restoration Ranch Concert, monthly lunches, and fly fishing once per week. Events such as these create the opportunity for student veterans to build a social network on campus.

Employment opportunities also allow for the building of connections. Employment offered on the VASC's webpage include veteran tutor positions, military-connected guide positions, and internships with the Veterans Academic Success Center. Another campus organization is the Veterans Alliance of Texas State (VATS). The VATS focuses on providing social and academic support to student veterans. Social opportunities include outings to monthly lunches, tailgates, and coffee socials. Texas State University is making efforts to provide student veterans with a healthy educational environment tailored to improve academic and mental health outcomes. Based on the

results of this study, as well prior research suggesting social networks are highly effective in positive mental well-being, it is essential that universities make these accommodations. The results of this study converge previous research in stressing the importance of healthy coping behaviors such as social networking. Texas State University is responsive to these needs, providing resources that support healthy coping behaviors like networking and seeking out social support. Without a healthy atmosphere and support from peers, psychological health could deteriorate, creating barriers to academic success and overall mental health for student veterans.

When mental health continues to decline, not only can negative coping behaviors develop but individuals may also develop suicidal ideation. Overall, suicide rates in veterans are alarmingly high at 45 suicides per 100,000 in 2016, which is about 6,000 suicides a year between 2008 and 2016. The USDVA has found that veteran suicides are 1.5 times greater than those of non-veterans as of 2016 (USDVA, 2018). In addition to statistics regarding current suicide rates in veterans, the USDVA also offers a suicide prevention fact sheet that states suicide prevention is the primary goal of the VA. Four key aspects of prevention are early intervention, overall good health, using research to inform best practices for veteran's services, and collaboration of communities (USDVA, 2019). Continued research with veterans allows for the identification of characteristics that commonly appear in individuals at risk for suicide. With respect to the current research, quantitative data was used to identify factors associated with psychological difficulties in student veterans. Notably, the factors included in this study were variables such as depression, anxiety, PTSD, and alcohol abuse, which have all been identified as contributing to suicidal ideation (Arenson et al., 2018). Identifying the factors that

increase the risk of negative health outcomes such as suicidal ideation may aid mental health professionals, as well as universities, in creating more efficacious treatment programs and on-campus accommodations for student veterans.

It is important to note that this study was not without limitations. One limitation was that depression, anxiety, social support, and alcohol consumption were assessed using self-report scales, a technique which is notoriously vulnerable to response biases (Greenwald & Krieger, 2006). This, in turn, could bias scores derived from survey measures like MSPSS, BDI, STAI, and QFI scales used in the current study. The use of clinical diagnoses or biomarkers like salivary cortisol instead of, or in addition to, self-reported measures could provide an objective means to support or validate analyses of self-report measures. The development of a well-validated and normed universal survey of veteran mental health would also be beneficial for future research in the field. Although there is an abundance of research that examines mental health in student veterans, it is difficult to directly compare results when different studies employ different measures. To be more specific, the majority of the research reviewed used custom surveys that varied widely between studies, making it difficult to reconcile similarities and differences across studies. The development of a comprehensive and standardized measure of veteran mental health would allow for various studies to be compared and contrasted with ease.

Another limitation of the current study was that it did not include a control group of non-veteran students for comparison. For future studies, a control group of non-veteran students would be beneficial as done in the study by Rudd et al., (2011) because it would resolve questions about similarities and differences in the mental health of typical,

"traditional" university students and student veterans. To clarify, higher anxiety scores may also be prevalent in the student population. Therefore, higher anxiety in student veterans may not be due to the military history of an individual but rather, due to the person's role as a student. For example, American College Health Association survey found that 62.3% of college students felt overwhelmed by anxiety. The inclusion of a control group of non-student veterans could help to answer this question.

Given that the sample in current study was limited to Texas State University students and was relatively small, the generalizability of results is constrained. A larger sample size would make the results of this study more generalizable to the entire student veteran population and would also allow for the examination of other variables like sex, ethnicity, other substance use, and branch of service. Partnering with the office of Veteran Affairs would be advantageous, they are able to reach a broader array of student veterans. In addition to greater statistical power and generalizability, exploring differences in mental health between branches of the military would help researchers decide if individuals within the various military branches might be differentially vulnerable to mental health problems after service. Each branch of the military has different training methods and ideals which systematically affect the mental health of servicemen. For example, the USDVA (n.d.) found that members of the Marine Corps were more likely than any other branch to seek mental health help, which implies that there is something different about the Marine Corps that leads these individuals to seek help more often than members of other branches. Further research would help to explain why Marines may be more comfortable with seeking help than other branches.

