11-8-2023

U.S. Military Veterans Transition to Two Midwest Universities: Post-Traumatic Stress Disorder, Moral Injury, and Academic Outcomes

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December 2023

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ACKNOWLEDGEMENTS

First and foremost, I praise God for guiding me throughout my education and blessing me with the opportunity to complete the dissertation research successfully with much patience and gratitude. I am incredibly grateful to the Templin Scholarship, Barnes Jewish tuition assistance, the O'Grady Fellowship, and the Military Dependent Education Assistance for funding my education and the opportunity to come this far with my educational scholarship.

I want to express my profound gratitude to my advisor, Dr. Umit Tokac, Ph.D. (Professor at the University of Missouri-Saint Louis, College of Nursing), for his invaluable guidance, relentless support, patience, understanding, and sincere compassion for education throughout this entire dissertation research. Studying under his guidance was a great privilege and honor; his sincerity, motivation, and vision for my study were inspirational. I would also like to thank my advising committee members, Dr. Anne Fish, Ph.D. (Professor and Ph.D. Program Director, Department of College of Nursing), Dr. Kimberly Werner, Ph.D. (Associate Professor and Dean of Research, Department of College of Nursing), and Dr. So Rin, Kim, Ph.D. (Assistant Professor, Department of Education) for all the knowledge, guidance, and support, to help improve my dissertation research.

I want to extend my heartfelt gratitude to my family, especially my husband, for his guidance, support, understanding, and patience in enduring late-night sleeplessness, for keeping up with me throughout this dissertation research process, and to my children for allowing me to complete my education. I am incredibly grateful to my friends in my Ph.D. program for their support and words of encouragement throughout my education

and continued friendship. My final gratitude goes to my sisters and brothers for listening to me and supporting my struggles during this education process and dissertation research. I also want to honor my mom and dad for their spiritual support; their love and motivation inspired me, and sincere appreciation goes to them for their push for knowledge and education; without that, I would not have come this far.

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Abstract

Objective: To examine the association between posttraumatic stress disorder (PTSD) and moral injury (MI) and the extrinsic factors of the degree of negative patterns of healthy behaviors and negative experiences in an academic setting, the moderating effects of social support on PTSD and MI symptomatology, and the perception of academic success and positive perception of academic experience. Additionally, to examine the mediating effect of intrinsic factors (perceived academic experience) on academic outcomes objectively and subjectively.

Background: Student veterans as non-traditional students face challenges transitioning to the academic environment. Some have underlying mental and psychological complications of PTSD and MI, leaving them feeling disconnected, not fitting in, lacking a sense of belonging, and lacking support, hindering academic success. The existing literature was unclear and inadequate in assessing student veterans' transitioning experience and lacked academic outcome evaluation.

Methods: Data on 68 college student veterans was collected through a five-month survey from two Midwest universities. The partial correlation network (graphical LASSO) regression method and *R* was applied to evaluate variables of PTSD, MI, health habits, college experience, social support, perception of academic experience, and academic success.

Findings: PTSD showed a strong positive direct effect on MI; both PTSD and MI had a direct negative effect on academic success; MI showed a negative direct effect on social connectedness. College experience had a direct effect on academic success, a direct negative effect on veteran status, and a negative direct effect on social connectedness.

Social connectedness had a strong direct effect on self-efficacy. Health habits showed a weak positive effect on peer sense of belonging, self-efficacy, social connectedness, and number of children. Social support moderated between PTSD and academic success objectively.

Conclusion: PTSD and MI symptomatology increases negative health behaviors and decreases with social support in veterans. Both PTSD and MI combined decrease with perceived academic success and social connectedness. Social support did not show moderation between academic success and academic experience.

Implications: These results can expand the body of knowledge to support student veterans to succeed in the academic environment, provide a social connection and sense of belonging, and help promote academic success.

Chapter 1

Introduction

Background

For student veterans with mental health complications, transitioning to college can be a daunting experience, whereas a positive college transitioning experience can predict the success of students' academic outcomes (Rugutt & Chemosit, 2005). After leaving military life, student veterans face new challenges of transitioning to the academic environment while losing their military camaraderie; the idea of starting a new social network on the college campus can seemingly be arduous and very stressful (Kirshner, 2015). According to Rattray et al. (2019), 84% of participants reported that their cognitive complications were sources of transitioning difficulties. For instance, this population with a high prevalence of post-traumatic stress disorder (PTSD; Dursa et al., 2014; U.S. Department of Veterans Affairs, 2020) with complications of moral injury (MI) is found to have difficulties transitioning into college. Importantly, PTSD and MI have overlapping definitions and symptoms, often co-occurring, leading to a downward spiraling effect on academic achievement and potential long-term deleterious mental health outcomes (Battles, 2018; Oster et al., 2017).

Having a veteran status differentiates student veterans from their civilian counterparts. In fact, some student veterans indicate that they do not want to identify themselves as veterans on campus (Olsen et al., 2014). Veterans from a hierarchical military environment find adapting to the civilian world, whether on campus or in the workforce, can be difficult due to the unstructured setting (Bosari et al., 2017). Student veterans are defined as "any student who is current, a former member of the active-duty

military, National Guard, or Reserves regardless of deployment status, combat experience, legal veteran status, or GI bill use" studying on a college campus (Vacchi, 2012, p. 17). Student veterans described in this study will be identified as those in Vacchi's definition.

Since the post-9/11 GI Bill enactment, there has been an influx of student veterans matriculating in higher education (Cate et al., 2017). To date, more than 2.9 million veterans of post-9/11 have pursued higher education after their service (Institute for Veterans and Military Families/Student Veterans of America, 2017). Despite the statistics of over 2.9 million student veterans pursuing an education using the GI Bill, a paucity of literature noted their transitioning experiences and studies on student veterans are conceptual (Kirchner, 2015). However, there are emerging themes in the literature concerning the negative education experience that student veterans in higher education confront intrinsically and extrinsically, including economic struggles (Cunningham, 2012; Norman et al., 2015), feeling a lack of support and inclusivity, disengagement, or disconnectedness (Bosari et al., 2017), feeling unwanted (Taylor, 2016), a sense of isolation, belonging or fitting in with peers, and being unfairly judged (Durdella & Kim, 2012; McAndrew et al., 2019; Elliot, 2015). Veterans deployed to a combat zone and returning with symptoms of PTSD were found to be negatively associated with academic adjustments and achievement (Campbell & Riggs, 2015; Greg et al., 2016), in addition to psychological symptoms of MI, which is robustly correlated with worsening outcomes of PTSD (Nieuwsma, 2020).

The compounding effect of PTSD and MI causes difficulties transitioning to the campus environment, thus further lengthening degree completion (Gregg et al., 2016;

Sansone & Tucker Segura, 2020), and subsequently, the student quits or drops out of college (Boyraz et al., 2016; Nieuwsma et al., 2020; Vest et al., 2020). Additionally, college retention among student veterans is low compared to civilian colleagues (Shirley et al., 2022). In a recent study, Umucu et al. (2022) found that college adjustment or transition among student veterans with PTSD was significantly negative, consistent with prior research. These physical, mental, or emotional traumas can cause persistent social issues on a college campus, leading to difficulties connecting with peers. Student veterans' experiences of exiting from military life to college life are known as a transition (Albright et al., 2019; Roberson & Eschenauer, 2020; Derefinko et al., 2019), adjustment (Campbell et al., 2015; McAndrew et al., 2019; Sullivan et., 2021; Bowe et al., 2018), and reintegration (Borsari et al., 2017). The term transition in this study means to change from one environment to another (i.e., military life to college life).

MI can exacerbate or simultaneously interconnect with PTSD symptomatology (Koenig, Youssef, & Pearce, 2019; Koenig et al., 2018), thus worsening the overall mental outcomes of the individuals while attending college. In fact, PTSD is stigmatized, psychologically debilitating, and is considered an "invisible disability" (Flink, 2017, p. 110). Student veterans exposed to trauma or atrocities of war are more likely to have mental disabilities preventing them from achieving academic success, and 80% report that their disability causes them stress while attending college (Student Veterans of America, 2017). Studies in the previous literature provide substantial evidence that transitioning to college and poor academic outcomes are highly related to PTSD with co-occurring symptoms of MI (Elliot, 2015; Student Veterans of America, 2017).

Student veterans are considered non-traditional, likely to be married with children (Elliot, 2015; Bosari et al., 2017), older (Kirschner, 2015; Whiteman et al., 2013), have different levels of life experiences, and some may have mental or physical disabilities (Fortney et al., 2016; U.S. Department of Veterans Affairs, 2020), creating challenges to successfully transition into higher education/post-secondary education compared to their civilian counterparts. These inequitable differences and overarching concerns leave veterans feeling unwanted (Taylor, 2016), isolated and unengaged (Gregg et al., 2016), or having social disconnections (Yeager & Rennie, 2021) in academic settings. Some student veterans with symptoms of PTSD or MI are more likely to engage in negative patterns of healthy behaviors of substance use such as drinking, smoking, and drug use (Battles et al., 2018; Fortney et al., 2016; Maguen et al., 2021; Schonfeld et al., 2015; Widome et al., 2011), unhealthy eating (Etuk et al., 2022; Hall et al., 2015) and sleeping behaviors (Wright et al., 2010; Slane et al., 2016).

Despite these struggles, some studies found that social support has been shown to positively affect academic achievement, campus adjustments, and decrease symptoms of PTSD (Eakman et al., 2019; Laws et al., 2018) and troubling experiences in college (Elliot, 2015), although inadequate among student veterans in postsecondary education. Li et al. (2018) state that social support predicts college students' academic achievement. For example, in a meta-analysis, Robbins et al. (2004) concluded that social support positively correlated with college grade point average (GPA). Previous studies specifically highlight the importance of peer support in helping student veterans in college transition by connecting with other student veterans with similar backgrounds, experiences, and a sense of understanding of their struggles (Whiteman et al., 2013).

Jenner (2019) highlights that student veterans in combat would trust their military peers with their lives, suggesting that they feel comfortable being around other veterans, noting the importance of military peers as a source of transitioning support while on a college campus and a sense of camaraderie where they can relate to one another. The construct of peers in this study refers to veteran peers.

Educators/faculty are vital to enhancing the college transition experience by providing support and a safe and welcoming environment for student veterans (Kirschner, 2015). However, over 75% feel inadequately prepared to address student veterans' concerns (Albright et al., 2020). Additionally, faculty support demonstrated higher GPAs (Roksa & Whitley, 2017) and academic achievement (Tayfur & Ulupinar, 2016), specifically through academic engagement (Chen, 2005). The most recent far-reaching survey by Albright et al. (2020), surveying 20 U.S. colleges and universities involving 14,637 faculty and staff members, concluded that 44% lack knowledge of the student veterans' challenges on campus, and over 70% are not adequately prepared to identify when student veteran exhibit mental distress (stress, anxiety, suicidal thought). When faculty lack the knowledge of student veterans' struggles on campus or are unprepared to recognize their psychological symptoms, providing appropriate or adequate support can be challenging. To date, faculty social support among student veterans is not well studied, although it is developing. Many studies were on the general population and in secondary education; however, they were insufficient in postsecondary education. Having social support from friends, family, peers, and faculty can transform their perception of their academic experience. Student veterans suffering with or without mental health complications coupled with a lack of support and negative campus experiences can

adversely impact their transitioning experience and, subsequently, academic achievement.

Many factors hinder student veterans from transitioning successfully on the college campus intrinsically and extrinsically, impacting student veterans' academic experience and outcomes. Studies among student veterans in college transition with psychiatric complications are scarce. The lack of literature concerning student veterans' experiences in college necessitates a broader lens to expand the research from the higher education board and researchers. This topic warrants further investigation, considering mixed and scarce empirical literature, predominantly cross-sectional and limited longitudinal studies concerning veterans' transition to college education. This study hopes to extend the body of knowledge discovered by other researchers, especially in higher education. To better understand the struggles of student veterans' college experience, the Stress Process Theory underpins and lays the groundwork for this study. This study examines how PTSD and MI are associated with extrinsic factors (degree of negative patterns of healthy behaviors, negative experiences in an academic setting, and lack of degree of social support) mediated by the intrinsic factors (perceptions of academic experience) to predict the outcomes of academic success (objectively and subjectively).

PTSD Symptoms

PTSD has been well studied in all populations but is limited among student veterans and its effects on higher education. In a literature review, Oster et al. (2017) report there were high rates of PTSD in the veteran population in 21 systematic reviews. There is evidence that having symptoms of PTSD and combat-related PTSD has a significant negative association with academic adjustment (Campbell & Riggs, 2015;

Rattray, 2019). According to the American Psychiatric Association (APA, 2021), PTSD is defined as a psychiatric disorder in those who experience or witness traumatic events with symptoms of intrusion, avoidance, alteration in cognition and mood, and alteration in arousal and reactivity; symptoms vary based on the severity of trauma. Existing literature highlights the effects of trauma on educational performance. According to Kessler et al. (1995), PTSD is linked to lower academic achievement in the general population and lower GPAs (Bryan et al., 2014). Re-experiencing symptoms can exacerbate symptoms of PTSD and are strongly related to impaired educational function in those with PTSD (Morissette et al., 2021).

Some research has found that veterans exposed to war may have a prevalence of PTSD with associated symptoms of moral injury, depression, and anxiety resulting in related risky behaviors such as drinking, smoking, and drug use (Battles et al., 2018; Fortney et al., 2016; Maguen et al., 2021; Schonfeld et al., 2015; Widome et al., 2011). In addition, veterans with PTSD have a related risk of suicide ideation or suicide attempts (Bryan et al., 2014), especially those deployed to Operation Enduring Freedom (OEF) and Operation Iraqi Freedom (OIF), having higher rates of suicide (Bradley, 2011). PTSD is a service-connected mental disability that can have a long-term effect on one's overall outcome (Rattray et al., 2019). Altogether, these PTSD-associated health risk behaviors that student veterans experience can be a catalyst to their transitioning difficulties, such as being social with their peers in the campus environment.

Veterans with PTSD and associated symptoms are correlated with quitting college or dropout (Boyraz et al., 2016; Nieuwsma et al., 2020; Vest et al., 2020), have negative experiences, feel unfairly judged on the college campus (Elliot, 2015), and have lower

grade point average (GPA; Bryan et al., 2014; Durdella & Kim, 2012). In addition, one study by Schonfeld et al. (2015) found that many veterans with college adjustment problems are those with mental health complications and who were diagnosed and treated for PTSD. Altogether, these findings suggest that having symptoms of PTSD can interfere with college transition and, consequently, associated with poor academic outcomes. Veterans have numerous tribulations intrinsically and extrinsically affecting their transition from military to college life.

Moral Injury Experiences

Shay and colleagues (2002) were the first to coin the term "moral injury" (MI) after accounts and interviews with soldiers and veterans in the late 1990s, but the less academic "soldier's heart" has been described since after the civil war; where it was then that they shared their symptoms and experience of the war that challenged their moral code and is now included in moral injury. MI interconnects with psychosocial and psychiatric problems, and the definition is inconclusive (Nieuwsma, 2020). Although MI is not a psychiatric problem, it is common in combat veterans with PTSD (Dreshner et al., 2011; Currier et al., 2017). MI is defined as the religious or spiritual internal ethical conflict (Koenig et al., 2018) resulting from "perpetrating, failing to prevent, bearing witness to, or learning about acts that transgress deeply held moral beliefs" (Litz et al., 2009). A recent study identified that higher scores on a *Moral Injury Scale* demonstrated a significant correlation with higher scores of mental illness symptoms by using three types of *Moral Injury Scale* in a sample of n=315 post-9/11 veterans (Nieuwsma, 2020). MI is found in the former and active-duty military and is associated with PTSD symptoms, such as guilt feeling, shame, self-condemnation, and loss of meaning and trust

(Koenig, Youssef, & Pearce, 2019). Combat veterans with multiple deployments are more likely to experience injurious moral events (Wisco et al., 2016). They are associated with self-injurious thoughts and behaviors (Bryan et al., 2014) and suicidality (Battles, 2018).

Moreover, MI is associated with symptoms of drugs, alcohol, and anxiety (Battles et al., 2018; Nieuwsma, 2020) and has a robust correlation with worsening outcomes of PTSD (Nieuwsma, 2020). Evidence shows that a college education is negatively associated with injurious moral events (Wisco et al., 2016). These negative ramifications of moral injury concurring with PTSD can lead to a downward spiral effect on academic achievement and potential long-term deleterious mental health outcomes (Battles, 2018). Interestingly, while PTSD and moral injury have distinct constructs, they may have an overlapping definition; MI plays a vital role in maintaining and treating PTSD (Koenig, Youssef, & Pearce, 2019; Koenig et al., 2018). There is a dearth of literature on MI and student veterans, but existing literature indicates that MI symptomatology was associated with poor mental health outcomes and, subsequently, poor college transition (Kelley et al., 2019).

Extrinsic Factors

Having symptoms of PTSD or concurrently with MI, student veterans can exhibit negative patterns of healthy behaviors and encounter negative experiences in the academic setting. However, the extrinsic factors of their environment, such as social support, can buffer these experiences. There is a growing body of literature concerning the negative experience in the academic environment that student veterans in higher

education confront extrinsically, which can hinder their transition to the college campus and, subsequently, academic success.

Negative Patterns of Healthy Behaviors. Student veterans diagnosed with PTSD or compounded with MI symptoms are at risk for numerous negative patterns of healthy behaviors such as maladaptive behaviors of substance abuse, aggression, sleep disturbances, and dietary behaviors. Because student veterans are more likely to have symptoms of PTSD, these unhealthy behaviors predispose student veterans to adverse health and academic outcomes (King et al., 2007). Veterans with mental health issues are an at-risk population (Hall et al., 2015). For example, those diagnosed with PTSD and co-occurring MI are associated with poor health habits such as substance abuse. In contrast, substance abuse alone can predict poor academic outcomes in previous literature (King et al., 2007).

Additionally, those diagnosed with PTSD in the past year were associated with a high risk of drinking alcohol, and for individuals diagnosed with chronic PTSD, risky health behaviors are accentuated (Widome et al., 2011). These maladaptive behaviors lead to poor academic performance for student veterans trying to gain an education (Bachrach & Read, 2012; Whiteman et al., 2013). Moreover, Nieuwsma et al. (2020) found that MI was robustly correlated with PTSD and drug and alcohol abuse. Because PTSD and MI are interconnected, the effects of their symptoms are also interrelated. MI is connected to substance disorders among U.S. combat veterans, and alcohol use disorder is linked to PTSD and combat exposure severity (Maguen et al., 2021; Widome et al., 2011).

Maguen et al. (2021) underline that those who experience potentially moral injurious events (PMIES) in the domain of perpetration have increased odds of substance use disorders, the domain of witnessing is associated with drug use disorders, and the domain of betrayal is associated with alcohol use disorders. According to the National Institute on Drug Abuse (2019), veterans are more likely to use alcohol (56.6%) than nonveterans (50.8%). Grossbard et al. (2014) found that 72% consumed alcohol in the past month, and 41% endorsed high-risk drinking. Furthermore, binge drinking was common in deployed veterans (Grossbard et al., 2014).

Two of many negative health patterns of behaviors that student veterans experience, sleep disturbance, and unhealthy eating behavior, are understudied in student veterans with PTSD. There have been reports that veterans diagnosed with PTSD have frequent complaints of sleep disturbances (Khazaie et al., 2016) and a prevalence of unhealthy eating behaviors or eating disorders compared to the general population (Etuk et al., 2022). Moreover, it is clear that veterans with PTSD report sleep disturbances, although the objective and subjective findings are inconsistent (Khazaie et al., 2016). Insomnia is the most reported sleep disturbance among veterans, especially in combat-exposed veterans with PTSD. On another note, insomnia is also found in high-level combat-related veterans with PTSD coupled with alcohol use (Wright et al., 2011). On the same note, combat-exposed veterans with post-deployment insomnia report having alcohol problems (Wright et al., 2011). Wright et al. (2011) further mention that insomnia severity strongly predicts PTSD with post-deployment and combat exposure.

Moreover, there is evidence that disordered eating is prevalent among veterans (Slane et al., 2016). Richman (2018) reports that disordered eating (abnormal eating

behavior) is more common than an eating disorder; while they are related, an eating disorder is a more severe condition. Etuk et al. (2022) found that veterans who report binge eating (6.5%) and overeating (8.9%) have a higher percentage than those having a diagnosis of binge eating disorder (3.7%). However, the author could not find a relationship between PTSD and disordered eating. However, Slane et al. (2016) found that those who self-reported disordered eating had a significantly higher rate of PTSD. A systematic review by Hall et al. (2015) indicated that PTSD predicts eating behaviors. PTSD and depression severity are associated with lifetime binge eating disorder and Bulimia Nervosa in veterans, particularly a higher percentage in females (Litwack et al., 2014). Although studies discussing eating disorder or sleeping disorder is beyond this study, and studies on eating disorders or unhealthy eating behaviors of veterans are not well studied; however, it is noteworthy that veterans' patterns of unhealthy sleeping and eating habit are highlighted. Overall, adequate duration and quality are required for optimal sleep (Saguin et al., 2021), and a healthy diet is vital to the mental and physical well-being of veterans (Saguin et al., 2021; Oster et al., 2017), primarily to function daily at an optimal level. Overall, some student veterans with mental disorders are predisposed to these unhealthy eating behaviors, affecting their health outcomes.

Degree of Negative Experiences in the Academic Setting. Student veterans who attend college encounter numerous negative experiences, such as feelings of isolation, disconnection, or being unfairly judged, preventing them from feeling included, wanted, belonging, or connected to the campus community. Financial strain is also reported as a struggle while attending college for student veterans in higher education. Many studies have reported that these challenges prevent student veterans from academic success.

There are many reasons why some men and women join the military services. Some veterans join the military for socioeconomic reasons, patriotism, or a stepping block for a better opportunity. However, for others, pursuing education may be the primary incentive to join the military. Education, in general, can provide an individual with a better job, a sense of accomplishment, perceived self-worth, increased knowledge, and social connection or understanding of belonging with their peers (Elder et al., 2011). Some literature suggests that veterans may need more time to complete their education due to serving their country, deployment, or raising a family while in the service. Although some veterans attempt to attend college while serving but never complete their degrees, some want to complete their education after their service obligation.

Nevertheless, education provides an individual an opportunity to succeed in life with support services that could help them complete the degree program and have a positive experience during their educational goal. Not surprisingly, literature has alluded that their educational experiences on campus are less than favorable, and these experiences are unique to their disposition as a veteran (Elliot, 2015; Graf et al., 2015; Gregg et al., 2016). For some veterans, transitioning from military life to college can be seamless, whereas, for others with PTSD or MI, it can be challenging. Veteran students face many challenges impacting their overall experience and success in their educational goals.

There are emerging themes in the literature concerning struggles student veterans in higher education experience, including feeling a lack of support and inclusivity, disengagement or disconnectedness (Bosari et al., 2017), a sense of isolation, and belonging or fitting in with peers (Durdella & Kim, 2012; Elliot, 2015; Elliot et al., 2011;

McAndrew et al., 2019; Smith et al., 2017) which predisposes veterans to feeling unwanted (Taylor, 2016), isolated and unengaged (Gregg et al., 2016), or having social disconnections (Yeager & Rennie, 2021). One study even mentioned that they were "unfairly judged" (Elliot, 2015, p. 16). According to Student Veterans of America (2017), veterans exposed to trauma are more likely to have disabilities that prevent them from achieving academic success, and 80% report that their disability causes them stress while attending college. Furthermore, as Olsen et al. (2014) indicated in a mixed-method exploratory study (N=500; n=10), some student veterans do not want to be identified as veterans in an academic setting. One predominant factor that sets student veterans apart from other students with PTSD is that they experience trauma-related combat exposure. Intriguingly, Elliot et al. (2011) found that combat-exposed veterans predicted a more significant lack of sense of belonging and troubling feelings even without the manifestation of PTSD. It is relevant to suggest that student veterans exposed to trauma-related combat are more likely to have troubling experiences on campus.

Individuals join the armed forces for many reasons, such as patriotism, college tuition benefits, or careers (Mankowski et al., 2015). On the contrary, one study showed that young men with high GPAs are less inclined to join the military. Those from a single-parent family structure with a perceived lack of social support or those from a lower-income family have greater odds of joining the military (Elder et al., 2011). This study suggests that men who joined the service are already disadvantaged. The mental health complications sustained by the military can further thwart their academic success, socialization, and overall transition to college life. Durdella and Kim (2012) found that

student veterans, compared to civilian students, have a lower college GPA, consistent with Elliot (2015).

Another theme that has been reported in the body of literature, although inadequate, is financial strains among student veterans. Paying for an education can be costly, but for student veterans, the GI Bill can provide student veterans with an opportunity for a fully paid education without financial strain or stress. However, the literature on this topic is minimal. Student veterans are in a unique position for academic success by having the financial benefits to fund their education with the assistance of the GI Bill. Having the GI Bill to fully finance student veterans' education and stipends for living expenses and school supplies, it is difficult to believe one would have financial struggles. Several studies revealed similar results regarding economic issues. Some studies reported that financial hardship is positively associated with PTSD (Elliot, 2015).

The new role of being a student can be stressful and anxiety-provoking, specifically in those with symptoms of PTSD and MI. On top of this, financial strain can lead to poor academic outcomes. Some studies also point out that student veterans struggle financially when transitioning to college campuses. One qualitative study noted that a participant reported that the GI bill process was a tedious, "labor-intensive and time-consuming process," leaving students in a financial predicament before starting their academic program (Taylor et al., 2016, p. 56). Another interesting fact, Elliot (2015) reports that economic hardship and college performance dissatisfaction are associated with PTSD. Gregg et al. (2016) said student veterans transitioning to post-secondary education have experienced financial stress. In addition, Gregg et al. (2016) mentioned that veterans who leave the military no longer get 'consistent paychecks' or wages (p. 96).

Altogether, these findings indicate that being a student veteran and having federal financial support, such as the GI Bill, does not eliminate their financial struggles. Student veterans experience a myriad of negative experiences in the academic setting, being a veteran status attending college. While financial stress is expected in students, financial stress among student veterans is tied to transitioning (Olsen et al., 2014).

In summary, these negative experiences on college campuses thwart student veterans from successfully achieving the federally funded education they equitably deserve for their military patronage. In addition, military-induced mental trauma, such as combat trauma due to the nature of their duties as a veteran, differentiates their trauma from the general population's trauma. Therefore, the struggles of their experience in a college setting are much different from those of a traditional student.

Lack of Social Support. Social support is a broad concept encompassing family and friends, significant others, faculty/institutional, and peers of similar military backgrounds. Social support is crucial for student veterans from a cohesive band of brotherhood in the military and a camaraderie mentality, particularly in an academic setting. However, the literature notes that having support from civilian friends differs from having support from veteran peers. Moreover, support from college campuses (college institutions) or faculties can transform how student veterans transition into college and perceive their learning and academic achievement experience (Morris et al., 2019). Connecting with a faculty to strengthen social integration may be one of the most meaningful contacts in the institution (Dean et al., 2020).

Nonetheless, of 182 written responses from student veterans (n=328), only 15% of students found faculty helpful, approachable, responsive, or understanding to veterans

in addition to accommodating for military services (Morris et al., 2019). Interaction between students and faculties significantly predicts academic achievement (Rugutt & Chemosit, 2005). For some student veterans, stepping foot into college for the first time tends to depend on faculty support due to a lack of college experience (Ndoye et al., 2020). Therefore, supporting student veterans can be crucial to their academic success and perceived social support.

Social support has been shown to have a positive effect on academic achievement, positive campus adjustments, and decreased symptoms of PTSD (Eakman et al., 2019; Laws et al., 2018). Laws et al. (2018) uncovered that family involvement reduces PTSD symptoms in a retrospective study. Snaider et al. (2017) suggested that social support from significant others moderated the outcomes of PTSD treatment. In another non-experimental correlation study, Eakman et al. (2019) examined student service members and veterans. They revealed that social support lessens financial worries and PTSD symptoms regardless of service-related health challenges. This result highlights the significance of social support and its impact on student veterans and those with mental health complications. Among combat veterans, having family, significant others, military peers, and the community (college institution) is crucial in attenuating PTSD symptomatology among those with a high level of PTSD symptoms (Wilcox, 2010). Evidence shows that students have higher odds of leaving their university due to feeling devalued by their faculty (Fernandez et al., 2019). Robbins et al. (2004) found that GPA was positively impacted by financial and social support.

There is evidence in the literature detailing that support from friends (Elliot, 2015) and military peers (Lehavot et al., 2013; Wilcox, 2010) are negatively associated

with symptoms of PTSD. Nevertheless, having social support from friends and family is related to having less frequent reports of troubling experiences (Elliot, 2015). Overall, evidence of social support from family, friends, community, and higher education can improve the troubling experience that veteran students may experience while attending college, thus promoting the overall transition process. Jenner (2019) reported that student veterans in combat would trust their military peers with their lives, suggesting they feel comfortable being around other veterans. This evidence demonstrates the importance of military peers providing student veterans with a source of transitioning support while on a college campus and a sense of camaraderie where they can relate to one another. In a phenomenological study by Alschuler & Yarab (2018), one student found that civilian students lacked respect and understanding of military culture. In the same study, the authors found that most interviewees had a similar negative attitude towards their civilian peers, suggesting that they depend on military peers as an essential social support system.

Intrinsic Factors/Academic Success

There is a growing body of knowledge on student veterans' perception of their academic experience correlating with academic achievement, thus having implications for higher education boards to promote veteran-friendly campuses. For student veterans, these intrinsic factors, or internal/inherent emotions that they experience, influence the perception of their academic success. Many prior studies focused on student veterans with mental health and success, specifically PTSD (Shirley et al., 2022). Still, proliferating studies address the concerns of their campus experiences on academic success. Traditionally, in academic settings, GPA or cumulative GPA has been used to

measure academic achievements in college students (Rugutt & Chemosit, 2005; York, Gibson, Rankin, 2015).

Academic Success. Academic achievement, along with GPA, has been well-studied among college students. Previous studies frequently used grades (i.e., assignments) and GPA to measure academic achievement (York et al., 2015). A comprehensive synthesis of defining and measuring academic success encompasses academic achievement, attainment of learning objectives, competencies, satisfaction, acquisition of desired skills, persistence, and post-college performance (York et al., 2015).

