

# Service-Connected Disability: Belongingness, Access, and Quality of Life for Student Veterans

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## Abstract

This study provides a deeper understanding of the experiences of student veterans with disabilities through examination of type and severity of service-connected disability and impacts on transition to higher education. Through quantitative survey research ( $n=328$  respondents) at a medium sized regional research university in the West, we investigated the role of injury type and visibility as it relates to sense of belongingness on campus, impacts on quality of life, and perceptions of university disability services. Students with invisible disabilities reported stronger impacts of their injuries on belongingness and quality of life, and a significant proportion of students (46%) reported their injuries as severe and worsening over time. Student veterans with posttraumatic stress (PTS) or sensory injuries had higher odds of reporting their experiences with university disability services as “helpful.” Comparatively, student veterans with physical injuries or traumatic brain injury (TBI) had lower odds of finding disability services helpful. Through exploring relationships between injury severity, type, and perception of injuries, we provide insight into disability services delivery and belongingness for student veterans on campus.

*Keywords: student veterans, disability, belongingness, quality of life, disability services*

Focus on the success and support of student veterans has significantly increased in higher education research and practice (Borsari et al., 2017). Studies have focused on enrollment trends in higher education (McBain et al., 2012; Zhang, 2018), educational outcomes among student veterans (Cate et al., 2017; Holder, 2011), and student success and retention (Cate et al., 2017). Several studies have also examined the impacts of service-connected disability (SCD) on transition out of the military and into higher education (Kinney & Eakman, 2017; Kranke et al., 2017). Understanding how student veterans carry their disabilities is important given that student veterans have reported disabilities at twice the rate of non-veteran students (NSSE Report, 2010). This disparity in prevalence of disability is concerning given reportedly lower patterns of use of campus disability services among student veterans compared to non-veterans (Lange et al., 2016). Through the examination of type and severity of SCD and impacts on transition to

higher education, this study seeks to provide a deeper understanding of the experiences of student veterans with disabilities. The goal of this study is to inform strategies for improved awareness of available resources and advocacy for student veterans and provide insight for campus practitioners.

## Literature Review

### Veteran Transition to University

Servicemembers who enlisted in the military after September 11, 2001 were afforded new and expanded veterans' education benefits, commonly referred to as the Post 9/11 GI Bill. Expanded benefits include funding for housing, books, and full tuition. Several unique conditions and experiences of post-9/11 student veterans impact their transition to, and success in, higher education. These conditions include the role of age differences between student veterans and other students, financial challenges, difficulty navi-

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gating veteran benefits, cultural barriers stemming from a lack of understanding of veteran experiences, the complexities of balancing family and returning to school, and cultural differences between the military and higher education (Cook & Kim, 2009; Hamrick & Rumann, 2012; Mendez et al., 2018; Lim et al., 2018).

Several campus interventions have been shown to mitigate the transition difficulties and help student veterans develop strong advocacy and coping skills (Borsari et al., 2017). However, much of the literature on student veteran transition fails to identify specific services/strategies for student veterans with disabilities. This omission is significant, as academic success factors (i.e. retention and graduation) have been shown to vary based on category and severity of injury in broader studies on non-veteran students with disabilities (Safer et al., 2020).

### **Service-Connected Disability and Transition to University**

High numbers of returning student-veterans will have SCD. Enhancements in battlefield care have led to the highest survival rate of wounded service members in U.S. history (Church, 2009; Madaus et al., 2009). According to the VA, approximately 36% of post-9/11-era veterans have a service-connected disability (National Center for Veterans Analysis and Statistics, 2018). The VA assigns cumulative ratings based on the scope and severity of a given injury or injuries. While this determines compensation, veterans do not always believe their disability rating accurately reflects the impact their injury has on their quality of life. The common use of asymmetric warfare tactics, (e.g. roadside bombs) have led to frequent exposure to blast injuries resulting in mild or severe traumatic brain injury (TBI), one of the two signature injuries in the Post 9/11 era, along with posttraumatic stress (PTS). PTS and TBI have independently received considerable attention in the medical and psychological research literature (Brickell et al., 2014; Vogt et al., 2017; Lindquist et al., 2017). However, less scholarship on veteran transition to higher education has focused specifically on PTS (Barry et al., 2012) or TBI (Borasri et al., 2017; Helms & Libertz, 2014). Further, recent scholarship points to potentially significant compounding effects of these two commonly co-occurring injuries on negative outcomes, such as veteran suicide, suicidal ideation, and executive function challenges among veterans with these two disabilities (Brenner et al., 2015; Carlson et al., 2010). Despite these findings, little attention within the transition to higher education literature has focused on the interaction effect between TBI and PTS.