In addition to larger samples, examination of branch differences, the use of a standardized measure of veteran health, and clinically-verifiable diagnoses, adding a qualitative component would also benefit our understanding of the challenges that veterans face as they transition to civilian life. The initial surveys used for this study also included a qualitative question at the end: "In your personal experience, what has been the most challenging aspect of adjusting to life as a university student?"; however, this question was not subjected to analysis due to time constraints. Qualitative analysis of the responses to questions such as these could provide researchers with supplemental insights as to why these mental health issues are so prevalent in student veterans and what aspects of adjusting to college life are most challenging to this population. This information can also inform the design of a standardized measure of veteran health, as well as the design and implementation of veteran support services on university campuses.

In conclusion, this study examined the effect of deployment on depression, anxiety, perceived social support, and alcohol consumption and found no differences due to deployment, possibly due to the fact that veterans who choose to pursue post-secondary education after service are systematically different from those who don't. The study also examined relationships between depression and anxiety, which supported the observation of co-morbidity between these symptoms. Furthermore, it was found that higher self-reported depression was negatively associated with perceived social support and positively related to alcohol consumption. In contrast, higher levels of anxiety were only associated with lower levels of social support, but not alcohol consumption. This suggests that although depression and anxiety share considerable amount of overlap, it may be appropriate to consider them separately rather than in combination. Results of this

research are significant because depression, anxiety, and alcoholism are contributing factors to eventual suicidal ideation. Identifying contributing factors to suicidal ideation allows for the identification of at risk individuals. Student veterans make up a significant portion of campus populations and these numbers are expected to grow. Addressing concerns via early intervention before symptoms become dysfunctional is essential for universities to maintain a healthy student body and decrease suicide rates on their campuses and could also inform attempts to improve mental health and lower suicide rates in the general population. The results of this study reinforce our understanding of the relationships between negative health outcomes such as depression and anxiety, and how positive and negative coping behaviors in veterans may contribute to mental health. In particular, they emphasize the importance of social support in helping veterans adjust to civilian life, especially to post-secondary education.

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APPENDIX A

Beck's Depression Inventory

This depression inventory can be self-scored. The scoring scale is at the end of the questionnaire.

1.
0 I do not feel sad.
1 I feel sad
2 I am sad all the time and I can't snap out of it.
3 I am so sad and unhappy that I can't stand it.
2.
0 I am not particularly discouraged about the future.
1 I feel discouraged about the future.
2 I feel I have nothing to look forward to.
3 I feel the future is hopeless and that things cannot improve.
3.
0 I do not feel like a failure.
1 I feel I have failed more than the average person.
2 As I look back on my life, all I can see is a lot of failures.
3 I feel I am a complete failure as a person.
4.
0 I get as much satisfaction out of things as I used to.
1 I don't enjoy things the way I used to.
2 I don't get real satisfaction out of anything anymore.
3 I am dissatisfied or bored with everything.
5.
0 I don't feel particularly guilty
1 I feel guilty a good part of the time.
2 I feel quite guilty most of the time.
3 I feel guilty all of the time.
6.
0 I don't feel I am being punished.
1 I feel I may be punished.
2 I expect to be punished.
3 I feel I am being punished.
7.
0 I don't feel disappointed in myself.
1 I am disappointed in myself.
2 I am disgusted with myself.
3 I hate myself.
8.
0 I don't feel I am any worse than anybody else.
1 I am critical of myself for my weaknesses or mistakes.
2 I blame myself all the time for my faults.

3 I blame myself for everything bad that happens.

9.

0 I don't have any thoughts of killing myself.

1 I have thoughts of killing myself, but I would not carry them out.

2 I would like to kill myself.

3 I would kill myself if I had the chance.

10.

0 I don't cry any more than usual.

1 I cry more now than I used to.

2 I cry all the time now.

3 I used to be able to cry, but now I can't cry even though I want to.

11.

0 I am no more irritated by things than I ever was.

1 I am slightly more irritated now than usual.

2 I am quite annoyed or irritated a good deal of the time.

3 I feel irritated all the time.

12.