Academic self-efficacy was previously associated with college GPA (Robins et al., 2004). Mana et al. (2022) define academic self-efficacy as "a set of individual beliefs regarding one's academic competence, persistence, and motivation" (p. 86). Some studies point out that academic self-efficacy and a sense of belonging are related to being mentored. Evidence indicates that academic self-efficacy directly predicts GPA and PTSD severity (Shirley et al., 2022). College self-efficacy and academic self-efficacy are used interchangeably in the literature; similarly, so are student success and academic success (York et al., 2015). Self-efficacy, defined by Bandura (1986, as cited in Zajacova et al., 2005, p. 678), is a "self-evaluation of one's competence to successfully execute a course of action necessary to reach the desired outcome." It is safe to say that if one has self-efficacy through the experience they gain from their environment on-campus, one can define their self-worth through their perception of a positive and supportive campus experience. According to Bong and Skaalvik (2003), self-efficacy and self-concept share a similar definition, have subtle distinctions conceptually, and apply to academic self-

perception. In fact, the authors state that "self-efficacy is an active precursor of self-concept" (p.30) and that both constructs can be used to predict similar outcomes such as motivation, emotion, and performance.

While academic self-efficacy is the belief in one's ability to engage in behavior to reach the desired goal of college-related activities (Gore et al., 2007), similarly, the authors found that perceived academic self-efficacy significantly predicts GPA, emphasizing that self-efficacy alone predicts GPA (Hsieh et al., 2007). Furthermore, those with good academic status have significantly higher self-efficacy judgment scores (Hsieh et al., 2007). The author also highlights that satisfaction with college experience determines students' persistence and performance, which is likely to progress in academic achievement if they are satisfied with their college experience (Gerardi, 2006). As Sadeghi-Gandomani and Adib-Hajbaghery (2018) state, GPA does not appropriately predict student academic success; therefore, their perception of their academic success is included in their subjective assessment of academic achievement.

While the sense of belonging and social connectedness are interrelated, for example, social connectedness is defined as the experience of belonging (Van Bel, 2009), and a sense of belonging is defined as being accepted, valued, valued in involvement, and fit, in this case, within an academic institution (Haggerty & Patusky, 1995; Holloway-Friesen, 2021; St. Amand, 2017). Therefore, to successfully develop self-efficacy, one must be entertained by a positive and supportive environment to promote self-confidence and a sense of value and subsequently achieve academic self-efficacy.

Problem Statement

The existing literature shows a gap in student veterans transitioning into higher education and their overall outcomes. While several articles mentioned emerging themes in their transitioning experiences, no articles mentioned the academic outcomes of these experiences, as Ghosh (2020) declared in a scoping review. Veterans are a unique population (Pierce & Pritchard, 2016); for example, they are vulnerable to health disparities (Nayback, 2009) and are underrepresented (Barry et al., 2014; Sullivan & Yoon, 2020). Student veterans are unlike traditional students; some may have underlying mental health complications such as PTSD with co-occurring MI due to combat, unique to student veterans, and others may have high-risk behaviors while attending college and are at risk of poor health outcomes, unique readjustment issues, and academic success (Parks et al., 2021; Bowes et al., 2017). For example, Schonfeld et al. (2015) underline that 49% (n=173) report having difficulty adjusting to college life. Student veterans' perception frames their overall college experience, thus reflecting on their academic success. Many studies indicate that their college experiences are negative, leaving them with a lack of appropriate resources to help them succeed in post-secondary college education. Student veterans encounter many challenges when transitioning from the military to college campuses. Student veterans ' academic success suffers without a robust support system from college campuses, faculty, boards of higher education, policymakers, friends, families, and the community. Unfortunately, the study finds that student veterans have the same negative experiences on college campuses, partially due to their mental conditions and veteran status, setting them apart from traditional students. The inadequate scope of studies examining college veteran students' transitioning from military life to college life and the mediating effects of these experiences warrants the

need to investigate further why negative experiences remain concerning, considering the influx of student veterans enrolling in college since the Post 9/11 GI Bill enactment.

Furthermore, Rattray et al. (2019) point out that those with mental disabilities requiring treatment take about seven years to complete the degree. Moreover, McAndrew et al. (2019) found that the perception of a lack of university support correlates with poor college adjustment. This mandates the need to explore further factors influencing their transitioning struggles and support for their academic achievement to promote their sense of belonging, erase their perception of being "different," and assess the outcome of their academic success.

Significance

Because student veterans are considered non-traditional, likely to be married with children (Elliot, 2015), and are older (Whiteman et al., 2013; Kirschner, 2015), come to college with different levels of life experiences and may have mental or physical disabilities (U.S. Department of Veterans Affairs, 2020; Fortney et al., 2016), they must have the necessary support from the members of higher education and who can pay particular attention to supporting their academic success by providing a positive and veteran-friendly campus to attain their degree successfully.

This study is also essential for the nursing field. It has implications for the nursing profession and the nursing school in universities. Some veterans may seek a nursing degree; therefore, members of the nursing department must support student veterans in their academic achievement to prevent the stigma and disconnectedness in those with psychological or psychiatric conditions. According to Fortney et al. (2016), student veterans have a higher prevalence of PTSD, depression, suicide, and drug use than

nonveteran students, especially among samples of OEF/OIF. This is noteworthy to the nursing department and college campus as a whole since psychiatric disorder in these samples is almost double compared to non-OEF/OIF veterans (Kaplan & McFarland, 2012).

The federal government provided financial support to improve the educational outcome of this unique population; hence, college campuses must reciprocate by providing a positive environment where they will feel they belong, are connected, and are wanted at their college of choice to help promote their academic experience, in hopes to transfer to academic success. Furthermore, Elliot et al. (2011) indicate that almost one-third of student veterans feel unfairly judged, over half do not fit in, and faculty consciously and unconsciously humiliate students; members of the nursing departments must join forces and intentionally make efforts with the member of the higher education board to create a conducive healthy learning atmosphere to enhance the lives of student veterans. It is problematic that student veterans with mental and physical disabilities struggle with everyday life and then endure the feeling of disconnectedness (Yeager & Rennie, 2021) at college campuses, making it difficult to reap the benefit of the GI Bill and academic achievement. Sullivan et al. (2021) found that those with increased social support, higher education, and meaningful military experience reported greater academic adjustment scores. Sheerin et al. (2019) also found that having greater education is a protective factor against psychiatric disorders. Therefore, it is essential for the school of nursing to provide a sense of collaborative campus community; at the same time, faculty understand their supportive role to student veterans, but the majority report not having the knowledge, skill, and self-confidence to support students experiencing psychological

distress (Albright et al., 2020). In essence, nursing faculties are frontrunners in promoting a nurturing, supportive, and welcoming milieu and providing a valuable education.

Many earlier studies concentrated on student veterans' reintegration struggles, campus experiences, and mental disorders. Still, the literature was unclear and inadequate in assessing their transitioning experiences, and academic outcomes were not evaluated (Ghosh et al., 2020). In fact, out of 24 articles, Ghosh et al.'s (2020) assessment identified that some quantitative studies lacked evidence of measure validity; therefore, the adequacy of capturing student veterans' college experience is unclear. There is a need to address the combination of their negative experience and academic outcomes rather than only identifying their transitioning experience to capture their overall academic success. Determining the intrinsic factors of their academic experience might help identify mediators of their academic success.

The results of this study can enlighten student veterans' knowledge by providing information on transitioning barriers many veterans experience from military to college life. In addition, the outcome of this study hopes to give members of higher education and faculties members of the nursing department evidence and knowledge to understand student veterans' experience in college better; furthermore, for faculties to deliberately promote a positive, supportive, and connecting student veteran with their peer to foster a sense of belonging and camaraderie on college campuses.

Purpose

This study examines the association between PTSD and MI and the extrinsic factors of the degree of negative patterns of healthy behaviors and negative experiences in an academic setting. Additionally, the moderating effects of social support on the

severity of PTSD, the extent of MI, and the perception of educational experience and academic success. Furthermore, this study examines, more specifically, the mediating effect of the intrinsic factors (perceptions of academic experience) on academic outcomes objectively and subjectively.

Moreover, network analysis is used to predict if student veterans' perception of their academic experience influences their academic success objectively (GPA) and subjectively (perceived academic success). Also, the evidence gained from this research will inform the higher education board and policymakers to recognize their struggles and be responsive to student veterans' needs when attending college. Additionally, it extends the work of other researchers interested in student veterans and higher education.

Given that PTSD and MI are related to these transitioning complications and the inadequacy of empirical research examining student veterans transitioning to the college campus and academic outcomes, the hypotheses are (1) student veterans with PTSD and MI will report more degrees of negative patterns of healthy behaviors and negative experience in an academic setting, and (2) a positive perception of academic experience will mediate the relationship between PTSD and MI and academic success scores objectively and subjectively, and (3) social support will moderate the relationship between PTSD and MI and the positive perception of academic experience and academic success.

Summary

Veterans are a unique population; transitioning to college can be a daunting experience for student veterans who are considered older, nontraditional, and have mental or physical disabilities. Being a veteran status differentiates student veterans from other

civilian counterparts with mental health complications of PTSD and MI. There has been a lack of research on student veterans noting their transitioning experience, including a lack of support, financial strain, disengagement, disconnectedness, and a sense of belonging or fitting in with peers on campus. Additionally, studies among student veterans in college transition with psychiatric complications are scarce. There are emerging themes of PTSD and MI symptomatology hindering academic success. Studies found that student veterans have negative health habits, negative experiences in the academic setting, a lack of social support, and a sense of belonging and connectedness. Student veterans ' academic success suffers without a robust support system from college campuses, faculty, boards of higher education, policymakers, friends, families, and the community.

Chapter 2

Literature Review

PTSD Symptoms

There has been a unanimous finding that PTSD and moral injury have an overlapping definition (Koenig et al., 2019; Currier et al., 2021) and are often co-occurring (Barnes et al., 2019). Moreover, individuals diagnosed with a lifetime "PTSD, major depressive disorder (MDD), and alcohol abuse/dependence" than those without a diagnosis have a higher score on all injurious moral measures (Nieuwsma et al., 2020, p. 245). The literature is distinct in the findings that PTSD is highly correlated with MI (Nieuwsma et al., 2020; Protopopescu et al., 2021; Battles et al., 2018; Kelly et al., 2019; Currier et al., 2021). Several studies indicate that symptoms of PTSD, such as anxiety or depression, contribute to adjusting or transitioning to college life or civilian life in general (Schonfeld, 2015; Norman, S.B., 2015; Elliot, 2015; Graf et al., 2015; McAndrews et al., 2019). However, Smith et al. (2017) found that regardless of veteran status, those with trauma have an issue fitting in. This was the most significant predictor among the n=455 sample, even having a small sample (n=61) in the study, Elliot (2015) found a similar result; those feeling not fitting in and trauma such as combat exposure are strongly associated among student veterans with symptoms of PTSD and depression.

Student veterans with PTSD exposed to combat are positively associated and highly correlated (Jakob et al., 2017) with mental health outcomes and troubling experiences (Campbell & Riggs, 2015; Elliot, 2015;) and have transitioning challenges (McAndrews et al., 2019; Gregg et al., 2016) and difficulty adapting to the civilian world after coming from the hierarchical military life (Bosari et al., 2017). A literature review

by Aldridge et al. (2020) identified the inconsistency in the findings that killing in combat was highly correlated with PTSD symptoms, while some literature did not find a statistical significance. Furthermore, exposure to combat among OEF/OIF veterans is associated with aggressive behaviors towards others, and chronic PTSD can exacerbate risky behaviors such as alcohol use and fighting 3-fold (Widome et al., 2011). Maguen et al. (2010) found that women in the OEF/OIF war era diagnosed with PTSD were older than 30. Maguen et al. (2010) also found that women who have never been married are more likely to be diagnosed with PTSD than men. Thus, as mentioned in multiple studies, social support is more likely to decrease social dysfunction and have adverse mental health effects. Elliot (2015) underlines that veteran students report having a lower level of PTSD if they are further along in their education, suggesting that greater education lowers PTSD symptoms. For instance, Norman et al. (2015) explored 31 veterans in a qualitative study and found that reintegration problems positively related to PTSD symptoms such as depression and anxiety.

Another study by Schonfeld (2015) discovered that student veterans (n=173), mainly of the white race (77%), frequently use alcohol and tobacco in PTSD with depressive symptoms, with depression being the highest percentage (53.8%). Finally, according to Elliot (2015), mental health issues were the most common predictor of negative experiences that student veterans face, which mirrors Ghosh et al. (2020) in a scoping review of 2288 articles, with 24 meeting the inclusion criteria of factors that influence student veterans' integration into higher education in the United States. Altogether, PTSD and associated symptoms contribute to veteran students' transitioning obstacles or are related to difficulties in college experiences.

Moral Injury Symptoms

There is no unanimous definition of moral injury (Currier et al., 2021), and is not categorized as a mental disorder (Barnes et al., 2019). However, several studies have found that moral injury is significantly associated with PTSD (Nieuwsma et al., 2020; Protopescu et al., 2021), alcohol, drug, and substance use disorder (Maguen et al., 2021), and suicidality (Nieuwsam, 2021; Ames, 2017). In addition, the number of deployments can exaggerate current suicidal ideation in those with mental health issues (Houtsma et al., 2017). Kelly et al. (2019) underscore that MI "significantly positively" predicts all mental health symptoms, such as depression, anxiety, suicidality, and PTSD, as well as hazardous alcohol use (p. 1), while Battles et al. (2018) resonate that a moral injurious event has a "significant total effect on all mental health outcomes" (p. 250). Wisco et al. (2016) studied 564 veterans and found a positive association between combat severity and all moral injurious event scales (MIES). Intriguingly, they also found that having higher education and higher income was negatively associated with two moral injury constructs of transgression to self and transgression to others, consistent with existing literature.

Contrarily, Protopopescu et al. (2021) found a correlation between self-reported MI and symptoms of PTSD avoidance cluster to experiencing challenges socially, suggesting that this may be due to guilty feelings. Similarly, Zerach & Levi-Belz (2021) found that exposure to violent situations such as combat correlates with MI outcomes of PTSS, guilt, and shame. To highlight the ill effect of moral injury, Nieuwsma et al. (2020) found that MI was robustly linked to the worsening outcome of PTSD, suicidality, depression, alcohol, and drug abuse in veterans (n=317) with a mean age of 37.48

(highlighting older generation). This echoes Maguen et al.'s (2021) study on combat veterans (n=1321), examining the relationship between a potentially moral injurious event (PMIE) and alcohol, drug use, and substance use disorder. Maguen and colleagues found that PMIE is associated with substance use disorder. Still, those with experiences of transgression or violation of one's moral code increase their odds of lifetime alcohol and substance use disorder. In contrast, drug and substance use have greater odds when experiencing witnessing others' moral transgression. Another interesting fact is that the sample for lifetime alcohol use and trauma exposure was younger, accounting for lower income and education levels (Maguen et al., 2012).

In contrast, Kelly et al. (2019) found no correlation between moral injury and drug abuse symptoms or gender differences in predicting mental health symptoms. Interestingly, the sample in Kelly et al. had 256 veterans; 67.6% were of the White race, and 92.6% had attended college. This evidence resonates with Wisco et al.'s (2016) result that being of a White race with a college education and having higher income had lower MIES scores. Similarly to Maguen et al.'s study, the mean age was 59 years old, suggesting that the prevalence of substance use was over decades rather than current in this study sample and is consistent with existing literature, referencing that student veterans are older.

Extrinsic Factors

Negative Experience in an Academic Setting

There are mixed results relating to student veterans' experiences on college campuses. Student veterans experience a lower sense of belonging (Durdella & Kim, 2012; McAndrew et al., 2019), a lack of social connection (Yeager & Rennie, 2021;

Bosari et al., 2017), isolation and feeling different, and keeping war secrets to avoid being stigmatized as having veteran status (Glover-Graf et al., 2010). To echo these experiences, Ghosh et al.'s (2020) scoping review investigating factors influencing student veterans' reintegration into higher education found establishing and maintaining social interaction with other students difficult. In contrast, in a nationally representative survey of Beginning Postsecondary Students Longitudinal Study, students felt they belonged to a college (Gopalan & Brady, 2019).

For example, Rattray et al. (2019) testify that veteran students reported difficulties in both senses of belonging and sharing personal thoughts (76%) and engaging with new friends (71%) among 38 veterans with a mean age of 33.6. This study's mean age is relevant, suggesting older age is a common denominator associated with these transitioning difficulties. Another argument Rattray et al. (2019) made was that some students describe their experience as positive if they have a supportive veteran service center (VSC), while other small universities lack these types of services (Taylor et al., 2016). In a phenomenological study, Yeager and Rennie (2021) suggested that having a VSC provided a meaningful transition, camaraderie, someone to understand their experience or someone like them, and a place where they felt they belonged. Student veterans reported having poor academic performance linked to having symptoms of PTSD (Boyraz et al., 2016) and a lower GPA compared to their civilian counterparts (Elliot, 2015; Durdella & Kim, 2012; Barry et al., 2014). Furthermore, student veterans enrolled part-time, transfer GPA, and institutional GPA are significantly related to stopping or quitting (Boyraz et al., 2016). However, Sansone et al. (2020) found no statistical difference between transferred veterans and non-veteran students at risk for

first stop (p = 0.40) and graduation (p = .90) in a four-year college. However, Sullivan et al. (2021) divulged that females and graduate student veterans reported having higher GPAs (n=128), consistent with Bryan et al. (2014); although sparse studies, existing works of the literature indicated similar results. On the other hand, there is consistency in the literature that nontraditional students were older (Trenz, 2015; Elliot, 2015; Whiteman et al., 2013; Kirschner, 2015).

Another negative experience proliferating in the literature that student veterans struggle with is financial hardship. Student veterans are in a unique position for academic success by having the economic benefits to fund their education with the assistance of the GI Bill. There are narrow studies that mention the financial struggles that veteran students experience. Having the GI Bill to fully finance student veterans' education and stipends for living expenses and school supplies, it is difficult to believe one would have financial struggles. Several studies revealed similar results regarding economic melees. For example, a mixed-method study by Taylor et al. (2016) investigated the perceptions of the college campus's assistive and supportive staff members. One participant reported that the GI bill process was a tedious, "labor-intensive and time-consuming process" in the qualitative portion of this mixed-method study (Taylor et al., 2016, p. 56). Similarly, from a veteran students' perspective in a mixed-method design study, Rattray et al. (2019) declared that student veterans (n=38) expressed their frustration with the payment timing of the GI bill. However, the authors also mentioned that student veterans must pay upfront for their tuition while processing the GI Bill. Another interesting fact relating to veteran students with PTSD is that Elliot (2015) reports that financial hardship and college performance dissatisfaction are associated with PTSD. In a study by Zepp et

al. (2018) examining coping strategies and GPA, they found that financial stress negatively influences GPA (Zepp et al., 2018), where every unit increased in financial stress, GPA decreased by 0.04 points. The authors also found that one feels that having adequate income positively affects GPA. Although this study is not on student veterans, it highlights how stress plays a crucial role in academic success.

Gregg et al. (2016) conducted a pilot study exploring barriers and support of veteran students (n=13:11 males and two females) transitioning to post-secondary education. They reported student veterans experience financial stress (38%). Although a small sample, the experience was over a third of the sample. A study by Albright (2019), in a larger sample (n=114,816: 74,762 female and 37,751 male), unearthed that female veteran students were more likely to report financial issues as contributing factors to their academic performance. Interestingly, veterans' annual family income is relatively lower than civilian peers (Durdella & Kim, 2012). In addition, Gregg et al., 2016) mentioned that veterans who leave the military no longer get 'consistent paychecks' or wages (p. 96). This evidence solidifies Ghosh et al.'s (2020) scope review of student veterans integrating into higher education, with financial hardship as one of the emerging themes. Altogether, studies mentioning financial hardship are scant. These findings indicate that being a student veteran and having federal financial support, such as the GI Bill, does not eliminate their financial struggles.

Degree of Negative Patterns of Healthy Behaviors

Student veterans diagnosed with PTSD or compounded with MI symptoms are at risk for numerous negative patterns of healthy behaviors such as maladaptive substance abuse behaviors, suicidal ideation/attempts, aggression, sleep disturbances, and negative

dietary behaviors. Because student veterans are more likely to have symptoms of PTSD, these unhealthy behaviors predispose student veterans to adverse health and academic outcomes.

Substance Use

Veterans with mental health issues are an at-risk population (Hall et al., 2015). For example, those diagnosed with PTSD and co-occurring MI are associated with poor health habits such as substance abuse. Additionally, those diagnosed with PTSD in the past year were associated with a high risk of drinking alcohol (Widome et al., 2011). At the same time, risky health behaviors are accentuated for individuals diagnosed with chronic PTSD. These maladaptive behaviors lead to poor academic performance for student veterans trying to gain an education (Bachrach & Read, 2012; Whiteman et al., 2013).

Moreover, Nieuwsma et al. (2020) found that MI was robustly correlated with PTSD, drug, and alcohol abuse. As mentioned, PTSD and MI are interconnected, and the effects of their symptoms are also interrelated. On the other hand, Maguen et al. (2021) found that MI correlated to substance disorders. Still, among U.S. combat veterans, alcohol use disorder is linked to PTSD and combat exposure severity, echoing Widome et al. (2011). Approximately 76% of veterans (n=2463) reported four or more lifetime traumas. Since combat trauma is highly associated with PTSD (Jakob et al., 2017), this is a significant finding, as it is also interlinked with MI.

Maguen et al. (2021) underlined that those who experience potentially moral injurious events (PMIES) in the domain of perpetration had increased odds of substance use disorders, the domain of witnessing is associated with drug use disorders, and the

domain of betrayal is associated with alcohol use disorders. According to the National Institute on Drug Abuse (2019), veterans are more likely to use alcohol over 56.6% than nonveterans of 50.8% when comparing gender, age, and geographical area. Grossbard et al. (2014) studied student veterans (n=1679) and found that 72% consumed alcohol in the past month and 41% endorsed high-risk drinking, while deployment increased the percentage; the deployment to OEF/OIF was significantly higher. Furthermore, binge drinking was common in deployed veterans (Grossbard et al., 2014). Contradictorily, Barry et al. (2012) found no difference between veterans and civilians in the frequency of drinking but noted that problematic drinking and sex were significant in female veterans compared to male veterans. Although there are some inconsistencies in the literature on student veterans' unhealthy habits, there is substantial evidence that the veteran population endorsed these unhealthy behaviors.

Sleep Dysfunction and Disordered Eating

Two of many negative patterns of healthy behaviors that student veterans experience are sleep disturbances and unhealthy eating behaviors, which are understudied in student veterans with PTSD. There have been reports that veterans diagnosed with PTSD have frequent complaints of sleep disturbances (Khazaie et al., 2016) and a prevalence of unhealthy eating behaviors or eating disorders compared to the general population (Etuk et al., 2022). Moreover, according to Maher et al. (2006), 87% of those with PTSD report sleep disturbances. Ghosh et al. (2020) found similar results that sleep disorders cause transitioning issues to student roles in the classroom in a scoping review of 2,288 articles.

Insomnia is the most prevalently reported among veterans of many sleep disturbances, especially in combat-exposed veterans with PTSD. On another note, insomnia is also found in high-level combat-related veterans with PTSD coupled with alcohol use (Wright et al., 2011). On the same note, combat-exposed veterans with post-deployment insomnia reported having alcohol problems (Wright et al., 2011). Wright et al. (2011) further mentioned that insomnia severity strongly predicts PTSD with post-deployment and combat exposure. Other sleep disturbances include nightmares, sleep-related movement, breathing disorders, and other parasomnia disorders beyond this study.

Moreover, there is evidence that eating disorders are prevalent among veterans (Slane et al., 2016). Richman (2018) reports that disordered eating (abnormal eating behavior) is more common than an eating disorder; while they are related, an eating disorder is a more severe condition. To echo Richman's (2018) finding, Etuk et al. (2022) found that veterans who report binge eating (6.5%) and overeating (8.9%), with overeating having a higher percentage than those having the diagnosis of binge eating disorder (3.7%). However, the author did not find a relationship between PTSD and disordered eating. However, Slane et al. (2016) found that those who self-reported disordered eating had a significantly higher rate of PTSD. A systematic review by Hall et al. (2015) indicated that PTSD predicts eating behaviors. PTSD and depression severity are associated with lifetime binge eating disorder and Bulimia Nervosa in veterans, particularly a higher percentage in females (Litwack et al., 2014). Although studies discussing eating disorders or sleeping disorders is beyond this study, and studies on eating disorders or unhealthy eating behaviors of veterans are not well studied; however, the noteworthy veterans' patterns of unhealthy sleeping and eating habit are highlighted.

Overall, adequate duration and quality are required for optimal sleep (Saguin et al., 2021), and a healthy diet is vital to the mental and physical well-being of veterans (Saguin et al., 2021; Oster et al., 2017), primarily to function daily at an optimal level. Graf et al. (2014) found that 38.1% (n=215) reported difficulty falling asleep. Cornwell and Waite (2009) found that perceived disconnection and isolation are attributed to those with health disadvantages; in general, those who attended college perceived less isolation and reported being in better health.

Lack of Social Support

Existing literature on social support is adequate, but a more comprehensive study is needed when looking at various sources of support for student veterans transitioning to higher education. For example, Ghosh et al. (2020) found that of nine articles, six mentioned themes of lacking college institutional support and inadequate staffing support to process educational benefits, and a few studies addressed peer support (veterans) and sources beyond academic institutions, such as family and civilian friends. However, several studies found that social support from friends and family (Elliot, 2015), children and spouses (Rattray et al., 2019), significant others (Snaider et al., 2017), and military peers (Wilcox, 2010; Lehavot et al., 2013) are associated with decreasing PTSD symptomatology.

Family and Friend Support

Elliot (2015) found that social support from friends and families was negatively associated with depression and PTSD among student veterans (n=626). Additionally, Elliot (2015) also found student veterans report fewer troubling experiences when friends and family are added to the analysis (Elliot, 2015); these study results are consistent with

prior studies. In another non-experimental correlation study, Eakman et al. (2019) noted that regardless of service-related health challenges, social support lessens financial worries and PTSD symptoms among injured veterans (n=26), consistent with Elliot et al. (2015). Furthermore, social support has been shown to affect academic achievement, positive campus adjustments, and decrease symptoms of PTSD (Eakman et al., 2019; Laws et al., 2018). One study remarkably noted that marital status (being married) significantly has a positive effect on GPA (Whiteman et al., 2013), mirroring Sheerin et al. (2019) concerning being married and having social support as a protective factor.

Another exciting development that Sullivan et al. (2021) found was that having a lack of social support and deployment were significant predictors of poor social adjustment among student service members/veterans (SSM/Vs.; n=128) enrolled in post-secondary education. Of a few qualitative studies, Rattray et al. (2019) noted that six of the seven veteran students cared for their children and used them as a social support motivation. Another participant in this study expressed how his wife and son were his salvation as a successful student (Rattray et al., 2019). Social support from various sources has been noted to be effective in mitigating PTSD symptoms and in academic achievement (Tayfur & Ulupinar, 2016) and financial hardship (Robbins et al., 2004; Eakman et al., 2019). Of note, in a meta-analysis of 109 studies examining the correlation between the study skills factor and psychosocial and college outcomes, the authors found that as social support increases, their academic achievement is higher (Robbins et al., 2004). Although this study is unrelated to veterans, it is imperative to note that social support impacts academic achievement.

Peer Support

Several studies highlight the importance of peer support (veterans) on college campuses. Finding support groups like themselves is a struggle for student veterans (Cunningham, 2012). In a literature review, Barry et al. (2014) established that student veterans perceived lower civilian peer support, consistent with earlier research. Gregg et al. (2016) noted the importance of building friendships and strategies in social support for meaningful academic experience. Whiteman et al. (2013) found that more emotional support from peers reported a higher GPA. Elliot (2015) underscores the importance of social support from veteran friends and family, and nonveteran friends correlate with fewer PTSD symptoms; samples consisted of married (57.8%) and steady boyfriends or girlfriends (46.3%, 11.5%, respectively). Overall, peer support was noted to be a significant factor in academic success. Overwhelming research suggests that student veterans desire to meet with other student veterans (DiRamio et al., 2008; Wilcox, 2010; Kirschner, 2015; Lehavot et al., 2013).

Institutional Support

Literature concerning campus support needs to be more extensive. For example, one phenomenology study declared that student veterans (n=13) report limited use of veteran support centers, suggesting not seeking help (62%; Gregg et al., 2016), signifying that post-deployment student veterans are autonomous and using their attributes gained from the military as their source of support, rather than peers or college institutions, which is consistent with Olsen et al. (2014). On the contrary, in a qualitative study, Yeager and Rennie (2021) noted the importance and advantages of having social support through a military and veteran center (MVC), providing a place for camaraderie, and sharing similar ideas with other veteran students.

Another study detailed veteran students reported feeling "ignored" or "undervalued" by their academic institutions (Williams-Klotz & Gansemer-Topf, 2017), although the sample in this study were first-year undergraduates (n=335) students. The author mentioned that being a first-year, a new student on campus might contribute to this experience versus a graduate student who has college experience and understands the college dynamics. The perceived lack of social support from the academic institution was due to campus staff needing to be more competent in processing GI Bill reimbursement or having a veteran center on campus for student veterans to conglomerate or find someone with similar background experiences to associate with. Fernandez et al. (2019) found evidence that students have 2.65 more odds of leaving their university due to feeling devalued by their faculty versus 1.78 times greater odds if they felt less valued by their peers among 400 student veterans. This reiterates the importance of faculty support on college campuses. Contradictorily, Graf, et al. (2014) found that student veterans would not consider leaving based on negative experiences on campus; in their study, 75% (n=215) received outside support, such as from friends, family, supervisors, and co-workers. This study had 63.7% undergraduates and 83.3% living with friends or family, explaining why some could have a high percentage of assistance from outside the college institutions. According to Bean and Eaton (2000), the role of faculty is to shape students' perception of fitting in and sense of belonging to the institution.

The context of social support from friends, family, and peers in this study is operationalized as having the availability, perceived someone cared, loved, valued, or help cope with a stressful event or provide everyday communication in a relationship or a network of social connection, gathered and synthesized from previous studies (Shelton,

2003; Mana et al., 2022). Shelton (2003) indicated that social support from faculty in the study included psychological and functional support. Shelton (2003) gathered that psychological faculty support encompasses providing care, being valued, approachable, encouraging, and conveying confidence, honesty, and non-judgmental. Furthermore, functional faculty support constituted of the availability of self or resources, engagement, constructive feedback, and reasonable expectations to students that fit their needs at that time gathered and synthesized from literature (Shelton, 2003; Mana et al., 2022; Kirschner, 2015). To some veterans, a faculty plays a pivotal role in providing support because, being in the military, their family might not be available due to the nature of their duty station changing frequently. Faculty and educators are used interchangeably in this study.

Overall, studies on perceptions of social support are insufficient, sources of support benefits need to be more consistent among student veterans in higher education, and most of the studies are cross-sectional. However, most of the social support literature notes the positive benefits in academic success, alleviating financial hardship, and lessening PTSD symptoms. Studies indicate that 62% of student veterans perceive a lack of social support from college institutions (Gregg et al., 2016); therefore, academic institutions must influence their perception of student veterans to achieve the feeling of being supported. Social support is fundamental to staying healthy mentally, psychologically, and socially. Of note, perceived excellent health is associated with perceived social connection and a high level of social support (Cornwell & Waite, 2009).