In addition to posttraumatic stress (PTS), other mental health conditions (e.g. depression and anxiety) have high prevalence rates after exposure to combat and military deployments (Milliken et al., 2007; Thomas et al., 2010). Rudd et al. (2011) found that of 628 student veterans surveyed, 34% were experiencing severe anxiety, 24% severe depression, and 45% exceeded the cutoff score for posttraumatic stress. In a study that matched veteran and non-veteran comparison students, Currier et al. (2018) found similarly high rates of veteran mental health conditions. Findings indicated e both a higher occurrence of mental health diagnoses for student veterans and higher levels of stigma related to seeking help (Currier et al., 2018). These studies highlight the differential effects of the range of mental health disabilities commonly impacting veterans, in addition to physical, sensory, and other service-connected disabilities.

### **Service-Connected Injury And Belongingness On Campus**

A multitude of factors can lead student veterans to leave campus and not return, but one area receiving increased focus is the role of belongingness (Hinton, 2020; McAndrew et al., 2019). The phenomenon of student veterans feeling out of place on campus has long been identified as a deterrent to persistence and graduation (DiRamio et al., 2008; Hamrick & Rumann, 2012). In a national study of student veteran well-being, 42% of student veterans reported a low sense of belonging compared to their Reservist (33%) and civilian (28%) counterparts (Barry et al., 2019). Even after comparing for background characteristics known to be highly correlated with sense of belonging on campus (e.g. age, GPA, year in school, ethnicity), student veteran status was a statistically significant predictor of sense of belonging (Barry et al., 2019). McAndrew et al. (2019) examined belongingness for student veterans through the lens of cultural (in)congruity. They found a significant link between feelings of not belonging on two scales measuring cultural connections and adjustment to college. These findings support earlier research findings related to connecting with peers. Due to differing levels of maturity and the gap in life experiences and responsibilities, many veterans have reported an inability to connect with civilian peers (DiRamio et al., 2008; Livingston et al., 2011, Whiteman et al., 2013).

Further, when considering intersecting identities for student veteran belongingness, it is important to consider unique impacts of disability on women veterans and their transition and integration on campus. Women are less likely to disclose their veteran status and seek out support services (Albright et al., 2019).

Lau et al., (2020) suggested that women veteran students should be treated as a unique cultural group with targeted services. Moore (2017) explored the role of veteran identity as a key component of transitioning into higher education, and asserted that when programs valorize and reify military veterans as a monolithic group, this messaging neglects deeper philosophical discussions on militarization and war policy and fails to capture the wide variety of perspectives veterans have on these issues and their experiences.

To remedy the social isolation impacting veterans in transition, national efforts to initiate veteran-to-veteran peer advising on campus have been established (Kees et al., 2017), and increasingly dedicated student veteran centers/spaces on campus are opening to provide space for students to connect, meet, and belong (Yeager & Rennie, 2020). However, the cultural incongruence that student veterans face may be linked to factors such as time-in-service, strength of military identity, combat experience, disability status, gender, and race (Atuel & Castro, 2018; Hinton, 2020). These identity intersections may be particularly important for student veterans as they transition to higher education and develop a sense of belonging. Scant research has investigated the role of intersecting identity dimensions and service-connected disabilities (SCDs) on belongingness and transition for student veterans.