0 I have not lost interest in other people.

1 I am less interested in other people than I used to be.

2 I have lost most of my interest in other people.

3 I have lost all of my interest in other people.

13.

0 I make decisions about as well as I ever could.

1 I put off making decisions more than I used to.

2 I have greater difficulty in making decisions more than I used to.

3 I can't make decisions at all anymore.

14.

0 I don't feel that I look any worse than I used to.

1 I am worried that I am looking old or unattractive.

2 I feel there are permanent changes in my appearance that make me look unattractive

3 I believe that I look ugly.

15.

0 I can work about as well as before.

1 It takes an extra effort to get started at doing something.

2 I have to push myself very hard to do anything.

3 I can't do any work at all.

16.

0 I can sleep as well as usual.

1 I don't sleep as well as I used to.

2 I wake up 1-2 hours earlier than usual and find it hard to get back to sleep.

3 I wake up several hours earlier than I used to and cannot get back to sleep.

17.

0 I don't get more tired than usual.

1 I get tired more easily than I used to.

2 I get tired from doing almost anything.

3 I am too tired to do anything.
18.
 0 My appetite is no worse than usual.
 1 My appetite is not as good as it used to be.
 2 My appetite is much worse now.
 3 I have no appetite at all anymore.
19.
 0 I haven't lost much weight, if any, lately.
 1 I have lost more than five pounds.
 2 I have lost more than ten pounds.
 3 I have lost more than fifteen pounds.
20.
 0 I am no more worried about my health than usual.
 1 I am worried about physical problems like aches, pains, upset stomach, or
 constipation.
 2 I am very worried about physical problems and it's hard to think of much else.
 3 I am so worried about my physical problems that I cannot think of anything else.
21.
 0 I have not noticed any recent change in my interest in sex.
 1 I am less interested in sex than I used to be.
 2 I have almost no interest in sex.
 3 I have lost interest in sex completely.

INTERPRETING THE BECK DEPRESSION INVENTORY
Now that you have completed the questionnaire, add up the score for each of the twenty-one questions by counting the number to the right of each question you marked. The highest possible total for the whole test would be sixty-three. This would mean you circled number three on all twenty-one questions. Since the lowest possible score for each question is zero, the lowest possible score for the test would be zero. This would mean you circles zero on each question.

You can evaluate your depression according to the Table below.

Total Score	Levels of Depression
1-10	These ups and downs are considered normal
11-16	Mild mood disturbance
17-20	Borderline clinical depression
21-30	Moderate depression
31-40	Severe depression
over 40	Extreme depression

State-Trait Anxiety Inventory
STAI Form Y-1

DIRECTIONS: A number of statements which people have used to describe themselves are given below. Read each statement and then write the number in the blank at the end of the statement that indicates how you feel <u>right now, that is, at this moment</u>. There is no right or wrong answers. Do not spend too much time on any one statement but give the answer which seems to describe your present feelings best

Not at all 1
Some What 2
Moderately so 3
Very much so 4

1. I feel calm
2. I feel secure
3. I am tense
4. I feel Strained
5. I feel at ease
6. I feel upset
7. I am presently worrying over possible misfortunes
8. I feel satisfied
9. I feel frightened
10. I feel comfortable
11 I feel self-confident
12. I feel nervous
13. I am Jittery
14. I feel indecisive
15. I am relaxed
16. I feel content
17. I am worried
18. I feel confused
19. I feel steady
20. I feel pleasant

APPENDIX C

Quantity Frequency Index of Alcohol Consumption

In the PREVIOUS SIX MONTHS, how often did you typically drink any of the following? Circle one number for each type of alcohol. [Table wine = regular wine; fortified wine = drinks like "Mad Dog 20/20," 3.2 beer is a weaker beer sold in some states; 6.0 beer is sold in Texas and also in liquor stores in other states; If you are not sure of the "proof" of the liquor you've consumed, just write in the type of liquor you drank (such as "vodka") and we'll do the rest.]