Intrinsic Factors

There is a growing body of knowledge on student veterans' perception of their academic experience correlating with academic achievement, implicating higher education boards to promote veteran-friendly and inclusive campuses. However, there is an insufficient body of literature focusing on student veterans' intrinsic factors impacting academic outcomes; although existing studies highlight their negative transitioning experience impacting their academic success, studies of intrinsic factors of academic self-efficacy, connectedness, sense of belonging, and inclusivity affecting academic outcomes from these experiences are even more minute among student veterans as a whole. Therefore, these constructs were chosen based on existing literature findings among student veterans' perceptions of their academic experience. Since academic performance is positively influenced by their mindset, which is defined as self-efficacy, academic motivation, and sense of belonging" (Farruggia et al., 2018, p. 310), academic institutions and scholars should consider promoting factors that influence their perception of their academic experience, thus translating to altering their mindset or attitude, eventually academic achievement. In the current study, the perception of the academic experience is operationalized as academic self-efficacy, connectedness, and sense of belonging, extending some part of Farruggia et al.'s (2018) definition.

Using regression analysis, Sullivan & Yoon (2020) found that only *Connection to Others* significantly predicts self-efficacy ($\beta = .29$, $P < .05$) when comparing two other independent variables of self-efficacy with *Motivation* and *World views* among student veterans in higher education (n=97). This evidence demonstrates the importance of connecting with those on campus, which may impact self-efficacy, consequently transferring to academic self-efficacy and, ultimately, academic outcome. Lee and

Robbins (1995) indicated that individuals who struggle with connectedness lead to isolation, and trauma could cause a regression to an "earlier form of functioning," leading to a "profound lack of belongingness" (p. 233).

Yet, unlike traditional students, the complexity of combat-related trauma can also affect student veterans' perception of their academic experience. To tackle academic success, this researcher investigates student veterans' academic outcomes to determine whether the perception of their academic experience (academic self-efficacy, connectedness, and sense of belonging) will influence student veterans academic success outcomes (objectively and subjectively). Because belonging positively and robustly correlates with college outcomes (Gopalan & Brady, 2019), understanding student veterans' perceptions of their academic experience can explain their overall academic outcomes. Some definitions are interrelated and overlapping; for example, social connectedness is the "experience of belonging and relatedness between people" (Van Bel et al., 2009, p. 67). In this case, a sense of belonging is characterized as being accepted, valued, valued in involvement, and fit within an academic institution (Haggerty & Patusky, 1995; Holloway-Friesen, 2021; St. Amand, 2017). A literature review of 130 articles by Bosari et al. (2017) evaluated the challenges of student veterans' retention and academic performance. It stated that student veterans have difficulty with social connections partly due to unpleasant or intrusive civilian peer interaction. It expressed that civilian peers lack appreciation, resulting in uncomfortably integrating with the civilian peer lifestyle and, instead, identifying themself with other veterans. Altogether, these experiences can leave students feeling a lack of belonging, disconnected, exclusive, or being different.

Scholars indicated that colleges and universities needed to frame teaching, services, and support towards diversity and inclusivity (Danowitz & Tuitt, 2011; Martinez-Acosta & Favero, 2018). According to Martinez-Acosta & Favero (2018), inclusivity is not quantifiable but a feeling or a "belief that one's experience and training are respected by those around you and that your participation provides a unique perspective that helps create better solutions" (p. A253). As demonstrated by Elliot 2015, student veterans feel they do not fit in and thus lack a sense of belonging. McAndrew et al. (2019) illuminated that the feeling of not belonging accounts for a significant effect (46%) of college adjustments. At the same time, Sullivan and Yoon (2020) found that harnessing strength fosters inclusion. Because curriculum in higher education should not be a "one-size-fits-all approach," neither should the college environment (Prevatt et al., 2011). Since student veterans are nontraditional students with diverse demographics and varying background experiences (Sullivan & Yoon, 2020), higher education educators must implement approaches to foster inclusivity but nurture and value the skills learned from the military.

Academic Success

Academic success is a broad construct used in many studies concerning higher education. Traditionally, GPA and academic achievement are constructs used to define academic success in an academic institution (York et al., 2015) and have been well-studied, however insufficient among student veterans. Academic success is conceptually defined as a student's performance based on the student's self-reported GPA in previous academic literature (Turner et al., 2009; York et al., 2015; Prevatt et al., 2011). However, academic success has not been clearly defined and accurately measured. Still, York et al.

(2015) proposed a comprehensive definition beyond a theoretically grounded GPA (York et al. 2015). Equally, Prevatt et al. (2011) stated several ways to determine academic success, such as motivation, career decidedness, academic skills, emotional and psychological factors, and social and interpersonal factors. However, there is a dearth of literature measuring academic success instruments that are well-validated besides GPA (Prevatt et al., 2011). The current study applied the combination of the newly developed ASICS (Academic Success Inventory for College Students) instrument and GPA level to capture York et al.'s (2015) refined definition of academic success and student veterans' struggles.

According to Prevatt et al. (2011), the ASICS instrument measures academic success accurately and comprehensively rather than solely relying on GPA by evaluating many areas of functioning in college students (Prevatt et al., 2011). A study by Ndoye et al. (2020) among 243 undergraduate students found that personal adjustments and internal motivation predict college students' academic success. This evidence grounds this study on the importance of fostering students' transition to the college environment. Similarly, Ahmad et al. (2019) found that high performance was perceived by personal adjustment to their school surroundings and perceived instructor efficacy among high-performing Malaysian students (n=305). They indicated that the perception of their instructors' effectiveness contributes to their academic success (Ahmad et al., 2019).

It is known in the literature that student veterans have different college experiences than traditional students. Student veterans' perception of their academic experience feels a lower level of sense of belonging (McAndrew et al., 2019; Elliot, 2015) and inclusivity (Bosari et al., 2017), as well as a higher level of disconnection

(Yeager & Rennie, 2021). Additionally, a literature review evaluating the challenges of student veterans' college transition and efforts to facilitate retention and academic performance is noteworthy since Student Service Members/Veterans (SSM/V) drop out in the first nine months (Bosari et al. (2017).

Academic achievement or academic success and academic self-efficacy along with GPA have been well documented (Hsieh et al., 2007) among college students; however, they are limited among student veterans. Academic success is defined as academic achievement, attainment of learning objectives, competencies, satisfaction, acquisition of desired skills, persistence, and post-college performance (York et al., 2015). An analytical literature review conducted by York et al. (2015) is a comprehensive review detailing the definition and operationalization of academic success using Astin's I-E-O model to produce a new proposed definition and conceptual model. The authors point out that Astin's I-E-O is explained as Input-Environments-Outcomes. To solidify the application of the first concept of the stress process theory, self-concept, York et al. (2015) added academic self-concept, encapsulated in the inclusive definition of academic success of attainment of educational objectives, while the perception of the learning environment was captured by the broader term satisfaction. Ndoye et al. (2020) found that personal adjustment is linked to academic success, most likely due to internal motivation translating to self-efficacy.

The current study defines academic success as defined by York et al. (2015). Because there is a paucity of scholarship addressing student veterans' academic success and outcome, to understand better what it means to succeed in the eyes of student

veterans, *GPA* will be used to assess their objective, while *perceived academic success* as a subjective operationalization definition of academic success.

Self-efficacy, defined by Bandura (1977), is evaluating one's own competence to complete a task successfully to be able to reach a desired outcome. This suggests that if one has self-efficacy, through the positive and supportive experiences they gained from their environment, contextually, they can feel valued, ultimately defining their self-worth. According to Bong and Skaalvik (2003), self-efficacy and self-concept share a similar definition with subtle distinctions conceptually and apply to academic self-perception. In fact, the authors state that "self-efficacy is an active precursor of self-concept" (p. 30) and that "both constructs have been useful in predicting similar outcomes" such as motivation, emotion, and performance (p. 28).

While academic self-efficacy is the belief in one's ability to engage in behavior to reach the desired goal of college-related activities (Gore et al., 2007), some studies point out that academic self-efficacy and a sense of belonging are related to being mentored, in other words, being supported (Holloway-Friesen, 2021). In a meta-analysis of 109 studies, Robbins et al. (2004) revealed that academic self-efficacy has been well studied and is associated with college GPA. Distinctly, GPA is the best predictor of academic self-efficacy and achievement motivation. This is a significant finding, considering student veterans have different levels of experience in the military, supporting their merits. Their sense of inclusivity, along with connection, sense of belonging, and self-efficacy, are perceived as being valued. Using regression analysis, a most recent study by Shirley et al. (2022) emphasized that academic self-efficacy has a direct path in predicting GPA and PTSD severity, revealed in using path analysis of college student

service members and veterans (CSSV; n=412). Similarly, Hsieh et al. (2007) found that perceived academic self-efficacy significantly predicts GPA, emphasizing that self-efficacy alone predicts GPA (adjusted R^2= .12, P<.001) among 112 undergraduate students in a Hispanic serving institution. Given that Hispanics are considered a minority and are underrepresented, this finding is relevant in similarly characterizing student veterans as being an underrepresented population.

Unique to being a military veteran, it is difficult to be inclusive to the general population on campus, particularly among those with mental or physical disabilities (Sullivan & Yoon, 2020). Due to the lack of or insufficient robust data describing student veterans as a population, stereotyping of this population is common; therefore, student veterans feel stigmatized (Vacchi & Berger, 2014). Vacchi and Berger (2014) noted that student veterans are between the ages of 24 and 39, while traditional college students are between 18 and 23 and have different life experiences. Dean et al. (2020) indicated student veterans have varying levels of maturity, differentiating and leaving them feeling exclusive from their civilian peers. Scholars mentioned that when a college institution creates an inclusive, supportive environment, students feel a sense of belonging, connection, and higher college self-efficacy (Holloway-Friesen, 2021; Hurtado et al., 2015; Olsen et al., 2014). Therefore, enhancing students' sense of belonging is paramount to promoting success and engagement (St. Amand et al., 2017).

A study by Hurtado et al. (2015) examined 20,460 students of The Diverse Learning Environments Survey and found that students who feel valued and recognized feel a sense of belonging; however, this study was among civilian students, but the evidence of feeling valued and recognized demonstrates the correlation to a sense of

belonging. Because there is sufficient data on self-efficacy linked to academic success in the civilian population, it's evident that self-efficacy should be promoted in student veterans.

Furthermore, those with good academic status versus those on probation have significantly higher self-efficacy judgment scores, suggesting they endorse stronger beliefs about completing academic tasks compared to those who do not have a higher self-efficacy score (Hsieh et al., 2007). This evidence validates that student veterans who perceive having positive experiences on campus, such as feeling valued, belonging, included, or connected on the college campus, perceive academic success. In addition, a study notes that satisfaction with college experience determines students' "persistence and performance" (p.188) likely to progress in academic achievement if they are satisfied with their college experience (Gerardi, 2006). That said, students are more likely to perform based on their perceptions influencing their internal motivation (Ndoye et al., 2020).

In conclusion, to successfully develop self-efficacy, student veterans must be surrounded by a positive, diverse, inclusive environment to promote a positive perception of academic experiences and consequently achieve academic self-efficacy, promoting connectedness, a sense of belonging, and inclusivity and aim for an environment friendly for all.

Framework

The Stress Process Theory/Model lays the groundwork for this study to explain the association between PTSD and MI, exposure to stressful transitioning events, social support, perception of academic experience, and outcomes. Because some student

veterans have been exposed to combat and diagnosed with PTSD, transitioning into a college environment can be more stressful than most. For some student veterans, the combination of stressful life events from exiting military life and entering college life, especially for those with mental health issues, can lead to adverse health outcomes. Student veterans are exposed to multiple stressors, such as financial hardship, feeling unsupported, making new friends, and being in an unstructured environment. One must achieve academic self-efficacy to define one's self-concept to achieve academic success.

Conceptual Framework/Model

The conceptual framework of the overall experience of student veterans transitioning to college is related to academic achievement in college: the severity of PTSD and the extent of moral injury symptoms are positively associated with the extrinsic factors (degree of negative patterns of healthy behaviors, degree of negative experiences in the academic setting, and lack of degree of social support) negatively mediated by the intrinsic factors (the perception of academic experience) and positively impacting the outcomes of academic success objectively and subjectively (**See Appendix A**).

Stress Process Theory/Model

The Stress Process Model (SPM) conceptualizes that exposure to stressors, such as life events and life strain, affects the self-concept, which is mediated by social support; if a disruption occurs through the process, it can lead to poor health outcomes (Pearlin et al., 1981; Greene, 2009). Hagerty and Patusky (1995) found a low sense of belonging in the depressed group, substantiating the application of this theory. Self-concept in the context of self refers to veterans' perception of themselves, their role in society, and how

they are valued. Stressors from combat exposure leave many veterans with difficulty transitioning into civilian life and the classroom environment (Elliot et al., 2011). The SPM consists of three components: source of stressors, mediator, and outcomes (Pearlin et al., 1981). The SPM has substantial empirical support among researchers internationally and is applied in various samples (caregivers, veterans, employees). For example, Ice et al. (2012) explain how grandparents in a caregiver role caring for their grandchildren cause stress and result in perceived psychological stress, increasing anxiety and cortisol levels, especially among females.

The complexity of the stress process theory has evolved in its construct and application, but the concept underpinning its importance still applies today. The guiding efforts of the SPM will help illuminate student veterans' experiences concerning academic success and how self-efficacy and self-concept, social support, healthy habits, PTSD symptoms, MI, and GPA play a vital role in the process. The SPM supports the significance of how traumatic events can cause symptoms of stress, anxiety, depression, and “clinical significant distress or impairment” as seen in PTSD individuals (Lentz, 2013, p.32). PTSD is a mental disorder found in veterans who served in combat (Ames et al., 2019), manifested by numbing avoidance, hyperarousal, and re-experiencing of traumatic events (Smith, Schurr, & Rosenheck, 2005). While MI is not a mental disorder but is found in veterans and active-duty military with PTSD, over time, they influence each other (Koenig et al., 2019).

MI plays a crucial role in maintaining and treating PTSD due to its interrelating demarcation (Koenig et al., 2019; Koenig et al., 2018). Because MI is associated with PTSD symptom severity, anxiety, and depression leading to the risk of suicide,

altogether, it can affect mental health and academic outcomes. In addition, these symptoms can lead to other maladaptive risk-taking behaviors (smoking, drugs, and alcohol abuse) that can cause physical harm (Tsai & Rosenheck, 2015; Harris et al., 2017). Higher education is more likely to encourage individuals to choose healthier lifestyles and coping techniques. According to Elliot and Lowman (2015), higher education students are less likely to misuse alcohol and can cope with a crisis because they have perceived personal control over their decisions. Stress is inevitable for veterans exposed to combat, and managing stress during the educational process and transitioning may be challenging. Promoting higher education and alleviating stressors during the educational process leads to academic success and fosters reintegration and immersion in college campuses. Managing stress during the educational process and transitioning may be challenging. Promoting higher education and alleviating stressors during the educational process leads to academic success and fosters reintegration and immersion in college campuses.

The first SPM concept is a source of stressors (life events and life strain). To understand the manifestation of stress is to understand the definition of stress and how it is measured. Stress, as defined by SPM, is the "response of the organism to a condition that, either consciously or unconsciously, are experienced as noxious," and the events that lead to stress can change a person's role; the adverse effects of stress can lead to depression (Pearlin et al., 1981, p.341). Greene (2009) argues that stress comes in different forms and that severity and stress moderators produce different outcomes. Elliot et al. (2011) noted that stressors and challenges in accessing resources on a college campus influence an individual's mental health directly and indirectly. Source of stress,

such as life events, in this context, college transition can lead to life strain, if chronic, will lead to a lifelong effect, eventually depression. Recognizing subjective and objective primary stressors, one can declare that a secondary strain (family, social, and professional) affects the self-concept (Judge et al., 2009). Student veterans have different experiences while serving in the military. While some experience the effects of combat stress (PTSD and MI), others may have the combination of exiting the military life and transitioning to college life with having a family, raising children, and working a full-time or part-time job while attending college. Adopting a friendly, supportive, and welcoming matriculation process for student veterans will help veterans achieve a sense of connection, belonging, and overall academic self-efficacy; educational institutions can prevent early attrition and promote academic success and completion.

The second concept of the stress process theory is the mediator of stress (social support, academic self-efficacy, and positive perception of academic experience). The mediator of stress is known as coping resources, including personal resources and social support. Personal resources focus on self-esteem and mastery, suggesting having self-control and achieving self-concept (Pearlin et al., 1990). Pearlin et al. (1990) stated that one suffers from depression if hardship occurs. In this study, personal intrinsic factors such as academic self-efficacy, connectedness, and belonging are the context of one's perception of academic experience. Social support encompasses perceived support, meaning how one views having the availability of trust and intimacy among married and nonmarried relationships (spouses, friends, or relatives). Several empirical studies indicate that social support (family and military peers) significantly predicts PTSD symptoms (Wilcox, 2010; Klaric et al., 2008; Sheerin, 2019; Eakman, 2016). Pearlin et

al. (1981) emphasize the combination of sustaining self-esteem and mastery; one can inhibit the pathway to depression, thus "neutralize any or all of its antecedent condition" (p.348). In other words, one can assume that by combining positive experience and social support can arbitrates the effects of stressful life events, in this case student veterans experiencing stress when attending college with prior mental health conditions having transitioning issue can subsequently lead to having a lower self-concept. While student veterans are much older than traditional students, the stress of having a family, keeping a job to support a family, and accumulating additional pressure from going to college will only further lessen their chances of academic achievement.

Traditionally, the third concept of the stress process theory is related to health outcomes (mental and physical health); however, this study looks to expand the stress process theory by applying it to educational attainment outcomes for student veterans. The construct of outcome in the SPM is drawn from the previous framework, including the notion of well-being mentally and physically as a role necessary to function in society (Pearlin et al., 1990; Hish et al., 2019). As student veterans transition to the campus environment, the ability to engage and excel in academic pursuits plays an integral role in functioning in that literary society. Veteran students who experience PTSD-associated symptomatology and MI can experience challenges that prevent them from transitioning to the campus environment, thus potentially leading to a poor academic outcome. Many student veterans experience traumatic events and atrocities while serving in the military and, therefore, have a negative predisposition before stepping on campus. They are more likely to have preconceived notions of being different from these dispositions, thus coming with a poor self-concept. By providing a positive learning environment, including

social support, a sense of belonging, and connectedness, college campuses can gain a positive designation for their services, in addition to changing the perception of student veterans' learning environment and developing self-concept and self-worth (Guo et al., 2022; Tentama & Jayanti, 2019).

Given that many veterans have symptoms of PTSD and MI, impaired mental and physical well-being puts them at a disadvantage. The stress process theory is a guiding theory to understanding the relationship between PTSD and MI influencing the degree of a negative pattern of healthy behaviors, negative experiences in an academic setting, and the degree of social support and academic success outcome among student veterans. Drawing upon the SPM can guide veterans with strategies to understand pre-existing stress sustained from military combat, negative experiences from college transition, perception of their academic experience, and academic outcomes.

In summary, the current study explores how PTSD and MI relate to the negative college transitioning experience, healthy habits, and lack of social support mediated by the student veterans' perception of academic experience to explain academic outcomes objectively and subjectively. Many studies indicated that PTSD and MI are correlated with transitioning to the college campus and academic success. Academic success is defined by York et al. (2015) as having all-encompassing academic achievement, attainment of learning objectives, competencies, satisfaction, acquisition of desired skills, persistence, and post-college performance. Additionally, academic self-efficacy, social connectedness, and sense of belonging play a role in student veterans' academic experience. The Stress Process Model strengthens this study by providing concepts to understand better student veterans with PTSD and MI, the extrinsic factors of their

college experience associated with their transition, and intrinsic factors guiding their overall academic success.

Chapters 3

Methodology

This section will cover the research design, setting, recruitment strategies, characteristics of the samples, data collection instruments and procedures, and protection of the human rights clause. To examine the association between PTSD and MI between the degree of negative patterns of healthy behaviors, negative experiences in an academic setting, and degree of social support; and the mediation of perceived academic experience to predict the outcomes of academic success (objectively and subjectively), a partial correlation network will be used to display the magnitude of the matrix among the variables being studied.

Hypotheses for this study include:

(1) Student veterans with PTSD and MI will report more degrees of negative patterns of healthy behaviors and negative experiences in an academic setting.

(2) A positive perception of academic experience will mediate the relationship between PTSD and MI and academic success scores objectively and subjectively.

(3) Social support will moderate the relationship between PTSD and MI and the perception of academic success and positive perception of academic experience.

Research Design

This study uses a non-experimental cross-sectional correlational design to examine how PTSD and MI are associated with extrinsic factors mediated by intrinsic factors to predict academic success outcomes. A correlational design examines multiple variables and their relationships and interactions. In this case, do PTSD and MI influence the extrinsic and intrinsic factors predicting academic outcomes? Furthermore, a cross-

sectional correlational study provides a snapshot at a point in time, aiming to seek differences in characteristics of a population whether its subject has been "exposed to an event of interest" in a natural environment (Lau & Kuziemsky, 2016).

Subjects and Settings

The target population for this study was college student veterans enrolled at two different large public universities in the Midwest region of the U.S., obtained through convenient and snowball sampling. The reason for convenient sampling was to determine if the proximity of the military installation to Illinois and Missouri made a difference in support services. Permission was granted and supported by veteran center coordinators, the graduate school of nursing committee members, and the Institutional Review Board (IRB). Potential participants were recruited from each university's veteran center and via online link on posted flyers.

Additionally, flyers were posted throughout the campus and at the veterans' centers of both universities, with an attached link to access the survey, information to access computer technology for those without access, and contact information to reach the research team. The participants were sent a survey (**See Appendix B**). By responding to the survey, participants gave informed consent to participate in the study. Confidentiality was maintained for all participants by a designated six-digit number and letters on the surveys, which excluded participants' personally identifiable information unless they wanted to participate in an Amazon gift card drawing (email and only first names are requested in a separate unlinked questionnaire). Participants who completed the survey and provided contact information for the drawing were placed in a drawing to win a $25 gift card. Ten Amazon gift cards were used for the drawing at each veteran

center location. All returned surveys were stored on the password-protected computer of this researcher.

Inclusion and Exclusion Criteria

Inclusion criteria are self-reporting veterans of any ethnicity ages 18 and older enrolled in a four-year university. In addition, any student who is a former member of the active-duty military, National Guard, or Reserves, regardless of deployment status, combat experience, legal veteran status, or GI Bill use, is studying on a college campus. Exclusion criteria were those under 18 years of age and those who have never been enlisted or commissioned in the military and are currently active-duty military. The time frame for data collection was five months, and each veteran coordinator emailed a survey reminder every 3-4 weeks, allowing ample time for the participants to return the surveys. Demographic data of self-identified gender, age, race, marital status, number of children, employment status, number of years in the military, branch of military service, salary range, active duty or retired, and how many years in college.

Measures

PTSD. The National Stressful Events Survey PTSD Short Scale (NSESSS-PTSD; LeBeau et al., 2014) is a brief, validated, and reliable instrument to assess probable PTSD diagnosis and severity according to DSM-5 criteria. NSESSS is a 9-item self-report scale derived from the National Stressful Events Survey (NSESSS), which originally was a 20-item scale. In a nonclinical sub-sample (n = 318) of the U.S. Census for a 2010 study (n = 2953), the NSESSS has solid psychometric properties with high Cronbach alpha (α = .90; LeBeau et al., 2014). In the current study, based on the data collected, the nine factors of the NSESSS have a high internal consistency across all items. Therefore, the current

study has a high-reliability Cronbach (α = .93), which is excellent (Field, 2018). NSESSS-PTSD is scored on a 4-point Likert scale (1 “Not at all to 4 “Extremely”). The total score ranges from 0 to 36, with higher scores indicating higher severity of the posttraumatic disorder. Participants indicate their symptoms occurring during the past seven days.

Moral Injury. The Moral Injury Symptom Scale – Military Version (MISS-M-SF; Koenig et al., 2018), a validated and reliable 10-item scale used to screen participants with MI and consists of 10 subscales of shame, guilt, moral concerns, feelings of betrayal by others, religious struggles, loss of meaning/purpose, loss of religious faith/hope, difficulty forgiving, loss of trust, and self-condemnation. MISS-M has a Cronbach alpha (α) above the acceptable value (α = .92; Ames et al., 2019) in a sample (n = 427) of U.S. veterans and active-duty military with PTSD symptoms. For example, Koenig et al.’s (2018) study that screened MI in veterans using MISS-M (SF) has an acceptable internal consistency (α = .72) and test-retest reliability (α = .87) in Veteran/Active-Duty Military (V/ADM) samples (n = 427). In the current study, the MISS reliability is good with Cronbach α = .81. The MISS-M is on a 5-point Likert scale (1 “not true at all” to 5 “extremely”). The total score ranges from 10 to 100, with higher scores indicating higher moral injury severity.

Healthy Habits and Social Support. Other items in the study were measured using the healthy habits and the social support scale, which are created items; therefore, there are no reliability or validity values to compare with this current study. However, in this study, the reliability of Cronbach's alpha is indicated in the findings based on constructs.

The Healthy Habit Scale. The Healthy Habits scale consists of 9 items with questions such as "How often in a week do you eat breakfast?" and "How often do you use illegal drugs (marijuana, cocaine, heroin, etc.)." The Healthy Habit Scale is scored on a 5-point Likert scale (1 "Never" to 5 "Always"). Since this is a created measure, there were no reliability values to compare. Based on this study sample, the reliability of the healthy habit scale is poor, with Cronbach $\alpha = .46$. This low Cronbach alpha may be related to the low number of items in this set of questions. Additionally, some items may not measure the same construct, indicating a weak representation of the items in the whole set of psychometric instruments (Panayides, 2013; Bujan et al., 2018).

The Social Support Scale. The social support scale consists of faculty, friends, and family support. Faculty support is a 6-item scale, and friends and family support is a 13-item scale that is scored on a 5-point Likert scale (1 "completely untrue" to 5 "completely true"). The higher the score, the higher the support. Since this is another created measure, there were no reliability values to compare. The reliability for this scale had an excellent Cronbach ($\alpha = .98$) for the current study.

The Sense of Belonging Scale. The Sense of Belonging Scale (SBS; Hoffman et al., 2003) measures the participants' sense of belonging to the school and their perceived faculty support. A sense of belonging is the subjective perception that one identifies and affiliates within an academic environment as having a part in shared values and support (Hoffman et al., 2003). The SBS has high reliability ($\alpha = .89$-$.92$; Morrow & Ackermann, 2012) with an 8-item scale measured on a 5-point Likert scale ranging from 1

("completely untrue) to 5 ("completely true") derived from Hoffman et al. (2003). For the SBS, survey items were borrowed from other surveys to answer the objectives: (for five items, α = .90; Hoffman et al., 2003; for three items, α = .70; Elliott et al., 2011) and for faculty support (α = .87; Hoffman et al., 2003). Based on data collected in this current study, there was a high reliability (α = . 90).

The Academic Success Inventory for College Students (ASICS). ASICS is a self-report instrument that is used to measure academic success. ASICS is a well-validated, practical, and accessible instrument measuring ten factors in areas of general academic skills, internal motivation/confidence, perceived instructor efficacy, concentration, external motivation/future, socializing, career decidedness, lack of anxiety, personal adjustment, and external motivation/current (Prevatt et al., 2011). ASICS has validity and reliability with acceptable to high Cronbach alphas (general academic skills = .93, internal motivation/confidence = .86, perceived instructor efficacy = .92, concentration = .87, external motivation/future = .88, socializing = .84, career decidedness = .87, lack of anxiety = .77, personal adjustment = .86, and external motivation/current =.62; Prevatt et al., 2011), Persian version with total = α 0.75 (Sadeghi-Gandomani & Adib-Hajbaghery, 2018). Similarly, Ndyoe et al.'s 2020 study resulted in an α in general academic skills = .89, internal motivation/confidence = .86, perceived instructor efficacy = .95, concentration = .88, external motivation/future = .87, socializing = .75, career decidedness = .86, lack of anxiety = .83, personal adjustment = .86, and external motivation/current = .58. ASICS is 50-item scale measured in 7-point Likert scale ranging from 1 (Strongly Disagree) to 7 (Strongly Agree). Scores are reversed on negatively worded items. Positive functioning indicates higher scores

(Prevatt et al., 2011). In previous studies, the ASICS has high reliability (α = 0.89) and construct validity (α = 0.86) among 305 students in Malaysia (Ahmad et al., 2019). In the current study, the ASIC reliability for the data collected was excellent (Cronbach α = .91).

Social Connectedness Scale-Revised (SCS-R). SCS-R is a 20-item scale with solid reliability and discriminant and convergent validity (Armstrong & Oomen-Early, 2009) (α = 0.91, Lee & Robbins, 1995; α = 0.92, Lee et al., 2001) used to measure the extent to which an individual feels connected to others in their social environment or social inclusion. The current study had a higher reliability (α = .96), which is an excellent Cronbach. The SCS-R is a Likert Scale ranging from 1 (Strongly Disagree) to 6 (Strongly Agree). The negatively worded items are reverse scored and summed together with the positively worded items with a total range of 20 to 120 (higher scores reflect a stronger sense of social connectedness).

GPA. Self-reported grade point average (GPA) scores from current college were used in the current study; scores range from 0 (no result) to 5 (high) scale. According to Bryan et al. (2014), self-report GPA has minimal discrepancy compared to actual GPA (r = 0.90 +/- 0.05).

Academic Self-Efficacy. The Self-Efficacy Formative Questionnaire is a validated instrument was used to measure the participants' academic self-efficacy (Gaumer Erickson & Noonan, 2018). Self-efficacy is "the perception an individual has about his or her capabilities to perform at an expected level, achieve goals, and complete moderately challenging tasks" (Gaumer Erickson & Noonan, 2018a, p. 23). The Self-Efficacy Formative questionnaire is a highly reliable scale (α = .89; Gaumer et al., 2018)

with eight items measured on a 5-point Likert scale ranging from 1 “not at all” to 5 “always.” The current study had a good reliability (α = .89), exactly the same as Gaumer et al. (2018).

Procedures

Both universities approved the Institutional Review Board (IRB). An introductory email was sent to veteran center coordinators of both universities explaining the research study’s purpose, process, and procedures. Also, an attached link to the web-based Qualtrics surveys was attached within the email requesting permission to hang flyers to recruit potential participants. The survey was accessible through any electronic device (desktop, laptop, and smartphone). Flyers were posted at both veteran centers by the coordinators and throughout the campuses approved by the university student event center.