### **Service-Connected Disability And Quality Of Life**

Existing scholarship on quality-of-life measures for post-9/11 veterans suggests exposure to combat increases rates of various negative outcomes (e.g. health, marital problems, alcohol abuse) compared to noncombat veterans and nonveterans (Sheffler et al., 2016; MacLean & Elder, 2007). Boehmer et al. (2004), found veterans who were mobilized to combat zones faced worse health outcomes for the first five years after their return. On the other hand, McCutchan et al. (2016) suggested the negative association of deployment and health may last even longer. Research also has paid particular attention to PTS, suggesting significant negative impact of PTS among post-9/11 veterans on a range of quality of life indicators (Vogt et al., 2017; Pittman et al., 2012). Some research focusing specifically on TBI has also found a negative impact on quality of life for veterans, particularly in the first-year post injury (Brickell et al., 2014).

### **Disability, Visibility, and Stigma**

Examinations of disability stigma indicate post-traumatic stress (PTS) among post-9/11 veterans is associated with a constellation of stigmatized asso-

ciations (Feinstein, 2015; Hipes et al., 2015). Other research has considered how the combat versus non-combat context of injury affects stigmatization versus valorization (Caddick et al., 2020). Both Kranke et al. (2017) and Flink (2017) reviewed scholarship exploring the relationship between invisible disabilities and stigma for student veterans and found generally negative cultural resonance for invisible SCDs. While some research on students with disabilities finds that those with visible disabilities have an easier adjustment to higher education than those with invisible disabilities (Safer et al., 2020), scant research focuses on the question of disability visibility among student veterans.

### **Veterans and Utilization of University Disability Services**

Most universities serve disabled veterans within existing disability services programs (McBain et al 2012, Vacchi & Berger, 2014; Hamrick & Rumann, 2012). Yet, disabled veterans are less likely than civilian students with disabilities to utilize campus disability services (Lange et al., 2016; Church 2009) and might benefit from disability services targeted to the veteran population (McBain et al., 2012). Several factors explain the reluctance or resistance of disabled veterans to use disability services; including disability stigma, perceiving the navigation as a hassle, and a sense that the accommodations available were designed for civilian-type disabilities (e.g. learning disabilities) and would not address their needs (e.g. triggering effect of loud noises for someone with PTS or difficulty concentrating) (Kranke et al., 2017; Lange et al., 2016; Morris et al., 2019).

Veterans with visible disabilities are more likely to utilize disability services than those with invisible disabilities (Kranke et al., 2017). While this pattern is also found among civilian students with disabilities (attributed to the heightened stigma on mental health disabilities), findings suggest the disparity is more exaggerated among student veterans (Kranke et al., 2017). Explanations for the tendency of student veterans to eschew disability services have focused on self-advocacy skills. Kinney & Eakman (2017) created and tested an instrument to measure self-advocacy for student veterans with disabilities. Findings from their study show that extent of exposure to support mechanisms and number of self-reported health conditions as statistically significant and positively correlated with self-advocacy of student veterans with disabilities. These findings suggest that efforts to bolster disabled student veterans' comfort with self-advocacy behaviors could translate into improved outcomes for student veterans.

## Research Questions

To examine how type and severity of service-connected disability affects student veterans' transition to higher education, we analyze three research questions:

1. Do type and visibility of disability shape sense of belongingness on the college campus?
2. Is there a relationship between type of disability and reported quality of life?
3. Is there a relationship between disability type and perceptions of university disability services?

## Methods

### Research Site

The research setting is a medium-sized regional research university situated in the West, hereafter referred to as Mountain West University (MWU). In Fall 2017, 1678 students had a direct armed forces connection (i.e. veterans, active duty, reserves). The institution is located near several military installations with high proportions of local population connected to the military. As a result of the community culture, institutional mission, and emphasis on campus military support, a host of services have been developed and implemented at the university. The Office of Disability Services works closely with the Veteran Services Office to introduce the services and supports available to student veterans, including testing accommodations, study supports, and faculty/course communications.