WINE	BEER	LIQUOR
1 = EVERDAY 2 = 5-6 days per week 3 = 3-4 days per week 4 = 1-2 days per week 5 = 3 times /mo or less 6 = NONE AT ALL On a drinking day, how much did you typically drink? (1/5, pint, glass, ½ gallon, etc.) How much?_____ Typically, I drank: Table wine _____ Fortified wine _____	1 = EVERDAY 2 = 5-6 days per week 3 = 3-4 days per week 4 = 1-2 days per week 5 = 3 times /mo or less 6 = NONE AT ALL On a drinking day, how much did you typically drink? (cans, bottles, qts, 6 pack, 12 pack, etc.) How much?_____ Typically, I drank: 32. beer _____ 6.0 beer_____	1 = EVERDAY 2 = 5-6 days per week 3 = 3-4 days per week 4 = 1-2 days per week 5 = 3 times /mo or less 6 = NONE AT ALL On a drinking day, how much did you typically drink? (shot, pint, qt, liter, 1/5, etc.) How much?_____ Typically, I drank: _____ proof liquor

WINE   TYPE
# of ounces x Type x Jessor weight   .15 = Table wine
                                                .20 = Fortified wine

1 Glass/Drink = 4 oz.
1 Wine cooler = 10 oz.

BEER TYPE
# of ounces x Type x Jessor weight   .04 = Regular
                                                .06 = 6 point

1 Can = 12 oz.
1 Pitcher = 64 oz.
1 Case (24 cans) = 288 oz.
1 Keg (Standard size) = 15.5 Gallon

LIQUOR   TYPE
# of ounces x Type x Jessor weight   .40 = 80 proof
                                                .43 = 86 proof
1 Shot/mixed drink = 1.5 oz.   .45 = 90 proof
1 Bottle = 25.6 oz.   .50 = 100 proof
                                                .75 = 151 proof
                                                .95 = 190 proof

JESSOR WEIGHTS   STANDARD
CONVERSIONS
1.00 = Daily   ½ Pint = 8 oz.
.80 = 5-6 days a week   1 Pint = 16 oz.
.50 = 3-4 days a week   1 Fifth = 25.6 oz.
.20 = 1-2 days a week   1 Quart = 32 oz.
.05 = 3 times a month or fever   1 Liter = 33.8 oz.
.00 = None   ½ Gallon = 64 oz.
                                                1 Gallon = 128 oz.

APPENDIX D

Multidimensional Scale of Perceived Social Support Instructions: We are interested in how you feel about the following statements. Read each statement carefully.

Indicate how you feel about each statement.

Circle the "1" if you **Very Strongly Disagree**

Circle the "2" if you **Strongly Disagree**

Circle the "3" if you **Mildly Disagree**

Circle the "4" if you are **Neutral**

Circle the "5"   if you **Mildly Agree**

Circle the "6" if you **Strongly Agree**

Circle the "7" if you **Very Strongly Agree**

1. There is a special person who is around when I am in need.

2. There is a special person with whom I can share joys and sorrows.

3. My family really tries to help me.

4. I get the emotional help & support I need from my family.

5. I have a special person who is a real source of comfort to me.

6. My friends really try to help me.

7. I can count on my friends when things go wrong.

8. I can talk about my problems with my family

9. I have friends with whom I can share my joys and sorrows.

10. There is a special person in my life who cares about my feelings.

11. My family is willing to help me make decisions.

12. I can talk about my problems with my friends.

Scoring Information:

To calculate mean scores:

Significant Other Subscale: Sum across items 1, 2, 5, & 10, then divide by 4. Family Subscale: Sum across items 3, 4, 8, & 11, then divide by 4.

Friends Subscale: Sum across items 6, 7, 9, & 12, then divide by 4. Total Scale: Sum across all 12 items, then divide by 12.

Other MSPSS Scoring Options:

There are no established population norms on the MSPSS. Also, norms would likely vary on the basis of culture and nationality, as well as age and gender. I have typically looked at how social support differs between groups (e.g., married compared to unmarried individuals) or is associated with other measures (e.g., depression or anxiety). With these approaches you can use the mean scale scores.

If you want to divide your respondents into groups on the basis of MSPSS scores there are at least two ways you can approach this process:

1. You can divide your respondents into 3 equal groups on the basis of their scores (trichotomize) and designate the lowest group as low perceived support, the middle group as medium support, and the high group as high support. This approach ensures that you have about the same number of respondents in each group. But, if the distribution of scores is skewed, your low support group, for example, may include respondents who report moderate or even relatively high levels of support.

2. Alternatively, you can use the scale response descriptors as a guide. In this approach any mean scale score ranging from 1 to 2.9 could be considered low support; a score of 3 to 5 could be considered moderate support; a score from 5.1 to 7 could be considered high support. This approach would seem to have more validity, but if you have very few respondents in any of the groups, it could be problematic.