The eligibility of participants was by their self-reported veteran status obtained from the VA centers at both universities, and informed consent was administered before participating in the study survey. Surveys were emailed three times to capture as many participants as possible. An email reminder was sent out every three to four weeks to the veteran coordinators to send out a reminder to complete the survey. Continual collaboration with both veteran center coordinators was maintained via emails and phone calls.

Data Analysis

SPSS and *R*

For quantitative data analysis, the IBM SPSS (version 26 and higher) program was used to compute the demographic characteristics of the samples. Additionally, R

packages *glasso* (Friedman et al., 2014) and *qgraph* (Epskamp et al., 2012) will be used to estimate and graph the partial correlation network. Furthermore, demographic information included participants' military-related information (military/veteran status and branch of service), university attended, gender identity, ethnicity/race, age, marital status, number of children, salary range, GPA, number of semester(s) attended at their university, and employment status. The mean substitution method (Downey & King, 1998) was used to replace missing data for participants who answered more than 85% of the measured scale. Those who answered less than 85% were not included in that measured scale.

Partial Correlation Network

To determine the complex patterns of a causal relationship between the variables of PTSD and MI correlating with the extrinsic factors (degree of a negative pattern of healthy behaviors, negative experiences in the academic setting, and degree of social support) influencing the overall objective and subjective academic outcome (GPA and perceived academic success), a partial correlation network was applied through a type of regression process called Least Absolute Shrinkage and Selection Operator (LASSO; Friedman et al., 2018; Tokac & Razon, 2021) or regularization technique to examine the structure and magnitude (strengths and weaknesses) of the association that was suitable for small sample size, such as samples in the current study (Tokac & Razon, 2021). Path analysis or multiple regression could not be performed due to the small sample size. To ascertain the graphical algorithm, R packages *glasso* (Friedman et al., 2014; McNally et al., 2017; Tokac & Razon, 2021) and *qgraph* (Epskamp et al., 2012; McNally et al., 2017; Tokac & Razon, 2021) was used by computing a sparse network of nodes

(variables) to produce the least number of undirected edges (links or correlation; Tokac & Razon, 2021; Manfro et al., 2023) and achieve lesser variance (McNally et al., 2017). Through this process, optimization of the model fit and small partial correlation driven to zero, thus increasing the sensitivity and specificity of the edges in the model (McNally et al., 2017; Manfro et al., 2023), allowing to visually discern the model in a meaningful way (Epskamp et al., 2012) and providing a clear depiction of weak edges. Notably, the magnitude and direction are denoted by the color and weight of edges in the network model (Epskamp & Friedman, 2018).

To identify the most influential nodes in the network, an evaluation of the centrality indices was performed by using bootnet (McNally et al., 2017; Epskamp et al., 2018; Tokac & Razon, 2021) R package to determine the *betweenness*, *closeness*, and *strength* of the variables. According to McNally et al. (2017), *Betweenness* refers to the shortest path through which the edges connected to the nodes pass between other nodes. *Closeness* indicates the measurement of the shortest distance of how close one node is to other nodes in the network. Furthermore, *strength* is how strong the connection is between the nodes (Tokac & Razon, 2021). Additionally, 12 variables were analyzed through the *R*, an analytic software, to produce a 12x12 partial correlation matrix. The partial correlation matrix was used to help determine correlation by setting two standard statistical significance levels ($p \leq 0.05$ and $p \leq 0.01$) to measure and define against the null hypotheses assumptions for this data.

Chapter 4

Findings

Descriptive Statistics

Participants

This study surveyed 79 college student veterans enrolled at two different large public universities in the Midwest region of the U.S., obtained through convenient and snowball sampling. Most participants were recruited from Illinois (97%) and a small portion from Missouri (3%) universities. A total of 11 participants were missing; nine signed in but did not complete the survey questionnaires. Therefore, participants with missing items was removed from the study, resulting in a total $n = 68$ subjects. Overall results, the study sample consisted of 39 (57.4%) males, 27 (39.6%) females, one non-binary (1.5%), and one (1.5%) who preferred not to say. Sixty-four participants reported ages ranging from 18 to 56 years ($M = 29.22$, $SD = 10.16$), and four participants did not identify their age. Age by range and percentage is 18 to 25 (48.4%), 26 to 33 (23.3%), 37 to 44 (17.2%), and greater than 46 (11.1%). The majority who served in the military were in the Army (24, 35.3%), and the others were in the National Guard (16, 23.5%), Air Force (14, 20.6%), in the Reserve (13, 19.1%), in the Navy (8, 11.8%), in the Marine Corps (4, 5.9%), one participant specified others, and 17 participants did not report their branch of military status. The percentages were over 100% due to some participants selecting two branches of military service. Participants identified their race/ethnicity as White ($n = 52$, 76.5%), multiple races ($n = 6$, 8.8%), Black ($n = 5$, 7.4%), Other ($n = 4$, 5.9%), and Asian ($n = 1$, 1.5%), who were enrolled in less than a year (45.6%), similar in

those enrolled between one to four years (45.4%), and small portions of those enrolled more than four years (8.8%).

A significant percentage of participants were married (*n* = 24, 35.3%) or in a relationship, whether living with a partner (*n* = 7, 10.3%) or living apart (*n* = 4, 5.9%). The other percentage was single (*n* = 29, 42.6%) or separated/divorced (*n* = 4, 5.9%). There was 67.6% of participants reported having no children, 3% to 11% had between one to four children, and 3% reported having more than four children. Most of the participants' salary made less than $29,999 (51.5%), which was the higher percentage, while others made between $30,000 to $69,999 (30.8%), and those made greater than $70,000 (17.6%) was the lowest percentage. Most of the participants worked either full-time (*n* = 26, 38.2%) or part-time (*n* = 20, 29.4%), not working (*n* = 10, 14.7%). Others reported as being either disabled (*n* = 6, 8.8%) or retired (*n* = 5, 7.4%), and both full-time homemakers and caring full-time for (ill/disabled) children under 18 or adults (*n* = 2, 3%).

The majority of participants received military benefits such as the GI Bill (*n* = 38, 55.9%), VA disability (*n* = 22, 32.4%), other (*n* = 4, 5.9%), and retirement (*n* = 3, 4.4%) while some received no benefits (*n* = 14, 20.6%). Of the 68 participants, 61 (89.7%) had self-reported GPA, with seven participants not reporting or reporting zero, ranging from 0 to 4.0, with a mean GPA of 3.26 and *SD* of .79. Since 31 (45.6%) of 68 participants were in their first academic year, some might not have known their GPA. Fifty-two (76.5%) participants declared a major, and 16 (23.5%) did not, indicating career decisions. A significant percentage of participants (*n* = 68) reported seeking support from the campus' veteran center (*n* = 29, 42.6%), those not seeking support (*n* = 25, 36.8%), while other

participants received support from other departments on campus (*n* = 25, 36.8%). Twelve participants selected both veteran centers and other departments when seeking support services; therefore, the total percentages are higher. Fifteen participants (22%) of 62 reported having learning disabilities, including ADD (Attention Deficit Disorder; n = 1), English as a second language (n = 1), ADHD (Attention Deficit Hyperactivity Disorder; n = 2), and hearing loss (n = 1), PTSD (n = 1), and TBI (Traumatic Brain Injury; n = 2). Interestingly, one participant reported having PTSD, did not report GPA, had been at the university for nine semesters, was medically discharged, and sought academic support on campus.

Given the low participation from Missouri University (*n* = 2) and Illinois (*n* = 66), the overall results and stratification of the findings are reported. The ethnicity/race and gender at Missouri University (White female, *n* = 2) and Illinois University, female (*n* = 23) and male (*n* = 36) and ethnicity/race: Participants identified their race/ethnicity as White (*n* = 50), multiple races (*n* = 6), Black (*n* = 5), Other (*n* = 4), and Asian (*n* = 1) The mean age for Missouri University (*n* = 2) was 35.5 (SD = 14.85), and for Illinois University (*n* = 60), the mean was 28.75 (*SD* = 9.93). Additionally, regarding the variables of PTSD and MI, two participants answered the PTSD measures at Missouri University; one participant categorized their PTSD level as severe and the other as mild, whereas at Illinois University, of 64 participants, 35 participants categorized their PTSD level and number of participants as mild = 11, moderate = 8, severe = 10, and Extreme = 6. Missouri University had one participant for the MI category who categorized their level as mild. Illinois University had 29 out of 64 participants categorized their MI level

and number of participants as mild = 8, moderate = 8, moderately severe = 6, and severe = 7.

Measures

PTSD

Of the 68 participants in this study, 38 answered the NSESS (*M* = 21.91, *SD* = 9.74). Three participants had less than 15% missing data and were replaced. Participants categorized their symptoms as mild (*n* = 12, 31.6%), moderate (*n* = 8, 21.1%), severe (*n* = 11, 28.9%), and extreme (*n* = 7, 18.4%; See **Figure 1**; **Appendix C**). Only one participant noted their learning disability as having PTSD. Only two participants answered this measure in Missouri (*M* = 19.69, *SD* = 15.12), while 35 participants in Illinois (*M* = 21.69, *SD* = 9.59).

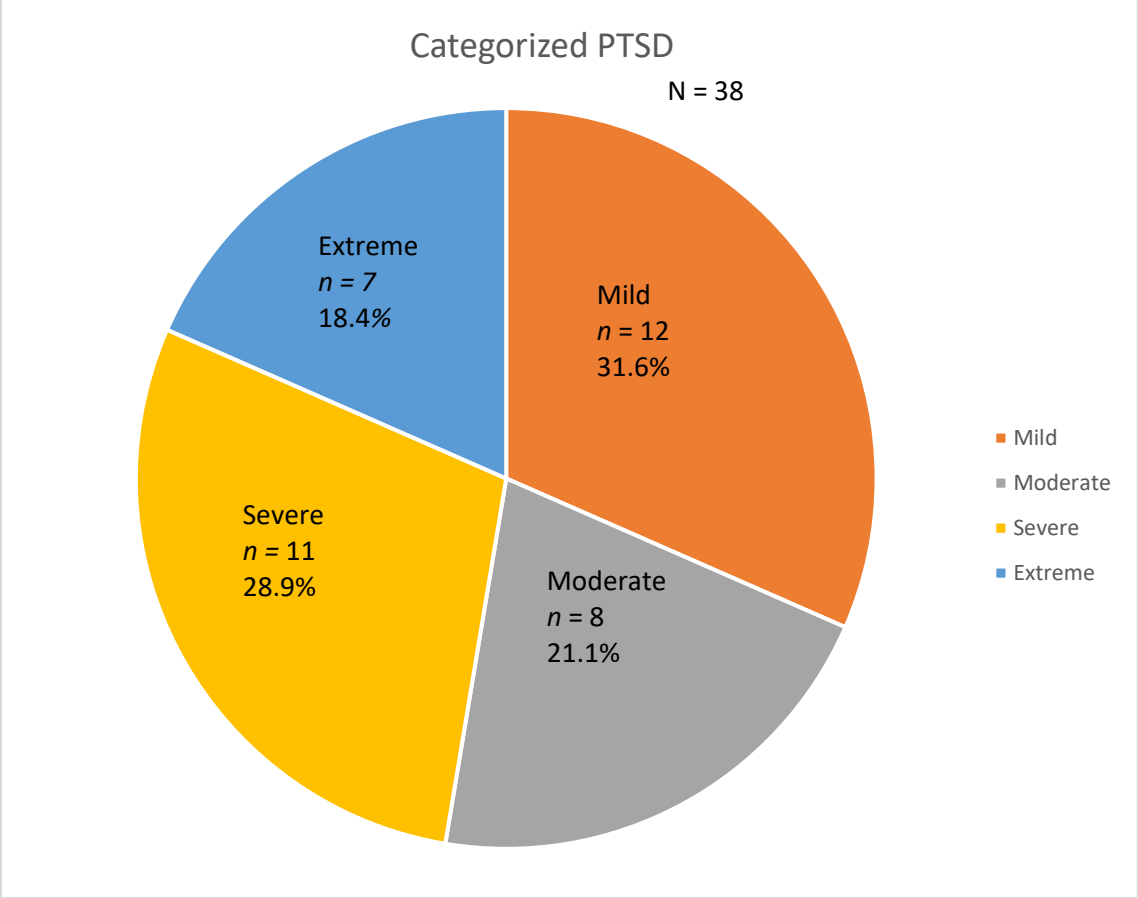


Figure 1 Categorized PTSD Level

Moral Injury

Overall, 31 (45.6%) of 68 participants (*M* = 45.74, *SD* = 16.46) reported having mild (*n* = 9, 29%), moderated (*n* = 8; 25.8%), moderately severe (*n* = 6; 19.4%), and severe (*n* = 8; 25.8%; See **Figure 2**; **Appendix D**). The result for the university in Missouri had one participant (*M* = 29) who answered MISS scales, while Illinois University had 29 participants (*M* = 45.13, *SD* = 15.43).

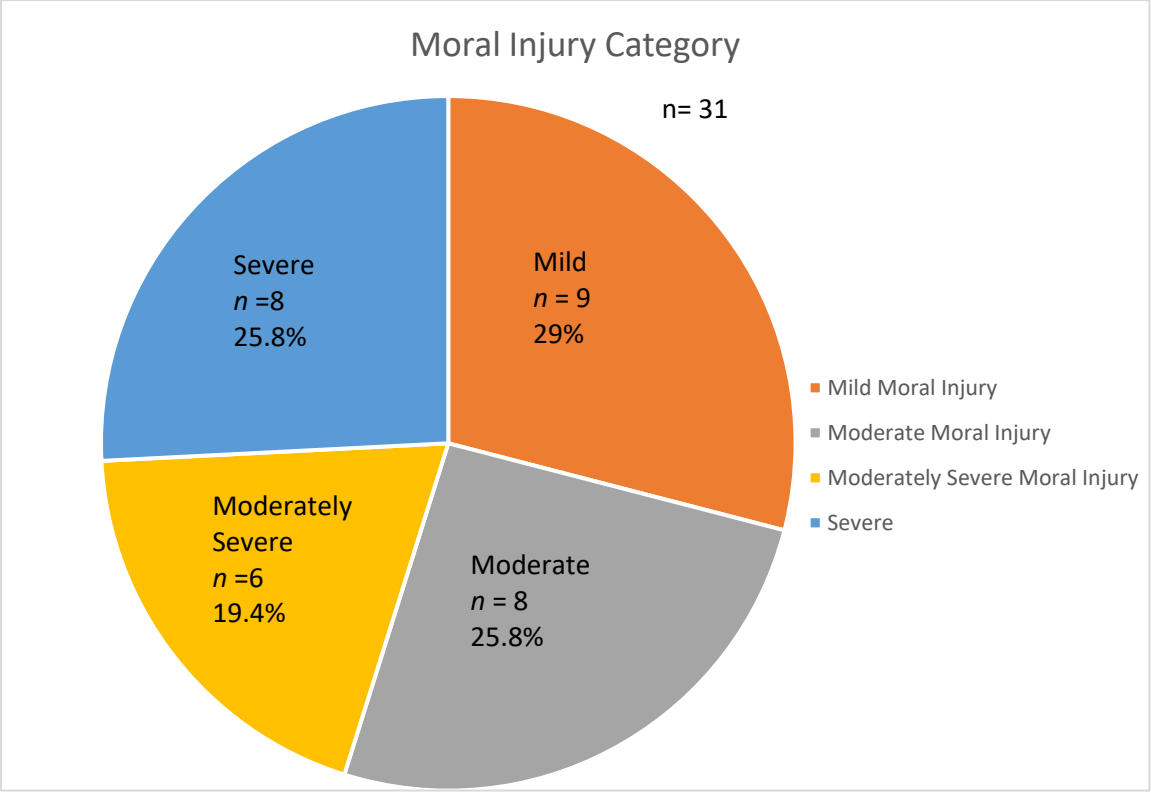


Figure 2 Categorized Moral Injury Level

Healthy Habits

Overall findings of negative healthy habits in the current study (*M* = 26.38, *SD* = 4.55), 42 participants reported having the majority (between 30-50%) practice positive, healthy habits in items such as “how often in a week do you eat dinner at the table

together with the family" and how often in a week do you eat breakfast." Of note, there was a high percentage of alcohol use from "sometimes" to "always," accounting for 45.3%. There are low reports of cigarette and illicit drug use from "sometimes" to "always," with both combined accounting for 18.8% (14.4%; 4.4%; respectively) of the time. Overall, 42 of 68 participants categorized their health habits as low (*n* = 12, 28.6%), mild (*n* = 9, 21.4%), medium (*n* = 2, 4.8%), and high (*n* = 19, 45.2%). (See **Figure 3**; **Appendix E**). The finding of the two universities: Missouri University had one participant (*M* = 23) who answered the survey, which characterized their health habits as low, while Illinois University had 39 participants (*M* = 26.26, *SD* = 4.59). Of 64 participants, 39 categorized their health habits as low (*n* = 11, 28.2%), mild (*n* = 9, 23.1%), medium (*n* = 2, 5.1%), and high (*n* = 17, 43.6%).

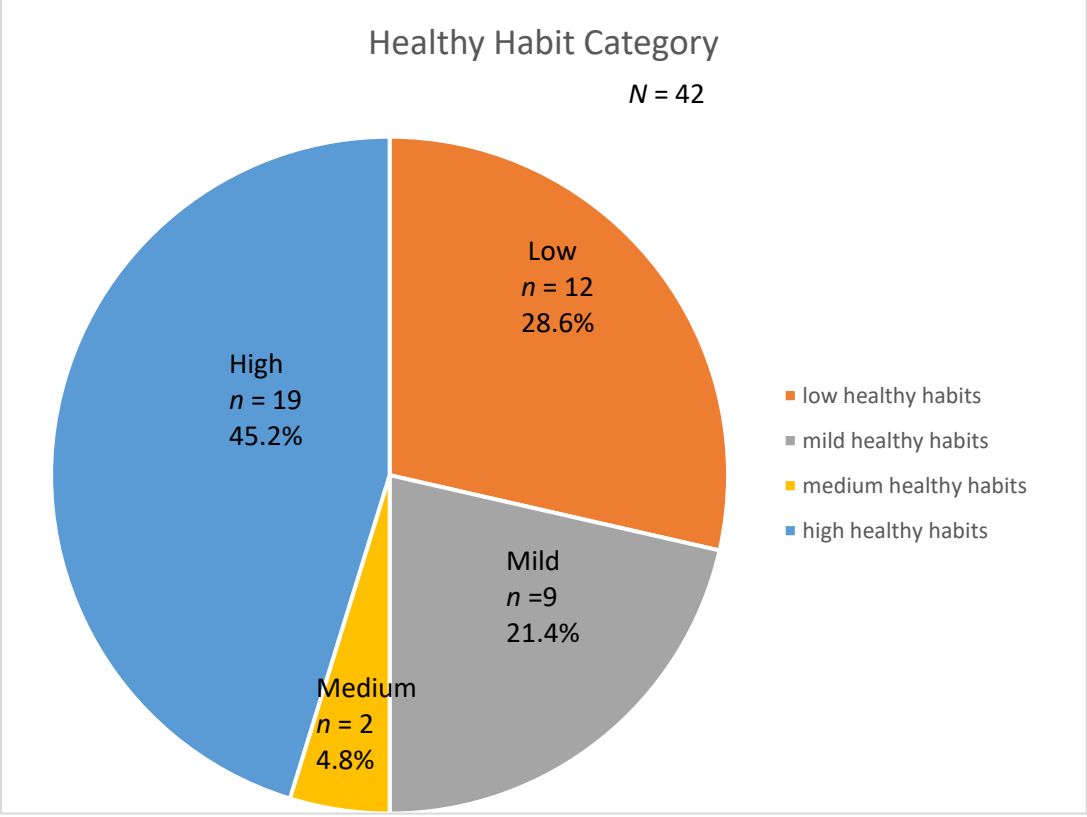


Figure 3 Categorized Healthy Habits

Social Support

In the current study, social support from family and friends for this sample was high (*M* = 75.81, *SD* = 21.18) for 37 participants but low for faculty support (*M* = 53.01, *SD* = 14.65) for 43 participants. Missouri University had one participant (*M* = 95), while Illinois University had 35 participants (*M* = 74.9, *SD* 21.42).

Sense of Belonging

The overall score for this investigation for faculty/campus environment sense of belonging (higher score indicated a higher sense of belonging): out of 43 participants, 20 reported a moderate to a high-level sense of belonging (*M* = 53.01, *SD* = 14.66), although there were about 23 participants that reported below the mean, moderate to low level of sense of belonging, especially with interaction with faculty.

ASICS

In the current investigation, the ASIC had a different cut-off for each subscale, accounting for below the 25th percentile for academic success. Two subscales that had a higher percentage of participants that did not meet the cut-off score were the lack of anxiety (31.9%; *M* = 41.62, *SD* = 21.62; having a lack of anxiety or nervousness in taking tests and studying) and personal adjustment (29.7%; *M* = 59, *SD* = 26.24; lack of issues that distract one's ability to perform well academically). In other subscales, participants met the cut-off. For academic success in this study, the overall score will be used to define perceived academic success, where a higher score indicates a higher academic success level. In the overall academic success score of 68 participants, 44 had a mean of 236.55 (*SD* = 37.81). Two participants from Missouri University had a mean result of

217.50 (*SD* = 10.61), while Illinois University had 40 participants (*M* = 238.09, *SD* = 38.80).

Social Connectedness

In the current study, the overall connectedness (*M* = 2.47, *SD* = 1.10) of 68 participants, 53 participants categorized their social connectedness level as low (n=13, 24.5%), mild (n=14; 26.4%), moderated (n=14, 26.4%), and high (n = 12, 22.6%). (See **Figure 4**; **Appendix F**).

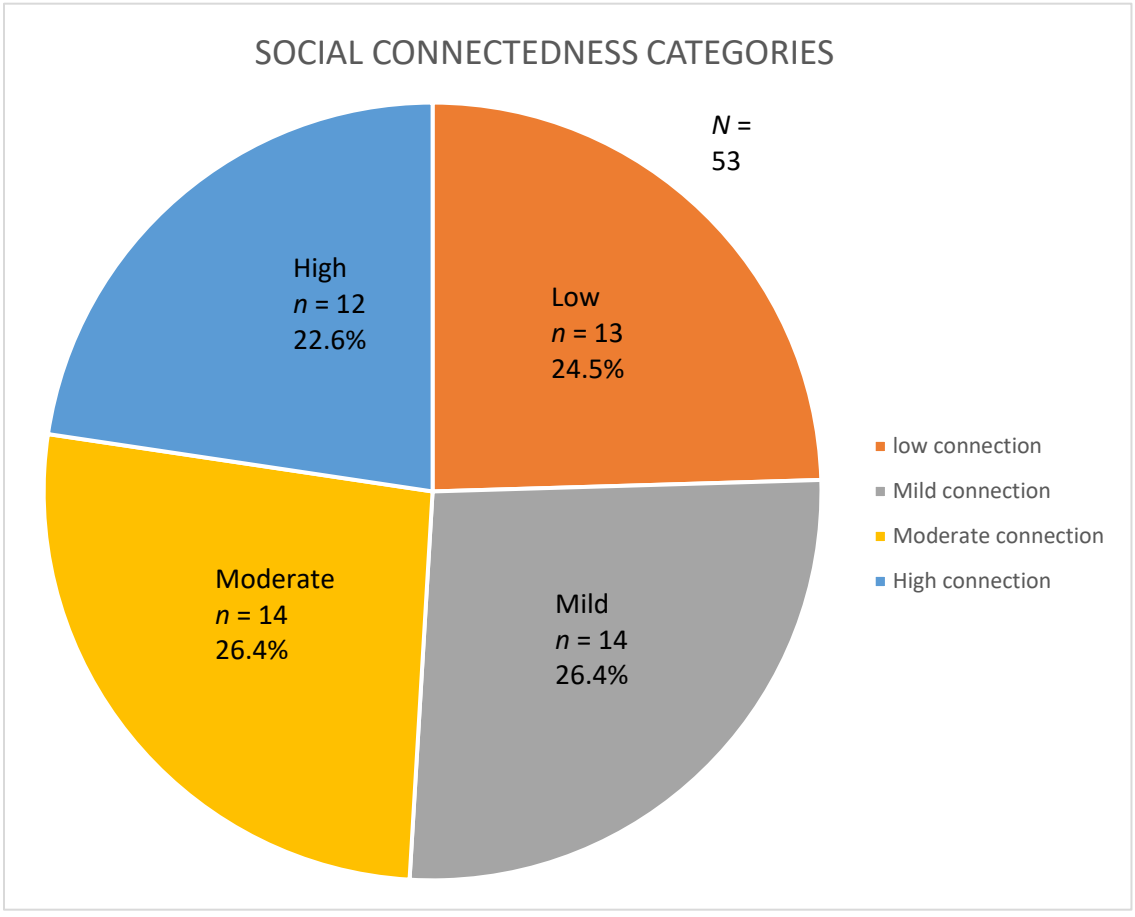


Figure 4 Categorized Social Connectedness Level

GPA

In the current study, 61 participants reported their GPA, while seven reported zero or had missing data. The overall GPA for this sample has a mean of 3.26 and an *SD* of .79. Missouri University had two participants (*M* = 3.40, *SD* .57), while Illinois University had 57 participants (*M* = 3.27, *SD* = .81).

Academic Self-Efficacy

For academic self-efficacy in the current study, 42 participants reported a moderate level of self-efficacy (*M* = 29, *SD* = 5.28) score; the higher the score, the more one feels about one's personal ability. Missouri University had one participant (*M* = 28.38), and Illinois University had 39 participants (*M* = 29.82, *SD* 5.46).

Partial Correlation Network

Figure 5 is a graphical illustration of the LASSO partial correlation of observed variables: PTSD, MI, extrinsic factors (negative patterns of healthy behaviors, faculty/campus sense of belonging for the college experience, social support), and intrinsic factors (self-efficacy, social connectedness, sense of belonging of peer and veterans status), as well as academic success and GPA. In the figure, green-colored edges signify a positive correlation, and red-colored edges signify a negative correlation. The color's intensity represents the correlation's strength (i.e., darker is more robust, and lighter is weaker). Analysis revealed a strong positive correlation between MI and PTSD (r = 0.63, p < .01), perceived faculty/campus sense of belonging and academic success (r = .62, p < .01), and social connectedness and self-efficacy (r = .41). In contrast, there was a strong negative correlation between MI and social connectedness (r = - .55, p < .05), perceived faculty/campus sense of belonging and veteran sense of belonging (r = - .35). Also, there are moderate positive correlations between GPA with peer sense of

belonging (r = .64, p < .01) and academic success (r = .54, p < .05); academic success with self-efficacy(r = .42) and number of children (r = .18), healthy habits with social connectedness (r = .44) and peer sense of belonging (r = .36). Additionally, moderate negative correlation included social support and GPA (r= - .20), veteran sense of belonging with peer sense of belonging (r = - .11) and social connectedness (r = .03), MI and academic success (r = - .09). Furthermore, there are several positive weak correlations between social support and social connectedness (r = .09), peer sense of belonging and social connectedness (r = .09), faculty/campus support with self-efficacy (r = .004), peer sense of belonging (r = .53), and social connectedness (r = .16), PTSD with social connectedness (r = .01), veteran sense of belonging (r = .17), and number of children (r = .29), healthy habit with number of children (r = .30), self-efficacy(r = .01), and PTSD (r = .24), veteran sense of belonging with MI (r = .17), as well as negative, weak correlation between PTSD with academic success (r = - .32), social connectedness (r = .01), and social support (r = - .25), GPA with self-efficacy (r = - .25) and faculty/campus sense of belonging (r = - .49), self-efficacy and number of children (r = - .22), and lastly social connectedness and number of children (r = - .26; **See also Appendix G**).

Table 1 shows the correlation values, divergent validity and reliability, and significance level. Variables with significant levels set at $p \leq 0.05$ are academic success and GPA, MI and social connectedness, and social support and peer sense of belonging. Additionally, variables with a significance level set at $p \leq 0.01$ are MI and PTSD, faculty/campus sense of belonging and academic success, and peer sense of belonging and GPA (**See also Appendix H**).

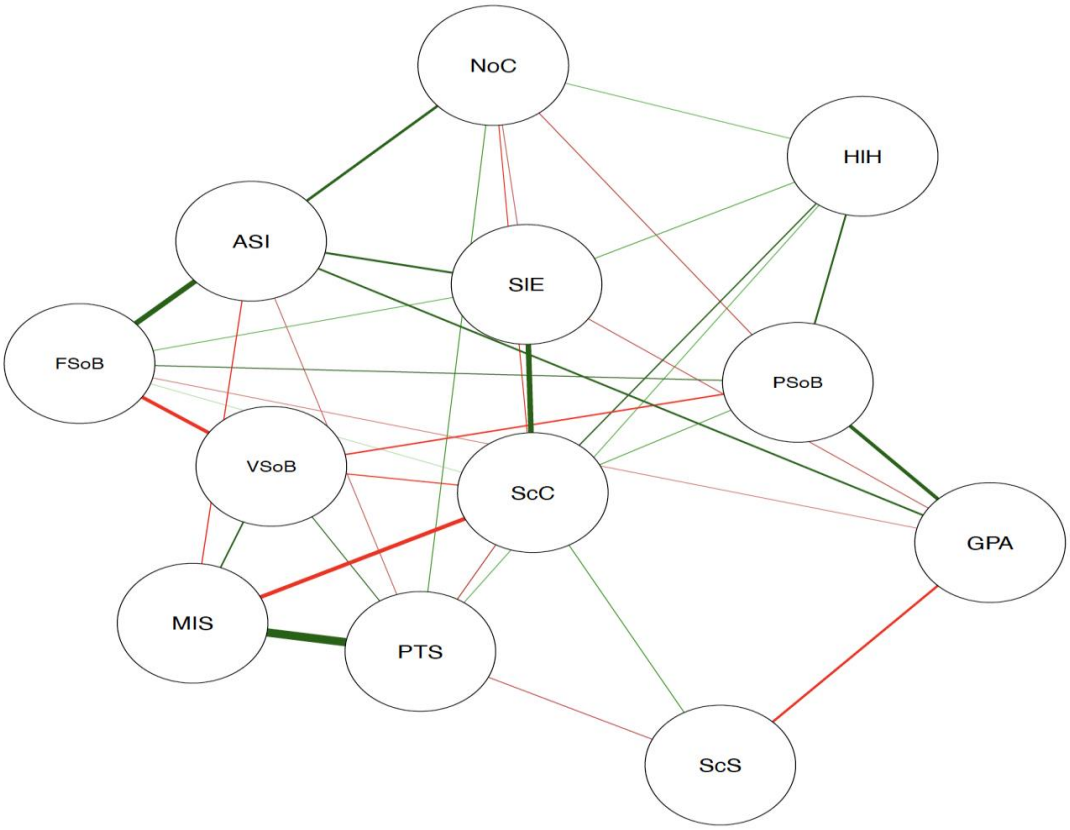


Figure 5 LASSO Regularized Illustration of partial correlation among PTSD (PTS), MI (MIS), healthy habits (HIH), sense of social support (ScS), sense of belonging (VSob, FSoB, PSoB), social connectedness (ScC), perceived academic experience and faculty sense of belonging to the campus (FSoB). Variables: NoC (number of children), GPA (objective academic success), Social Connectedness (perceived connection to others), self-efficacy (perceived self-worth), ASIC (perceived academic success), PTSD (symptoms of PTSD), PSoB (sense of belonging among peers), VSoB (sense of belonging among veterans), FSoB (perceived sense of belonging with faculty/campus experience), ScS (social support from family and friends), MIS (moral injury symptoms), and HIH (healthy habits).