### Survey Design and Data

The survey used for this study contained questions designed to capture information on service characteristics (i.e. time spent in the military, service branch, service era), demographic characteristics, support service utilization, as well as veterans' experiences transitioning from the military to higher education. Additionally, the survey contained several questions about the nature, scope, and severity of any significant injuries incurred while serving in the military. The project received IRB approval and per the IRB informed consent was given on the first page of the online survey. The incentivized survey (\$5 gift card for completing the survey) was sent to a registry of 1,100 student veterans and rendered a sample of 328 respondents, not including active duty or national guard and reserves. Because the research focused on disabled veterans, current service members were not included in the survey solicitation. The survey sample consisted of 65% male respondents along with

33% female and 1% choosing other or non-response. In terms of ethnicity, the sample was predominantly white (72%), with Hispanic, multiple, and Black students comprising 23% of the sample; another 5% of sample participants identified as Asian American or Native American. Racial and ethnic minority groups made up 40% of Defense Department active-duty military in 2015 and 33% of the student body at MWU. This indicates that the sample consists of more white participants than the broad military population (Parker et al., 2017) and MWU.

A block of questions addressed the types of injuries incurred while in service, where and how the injuries occurred, and perceptions of how these injuries impact participants' daily lives. From the sample, 65% of respondents ( $n=211$ ) indicated they had incurred an SCD, leaving 117 respondents who did not indicate an SCD. The survey allowed participants to select multiple types of service-connected injuries. Of the total sample, 38% of respondents indicated multiple injuries, while 59% of veterans with an SCD had multiple injuries. Survey responses were then broken down into six dummy variables indicating the presence of a specific injury—with injury categories being not mutually exclusive. Breakdown by type of disability is represented in Table 1. Any disabilities unrelated to military service were not within the scope of this study. In Figures 1 and 2 below, percent of participants reporting each type of disability are broken down by gender and race.

For perceptions of disability, 15% of participants answered "yes" to whether they felt others can easily notice their injury. A slightly higher percentage (18% of those who had an SCD) felt like they "stick out" in the classroom because of their disability. When the sub-set of students who indicated an SCD were asked if they ever refer to themselves as disabled, approximately half responded yes, while 43% responded sometimes, and 8% answered no. For further exploration of the sample's descriptive characteristics and of the participants' open-ended responses to the survey, see Morris et al. (2019).

### Analysis

Quantitative methods were chosen for this project, specifically logistic and multiple ordinary least squares regressions. Multiple regressions were used for statistical models with continuous dependent variables. Logistic regressions were used to examine associations between control variables and dichotomous dependent variables. Stata version 15.1 was used to conduct analyses. The goal behind this approach was to yield findings which would be generalizable to the population of student veterans at MWU.

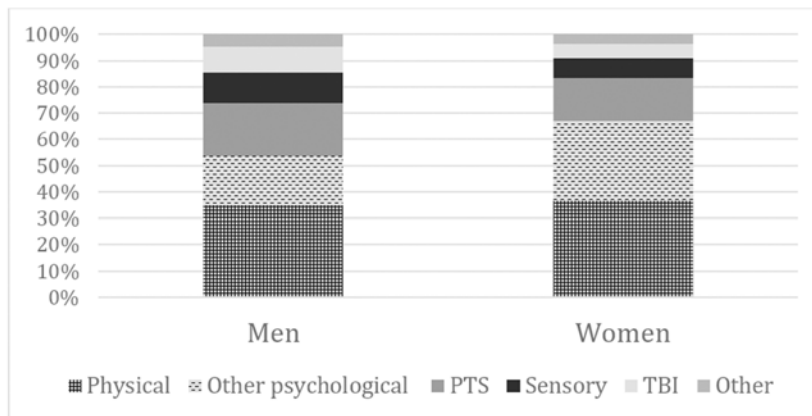
**Table 1**

*Sample by Injury Type*

	% of total sample	% of sample with SCD
Physical	45 (148)	68
Other psychological	28 (92)	43
Posttraumatic stress	25 (81)	38
Sensory	13 (44)	21
Traumatic brain injury	11 (37)	17
Other injury	5 (18)	7
Multiple injuries	38 (125)	59