Table 1

Correlations, Divergent Validity, and Descriptive Statistics

Variables	1	2	3	4	5	6	7	8	9	10	11	12
Noc	1.00											
GPA	0.07	1.00										
ScC	-0.26	-0.001	1.00									
SIE	-0.22	-0.25	0.41	1.00								
ASI	0.18	0.54*	-0.26	0.42	1.00							
PTSD	0.29	0.05	0.01	-0.02	-0.32	1.00						
PSoB	-0.13	0.64**	0.09	0.11	-0.47	-.23	1.00					
VSoB	0.17	0.05	0.03	0.19	0.08	0.17	-0.11	1.00				
FSoB	0.18	-0.49	0.16	0.004	0.62**	0.32	0.53	-0.35	1.00			
ScS	0.20	-0.20	0.09	0.08	-0.13	-0.25	-0.02*	-0.01	-0.40	1.00		
MI	-0.29	-0.05	-0.55*	0.18	-0.09	0.63**	0.19	0.17	-0.08	0.07	1.00	
HIH	0.30	-0.24	0.44	0.01	0.40	0.24	0.36	-0.25	-0.42	0.03	0.21	1.00

Note: The off-diagonal values are divergent validity. *Correlations are significant at < 0.05 level, ** Correlation are significant at < 0.01. Values < .005 are carried out to the three decimal points.

Figure 6 illustrates the *z*-scored centrality indices that indicate the *betweenness, closeness, and strength*. Given that social connectedness, MI, and academic success had a *z*-score greater than zero, all three centrality indices signified higher centrality compared to other variables. The diagram showed a variable with a *z*-score close to zero *betweenness, closeness,* and *strength,* which is the faculty/campus sense of belonging, indicating the lowest centrality indices in the network. Even though PTSD has *closeness* close to zero (z-score < 0) and a low *betweenness* (*z*-score < 0), it has a significant strength (*z*-score >0). While academic success displayed the highest *betweenness* (*z*-score > 2), social connectedness had the highest *closeness* (*z*-score > 1) and had the strongest (*z*-score > 1) association among all other variables. Faculty/campus sense of belonging is

closest to zero on *closeness* (*z*-score >0) and *strength* (*z*-score >0) and, therefore, had the lowest centrality. Collectively, drawn upon these interpretations, results indicated that social connectedness, MI, PTSD, and academic success were important factors in student veterans' transitioning to their college experience (**See also Appendix I**).

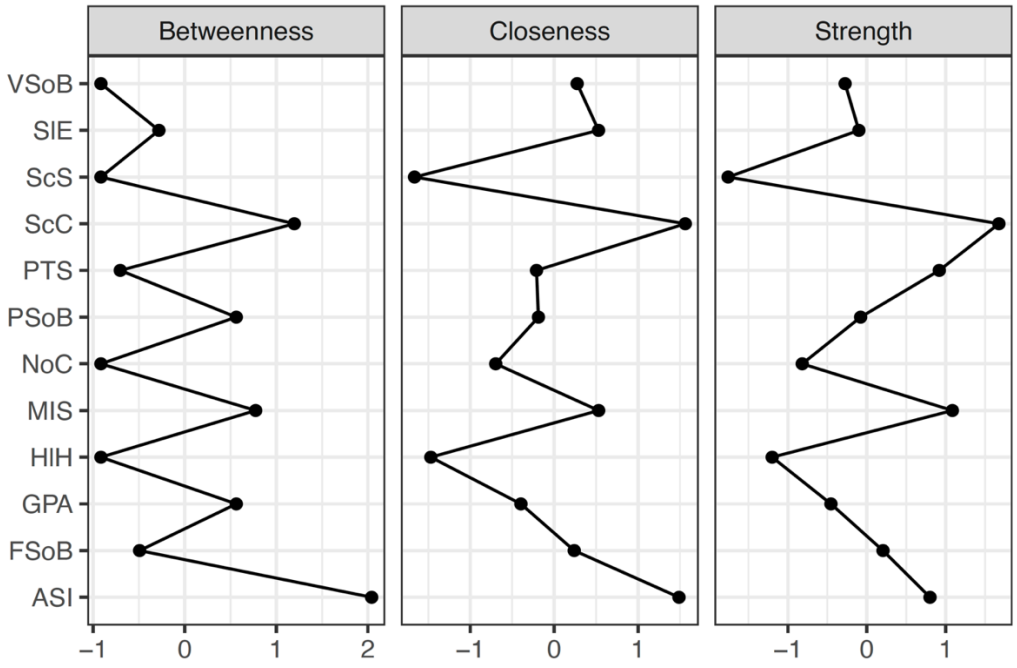


Figure 6 Illustration of *z*-score Centrality Indices depicting *betweenness*, *closeness*, and *strength* for student veterans' transition to college experiences and academic outcomes.

Chapter 5:

Summary and Conclusions

Student veterans are a unique population; being nontraditional students sets them apart from other traditional students because of underlying mental complications such as PTSD and MI and physical disabilities. The existing literature mentioned emerging themes of difficulty transitioning to the college environment and negative experiences with poor academic outcomes. Many studies focused on student veterans' transitioning difficulties, whereas no studies was found that focused on academic success (both objectively and subjectively). The findings in the LASSO, centrality indices, and correlation matrix provide key factors and variables that highlight the purpose and significance of this examination in addition to expanding the body of knowledge. Notably, the results will offer the board of education, faculty, nursing field, community, and military members crucial information and implications to support veterans in their college experience and academic outcomes. The hypotheses for this study were:

(1) Student veterans with PTSD and MI will report more degrees of negative patterns of healthy behaviors and negative experiences in an academic setting. This hypothesis was supported.

(2) A positive perception of academic experience will mediate the relationship between PTSD and MI and academic success scores objectively and subjectively. This hypothesis was supported.

(3) Social support will moderate the relationship between PTSD and MI and the positive perception of academic experience and academic success. This hypothesis was partially supported.

Discussion

This study aims to examine the association between PTSD and MI and the extrinsic factors (degree of negative patterns of healthy behaviors, negative experiences in an academic setting, and lack of degree of social support) mediated by the intrinsic factors (perception of academic experience) to predict academic success objectively and subjectively in two Midwest universities as demonstrated in the conceptual model. The overall result of this study revealed more men than women, with a mean age of 29.22, which is relevant, noting from previous findings that student veterans are older than traditional college students (Kirschner, 2015; Whiteman et al., 2013). Of 68 participants, 25 did not seek academic support on campus. In contrast, 29 participants reported receiving academic support from the veteran center, and 25 reported receiving academic assistance from other departments within the campus. However, 12 participants selected both the veteran center and other departments within the campus. When extricating these twelve participants from each of the locations, those who did not seek support were a higher percentage overall.

Those who did not seek academic support either had a family, worked full-time (26, 38.2%) or part-time (20, 29.4%), or took care of children and attended classes, while some who reported not receiving campus support did not indicate their employment status. Likewise, previous studies found a high percentage of student veterans not seeking academic support on campus (Gregg et al., 2016). When examining the participants' salaries in this study, 51.5% had a salary of $29,999 or less. The second lowest had the second highest percentage of 30.8%, with a salary between $30,000 to $69,999 (30.8%), when less than 17.6% made over $70,000. This finding is consistent and a frequent theme

in literature of student veterans reporting having low income and financial strain (Eakman et al., 2019; Norman et al., 2015; Robbins et al., 2004).

Based on the partial correlation network results, social connectedness, MI, PTSD, self-efficacy, faculty/campus sense of belonging, perception of being a veteran, GPA, perception of belonging with peers, social support, and academic success are factors influencing student veterans with mental health perceptions in their experiences transitioning to college. As demonstrated in the study findings, social connectedness and academic success negatively impacted student veterans with both symptoms of moral injury and PTSD. PTSD and MI had a positive correlation. Therefore, MI symptomatology influences PTSD symptomatology positively, meaning if MI symptom levels increase, so will PTSD symptom levels. This finding is consistent with previous research, with MI and PTSD having overlapping symptoms (Battles, 2018; Koenig et al., 2020; Oster et al., 2017). This implies that since PTSD and MI are interlinked, student veterans with increased MI symptomology PTSD will also be manifested and, therefore, will likely have difficulties in academic success and social connection with others.

Additionally, being a veteran status negatively impacts the perception of faculty or campus sense of belonging. This said, student veterans who do not feel a sense of belonging from a faculty or on campus feel more isolated and less engaged with their academic environment. Thus, they have perceived negative experiences on campus. Student veterans in this study were noted to have both a low sense of belonging and social connectedness; since they both have interrelated definitions, it is easy to see that if a social connection is low, so will their sense of belonging. This result is evident in prior studies that student veterans experience a lower sense of belonging (Durdella & Kim,

2012; McAndrew et al., 2019) and lack of social connection (Yeager & Rennie, 2021; Bosari et al., 2017)

Another interesting finding was that social connectedness, self-efficacy, academic success, and faculty/campus sense of belonging have a moderate to strong correlation. Conceptually, the perception of a positive academic experience (academic self-efficacy, connectedness, and sense of belonging) is moderate to strongly related to academic success (**See Appendix A**). This suggests that those who have high social connections will likely have increased perceived self-efficacy, thus increasing their perception of belonging to the academic environment, leading to academic success, as evidenced by previous research (Rugutt & Chemosit, 2005; Laws et al., 2018; Eakman et al., 2019). Overall, faculty/campus sense of belonging, academic success, self-efficacy, social connectedness, PTSD MI, veteran sense of belonging, and veteran sense of belonging had their own enclosed network in this analysis, indicating these variables are closely related.

There was also a separate network between social support, GPA, and peer sense of belonging. However, peer sense of belonging had a positive correlation with GPA. That said, those who perceive a sense of belonging among their peers will more likely have higher GPAs. One interesting finding in this study was that social support had a negative correlation with GPA. This result may be related to the low faculty support levels indicated by this sample in this study. Low faculty support is more likely to have a negative effect on GPA, and having a peer sense of belonging positively influences one's GPA, as evidenced by previous studies (Elliot, 2015; Robbins et al., 2004). These results are significant because the sense of belonging is tied to connectedness and can also influence self-efficacy. These intrinsic factors can mediate GPA level and overall

perception of academic success. Therefore, nurturing these intrinsic factors can have a meaningful and substantial impact on student veterans' sense of self-worth, thus promoting their perception of positive experiences on college campuses. Additionally, since there was a high percentage of student veterans who did not meet the cut-off for a subscale of *personal adjustment* in the ASIC measurement, nurturing their self-worth (internal motivation) is critical to their scholastic success since this subscale is a predictor of academic success (Ndoye et al., 2020).

While 52 (76.5%) participants declared a major and 16 (23.5%) did not, which indicates that a large group had career decidedness, which shows that they are working towards committed career goals (Prevatt et al., 2011). It is a relevant finding since a high percentage of career decidedness indicates a sense of personal commitment and a positive perception of academic completion since previous studies indicated that study veterans take longer to complete their degree (Gregg et al., 2016; Sansone & Tucker Segura, 2020).

Furthermore, to capture the purpose of this study, healthy habits had some significant connection, although there was a weak association among other variables in the network. The model indicated that healthy habits positively correlated with peer sense of belonging, PTSD, self-efficacy, social connectedness, and number of children; however, a moderate to weak relationship was found. Nevertheless, to illuminate the ill effects of negative health behavior among student veterans with mental health complications, this weak correlation needed to be revealed because the findings are noteworthy. Although the network analysis did not show MI correlating with health habits, it is known in the literature that PTSD and MI have co-occurring symptomatology

and definition, so they influence each other. This result could be related to the small sample size. Notably, even in a small sample size, there was evidence of a high percentage of alcohol consumption, from “sometimes” to “always” accounting for 45.3%.

Moreover, 18.8% of combined cigarettes and illicit drug use were reported. Considering about half of 68 participants reported having PTSD and MI from “mild” to “severe” symptoms, these adverse health habits were not surprising. Similar to the previous findings, MI is robustly correlated to PTSD and drug and alcohol abuse (Nieuwsma et al., 2020; Widome et al., 2011), and veterans with mental health issues are an at-risk population (Hall et al., 2015).

Furthermore, those who practice healthy habits are more likely to have more connections with friends; inversely, those who have fewer connections with friends are more likely to practice negative habits because depending on the types of friends one has, they may influence one’s health habits. This result was also noted by Cornwell & Waite (2009), that the perception of excellent health is associated with a perception of connection. This can explain some of the findings, given there are almost equal numbers of participants who are single and married or those in a relationship. This current study revealed a strong positive correlation between PTSD and MI, a small positive correlation between healthy habits with self-efficacy and PTSD, as well as a moderate correlation between social connectedness and peer sense of belonging of negative patterns of healthy behaviors. Overall findings in health habits in the current study, out of 42 participants, the majority (30-50% in various items) reported practicing positive health habits. Maybe related to participants being much older and with children, 51.5% of those who responded to the survey were married, not married, but living with partners or in a

relationship and living apart. Although out of the 42.6% who are single, while attending college may have the time to socialize with peers, be employed full-time or part-time, or care for others, reflecting the increased positive healthy behaviors. Items such as "How often do you sleep 6 to 8 hours per night in a week?" and "How often do you eat three or more servings of fruits and vegetables per day?" showed over 50% of participants practice healthy routines from "some time to always." In this study sample, there was over half (52.4%) of 42 participants reported sleep dysfunction from "some time" to "never" sleeping six to eight hours per week. There were high percentages of poor eating habits when asked if they eat three to four servings of fruits or vegetables daily (54.8%) and how often they eat breakfast in a week, from "sometimes" to "never" (45.2%).

Additionally, previous studies also support this finding, with those diagnosed with PTSD having frequent complaints of sleep disturbance (Khazaie et al., 2016). However, in this study sample, only one reported a PTSD diagnosis, while out of 68 participants reported mild to severe levels of PTSD and MI symptoms. These negative health habits were highlighted in previous studies, as evidenced by Etuk et al. (2022), that veterans have a high prevalence of unhealthy eating behaviors or eating disorders compared to the general population, and PTSD predicts eating behaviors (Hall et al., 2015).

The number of children was positively linked with healthy habits, indicating that the more children one has, the healthier behaviors one practices, suggesting parents positively influence their children. However, in this study, 67.6% of participants reported having no children, while a small percentage reported having children (32.3%). Remarkably, those who reported having three to four children were older than 42, apart from one participant who was age 27. Notably, this sample has a lower percentage of

those who reported having children, although consistent with prior studies that student veterans are likely to be married with children (Elliot, 2015; Bosari et al., 2017), differentiating them from traditional college students.

The LASSO model indicated self-efficacy increases as healthy habit behavior increases, consistent with previous findings indicating that those with higher education (having perceived self-efficacy) are less likely to misuse alcohol and have coping abilities with having perceived personal control (Elliot and Lowman, 2015). Thus, practicing healthy behaviors improves self-efficacy or self-worth and, subsequently, academic success, as evidenced by previous findings (Shirley et al., 2022). As a whole, when looking at the model, the two networks had separate but small connections within the entire network due to the small sample size.

The Z-Score Centrality Indices analysis indicated that social connectedness, MI, and academic success are significant variables in student veterans' transition experience. It is apparent that those with MI symptomatology above PTSD are highly influenced by social connections with peers in promoting academic success. Also, faculty/campus sense of belonging was the lowest among other variables, with insignificant *betweenness* and lesser *closeness*; however, this small significant strength may show a more robust strength in the case of larger samples. Therefore, faculty/campus experience is critical to providing students with a high-level sense of belonging to promote academic success. Additionally, although PTSD had insignificant *betweenness* and *closeness*, both having z-scores less than zero, PTSD had significant strength in the network. Therefore, PTSD might not make a connection or closeness between other variables, but it had considerable strength; thus, it might affect social connection, MI symptomology, or

academic success in a larger sample size. Since PTSD symptomatology overlaps with MI, this result was not unexpected. All things considered, it is evident that even in a small sample size, the partial correlation network analysis revealed a correlation between *closeness* and *strength* but not *betweenness* in faculty involvement.

Drawing upon the Stress Process Theory, the theory conceptualized that exposure to stressors affects the self-concept, which is mediated by social support; without that, it can lead to poor health outcomes (Greene, 2009; Pearlin et al., 1981). The application of this theory can be implicated in these samples, as revealed in the findings. In this small sample, the results demonstrated that, for those with MI and PTSD symptomatology, having a lack of perceived sense of belonging as a veteran or a lack of social connection with others on campus can be part of their struggles or stressors in the college transitioning experience. In addition, many student veterans in this study displayed considerable levels of MI and PTSD symptomatology, potentially leading to various associated issues such as mental disabilities, anxiety, depression, poor health habits, and poor transitioning experience, leading to poor academic or health outcomes. Furthermore, while the majority of participants in this study indicated having low income and 26.6% (n = 14) of participants received no educational benefits, and some having to work either part-time or full-time can be an additional contributing factor to their stress level, in addition to a lack of sense of belonging, can leave them feeling disconnected; the current study distinctly illustrates a strong correlation between connectedness and self-efficacy. Since a sense of belonging is closely related to social connectedness, both sense of belonging and self-efficacy influenced academic performance, leading to academic success, consistent with prior studies (Farruggia et al., 2018). Having a strong social

connection and perceived institutional social support is a critical factor in perceived self-efficacy, resulting in a perceived positive academic experience (academic efficacy) and subsequently successful academic outcomes both objectively and subjectively. Therefore, faculties must understand student veterans' source of stress and promote a positive college experience to alleviate some of their struggles while transitioning to the college environment and attaining educational success.

Furthermore, as Gopalan & Brady (2019) stated, belonging positively and robustly correlates with college outcomes. Therefore, social support from friends, family, or faculty is crucial in promoting their self-efficacy and sense of value and self-worth. As demonstrated in the partial correlation model, self-efficacy, peer sense of belonging, and social connectedness influence health behaviors. Although social support was not the moderator in this study, it was mediated by social connectedness, a veteran sense of belonging, and academic experience; social support may have been a moderator, given a larger sample. In conclusion, the combination of financial hardship, mental health, and associated complications (i.e., negative health behaviors), transitioning into the college environment can be stressful, eventually leading to adverse health and academic outcomes. A call to action is necessary to educate faculty, the board of education, and policymakers to understand and support the needs of student veterans.

A highlighted significant factor of this study is the framework complexity of the conceptual model underpinning student veterans transitioning to the college environment and the comprehensive analysis of the findings; this study takes a holistic approach to illuminate and recognize student veterans' struggles with PTSD, overlapping MI symptoms, and their associated effects, that can transpire to having negative patterns of

healthy behavior, negative experience transitioning to the college setting, and perceived having lack of social support, consequently leading to having a negative perception of academic experience, and adversely affecting their overall academic success. Additionally, utilizing both the academic success instrument (ASIC) and GPA level, and not solely on GPA alone to rigorously measure student veterans' academic success, elevates this study to a new level in understanding their perception of academic success both subjectively and objectively.

Limitations

The current study had several limitations affecting the generalizability and interpretation of the findings. Out of the two public universities, Illinois University had the most participants, while Missouri University had only two participants, which limited the representation of the student veterans in Missouri University; hence, due to the small sample size, discretion should be taken to infer generalizability. The sample of student veterans was limited to the Midwest region; the representation is unknown from a rural or urban region.

Another limitation of a small sample size prevented the detection of a robust significant effect among some studied variables, as demonstrated in the partial network correlation. Future studies with a larger sample size can provide a broader representation of the student veterans' college experience, and also, a substantial distinction of association among variables can be more noticeable. Since this is a cross-sectional study, rather than longitudinal, PTSD and MI symptomatology and tracking student veterans' academic success over time were not accounted for; otherwise, it can influence college success of academic outcomes.

Additionally, the essence of the variable was not fully captured due to the nature of the usage of a self-report instrument. Furthermore, considering the small percentage of minorities (23.5 %) compared to white race (76.5 %), caution needs to be considered when generalizing results in these groups. Given that over 44.1% of participants did not answer the PTSD (n=30) and 54.4% for the MI (n = 37) scale, and a small sample might not be a respectable representation of all service members with mental symptoms enrolled in the university, caution should be taken into consideration. Moreover, the causation of this correlation study cannot be implied; only inferences can be made by running variables through analytical tools (Gershman & Ullman, 2023). Finally, given the small number of student veterans in this population, further research is needed to extend the recruitment locations and population to other areas of the U.S. and countries to promote generalizability and representation of student veterans with mental health complications transitioning to college.

Implications/Recommendations

In this study, participants reported having varying high degrees of PTSD (n=38) and MI (n =31) symptoms, while 12 participants reported receiving psychiatric services from the VA. For others who are not receiving service, providing information on the availability of services on campus, such as VA, counseling, or student support service centers that offers psychological and psychiatric assistance as well as crisis line and locations (Bosari et al., 2017; Yeager & Rennie, 2021) during the orientation process would be beneficial. Additionally, the VA center on campus should provide information on services available for veterans offered by military installations and how to contact appropriate representatives for those services. Furthermore, for student veterans who do

not seek services on campus (n = 25) for academic support, the VA center should offer information on services, whether at the nearest military installation(s) or online. To support social connection among student veterans, educators/faculty need to promote a sense of belonging in the classroom and the college settings.

This the current study has implications for the nursing profession and the school of nursing in universities. Some veterans may seek a nursing degree; therefore, members of the nursing department must support student veterans in their academic achievement to prevent the stigma and disconnectedness in those with psychological or psychiatric conditions. According to Fortney et al. (2016), student veterans have a higher prevalence of PTSD, depression, suicide, and drug use than nonveteran students, especially among samples of OEF/OIF. This is noteworthy to the nursing department and college campus as a whole since psychiatric disorder in these samples is almost double compared to non-OEF/OIF veterans (Kaplan & McFarland, 2012. The sample in this current study demonstrated that even in a small sample, student veterans suffer from high degrees of PTSD and MI symptom levels.

Furthermore, the veteran centers can provide educational support services for faculty and university staff members on student veteran characteristics (i.e., mental or physical disabilities), strategies to promote connectedness in the classrooms or campus, unique needs that they may have, and providing veteran-friendly and welcoming transitioning experiences. It is essential for the school of nursing to provide a sense of collaborative campus community; at the same time, faculties understand their supportive role to student veterans, but the majority of faculty reported not having the knowledge, skill, and self-confidence to support students experiencing psychological distress

(Albright et al., 2020). In essence, nursing faculties are frontrunners in promoting a nurturing, supportive, and welcoming milieu and providing a valuable education.

Moreover, since many participants in this study demonstrated earning low salaries, and some revealed not receiving any financial assistance, veteran centers can extend assistance off campus by collaborating with the military installation in providing other federal assistance, scholarships, or information to connect with appropriate representatives to assist with financial needs that might be available to service members. Moreover, for academic success measures in those who did not meet the cut-off in the categories of lack of anxiety and personal adjustment, Prevatt et al. (2011) suggested recommendations to battle anxiety that might negatively impact academic performance, including strategies to relieve stress (exercise or meditation). Furthermore, consider relaxation techniques privately or offered by the university counseling center. Additionally, counseling is suggested for those with alcohol or drug misuse and psychological concerns for personal adjustment (personal issues undermining one's ability and performance category). These results can expand the body of knowledge to help student veterans succeed in the academic environment and help promote academic success.

Conclusions

The findings substantiate the purpose of this study in examining the relationship between PTSD and MI and the extrinsic factors affecting extrinsic factors and overall academic success outcomes.

The findings for my hypothesis are listed below:

- **Hypothesis 1: Student veterans with PTSD and MI will report more degrees of negative patterns of healthy behaviors and negative experiences in the academic setting**

This study revealed a strong positive direct correlation between PTSD and MI, a slight positive correlation between negative healthy habits with self-efficacy and PTSD, as well as a moderate correlation between social connectedness and peer sense of belonging and negative patterns of healthy behaviors. Of note, there was a high percentage of alcohol use from "sometimes" to "always," accounting for 45.3% of participants. This could be because many single participants with high social connections with their peers might have more adverse health habits. Although there are low reports of cigarette and illicit drug use from "rarely" to "always," both combined account for 18.8% of the time. These findings are consistent with previous studies (Widome et al., 2011; Nieuwsma et al., 2020; Maguen et al. (2021) in those with PTSD and MI have negative health habits, while a small percentage of a participant engaged in smoking and illicit drug use in this study, still a more significant percentage of those consume alcohol.

Additionally, 42 participants reported having low health habits, 54.6% of participants reported from "medium" to "low," and when asked, "How often do you eat three or more servings of fruits and vegetables per day?" 54.8% of participants reported from "sometimes" to "never" eating three or more servings of fruits and vegetables. Also, when asked, "How often in a week do you eat breakfast?" 45.2% reported "sometimes" to never" eat breakfast. Since this is a small sample that reported negative health habits, with almost an equal number of

participants who are married or with partners compared to single participants, positive and negative health habits were nearly an even split. Additionally, 52.4% of participants reported sleep dysfunction from “some time” to “never” sleeping six to eight hours per week. Overall, there was a high degree of negative health patterns, even in this small sample.

Furthermore, the partial correlation network analysis found a negative correlation between having a negative campus experience demonstrated by nodes of faculty/campus sense of belonging and veteran sense of belonging being veteran status. This could also explain why 25 of 67 participants did not seek support on campus, lacking engagement in the academic settings, while other student veterans utilized other departments (n = 25) or veteran centers (n = 29). Additionally, over 50% of participants reported having a low income having less than $29,999, and some also reported receiving no military benefit (20.6%). At the same time, some either worked full-time or part-time while attending college. This finding may indicate financial struggles among this studied sample. Overall, this study sample reported a high degree of negative healthy behaviors and an adverse academic experience.

Therefore, I support this hypothesis; firstly, the literature points out that MI was robustly correlated with PTSD, drug, and alcohol abuse (Nieuwsma et al., 2020). Widome et al. (2011) indicated that those diagnosed with PTSD in the past year were associated with a high risk of drinking alcohol, and for individuals diagnosed with chronic PTSD, risky health behaviors have accentuated. Schonfeld (2015) also found that mainly of the white race (77%), frequently use

alcohol and tobacco in PTSD with depressive symptoms. While this study highly support this sample, considering this sample had high percentage of White race, this might justify the increase alcohol use.

Additionally, Maguen et al. (2021) underline that those who experience PMIES in the domain of perpetration have increased odds of substance use disorders. As validated in this study sample on the high level of alcohol and small drug use. Secondly, there was a high percentage of participants reporting sleep dysfunction from "some time" to "never" sleeping six to eight hours per week in this study.

Similarly, Khazaie et al. (2016) revealed veterans diagnosed with PTSD have frequent complaints of sleep disturbances, and Etuk et al. (2022) indicated that veterans have a high prevalence of unhealthy eating behaviors or eating disorders compared to the general population. Also, Hall et al. (2015) indicated that PTSD predicts eating behaviors. Although this study sample did not reveal a PTSD diagnosis besides one participant; however, many reported high PTSD and MI symptom levels. Prior studies support the findings in this study sample with veterans having negative health behaviors with sleep and disordered eating

Finally, the literature found that student veterans encounter negative experiences on campus, as supported by Elliot et al. (2015). Additionally, Bosari et al. (2017) found student veterans feel disengaged. Many studies found that student veterans feel a sense of isolation (Elliot, 2015; Elliot et al., 2011; McAndrew et al., 2019; Smith et al., 2017). Furthermore, several studies found that their educational experiences on campus are less than favorable, and these

experiences are unique to their disposition as a veteran (Elliot, 2015; Graf et al., 2015; Gregg et al., 2016). Previous findings can explain why many participants did not seek assistance on campus. Moreover, Elliot (2015) found that financial hardship is positively associated with PTSD. While Gregg et al. (2016) noted that they no longer get a consistent paycheck, and financial stress among student veterans is tied to transitioning (Olsen et al., 2014) and that student veterans face economic struggles (Cunningham, 2012; Norman et al., 2015). Previous study findings solidify the evidence in this study relating to negative academic experiences.

- **Hypothesis 2: A positive perception of academic experience will mediate the relationship between PTSD and MI and academic success scores objectively and subjectively**

In the conceptual model, the construct of academic self-efficacy, connectedness, and sense of belonging represent the construct of positive perception of academic experience. The findings in the partial correlation network indicated that veterans' sense of belonging and faculty/campus sense of belonging mediated between perceived academic success and PTSD and MI. While PTSD and MI variables had a strong positive correlation with each other, and both had a weak negative correlation with perceived academic success. On the other hand, social connected, peer sense of belonging mediated between both PTSD and MI and level of GPA (objective indicator of academic success). In which, social connectedness had weak positive correlation PTSD and a strong negative correlation with MI, it also had a weak positive correlation with peer sense of

belonging, and peer sense of belonging with level of GPA. Additionally, self-efficacy and social connectedness mediated between both PTSD and MI and perceived academic success. In which, MI had a strong negatively correlation between social connectedness, social connectedness had a strong positive correlation with self-efficacy, and self-efficacy had a moderate positive correlation with perceived academic success.

As hypothesized, a positive perception of academic experience by having a sense of belonging with the faculty and sense of belonging as a veteran, social connectedness, and self-efficacy can mediate their academic success (subjectively). Furthermore, having the positive perception of academic experience by having social connectedness and peer sense of belonging can mediated their objective academic success in their level of GPA.

As mentioned, a larger sample might have displayed a more significant correlation than a small sample. For example, the ASIC result for academic success in two subscales that had a higher percentage of participants that did not meet the cut-off score was the lack of anxiety (31.9%; mean = 41.62, *SD* = 21.62; having a lack of anxiety or nervousness in taking tests and studying) and personal adjustment (29.7%; mean = 59; SD = 26.24; lack of issues that distract one's ability to perform well academically). In other subscales, less than 20% of participants met the 25th percentile cut-off. These results suggested that being a veteran status with PTSD and MI symptomology, anxiety, and personal adjustment is two of the complication that student veterans struggle with transitioning to the college environment and achieving academic success.

Additionally, there was a weak negative correlation between social connectedness and being a veteran status. These findings are supported and consistent with previous research on being stigmatized as a veteran status (Glover-Graf et al., 2010) and feeling disconnected (Yeager & Rennie, 2021).

Additionally, this study sample reported a moderate to low-level sense of belonging, especially with faculty, indicating that their perception of academic experience was not positive and lacked a sense of belonging in the classroom. Furthermore, on the overall connectedness scale, 60.3% (n = 41) reported "moderated" to "low" connection with others. The finding of a high percentage of student veterans having perceived low social connection issues underlines that student veterans continue to endorse connection issues with others on the college campus. Also, since self-efficacy is correlated with social connectedness, their self-efficacy is influenced by their connection to the college settings, faculty, and others on the college campus.

I support this hypothesis. Given that Ahmad et al. (2019) found that high performance was perceived by personal adjustment to their school surroundings and perceived instructor efficacy and that the perception of their instructors' effectiveness contributes to their academic success. Since in this sample had two factors of personal adjustment and anxiety in the ASIC measure that did not meet the cut-off, Ndoye et al. (2020) also found that personal adjustment is linked to academic success, most likely due to internal motivation translating to self-efficacy. Additionally, a most recent study by Shirley et al. (2022) emphasized that academic self-efficacy has a direct path in predicting GPA and PTSD. In this

case, I partially support this finding since, in this studied sample, academic self-efficacy has a direct path to the level of GPA, as they indicated that GPA is the measure of academic success. Remarkably, a new finding was that self-efficacy also has a direct path to their perceived academic success (ASIC) in this study. However, self-efficacy was not a direct path to PTSD because social connectedness moderated between PTSD and self-efficacy, as demonstrated in the LASSO illustration.

Similarly, Hsieh et al. (2007) found that perceived academic self-efficacy significantly predicts GPA, emphasizing that self-efficacy alone predicts GPA (adjusted R^2= .12, P<.001). Furthermore, Sullivan & Yoon (2020) found that only *Connection to Others* significantly predicts self-efficacy. Since the LASSO illustration demonstration, social connectedness moderated PTSD and self-efficacy, as mentioned previously. All in all, Farruggia et al. (2018) noted that academic performance is influenced by self-efficacy, sense of belonging, and academic motivation. Finally, Rugutt & Chemosit (2005) highlighted that a positive college transitioning experience can predict the success of students' academic outcomes.

- **Hypothesis 3: Social support will moderate the relationship between PTSD and MI and the perception of academic success and positive perception of academic experience.**

  Conceptually, lack of social support moderated positively with PTSD and MI and negatively with the perception of academic experience as depicted in the conceptual model. In this study, the partial correlation network analysis revealed

that social support was negatively associated with PTSD, consistent with previous research (Elliott, 2015); therefore, having social support positively correlated with the level of PTSD symptomatology, while MI and PTSD were highly associated, thus highly influence one another. Additionally, social support is negatively correlated with the levels of GPA. The negative association between the level of social support and the level of GPA having a negative correlation was surprising. Still, I can assume it is related to a small sample or other variables influencing this negative correlation or by chance. Since the sample is small, I can only assume the influencing factor was not sufficient or robust for the LASSO regression to fully capture the effect graphically. Still, the observed variables of social support moderated between PTSD and academic success (level of GPA).

Unexpectedly, the study findings did not show social support to moderate the perception of academic experience. However, there was a mediating effect of social connectedness, veteran status, and academic experience between the perception of academic success and social support. In fact, these groups of variables had their own network in the entire network. Drawing upon these findings, I partially support this hypothesis because social support demonstrated moderation between PTSD and academic success objectively, as evidenced by previous research (Whiteman et al., 2013), and social support was also found to decrease symptoms of PTSD (Eakman et al., 2019; Elliot, 2015; Laws et al., 2018). Additionally, social support has been shown to affect academic achievement (Eakman et al., 2019; Laws et al., 2018).

As a whole, future research is needed to expand the knowledge and in-depth understanding of these unique experiences that student veterans are challenged with, having a larger sample. These results can provide educational board members, faculties, student veterans researchers, and policymakers with a broader lens of student veterans' unique needs in supporting their academic success.

References

Ahmad, H., Mokshein, S.E., Husin, M.R., Ali, S.R., & Panessai, Y. (2019). Measuring the academic success of students with ASICS using polytomous item response theory. *International Journal of Advanced and Applied Science, 6*(4), 123-129. http://www.science-gate.com/IJAAS.html

Albright, G., Kognito, Bryan, C.J., & The University of Utah (2020, June 10) Are campuses ready to support student in distress? https://www.insidehighered.com/sites/default/server_files/media/Student%20Veterans%20Study%20_%20KogUtah%20_%20JUNE18.pdf

Aldridge, V., Scott, H., & Paskell, R. (2020). Post-Traumatic Stress Disorder and killing in combat: A Review of existing literature. *Journal of Military and Veteran's Health, 28*(4), 46-59.

Alschuler, M., & Yarab, J. (2018). Preventing veteran attrition: what more can we do? *Journal of College Student Retention, 20*(1), 47-66. doi:10.1177/1521025116646382.

American Psychiatric Association (2020). What is depression? Retrieved from: https://www.psychiatry.org/patients-families/depression/what-is-depression

American Psychiatric Association (2021). What is posttraumatic stress disorder (PTSD)? https://psychiatry.org/patients-families/ptsd/what-is-ptsd

Ames, D., Erickson, Z., Youssef, N.A., Arnold, I., Adamson, A., Sones, A.C., … Koenig, H.G. (2019). Moral injury, religiosity, and suicide risk in the U.S., veterans and active-duty military with PTSD symptoms. *Military Medicine, 184*(3/4), e271-e278.

Armstrong, S., & Oomen-Early, J. (2009). Social connectedness, self-esteem, and depression symptomatology among collegiate athletes versus nonathletes. *Journal of American College Health, 57*(5), 521-526.

Bachrach, R.L. & Read, J.P. (2012). The role of posttraumatic stress and problem alcohol involvement in university academic performance. *Journal of Clinical Psychology, 68*(7), 843-859.

Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychology Review 84*(2): 191–215

Battles, A., R., Kelley, M.L., Bravo, A.J., & White, T.D. (2018). Moral Injury and PTSD as mediators of the association between morally injurious experiences and mental health and substance use. *Traumatology, 24*(4), 246-254.

Barry, A.E., Whiteman, S., MacDermid, S., Wadsworth, S., & Hitt, S. (2012). The alcohol use and associated mental health problems of student service members/veterans in higher education. *Drugs: Education, Prevention, and Policy, 19*(5), 415-425.

Barnes, H.A., Hurley, RA., Taber, K.H. (2019). Moral Injury and PTSD: Often co-occurring yet mechanistically different. *The Journal of Neuropsychiatry and Clinical Neurosciences, 31*(2), A4-103. https://doi.org/10.1176/appi.neuropsych.19020036

Bean, J.P., & Eaton, S. (2000). A Psychological model of college student retention. In J.M. Braxton (Ed.)., *Reworking the departure puzzle: New Theory and research on college student retention.* Nashville, TN: University of Vanderbilt Press.

Bosari, B., Yurasek, A., Miller, M., Murphy, J. G., McDevitt-Murphy, M.E., Matthew, P., …Carey, K.B. (2017). Student service members/veterans on campus: Challenges for reintegration. *American Journal of Orthopsychiatry, 87*(2), 166-175. doi:10.1037/ort0000199

Boyraz, G., Granda, R., Baker, C.N., Tidwell, L.L., Waits, J.B. (2016). Posttraumatic stress, effort regulation, and academic outcomes among college students: A Longitudinal Study. *Journal of Counseling Psychology*, *63*(4), 475-486. doi:10.1037/cou000010

Bong, M., & Skaalvik, E.M. (2003). Academic self-concept and self-efficacy: how different are they really? *Educational Psychology Review, 15*(1), 1-40.

Bowes, M., A., Ferreira, N., & Henderson, M. (2018). The influence of psychosocial factors in veteran adjustment to civilian life. *Clinical Psychological Psychotherapy, 25,* 583-600. doi:10.1002/cpp.2182

Bradley, J.C. (2011). 2011 Military health system conference: *The challenge and the promise: strengthening the force, preventing suicide and saving lives* (Report of the DOD Suicide Prevention Task Force). Department of Defense Task Force on the Prevention of Suicide by Members of the Armed Forces. Retrieved from https://apps.dtic.mil/sti/citations/ADA556250

Bryan, C.J., Bryan, A.O., Hinkson, K., Bichrest, M., Ahern, D.A. (2014). Depression, posttraumatic stress disorder, and grade point average among student servicemembers and veterans. *Journal of Rehabilitation Research & Development, 51*(7), 1035-1046. doi:10.1682/JRRD.2014.01.0012 https://doi.org/10.21315%2Fmjms2018.25.6.9

Bujan, M.A., Omare, E.D., & Baharum, N.A. (2018). A review on sample size determination for Cronbach Alpha test: A simple guide for researchers. *Malaysian Journal of Medical Sciences, 25 (6), 85-99.* doi. https://doi.org/10.21315%2Fmjms2018.25.6.9

Campbell, R., & Riggs, S.A. (2015). The role of psychological symptomatology and social support in the academic adjustment of previously deployed student veterans. *Journal of American College Health, 63*(7), 473-481.

Cate, C.A., Lyon, J.S., Schmeling, J., & Bogue, B.Y. (2017). National Veteran Education Success Tracker: A Report on the Academic Success of Student Veterans Using the Post-9/11 GI Bill. Student Veterans of America, Washington, D.C.

Chen, J.J. (2005). Relation of academic support from parents, teachers, peers to Hong Kong Adolescents' academic achievement: The mediating role of academic engagement. *Genetic, Social, and General Psychology Monographs, 131*(2), 77-127.

Cornwell, E.Y., & Waite, L.J. (2009). Social disconnectedness, perceived isolation, and health among older adults. Journal of Health and Social Behavior, 50(1), 31-48. doi:10.1177/00221465000103

Cunningham, J. (2012). Veterans' post-secondary education: keeping the promise to those who serve. *Hinckley Journal of Politics, 13*, 14-20.

Currier, J.M., Farnsworth, J.K., Drescher, K.D., McDermott, R.C., Sims, B.M., & Albright, D.L. (2017). Development and evaluation of the Expressions of Moral Injury Scale-Military Version. *Clinical Psychological Psychotherapy, 25,* 474-488. doi:10.1002/cpp.2170

Dean, T., Sorgen, C.H., & Zinskie, C.D. (2020). Social integration of student veterans: The influence of interaction with faculty on peer-group interaction. *Journal of Veterans Studies, 6*(2), 20-19. doi: http://doi.org/10.21061/jvs.v6i2.188

DeBeard, M.S., Spielmans, G.I., Julka, D.L. (2004). Predictors of academic achievement and retention among college freshmen: A longitudinal study. *College Student Journal, 38*(1), 66-81.

Derefinko, K.J., Hallsell, T.A., Isaacs, M.B., Colvin, L.W., Salgado-Garcia, F.I., & Bursac, Z. (2019). Perceived needs of veterans transitioning from military to civilian life. *Journal of Behavioral Health Services & Research, 46*(3), 384-398.

DiRamio, D., Ackerman, R., Mitchell, R.L. (2008). From combat to campus: voices of student-veterans. *NASPA Journal, 45*(1), 73-102.

Danowitz, M., & Tuitt, F. (2011). Enacting inclusivity through engage pedagogy: A higher education perspective. *Equity & Excellence in Education, 44*(1), 40-56. doi:10.1080/10665684.2011.539474

Downey, R.G., & King, C.V. (1998). Missing data in Likert ratings: A comparison of replacement methods. *Journal of General Psychology, 125*(2), 175-191. http://dx.doi.org/10.1080/00221309809595542

Durdella, N. & Kim, Y.K. (2012). Understanding patterns of college outcomes among student veterans. *Journal of Studies in Education, 2*(2), ISSN 2162-6952

Drescher, K., Foy, D., Kelly, C., Leshner, A., Schutz, K., & Litz, B. (2011). An exploration of the viability and usefulness of the construct of moral injury in war veterans. *Traumatology,* 17(1), 8-13.

Dursa, E.K., Reinhard, M.J., Barth, S.K., & Schneiderman, A.I. (2014). Prevalence of a positive screen for PTSD among OEF/OIF and OEF/OIF-Era veterans in a large population-based cohort. *Journal of Traumatic Stress, 27*(5), 542-549. https://doi-org.ezproxy.umsl.edu/10.1002/jts.21956

Eakman, A.M., Kinney, A.R., Reinhardt, R. (2019). Participation, meaningful activity, and social support among U.S. student service members/veterans. *OTJR: Occupation, Participation, and Health, 39*(4), 221-231

Eakman, A.M., Schelly, C., & Henry, K.L. (2016). Protective and vulnerability factors contributing to resilience in Post-9/11 veterans with service-related injuries in postsecondary education. *The American Journal of Occupational Therapy, 70*(1), 260010p1-260010p10. Http://dx.doi.org/10.5014/ajot.2016.106519

Elder, G.H., Wing, L., Spence, N.J., Adkins, D.E., & Brown, T. H. (2011). Pathways to the All-Volunteer Military. *Social Science, Quarterly, 91*(2), 455-475. doi:10.1111/j.1540-6237.2010.00702.x

Elliot, M. (2015). Predicting problems on campus: An analysis of college student veterans. *Analyses of Social Issues and Public Policy, 15*(1), 105-126. doi:10.1111.asap.12066

Elliot, M., Gonzalez, C., & Larsen, B. (2011). U.S. Military veterans' transition to college: Combat, PTSD, and alienation of Campus. *Journal of Student Affair Research and Practice, 43*(3), 279-296.

Elliot, M. & Lowman, J. (2015). Education, income and alcohol misuse: a stress process model. *Social Psychiatry & Psychiatric Epidemiology, 2015*(50), 19-26. doi:10.1007/s00127-014-0867-3

Epskamp, S., Borsboom, D., & Fried, E., I. (2018). Estimating psychological networks and their accuracy: A tutorial paper. *Behavioral Research Methods, 50,* 195-212. https://doi.org/10.3758/s13428-017-0862-1

Epskamp, S., Cramer, A., O. J., Waldorp, L. J., Schmittmann, V.D., & Borsboom, D. (2012). Qgraph: Network visualization of relationships in psychometric data. *Journal of Statistical Software, 48*(4), 1018. doi:10.18637/jss.v048.i04

Etuk R, Shirk, S.D., Klein, K.M., Masheb, R.M., Potenza, M.N., Park, C.L., Park, C.L., & Kraus, S.W. (2022). Examining the clinical correlates of overeating and binge-eating behaviors among U.S. veterans. *Military Medicine, 187*(3/4), 297-303.

Farruggia, S.P., Han, C., Watson, L., Moss, T.P., Bottoms, B.L. (2018). Noncognitive factors and college student success. *Journal of College Student Retention: Research, Theory, & Practice, 20*(3), 308-327.

Fernandez, F., Merson D., Ro, H.K., Ranking, S. (2019). Do classroom interaction relate to considerations of institutional departure among student veterans and service members? *Innovative Higher Education, 44,* 233-245. https://doi.org/10.1007/s10755-019-9450-8

Field, A. (2018). *Discovering Statistics using IBM SPSS Statistics: North American Edition (5th).* Sage Publication.

Flanagan, J.C., Teer, A., Beylotte, F.M., Killeen, T.K., Back, S.E. (2014). Correlates of recent and lifetime aggression among veterans with co-occurring PTSD and substance use disorders. *Mental Health Substance Use, 7*(4), 315-328. doi:10.1080/17523281.2014.924986.

Flink, P. (2017). Invisible disabilities, stigma, and student veterans: Contextualizing the transition to higher education. *Journal of Veterans Studies*, *2*(2), 110-120.

Fortney, J.C., Curran, G.M., Hunt, J.N., Cheney, A., Lu, L., Valenstein, M., & Eisenberg, D. (2016). Prevalence of probable mental disorders and help-seeking behaviors among veteran and nonveteran community college students. *General Hospital Psychiatry, 38*, 99-104. doi:10.1016/j.genhosppysch.2015.09.007

Friedman, J., Hastie, T., & Tibshirani, R. (2008). Sparse inverse covariance estimation with the graphical lasso. *Biostatistics, 9*(3), 432-441. https://doi.org/10.1093/biostatistics/kxm045

Gaumer Erickson, A., & Noonan, P. (2018). Self-efficacy formative questionnaire technical report In *The skills that matter: Teaching interpersonal and intrapersonal competencies in any classroom.* Corwin.

Gerardi, S. (2006). Positive college attitude among minority and low-income students as an indicator of academic success. *The Social Science Journal, 43*(2006), 185-190.

Gershman, S.J., & Ullman, T.D. (2023). Causal implicature from correlation statements. *National Library of Medicine: Nation Center for Biotechnology Information, 18*(5), e0286067. doi:10.1371/journal.pone.0286067

Ghosh, A., Santana, M.C., & Opelt, B. (2020). Veterans' reintegration into higher education: A scoping review and recommendations. *Journal of Student Affairs Research and Practice, 57*(4), 386-402.

Glover-Graf, N. M., Miller, E., & Freeman, S. (2010). Accommodating veterans with posttraumatic stress disorder symptoms in the academic setting. *Rehabilitation Education, 24*(1&2), 43-56.

Gopalan, M., & Brady, S.T. (2019). College students' sense of belonging: A National perspective. *Educational Researcher, 49*(2), 134-137.

Gore, P., Leuwerk, W.C., & Turley, S.E. (2006). A psychometric study of a college self-efficacy inventory. *Journal of College Student Retention: Research, Theory, and Practice 7*, 227-244. doi: https://doi.org.2190/5CQF-F3P4-2QA-GNVJ

Graf, N.M., Ysasi, N.A., Marini, I. (2015). Assessment of military viewpoints regarding post-secondary education: classroom preferences and experience. *Hamill Institute on Disabilities*, *59*(1), 18-29. https://doi-org.ezproxy.umsl.edu/10.1177/0034355214558937

Greene, T. W. (2009). An integrated stress process theory: viewing intersections of crime and mental illness. *Theory in Action, 2*(1), 122-139.

Gregg, B.T., Kitzman, P.H., & Shordike, A. (2016). Well-being and coping of student veterans readjusting into academia: A Pilot Survey. *Occupational Therapy in Mental Health, 32*(1), 86-107. doi:10. 1080/0164212X.2015.1082081. http://doi.org//10. 1080/0164212X.2015.1082081

Grossbard, J.R., Widome, R., Lust, K., Simpson, T., Lostutter, T.W., & Saxon, A. (2014). High-risk drinking and academic performance among college student veterans. *Journal of Alcohol and Drug Education*, *58*(3), 28-47.

Guo, J., Yang, L., Zhang, J., & Gan, Y. (2022). Academic self-concept, perceptions of the learning environment, engagement, and learning outcomes of university students: relationships and causal ordering. *Higher Education, 83,* 809-828.

Hagerty, B.M., & Patusky, K. (1995). Developing a measure of sense of belonging. *Nursing Research*, *44*(1), 9-13.

Hall, K.S., Hoerster, K.D., & Yancy, W.S. (2015). Post-Traumatic Stress Disorder, physical activity, and eating behaviors. *Epidemiologic Reviews, 2015* (37), 103-115. doi:10.1093/epirev/mxu011

Harris, A.H., Brown, R., Dawes, M., Dieperink, E., Hugh Myrick, D., Gerould, H., …Hagedorn., H.J. (2017). Effects of multifaceted implementation intervention to increase utilization of pharmacological treatment for alcohol use disorders in the US Veterans Health Administration. *Journal of Substance Abuse Treatment, 82*(2017), 107-112. https://doi.org/10.1016/j.jsat.2017.09.002

Hish, A.J., Nagy, G.A., Fang, C.M., Kelley, L., Nicchitta, C.V., Dzirasa, K., …Rosenthal, Z. (2019). Applying the stress process model to stress-burnout and stress-depression relationships in biomedical doctoral students: A cross-sectional pilot study. *CBE-Life Science Education, 18*(51), 1-11. doi:10.1187/cbe.19-03-0060

Hoffman, M., Richmond, J., Morrow, J., & Salomone, K. (2003). Investigating "sense of belonging" in first-year college students. *Journal of College Student Retention, 4*(3), 227-256.

Holloway-Friesen, H. (2021). The role of mentoring on Hispanic graduate students' sense of belonging and academic self-efficacy. *Journal of Hispanic Higher Education, 20*(1), 46-58.

Houtsma, C., Khazem, L.R., Green, B.A., Anestis, M.D. (2017). Isolating effects of moral injury and low post-deployment support within the U.S. military. *Psychiatry Research, 247*, 194-199. https://doi.org/10.1016/j.psychres.2016.11.031

Hsieh, P., Sullivan, J.R., Guerra, Norma, S. (2007). A closer look at college students: Self-efficacy and goal orientation. *Journal of Advanced Academics, 18*(3), 454-476.

Hurtado, S., Ruiz, Al., Alvarado, A., & Guillermo-Wann, C. (2015). Creating inclusive environments: The mediating effects of faculty and staff validation on the relationship of discrimination/bias to students' sense of belonging. *Journal Committed to Social Change on Race and Ethnicity, 1*, 60-80.

Ice, G.H., Sadruddin, A.F., Vagedes, A., Yogo, J., & Juma, E. (2012). Stress associated with caregiving: An examination of the stress process model among Kenyan Luo elders. *Social Science & Medicine, 74*(12), 2020-2027.

Institute for Veterans and Military Families/Student Veterans of America (2017, June). I am a Post-9/11 student veteran: Collaboration of the Institute of Veterans and Military Families and Student Veterans of America. https://surface.syr.edu/cgi/viewcontent.cgi?article=1307&context=ivmf

Jakob, J. M., Lamp, K., Rauch, S. A., Smith, E. R., & Buchholz, K. R. (2017). The impact of trauma type or number of traumatic events on PTSD diagnosis and symptom severity in treatment-seeking veterans. *The Journal of nervous and mental disease*, *205*(2), 83-86.

Jenner, B.M. (2019). Student veterans in transition: The impact of peer community. *Journal of the First-Year Experience & Students in Transition, 31*(1), 69-83.

Judge, K.S., Menne, H.L., Whitlatch, C.J. (2009). Stress process model for individual with dementia. *The Gerontologist, 50*(3), 294-302. doi:10.1093/geront/gnp162

Kaplan, M.S., & McFarland, B.H. (2012). Veterans who have served in the conflicts of Iraq and Afghanistan are at increased risk of suicide compared to other veterans if they have a psychiatric diagnosis. *Evidence-Based Mental Health, 15, 99.* http://dx.doi.org/10.1136/eb-2012-100914

Kelley, M.L., Braitman, A.L., White, T.D., & Ehlke, S. (2019). Sex differences in mental health symptoms and substance use and their association with moral injury in veterans. *Psychological Trauma, 11*(3), 337-344. doi:10.1037/tra0000407

Kessler, R., Sonnega, A., Bromet, E., Hughes, M., & Nelson, C.B (1995). Posttraumatic stress disorder in the National Comorbidity Survey. *Archives of General Psychiatry, 52*(12), 1048-1060.

Khazaie, H., Ghadami, M.R., & Masoudi, M. (2016). Sleep disturbances in veterans with chronic war-induced PTSD. *Journal of Injury and Violence Research, 8*(2), 99-107.doi: 10.5249/jivr.v8i2.808

King, K.M., Meehan, B.T., Trim, R.S., & Chassin, L. (2006). Substance use and academic outcomes: synthesizing findings and future directions. *Addiction, 101*(12), 1688-1689. https://doi.org/10.1111/j.1360-0443.2006.01695.x

Kirschner, M.J. (2015). Supporting student veteran transition to college and academic success. *Adult Learning, 26*(3), 116-123.

Klaric, M., Franciskovic, T., Klaric, B., Krsic, M., Grkovic, J., Lisica, I.D., …Stevanovic, A. (2008). Social support and PTSD symptoms in war-traumatized women in Bosnia and Herzewgovina. *Psychiagtria Danubina, 20*(4), 466-473.

Koenig, H.G., Ames, D., Youssef, N.A., Oliver, J.P., Min, D., Volk, F., …, Pearce, M. (2018). Screening for Moral Injury: The Moral Injury Symptom Scale-Military Version Short Form. *Military Medicine, 183* (11/12), e659-e665.

Koenig, H.G., Youssef, N.A., & Pearce, M. (2019). Assessment of moral injury in veterans and active-duty military personnel, with PTSD: A review. *Frontiers in Psychiatry, 10*(443), 1-15. doi: 10.3389/fpsyt.2019.00443

Lau, F., & Kuziemsky, C. (2017, February 27). *Handbook of eHealth Evaluation: An Evidence-Base Approach: Chapter 12: Methods for Correlational Studies.* Victoria, British Columbia, Canada. https://www.ncbi.nlm.nih.gov/books/NBK481614/

Laws, H.B., McCutcheon, S.J., Schmitz, T.M., Glynn, S.M., Hoff, R. (2018). Posttraumatic stress symptoms change after family involvement in veterans' mental health care. *Psychological Services, 15*(4), 520-528. https://dx.doi.org/10.1037/ser0000200

LeBeau, R., Mischel, E., Resnick, H., Kilpatrick, D., Friedman, M., & Craske, M. (2014). Dimensional assessment of posttraumatic stress disorder in DSM-5. *Psychiatry Research, 218*(2014), 143-147.

Lee, R.M., Draper, M., & Lee, S. (2001). Social connectedness, dysfunctional interpersonal behaviors, and psychological distress: Testing a mediator model. *Journal of Counselor Psychology, 48*(3), 210-318. doi: 10.1033//0022-0167.48.3.310

Lee, R.M., & Robbins, S.B. (1995). Measuring belongingness: The social connectedness and social assurance scales. *Journal of Counseling Psychology, 42*(2), 232-241.

Lehavot, K., Der-Martirosian, C., Simpson, T.L.. Shiperd, J.C., Washington, D.L. (2013). The role of military social support in understanding the relationship between PTSD, physical health, and healthcare utilization in women veterans. *Journal of Traumatic Stress, 26,* 772-775.

Lentz, J.N. (2013). Post-traumatic stress and mental health in the U.S. Military: issues and response efforts. New York, New York: Nova Science Publisher.

Li, J., Han, X., Wang, W., Sun, G., & Cheng, Z. (2018). How social support influences university students' academic achievement and emotional exhaustion: the mediating role of self-esteem. *Learning and Individual Differences, 61,* 120-126. https://www.sciencedirect.com/science/article/pii/S1041608017302133

Litwack, S.D., Mitchell, K.S., Sloan, D.M., Reardon, A.F., & Miller, M.W. (2014). Eating disorder symptoms and comorbidity psychopathology among male and female veterans. *General Hospital Psychiatry, 36*(4), 4060410. doi:10.1016/j.genhosppsych.2014.03.013.

Litz, B.T., Stein, N., Delaney, E., Lebowitz, L., Nash, W.P., Silva, C., & Maguen, S. (2009). Moral injury and moral repair in war veterans: A preliminary model and intervention strategy. *Clinical Psychology Review, 29*(8), 695-706.

Maguen, S., Nichter, B., Norman, S.B., & Pietrzak, R.H. (2021). Moral injury and substance use disorders among US combat veterans: results from 2019-2020 National Health and Resilience in Veterans Study. *Psychological Medicine*, 1-7. https://doi.org/10.1017/50033291721002919

Maher, M.J., Rego, S.A., Asnis, G.M. (2006). Sleep disturbances in patients with post-traumatic stress disorder: epidemiology, impact and approaches to man-

agement. *Journal of Injury and Violence Research, 20*(7), 567-590.

Mana, A., Saka, N., Dahan, O., Ben-Simon, A., & Margalit, M. (2022). Implicit theories, social support, and hope as serial mediators for predicting academic self-efficacy among higher education students. *Learning Disability Quarterly, 45*(2), 85-95.

Manfro, P.H., Pereira, R.B., Rosa, M., Cogo-Moreira, H., Fisher, H.L., Kohrt, B.A., Mondelli, V., & Kieling, C. (2023). Adolescent depression beyond DSM definition: A network analysis. *European Child & Adolescent Psychiatry, 32*, 881-892. https://doi.org/10.1007/s00787-021-01908-1

Mankowski, M., Tower, L.E., Brandt, C.A., Mattocks, K. (2015). Why women join the military: enlistment decisions and post deployment experiences of service member and veterans. *Social Work, 60*(4), 315-323.

Martinez-Acosta, V.G., & Favero, C.B. (2018). A discussion of diversity and inclusivity at the institutional level: The need for a strategic plan. *The Journal of Undergraduate Neuroscience Education, 16*(3), A252-A260.

McAndrew, L.M., Slotkin, S., Kimber, J., Maestro, K., Martin, J.L., Crede, M., …Eklund, A. (2019). Cultural incongruity predicts adjustment to college for student veterans. *Journal of Counseling Psychology, 66*(6), 678-689. doi:10.1037/cou0000363

McNally, R., Heeren, A., & Robinaugh, D.J. (2017). A Bayesian network analysis of posttraumatic stress disorder symptoms in adults reporting childhood sexual abuse. *European Journal of Psychotraumatology, 8*(sup3), 1341276. https://doi.org/10.1080/20008198.2017.1341276

Morissette, S.B., Ryan-Gonzalez, C., Yufik, T., DeBeer, B.B., Kimbrel, N.A., Sorrells, A.M., …Meyer, E.C. (2021). The effects of PTSD symptoms on educational functioning in student veterans. Psychological *Service, 18*(1), 124-133. doi: 10.1037/ser0000356.

Morris, P.A., Powers Albanesi, H., Cassidy, S. (2019). Student veterans' perceptions of barriers, support, and environment at a high-density veteran enrollment campus. *Journal of Veterans Studies, 4*(2), 180-202.

Morrow, J. A., & Ackermann, M. E. (2012). Intention to persist and retention of first-year students: The importance of motivation and sense of belonging. College Student Journal, 46(3), 483-491

National Institute of Drug Abuse (2019, October 23). Substance use and military life drug facts: general risk of substance use disorders. https://nida.nih.gov/publications/drugfacts/substance-use-military-life#:~:text=men%20than%20women.-,Veterans%3A,a%201%2Dmonth%20period).

Nayback, A.M. (2009). PTSD in the combat veteran: Using Roy's Adaptation Model to examine the combat veteran as a Human Adaptive System. *Issues in Mental Health Nursing, 30*(5), 304-310.

Nieuwsma, J.A., Brancu, M., Wortmann, J., Smigelsky, M.A., King, H.A., VISN 6 MIRECC Workgroup, & Meador, K.G. (2020). Screening for moral injury and comparatively evaluating moral injury measures in relation to mental illness symptomatology and diagnosis. *Clinical Psychology Psychotherapy, 28*, 239-250. https://doi.org/10.1002/cpp.2503

Norman, S.B., Rosen, J., Himmerich, S., Meyers, U., Davis, B., Brown, K.C., …Piland, N. (2015). Student veteran perceptions of facilitators and barriers to achieving academic goals. *Journal of Rehabilitation Research & Development, 52*(6), 701-712. http://dx.doi.org/10.1682/JRRD.2015.01.0013

Ndoye, A., Clarke, S., & Henderson, C. (2020). Predicting college students' academic success. *Journal of Student Success and Retention, 6*(1), 37-61.