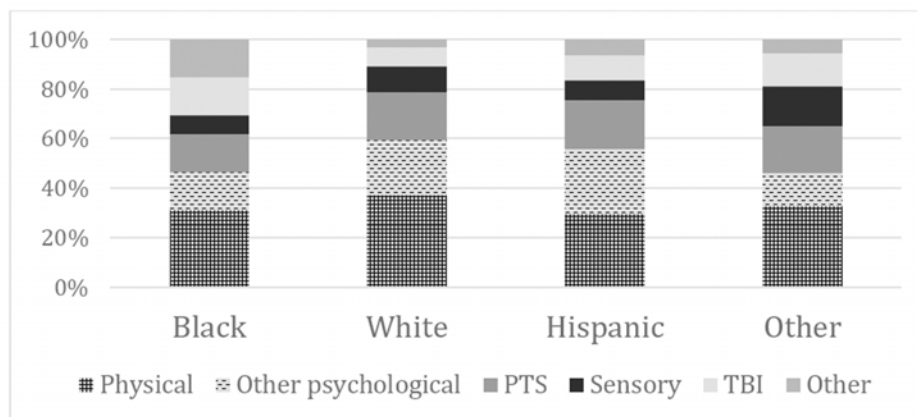
**Figure 1**

*Injury Type by Gender*



**Figure 2**

*Injury Type by Race*



Using regression analyses allowed the authors to investigate the impact of different types of SCD on the dependent variables, net of other factors.

During the analysis process, several models were tested on the dependent variables. These models included a number of different control variables. Models were tested which included demographic characteristics, (e.g., race, age, and gender), service characteristics (e.g., time spent in military service, branch of service, military rank, nature of military separation, and service era), and SCD specific questions (e.g., injury type, assigned VA disability rating, whether or not the student veteran refers to themselves as disabled, as well as scope and severity of injury). Akaike information criterion, Bayesian information criterion, and Wald tests were used to assess model fit for logistic regression models. *F*-tests and adjusted  $r^2$  values were used to assess model fit for ordinary least squares models. Models with injury type and injury noticeability as the primary control measures proved to be more parsimonious than models including demographic characteristics and/or service characteristics.

## Findings/Results

### Question 1: Do Type and Visibility of Disability Shape Sense of Belongingness on Campus?

The first question examined the relationship between type of SCD and belongingness. Table 2 presents the adjusted associations between SCD types and three different belongingness measures.

#### *Do You Stick Out in the Classroom?*

The first belongingness measure asked survey participants the question “Do you feel like you stick out in the classroom because of your injury?” This item was coded as a yes/no response. Model parameters included six different service-connected injury types and the perceived noticeability of an injury. Noticeability was captured through the question “Do you think others can easily notice your injury?” and was coded as a yes/no response.

The model produced three statistically significant predictors for sticking out in the classroom: noticeability, other psychological injury, and PTS. Noticeability was the strongest correlate ( $p < 0.001$ ). The odds of feeling like you stick out in the classroom are expected to be 15.86 times higher for veterans who felt others could easily notice their injury. Other psychological injury and PTS also increased the odds of feeling like you stick out in the classroom 3.57 and 3.36 times, respectively.

#### *Do You Feel Out of Place in the Civilian World?*

The second belongingness measure asked participants the question “Do you feel out of place in the civilian world?” Responses were originally captured on a three-item Likert scale (no/sometimes/yes). This variable was then transformed into a dummy variable, with 0=no and sometimes/yes=1. TBI was the only statistically significant predictor of feeling out of place in the civilian world ( $p < .05$ ). The odds of feeling out of place in the civilian world are 10.62 times higher among veterans with TBI.

#### *Combined Belongingness Measure*

The third outcome variable assessed in Table 2 regresses model parameters on a combined belongingness measure. This measure was generated using both “Do you feel like you stick out in the classroom because of your injury?” and “Do you feel out of place in the civilian world?” Participants who answered both “yes” to sticking out in class and either “sometimes” or “yes” to feeling out of place in the civilian world were coded as one. Conversely, answering no to one or both questions resulted in being coded as a zero.