Olsen, T., Badger, K., & McCuddy, M.D. (2014). Understanding the student veterans' college experience: An exploratory study. *U.S. Army Medical Department Journal, 101-108.* http://www.cs.amedd.army.mil/dasqadocument.aspx?type=1

Oster, C., Morello, A., Venning, A., Redpath, P., & Lawn, S. (2017). The health and wellbeing needs of veterans: a rapid review. *BMC Psychiatry, 2017*(17), 414-417. doi: 10.1186/s12888-1547-0.

Panayides, P. (2013). Research reports: Coefficient alpha, interpret with caution. *Europe's Journal of Psychology, 9*(4), 687-696. doi:10.5964/ejop.v9i4.653

Park, C.L., Sacco, S.J., Finklestein-Fox, L., Sinnott, S.M., Scoglio, A.A., Lee, S.Y., …Kraus, S.W. (2021). Post-9/11 military veterans' adjustment to civilian life over time following separation from service. *Journal of Clinical Psychology*, 2011-2095. doi:10.1002/jclp.23144

Pearlin, L.I., Menaghan, E.G., Liberman, M.A. Mullan, J.T. (1981). The stress process. American Sociological Association, 22(4), 337-356.

Pearlin, L.I., Mullan, J.T., Semple, S.J., Skaff, M.M. (1990). Caregiving and stress process: An overview of concepts and their measures. The Gerontologist, 30(5), 583-594.

Pierce, M.E., & Pritchard, L.M. (2016). Lower-stress-reactive cortisol in female veterans associated with military status, but not PTSD. *Stress: The International Journal on the Biology of Stress, 19*(5), 486-491. doi:10.1080/10253890.2016.1217841

Prevatt, F., L, H., Welles, T., Festa-Dreher, D., Yelland, S., & Lee, J. (2011). The Academic success inventory for college students. *Journal of College Admission, n211,* 26-31.

Protopopescu, A., Boyds, J.E., O'Connor, C.O., Rind, S.G., Jetly, R., Lanius, R.A., … McKinnon, M.C. (2021). Examining the associations among moral injury, difficulties with emotion regulation, and symptoms of PTSD, depression, anxiety, and stress among Canadian military members and veterans: A Preliminary study. *Journal of Military, Veteran and Family Health, 7*(2), 71-80. doi:10.3138/jmvfh-2020-0036

Ramchand, R. (2021, July 15). Suicide among veterans. *Rand Education and Labor.* https://www.rand.org/pubs/perspectives/PEA1363-1.html

Rattray, N.A., Natividad, D.M., Frankel, R.M., True, G., Salyers, M.P., & Kukla, M. (2019). The long and winding road to post-secondary education for U.S. veterans with invisible injuries. *Psychiatric Rehabilitation Journal, 42*(3), 284-295.

Richman, M. (2018, June 27). Study: Demanding, fast-paced military lifestyle may cause women to adopt poor eating habits. https://www.research.va.gov/currents/0618-Demanding-fast-paced-military-lifestyle-may-cause-women-to-adopt-poor-eating-habits.cfm

Robertson, J.C., & Eschenauer, R.K. (2020). Student veteran perceptions of college-to-career transition. *College Student Affairs Journal, 38*(1), 53-64.

Robbins, S.B., Le, H., Davis, D., Lauver, K., & Langley R., Carlstrom, A. (2004). Do psychosocial and study skill factors predict college outcomes? A Meta-Analysis. *Psychological Bulletin, 130*(2), 261-288.

Rudd, M.D., Goulding, J., Craig, C.J. (2011). Student Veterans: A national survey exploring psychological symptoms and suicide risk. *Professional Psychology: Research and Practice, 42*(5), 354-360.

Rugutt, J. K., & Chemosit, C. C. (2005). A Study of Factors that Influence College Academic Achievement: A Structural Equation Modeling Approach. *Journal of Educational Research & Policy Studies*, *5*(1), 66-90.

Sadeghi-Gandomani, H., & Adib-Hajbaghery, M. (2018). Psychometric properties of Persian version of academic success inventory for college students. *Nursing and Midwifery Studies, 7*, 174-179.

Saguin, E., Gomez-Merino, D., Sauvet, F., Leger, D., Chennaoui, M. (2021). Sleep and PTSD in the military forces: A reciprocal relationship and a psychiatric approach. *Brain Science, 11*(10), 1-17. https://doi.org/10.3390/brainsci11101310

Sansone, V.A., & Tucker Segura, J.S. (2020). Exploring factors contributing to college success among student veteran transfers at a four-year-university. *The Review of Higher Education, 43*(3), 887-915.

Shay, J. (2002). *Odysseus in America: Combat trauma and the trials of homecoming*. New York: Scribner.

Sheerin, C.M., Amstadter, A.B., Kurtz, E.D., Bountress, K.E., Stratton, K.J., McDonald, S.D., and Mid-Atlantic VA MIRECC workgroup. (2019). The association of resilience on psychiatric, substance use, and the physical health outcomes in

combat trauma-exposed military service members and veterans. *European Journal of Pschotraumtology, 10*(1), 1-10. https://doi.org/10.1080/20008198.2019.1625700

Shelton, E.N. (2003). Faculty support and student retention. *Journal of Nursing Education, 42*(2), 68-75.

Schonfeld, L., Braue, L.A., Stire, S., Gum, A.M., Cross, B.L., Brown, L.M. (2015). Behavioral health and adjustment to college life for student service members/veterans. *Journal of American College Health, 63*(7), 428-436.

Shirley, D.M., Metz, A.J., Hinkson, K.D., Drake-Brooks, M.M., Taylor, J.M., Artman, S.E., Burningham, C., & Bryan, C.J. (2022). Academic performance of college student and veterans: The influence of emotion regulation, self-efficacy, and PTSD symptom severity. *Journal of Veterans Studies, 8*(1), 186-203.

Slane, J.D., Levine, M.D., Borrero, S., Mattocks, K.M., Ozier, A.D., Silliker, N., …Haskell, S.G. (2016). Eating behaviors: Prevalence, psychiatric comorbidity, and associations with body mass index among male and female Iraq and Afghanistan veterans. *Military Medicine, 181*(11/12), e1650-e1656.

Smith, J.G., Vilhauer, R.P., & Chaflos, V. (2017). Do military and civilian students function differently in college? *Journal of American College Health, 65*(1), 76-79. http://dx.doi.org/10.1080/07448481.2016.1245193

Smith, M.W., Schurr, P.P., & Rosenheck, R.A. (2005). Employment outcomes and PTSD symptom severity. *Mental Health Services Research, 7*(2), 89-101. doi: 10.1007/s11020-0053780-2

Snaider, P., Waklyn, S.G., Suvak, M.K., & Monson, C.M. (2017). The role of social support in Cognitive-Behavioral Conjoint Therapy in Posttraumatic Stress Disorder. *Behavioral Therapy, 48,* 285-294.

St. Amand, J., Girard, S., & Smith, J. (2017). Sense of belonging at school: Defining attributes, determinants, and sustaining strategies. *IAFOR Journal of Education, 5*(2), 105-119.

Student Veterans of America (2017). Research brief: profile of the contemporary student veteran. Retrieved from: https://nvest.studentveterans.org/wp-content/uploads/2017/04/Profiles-of-a-Contemporary-Student-Veteran.pdf

Sullivan, N., Freer, B. D., & Ulrich, S. (2021). Student veterans and adjustment to college: Making meaning of military experiences. *Journal of American College Health*, *69*(5), 503-512.

Sullivan, K., & Yoon, K. (2020). Student veterans' strengths: exploring student veterans' perceptions of their strengths and how to harness them in higher education. *The Journal of Continuing Higher Education, 68*(3), 164-180. doi:10.1080/07377377363

Tayfur, C., & Ulupinar, S. (2016). The effect of perceived social support on the academic achievement of health college students. *Journal of Psychiatric Nursing, 7*(10), 1-6.

Taylor, A. (2016). Challenges on the front lines: serving today's student veterans. *College and University: The Journal of the American Association of Collegiate Registrars, 91*(4), 47-60.

Tentama, F., & Jayanti, H.D. (2019). Self-concept, perception of the learning environment and employability: A study of vocational high school students in Prabanan Yogyakarta, Indonesia. *Humanities & Social Science Reviews, 17*(1), 433-440. https://doi.org/10.18510/hssr.2019.7149

Tokac, U., & Razon, S. (2021). Nursing Professionals' mental well-being and workplace impairment during the COVID-19 crisis: A Network analysis. *Journal of Nursing Management, 29*, 1653-1659. https://doi.org/10.1111/jonm.13285

Trenz, R.C., Ecklund-Flores, L., Rapooza, K. (2015). A comparison of mental health and alcohol use between traditional and nontraditional students. *Journal of American College Health, 63*(8), 584-588.doi:10.1080/07448481.2015.1040409

Tsai, J. & Rosenheck, R.A. (2015). Risk factors for homelessness among US veterans. *Epidemiologic Reviews, 37*, 177-195. doi: DOI: 10.1093/epirev/mxu004

Tsai, J., Snitkin, M., Kraus, S.W., & Pietrzak, R.H. (2020). Awareness of suicide prevention programs among U.S. military veterans. *Administration and Policy in Mental Health Services Research, 47*(115), 115-125. https://doi.org/10.1007/s10488-019-00975-6.

Umucu, E. Chan, F., Lee, B., Brooks, J., Reyes, A., Mangadu, T., Chiu, C., & Ferriera-Pinto, J. (2022, January 20). Well-being, PTSD, college adjustment in student veteran with and without disabilities. *Frontier in Education*, 6. https://doi.org/10.3389/feduc.2021.793286

U.S. Department of Veterans Affairs (11 June 2020). Learning about student veterans. Retrieved from https://www.mentalhealth.va.gov/student-veteran/learn-about-student-veterans.asp

U.S. Department of Veterans Affairs (2021, September). 2021 National veteran suicide prevention annual report: Office of mental health and suicide prevention. https://www.mentalhealth.va.gov/docs/data-sheets/2021/2021-National-Veteran-Suicide-Prevention-Annual-Report-FINAL-9-8-21.pdf

Vacchi, D.T. (2012). Considering student veterans on the twenty-first-century college campus. *About Campus, 17*(2), 15-21. doi:10.1002/abc.21075

Vacchi, D.T., & Berger, J.B. (2014). *Higher Education: Handbook of Theory and Research:* (Vol. 29; M.B. Paulsen). Student veterans in higher education. Springer.

Van Bel, D.T., Smolders, K.C., IJsselsteijn, W.A., De Dort, Y.A. (2000). Social connectedness: concept and measurement. *Intelligent Environment*, 67-74.

Vest, B.M., Hoopsick, R.A., Homish, D.L., & Homish, G.G. (2020). Mental health and educational outcomes among current and formal National Guard and Reserve soldiers. *Journal of American College Health, 68*(2), 110-114.

Whiteman, S.D., Barry, A.E., Mroczek, D.K., & MacDermid Wadsworth, S. (2013). The development and implications of peer emotional support for student service members/veterans and civilian college students. *Journal of Counseling Psychology, 60*(2), 265-278.

Widome, R., Kehle, S.M., Carlson, K.F., Nelson Laska, M., Gulden, Al., & Lust, K. (2011). Post-Traumatic Stress Disorder (PTSD) and health risk behaviors among Afghanistan & Iraq war veterans attending college. *American Journal of Health Behaviors, 35*(4), 387-392.

Wilcox, S. (2010). Social relationship and PTSD symptomatology in combat veterans. *Psychological Trauma, Theory, Research, Practice, and Policy, 2*(3), 175-182. doi:10.1037/a0019062

Williams-Klotz, D. N., & Gansemer-Topf, A. M. (2017). Identifying the camouflage: Uncovering and supporting the transition experiences of military and veteran students. *Journal of the First-Year Experience & Students in Transition, 29*(1), 83-98.

Wisco, B.E., Marx, B.P., May, C.L., Martini, B., Krystal, J.H., Southwick, S.M., …Pietrzak, R.H. (2016). Moral injury in U.S. combat veterans: results from the national health and resilience in veteran study. *Depress Anxiety, 34*, 340-347.

Wright, K.M., Britt, T.W., Bliese, P.D., & Adler, A.B. (2010). Insomnia severity, combat exposure, and mental health outcomes. *Stress and Health, 2011*(27), 325-333.

Yeager, J., & Rennie, M. (2021). Student veterans' experiences of a campus veterans center revealed through photovoice. *Journal of Continuing Education, 69*(1), 46-60. https://doi-org.ezproxy.umsl.edu/10.1080/07377363.2020.1813483

York, T.T., Gibson, C., & Rankin, S. (2015). Defining and measuring academic success. *Practical Assessment, Research, and Evaluation, 5*(20), 1-20. https://scholarworks.umass.edu/pare/vol20/iss1/5

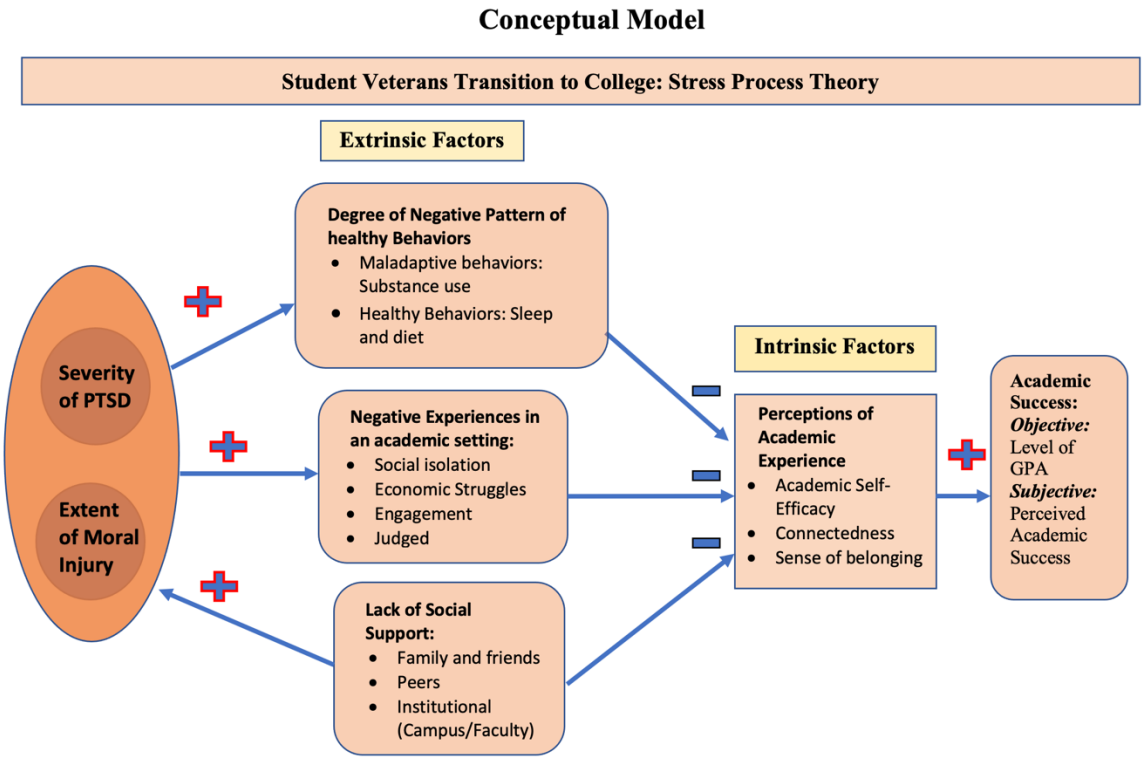
Zepp, P., Potter, D., Haselwood, C., & Britt-Lutter, S. (2018). *Family and Consumer Sciences Research Journal, 47*(1), 73-86. doi:10.1111/fcsr.12274

Zerach, G., & Levi-Belz, Y. (2021). Exposure to combat incidents within military and civilian populations as possible correlates of potentially morally injurious events

and moral injury outcomes among Israeli combat veteran. *Clinical Psychological Psychotherapy,* 1-15. doi:10.1002/cpp.2632.

Appendix A

Conceptual Model of Student Veterans Transition to College: Stress Process Theory



Appendix B

Student Veteran Transition to College Survey

CONSENT University of Missouri–St. Louis
Informed Consent for Participation in Research Activities
Project Title: U.S. Military Veterans' Transition to Two Midwest Universities: Post-Traumatic Stress Disorder, Moral Injury, and Academic Outcomes
Principal Investigator: Malychanh Bartlett (Doctoral Candidate) and Dr. Umit Tokac
IRB Project Number:

You are invited to participate in a research study. The purpose of this research examines how psychological factors (symptoms of posttraumatic stress disorder and moral injury) and other social factors impact academic outcomes for veterans in an academic setting.

Your participation will involve completing a Qualtrics survey about psychological, social, and academic factors that will take approximately 30-40 minutes to complete. You do not have to participate in this research. It is your choice whether or not you want to participate. If you choose not to participate, or choose to stop participation at any time, there will be no penalty to you or loss of benefits to which you are otherwise entitled. If you choose to join our research project, your participation will be voluntary. You can ask to withdraw from the research project at any time.
For your time and effort, at the end of the survey, you will be invited to provide your contact information in a separate, unlinked survey to be entered into a drawing for one of ten $25 Amazon gift cards.
There is a loss of confidentiality risk associated with this research. This will be minimized by using a password-protected, encrypted Qualtrics survey platform and storing contact information for incentives separate from survey data. You may experience emotional/psychological discomforts from questions in the survey about posttraumatic stress disorder and moral injury. You may skip any questions you do not want to answer and stop participation at any time.
There is no direct benefit to you from taking part in this study. However, the information we learn from you during this study may help us learn how to best support veterans in a college setting.
We will do everything we can to protect your privacy. As part of this effort, your identity will not be revealed in any publication that may result from this study. In rare instances, a researcher's study must undergo an audit or program evaluation by an oversight agency (such as the Office for Human Research Protection) that would lead to disclosure of your data as well as any other information collected by the researcher.
If you have any questions or concerns regarding this study, or if any problems arise, you may call the Investigator, Malychanh Bartlett at 618-789-5824 (email: mbqmx@umsl.edu) or the Faculty Advisor, Dr. Umit Tokac at 314-516-7086 (email: tokacu@umsl.edu). You may also ask questions or state concerns regarding your rights as a research participant to the University of Missouri–St. Louis Office of Research Compliance, at 314-516-5972 or irb@umsl.edu; and for Southern Illinois University students, contact 618-650-3010 or email at irbtraining@siue.edu.
By completing this survey, you agree to participate.

Q1 What university do you attend?

- ○ University of Missouri - St. Louis
- ○ Southern Illinois University - Edwardsville
- ○ Other, please specify

_____

Q2 What is your gender identity?

- ○ Male 554
- ○ Female
- ○ Non-binary/third gender
- ○ Prefer not to say

Q3 What is your age?

_____

Q4 How do you describe your race? Select all that apply.

- [ ] Native American or Alaska Native
- [ ] Black
- [ ] Asian
- [ ] White
- [ ] West Asian, Middle Eastern, or North African
- [ ] Native Hawaiian
- [ ] Other Pacific Islander
- [ ] Other

Q5 What is your salary range per year?

- ○ Less than $29,999
- ○ $30,000-$39,999
- ○ $40,000-$49,999
- ○ $50,000-$59,999
- ○ $60,000-$69,999
- ○ $70,000 or greater

Q6 What is your current romantic relationship status?

- ○ Single
- ○ Not married, but living with a partner
- ○ Not married, but in a relationship (living apart)
- ○ Married
- ○ Separated/Divorced
- ○ Widowed

Q7 How many children do you have?

- ○ 0
- ○ 1
- ○ 2
- ○ 3
- ○ 4
- ○ More than 4

Q8 How long have you been a student at your current university?

- ○ Less than a year
- ○ 1 year
- ○ 2 years
- ○ 3 years
- ○ 4 years
- ○ more than 4 years

Q9 What is your current overall GPA?

_____

Q10 How many semesters have you been in college?

_____

Q11 Have you declared a major yet?

- ○ No
- ○ Yes

Skip To: Q13 If Have you declared a major yet? = No

Q12 How many semesters have you been in your current major?

_____

Q13 What location do you seek academic support on campus?

- ☐ Student Veteran Center
- ☐ Other campus departments
- ☐ Nowhere on campus

Q14 Have you ever been diagnosed with a learning disability?

- ○ No
- ○ Yes

Skip To: Q16 If Have you ever been diagnosed with a learning disability? = No

Display This Question:

If Have you ever been diagnosed with a learning disability? = Yes

Q15 Please specify your learning disability.

_____

Q16 Have you ever been diagnosed with ADHD?

- ○ No
- ○ Yes

Q17 Approximately what PERCENTAGE of your total college expenses (tuition, room and board, books, daily living expenses) do you personally pay for by working, borrowing money (such as financial aid or student loans) or out of your own personal savings? Do not count expenses that are paid for by your parents, by a trust fund, or by a scholarship.

0 10 20 30 40 50 60 70 80 90 100

The value must be between 0%-100% ()	

Q18 What is your current employment status? Select all that apply.

- ☐ Working for pay full-time
- ☐ Working for pay part-time
- ☐ Not working for pay but actively looking for paid work
- ☐ Full-time care of children under the age of 18 or adults (for example, disabled adult/child/parent/spouse)
- ☐ Full-time homemaker without full-time child or elder care responsibilities
- ☐ Retired
- ☐ Disabled

Display This Question:

If What is your current employment status? Select all that apply. = Working for pay full-time

And What is your current employment status? Select all that apply. = Working for pay part-time

Q19 How many hours a week do you spend working at a job for pay?

_____

Q20 In what component(s) of the military have you served? Select all that apply.

- ☐ Active duty
- ☐ Reserve
- ☐ National Guard

Q21 What is your current veteran status?

- ○ Retired Veteran
- ○ Active-Duty Military
- ○ Honorable Discharged
- ○ Discharged Under Honorable Conditions
- ○ Medically Discharged
- ○ Separated
- ○ Other, specify _____

Q22 If you have been in more than one branch, in which branch of the military have you served longer?

- ○ Army
- ○ Marine Corps
- ○ Navy
- ○ Air Force
- ○ Coast Guard
- ○ Other, specify _____

Q23 What kind of medical services are you receiving from the Veterans Affairs (VA) currently? (e.g., General health, Psychiatric, etc.) select all that apply:

- ☐ General health
- ☐ Psychiatric
- ☐ Physical Therapy
- ☐ Other, specify _____
- ☐ None at this time

Q24 What kind of benefits are you receiving from the military/VA currently? (e.g., VA disability, retirement, etc.), select all that apply:

- ☐ Retirement
- ☐ VA disability
- ☐ Educational: GI Bill/Yellow Ribbon Program
- ☐ Other, specify _____
- ☐ None at this time

Q25 Below are a number of statements that reflect various ways in which we view ourselves. Rate the degree to which you agree or disagree with each statement using the following scale (1 = Strongly Disagree and 6 = Strongly Agree). There is no right or wrong answer. Do not spend too much time with any one statement and do not leave any unanswered.

	Strongly Disagree	Disagree	Mildly Disagree	Mildly Agree	Agree	Strongly Agree
1. I feel comfortable in the presence of strangers.	○	○	○	○	○	○
2. I am in tune with the world.	○	○	○	○	○	○
3. Even among my friends, there is no sense of brother/sisterhood.	○	○	○	○	○	○
4. I fit in well in new situations.	○	○	○	○	○	○
5. I feel close to people.	○	○	○	○	○	○
6. I feel disconnected from the world around me.	○	○	○	○	○	○
7. Even around people I know, I don't feel that I really belong.	○	○	○	○	○	○
8. I see people as friendly and approachable.	○	○	○	○	○	○
9. I feel like an outsider.	○	○	○	○	○	○
10. I feel understood by the people I know.	○	○	○	○	○	○
11. I feel distant from people.	○	○	○	○	○	○
12. I am able to relate to my peers.	○	○	○	○	○	○
13. I have little sense of togetherness with my peers.	○	○	○	○	○	○
14. I find myself actively involved in people’s lives.	○	○	○	○	○	○

15. I catch myself losing a sense of connectedness with society.	○	○	○	○	○	○
16. I am able to connect with other people.	○	○	○	○	○	○
17. I see myself as a loner.	○	○	○	○	○	○
18. I don't feel related to most people.	○	○	○	○	○	○
19. My friends feel like family.	○	○	○	○	○	○
20. I don't feel I participate with anyone or any group.	○	○	○	○	○	○

Q26 My partner is a positive influence on my academic achievement

- ○ Not currently in a dating relationship
- ○ Strongly Disagree
- ○ Moderately Disagree
- ○ Slightly Disagree
- ○ Neutral
- ○ Slightly Agree
- ○ Moderately Agree
- ○ Strongly Agree

Q27 List a course that you have taken within the past year that was the hardest and most difficult for you:

_____

Q28 For the following questions, please mark the answers that correspond to responses of how you feel about the toughest class you took listed above.

	Strongly Disagree	Moderately Disagree	Slightly Disagree	Neutral	Slight Agree	Moderately Agree	Strongly Agree
Personal problems kept me from doing well in this class.	○	○	○	○	○	○	○
It was easy to keep my mind from wandering in this class.	○	○	○	○	○	○	○
I was nervous for tests even when I was well prepared.	○	○	○	○	○	○	○
I studied the correct material when preparing for tests in this class.	○	○	○	○	○	○	○
I had an easy time concentrating in this class.	○	○	○	○	○	○	○
I got satisfaction from learning new material in this class.	○	○	○	○	○	○	○
I needed to do well in this class to get a good job later on.	○	○	○	○	○	○	○
I needed to do well in this class to get a good job later on.	○	○	○	○	○	○	○

I felt confident I could understand even the most difficult material in this class.	○	○	○	○	○	○	○
I was pretty sure I could make an A or a B in this class.	○	○	○	○	○	○	○
I tried everything I could to do well in this class.	○	○	○	○	○	○	○
Sometimes I partied when I should have been studying.	○	○	○	○	○	○	○
I worked really hard in this class.	○	○	○	○	○	○	○
Studying for this class made me anxious.	○	○	○	○	○	○	○
I had a hard time concentrating in this class.	○	○	○	○	○	○	○
My grades suffered because of my active social life.	○	○	○	○	○	○	○
I knew that if I worked hard, I could do well in this class.	○	○	○	○	○	○	○

This class will be very useful to me in my career.	○	○	○	○	○	○	○
I worried a lot about failing this class.	○	○	○	○	○	○	○
I got easily distracted in this class.	○	○	○	○	○	○	○
I was disappointed with the quality of the teaching.	○	○	○	○	○	○	○
I kept a good study schedule in this class.	○	○	○	○	○	○	○
I did poorly because the instructor was not effective.	○	○	○	○	○	○	○
I would have done much better in this class if I didn't have to deal with other problems in my life.	○	○	○	○	○	○	○
It was important to get a good grade in this class for external reasons (my parents, a scholarship, university regulations).	○	○	○	○	○	○	○

I worked hard in this class because I wanted others to think I was smart.	○	○	○	○	○	○	○
I would have done better if my instructor was better.	○	○	○	○	○	○	○
I was pretty sure I would get a good grade in this class.	○	○	○	○	○	○	○
I felt pretty confident in my skills and abilities in this class.	○	○	○	○	○	○	○
I worked hard in this class because I wanted to understand the materials.	○	○	○	○	○	○	○
I got anxious when taking tests in this class.	○	○	○	○	○	○	○
I studied a lot for this class.	○	○	○	○	○	○	○
I think I used good study skills when working in this class.	○	○	○	○	○	○	○
The instructor in this class really motivated me to do well.	○	○	○	○	○	○	○

Anything I learned, I learned on my own. The instructor in this class was not a good teacher.	○	○	○	○	○	○	○
I got behind in this class because I spent too much time partying or hanging out with my friends.	○	○	○	○	○	○	○
This class is important to my future success.	○	○	○	○	○	○	○
I needed good grades in this class to keep up my GPA.	○	○	○	○	○	○	○
I had some personal difficulties that affected my performance in this class.	○	○	○	○	○	○	○
I think in the future I will really use the material I learned in this class.	○	○	○	○	○	○	○
Sometimes my drinking behavior interfered with my studying.	○	○	○	○	○	○	○

I made good use of tools such as planners, calendars and organizers.	○	○	○	○	○	○	○
I used goal setting as a strategy in this class.	○	○	○	○	○	○	○
I was good at setting specific homework goals.	○	○	○	○	○	○	○
I was well organized.	○	○	○	○	○	○	○
I am certain about what occupation I want after I graduate.	○	○	○	○	○	○	○
I know what I want to do after I graduate.	○	○	○	○	○	○	○
I am having a hard time choosing a major.	○	○	○	○	○	○	○
I am certain that my major is a good fit for me.	○	○	○	○	○	○	○

Q29 Please select the option that most accurately indicates how you are feeling about your self-efficacy (belief and attitude of your abilities) in your academic life:

	Not at all	A little bit	Moderately	Quite a bit	Always
I can solve most problems if I invest the necessary effort.	○	○	○	○	○
I can remain calm when facing difficulties at the university because I can rely on my coping abilities.	○	○	○	○	○
I can learn what is being taught in class this year.	○	○	○	○	○
Once I've decided to accomplish something that's important to me, I keep trying to accomplish it, even if it is harder than I thought.	○	○	○	○	○
I am confident that I will achieve the goals that I set for myself.	○	○	○	○	○
When I'm struggling to accomplish something difficult, I focus on my progress instead of feeling discouraged.	○	○	○	○	○
I will succeed in whatever college major I choose.	○	○	○	○	○
I think that no matter who you are, you can significantly change level of talent.	○	○	○	○	○

Q30 Please select the option that most accurately indicates your sense of belonging to school:

	Completely untrue	Mostly Untrue	Neutral	Mostly True	Completely True
I have met with classmates outside of class to study for an exam.	○	○	○	○	○
If I miss class, I know students who could get notes from.	○	○	○	○	○
I discuss events which happened outside of class with my classmates.	○	○	○	○	○
I have discussed personal matters with students who I met in class.	○	○	○	○	○
I could contact another student from class if I had a question.	○	○	○	○	○
Other students are helpful in reminding me when assignments are due or when tests are approaching.	○	○	○	○	○
I have developed personal relationships with other students in class.	○	○	○	○	○
I invite people I know from class to do things socially.	○	○	○	○	○
I feel comfortable contributing to class discussions.	○	○	○	○	○
I feel comfortable asking a question in class.	○	○	○	○	○
I feel comfortable volunteering ideas or opinions in class.	○	○	○	○	○
Speaking in class is easy because I feel comfortable.	○	○	○	○	○

Q31 Please select the option that most accurately indicates your feelings about the interaction with your peers:

	Completely Untrue	Mostly Untrue	Neutral	Mostly True	Completely True
I do not like it when people I meet at the university want to know the details of my military experience.	○	○	○	○	○
I sometimes feel like I do not fit in with other students because of the age difference.	○	○	○	○	○
I sometimes feel like I am looked down upon because I am a veteran.	○	○	○	○	○

Q32 Please select the option that most accurately indicates what you think about your faculty support:

	Strong disagree	Moderately disagree	Slightly disagree	Neutral	Slightly agree	Moderately agree	Strongly agree
I feel comfortable talking about a problem with faculty.	○	○	○	○	○	○	○
I feel comfortable asking a teacher for help if I do not understand course-related material.	○	○	○	○	○	○	○
I feel that a faculty member would be sensitive to my difficulties if I shared them.	○	○	○	○	○	○	○
I feel comfortable socializing with a faculty member outside of class.	○	○	○	○	○	○	○
I feel that a faculty member would be sympathetic if I was upset.	○	○	○	○	○	○	○
I feel that a faculty member would take	○	○	○	○	○	○	○

the time to talk to me if I needed help.							
If I had a reason, I would feel comfortable seeking help from a faculty member outside of class time (office hours etc.).	○	○	○	○	○	○	○
I feel comfortable seeking help from a teacher before or after class.	○	○	○	○	○	○	○
I feel that a faculty member really tried to understand my problem when I talked about it.	○	○	○	○	○	○	○
I feel comfortable asking a teacher for help with a personal problem.	○	○	○	○	○	○	○

Q33 Please select the option that most accurately indicates your habits:

	Never	Rarely	Sometimes	Very Often	Always
How often in a week do you eat dinner at the table together with the family?	○	○	○	○	○
How often do you eat three or more serving of fruits and vegetable per day?	○	○	○	○	○
How often in a week do you eat breakfast?	○	○	○	○	○
How often do you sleep 6 to 8 hours per night in a week?	○	○	○	○	○
How often do you exercise over 30 minutes per day in a week?	○	○	○	○	○
How often do you visit your doctor in a year?	○	○	○	○	○
How often do you drink alcoholic beverages in a week?	○	○	○	○	○
How often do you smoke cigarettes?	○	○	○	○	○
How often do you use illegal drugs (marijuana, cocaine, heroin, etc.)?	○	○	○	○	○
How often do you eat takeout or fast food per week?	○	○	○	○	○

Q34 Please select the option that most accurately indicates what you think about your social support:

	None of the time	A little of the time	Some of the time	Most of the time	All of the time
Someone you can count on to listen to you when you need to talk.	○	○	○	○	○
Someone to give you information to help you understand a situation.	○	○	○	○	○
Someone to give you good advice about a crisis.	○	○	○	○	○
Someone to confide in or talk to about yourself or your problems.	○	○	○	○	○
Someone whose advice you really want.	○	○	○	○	○
Someone to share your most private worries and fears with.	○	○	○	○	○
Someone to turn to for suggestions about how to deal with a personal problem.	○	○	○	○	○
Someone who understands your problems.	○	○	○	○	○
Someone to help you if you were confined to bed.	○	○	○	○	○
Someone to take you to the doctor if you needed it.	○	○	○	○	○
Someone to prepare your meals if you were unable to do it yourself.	○	○	○	○	○
Someone to help with daily chores if you were sick.	○	○	○	○	○
Someone who shows you love and affection.	○	○	○	○	○
Someone to love and make you feel wanted.	○	○	○	○	○
Someone who hugs you.	○	○	○	○	○

Someone to have a good time with.	○	○	○	○	○
Someone to get together with for relaxation.	○	○	○	○	○
Someone to do something enjoyable with.	○	○	○	○	○
Someone to do things with to help me get my mind off things.	○	○	○	○	○

Q35 Please select the option that most accurately indicates how you feel:

	Not at all	A little bit	Moderately	Quite a bit	Extremely
Having “flashbacks,” that is, you suddenly acted or felt as if a stressful experience from the past was happening all over again (for example, you re-experienced parts of a stressful experience by seeing, hearing, smelling, or physically feeling parts of the experience)?	○	○	○	○	○
Feeling very emotionally upset when something reminded you of a stressful experience?	○	○	○	○	○
Trying to avoid thoughts, feelings, or physical sensations that reminded you of a stressful experience?	○	○	○	○	○
Thinking that a stressful event happened because you or someone else (who didn’t directly harm you) did something wrong or didn’t do everything possible to prevent it, or because of something about you?	○	○	○	○	○
Having a very negative emotional state (for example, you were experiencing lots of fear, anger, guilt, shame, or horror) after a stressful experience?	○	○	○	○	○
Losing interest in activities you used to enjoy before having a stressful experience?	○	○	○	○	○
Being “super alert,” on guard, or constantly on the lookout for danger?	○	○	○	○	○
Feeling jumpy or easily startled when you hear an unexpected noise?	○	○	○	○	○
Being extremely irritable or angry to the point where you yelled at other people, got into fights, or destroyed things?	○	○	○	○	○

Q36 Please select the option that most accurately indicates how you feel right now for items A-K:

A. I feel betrayed by leaders who I once trusted.

- ○ 0
- ○ 1
- ○ 2
- ○ 3
- ○ 4
- ○ 5
- ○ 6
- ○ 7
- ○ 8
- ○ 9
- ○ 10

B. I feel guilt over failing to save the life of someone in war.

- ○ 0
- ○ 1
- ○ 2
- ○ 3
- ○ 4
- ○ 5
- ○ 6
- ○ 7
- ○ 8
- ○ 9
- ○ 10

C. I feel ashamed about what I did or did not do during this time.

- ○ 0
- ○ 1
- ○ 2
- ○ 3
- ○ 4
- ○ 5
- ○ 6
- ○ 7
- ○ 8
- ○ 9
- ○ 10

D. I am troubled by having acted in ways that violated my own morals or values.

- ○ 0
- ○ 1
- ○ 2
- ○ 3
- ○ 4
- ○ 5
- ○ 6
- ○ 7
- ○ 8
- ○ 9
- ○ 10

E. Most people are trustworthy.

- ○ 0
- ○ 1
- ○ 2
- ○ 3
- ○ 4
- ○ 5
- ○ 6
- ○ 7
- ○ 8
- ○ 9
- ○ 10

F. I have forgiven myself for what happened to me or others during combat.

- ○ 0
- ○ 1
- ○ 2
- ○ 3
- ○ 4
- ○ 5
- ○ 6
- ○ 7
- ○ 8
- ○ 9
- ○ 10

G. All in all, I am inclined to feel that I am a failure.

- ○ 0
- ○ 1
- ○ 2
- ○ 3
- ○ 4
- ○ 5
- ○ 6
- ○ 7
- ○ 8
- ○ 9
- ○ 10

H. I have a good sense of what makes my life meaningful.

- ○ Absolutely untrue
- ○ Mostly untrue
- ○ Somewhat untrue
- ○ Can't say true to or false
- ○ Somewhat true
- ○ Mostly true
- ○ Absolutely true

I. I wondered what I did for God to punish me.

- ○ A great deal (very true)
- ○ Quite a bit
- ○ Somewhat
- ○ Not at all (very untrue)

J. Compared to when you first went into the military, has your religious faith since then...

- ○ Weakened a lot
- ○ Weakened a little
- ○ Strengthened a little
- ○ Strengthened a lot

K. Do the feelings you indicated above cause you significant distress or impair your ability to function in relationships, at work, or other areas of life important to you? In other words, if you indicated any problems above, how difficult have these problems made it for you to do your work, take care of things at home, or get along with other people?

- ○ Not at all
- ○ Mild
- ○ Moderate
- ○ Very much
- ○ Extremely

Q37 If you need help the following resources are available to veteran students:

National Veterans Crisis Line (800-273-8255 press 1), Text: 838255. The national crisis line will connect veterans, their families, and friends to the Department of Veteran's Affairs Responders

University of Missouri St. Louis Health and Counseling Services - 314-516-5671

Southern Illinois University Counseling Services - 618-650-2842

Q38 Would you like to be entered into the raffle for 1 of 10 $25 Amazon gift cards for your participation? If you do not wish to receive a gift card, please click "DONE" at the end of the page.

CLICK HERE "Yes, I would like to participate"

Yes I'd like to receive a gift card! A new window will open and you will be redirected to a different page not connected to your answers on this survey. After you click "Yes I'd Like to receive a gift card" You will still need to click DONE on this page.

Thank you for your participation.

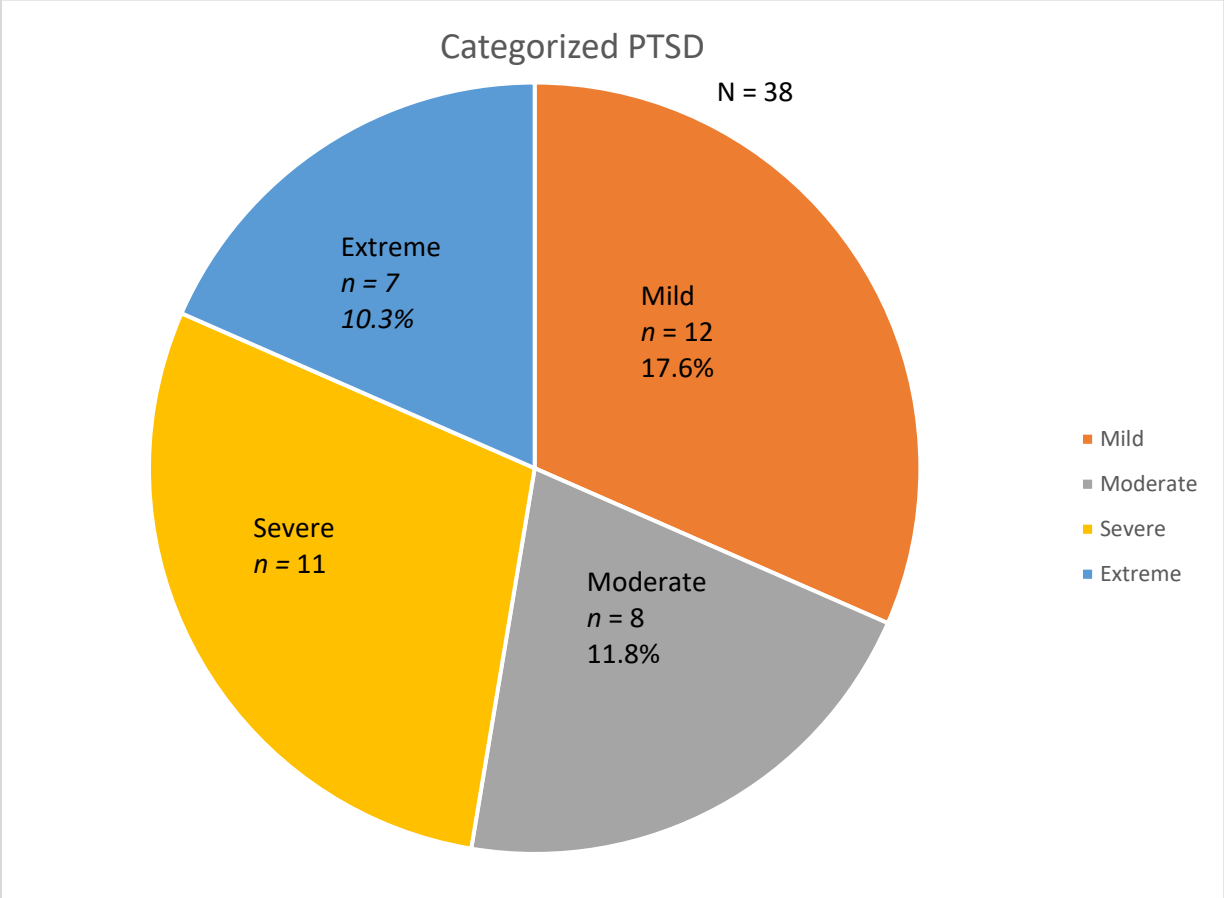
Appendix C: Chart of NSESS: PTSD Category

Figure 1

NSESS: Categorized PTSD Level

Categorized PTSD

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Mild	12	17.6	31.6	31.6
	Moderate	8	11.8	21.1	52.6
	Severe	11	16.2	28.9	81.6
	Extreme	7	10.3	18.4	100.0
	Total	38	55.9	100.0	
Missing	System	30	44.1		
Total		68	100.0		



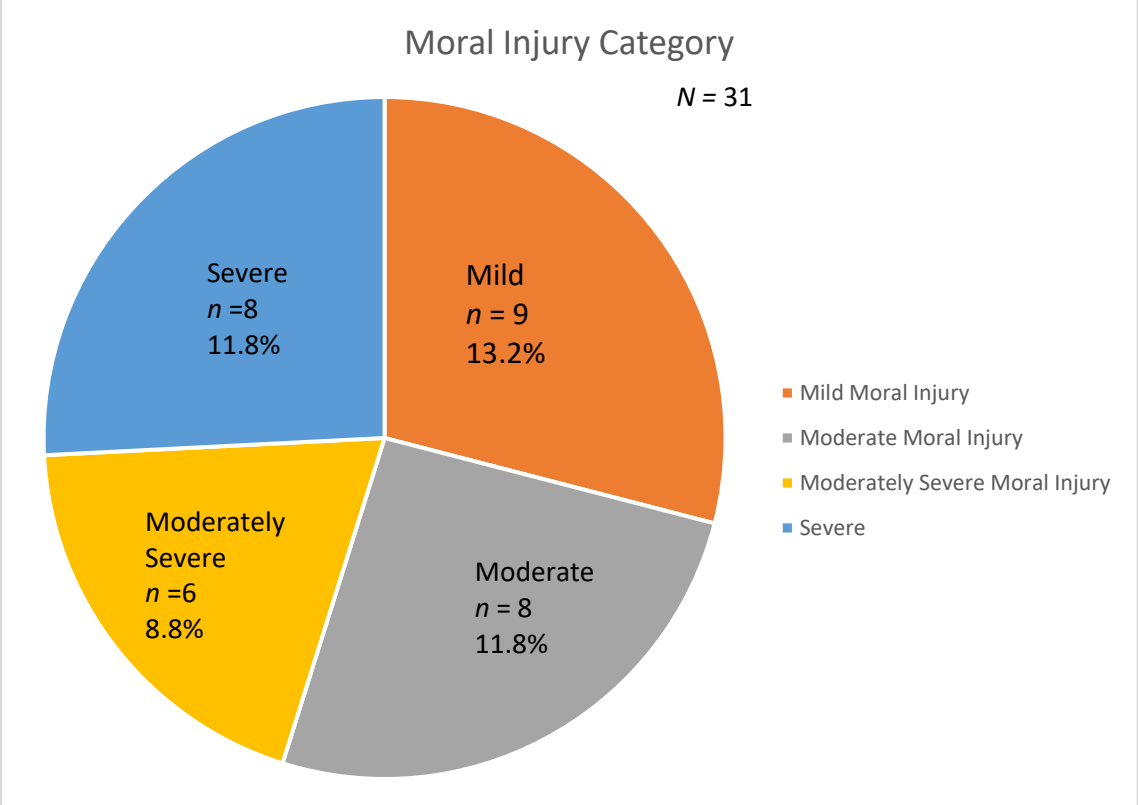
Appendix D: Chart of Moral Injury Category

Figure 2

Categorized Moral Injury Level

Moral Injury Category

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Mild Moral Injury	9	13.2	29.0	29.0
	Moderate Moral Injury	8	11.8	25.8	54.8
	Moderately Severe Moral Injury	6	8.8	19.4	74.2
	Severe	8	11.8	25.8	100.0
	Total	31	45.6	100.0	
Missing	System	37	54.4		
Total		68	100.0		



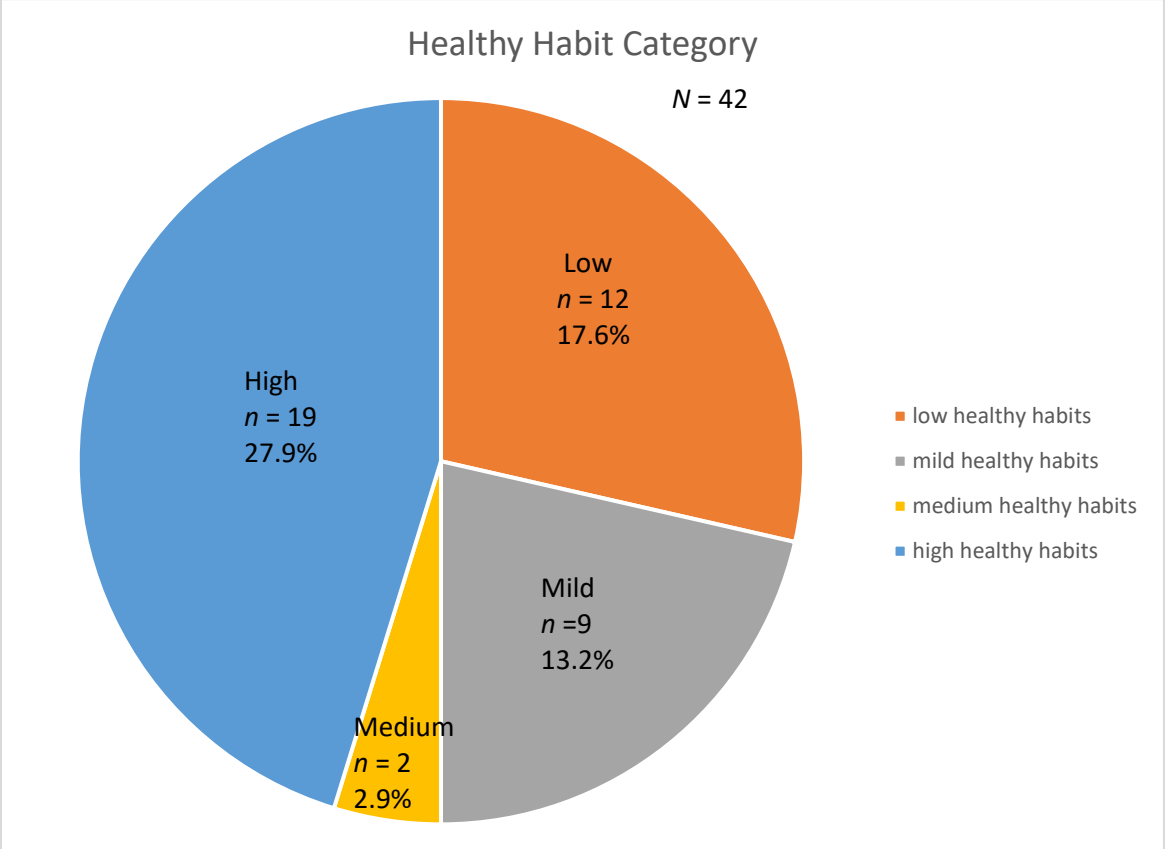
Appendix E: Chart of Healthy Habit Category

Figure 3

Categorized Negative Healthy Habits

Healthy Habit Category

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	low healthy habits	12	17.6	28.6	28.6
	mild healthy habits	9	13.2	21.4	50.0
	medium healthy habits	2	2.9	4.8	54.8
	high healthy habits	19	27.9	45.2	100.0
	Total	42	61.8	100.0	
Missing	System	26	38.2		
Total		68	100.0		



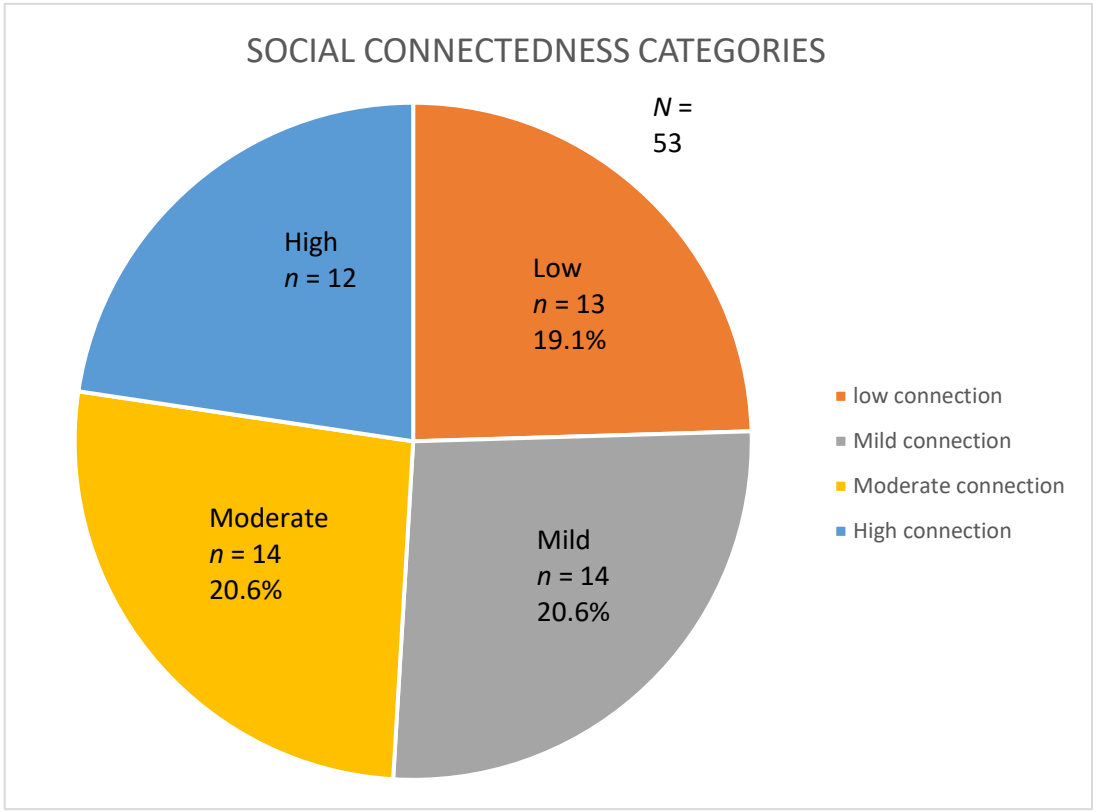
Appendix F: Chart of Social Connectedness Category

Figure 4

Categorized Social Connectedness Level

SOCIAL CONNECTEDNESS CATEGORIES

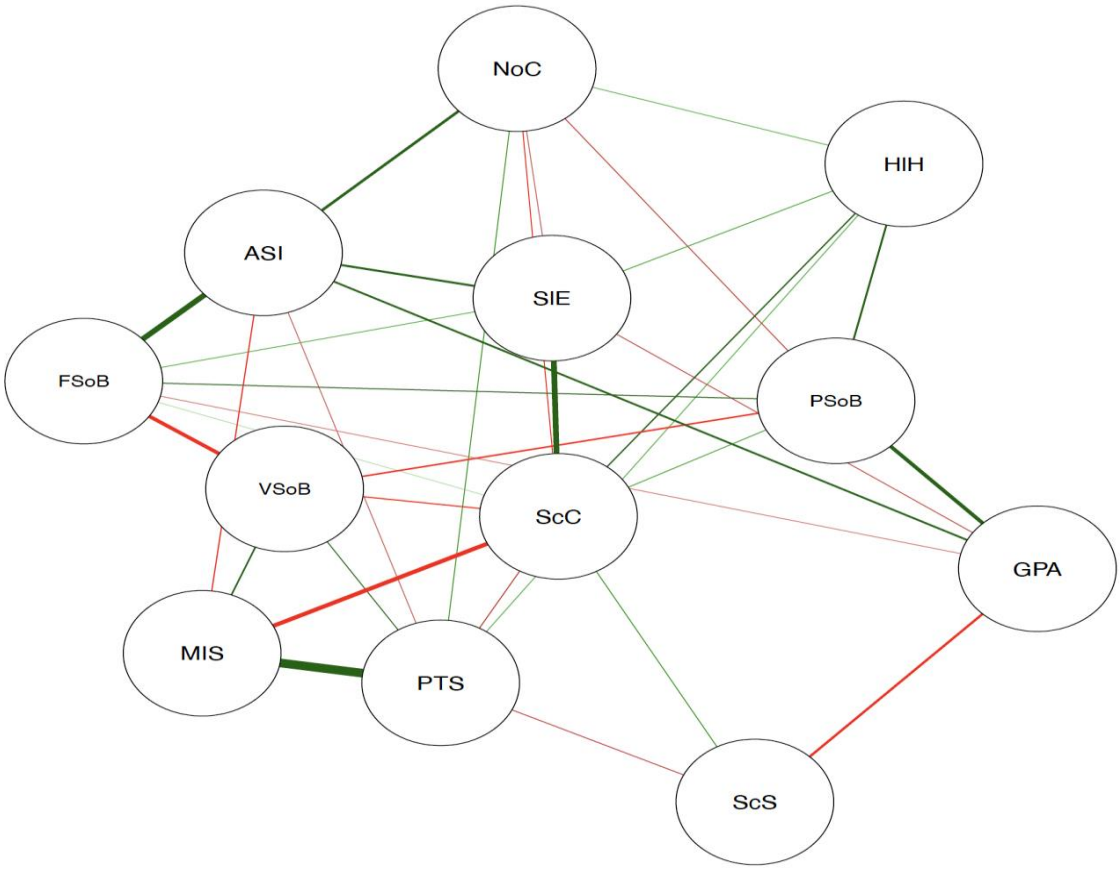
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	low connection	13	19.1	24.5	24.5
	Mild connection	14	20.6	26.4	50.9
	Moderate connection	14	20.6	26.4	77.4
	High connection	12	17.6	22.6	100.0
	Total	53	77.9	100.0	
Missing	System	15	22.1		
Total		68	100.0		



Appendix G: LASSO Regularized Illustration of Partial Correlation

Figure 5

LASSO Regularized Illustration of Partial Correlation



Note. Partial correlation among PTSD, MI, healthy habits, social support, sense of belonging, social connectedness, perceived academic experience (FSoB), and academic success. (NoC [number of children], GPA [current self-report GPA], Social Connectedness [perceived connection to others], self-efficacy [perceived self-worth], ASIC [academic success], PTSD [symptoms of PTSD], PSoB [sense of belonging among peers], VSoB [sense of belonging among veterans], FSoB [perceived sense of belonging with faculty/campus experience], ScS [social support from family and friends], MIS [Moral Injury symptoms], and HIH [healthy habits]).

Appendix H: Correlations, Divergent Validity, and Descriptive Statistics

Table 1

Correlations, Divergent Validity, and Descriptive Statistics

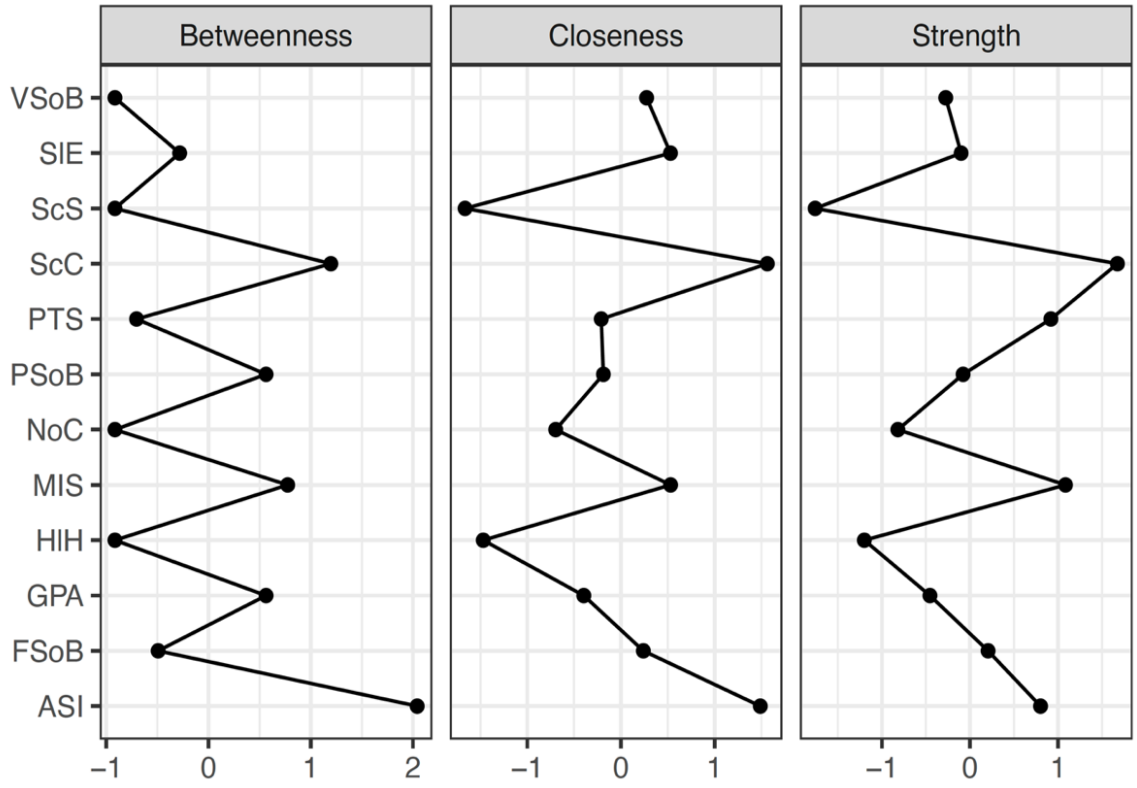
Variables	1	2	3	4	5	6	7	8	9	10	11	12
Noc	1.00											
GPA	0.07	1.00										
ScC	-0.26	-0.001	1.00									
SIE	-0.22	-0.25	0.41	1.00								
ASI	0.18	0.54*	-0.26	0.42	1.00							
PTSD	0.29	0.05	0.01	-0.02	-0.32	1.00						
PSoB	-0.13	0.64**	0.09	0.11	-0.47	-.23	1.00					
VSoB	0.17	0.05	0.03	0.19	0.08	0.17	-0.11	1.00				
FSoB	0.18	-0.49	0.16	0.004	0.62**	0.32	0.53	-0.35	1.00			
ScS	0.20	-0.20	0.09	0.08	-0.13	-0.25	-0.02*	-0.01	-0.40	1.00		
MI	-0.29	-0.05	-0.55*	0.18	-0.09	0.63**	0.19	0.17	-0.08	0.07	1.00	
HIH	0.30	-0.24	0.44	0.01	0.40	0.24	0.36	-0.25	-0.42	0.03	0.21	1.00

Note: The off-diagonal values are divergent validity. *Correlations are significant at < 0.05 level, ** Correlation are significant at < 0.01. Values < .005 are carried out to the three decimal points.

Appendix I: Illustration of Z-Score Centrality Indices

Figure 6

Illustration of Z-score Centrality Indices



Note. Depiction of *betweenness, closeness,* and *strength* for student veterans' transition to college experiences and academic outcomes.