Noticeability, other psychological injury, PTS, and TBI were statistically significant predictors for the combined belongingness measure: The odds of scoring on the combined belongingness measure are expected to be 14.48 times higher among veterans who feel others can easily notice their injury. Other psychological injury increases the odds of scoring on the combined belongingness measure by 4.66. PTS increases the odds by 4.41 and TBI increases the odds by 2.88.

### Question 2: Is There a Relationship Between Type Of Disability And Reported Quality Of Life?

Our second research question considers the impact of disability type on quality of life. To investigate the relationship between disability type and quality of life, we combined two survey questions into a standardized composite variable. The first question asked participants “To what extent has your injury negatively affected your quality of life?” and was captured on a four-point scale, ranging from: “not at all” to “very much.” The second question asked participants “Has the impact of your injury on your quality of life changed over time?” This was assessed on a three-point Likert scale: improved = 0, no change = 1, and worsened = 2. As these questions were captured on different scales, they were converted into standardized values, or Z-scores, and collapsed into one measure. Our study found 45.5% of those reporting an SCD experienced it as both a severe and worsening

**Table 2***Logistic Regression on Belonginess Measures Expressed as Odds Ratios*

	<b>Stick out in the classroom</b>	<b>Out of place in the civilian world</b>	<b>Combined belongingness</b>
Noticeability	15.86*** [5.38, 46.72]	0.82 [0.32, 2.10]	14.48*** [4.60, 45.57]
<b>Injury Type</b>			
Physical	0.65 [0.25, 1.68]	0.65 [0.31, 1.40]	0.74 [0.27, 2.03]
Other Psychological	3.57** [1.39, 9.17]	1.48 [0.75, 2.93]	4.66** [1.70, 12.74]
Posttraumatic Stress	3.36* [1.24, 9.12]	1.59 [0.74, 3.42]	4.41** [1.53, 12.73]
Sensory	2.23 [0.83, 6.05]	1.37 [0.54, 3.49]	2.31 [0.83, 6.42]
Traumatic Brain Injury	2.58 [0.94, 7.08]	10.62* [1.33, 84.81]	2.88* [1.03, 8.11]
Other Injury	1.85 [0.41, 8.37]	1.13 [0.27, 4.70]	1.35 [0.26, 6.97]

Note. \*Significant at  $p \leq 0.05$ , \*\*significant at  $p \leq 0.01$ , \*\*\*significant at  $p < 0.001$ , ( $n = 211$ ), [95% CI]

impact on their quality of life. Further investigation of the severity of injury (measured as impact on quality of life) and individuals' VA disability rating show a positive correlation ( $r = .43$ ). Despite the positive correlation between VA disability rating and severity impact, we chose not to use this correlation in the composite "Quality of Life" measure, as a significant proportion of respondents (34%) were not satisfied with their VA disability rating. This correlation suggested an inaccurate representation of the impact of disability on their lived experience.

A multiple regression analysis was then employed to predict the impact of noticeability and SCD type on the composite quality of life measure. Together these variables accounted for 13% of the variance in the quality-of-life standardized score (see Table 3). Students who reported having PTS ( $B = .25$ ), having a physical impairment ( $B = .26$ ), and the variable Noticeability (others notice my injury) ( $B = .31$ ) were found to be significant in predicting quality of life for student veterans ( $p < .05$ ). Because the outcome measure is a standardized score, coefficients should be interpreted in terms of standard deviation units in the distribution of responses by survey respondents.

All three significant predictors have a positive coefficient value, therefore an increase in each variable is associated with a greater negative impact of the SCD on quality of life.

### **Question 3: Is There a Relationship Between Disability Type and Perceptions of University Disability Services?**

Our third research question examines whether type of SCD is significantly associated with perceptions of campus disability services as helpful or not helpful. Not all disabled veterans use the disability services center on campus, reducing the analytic sample for question three from 211 respondents to 101. Responses to the perceived helpfulness of disability services survey question were evenly distributed with 53% of student veterans finding disability services not helpful and 47% finding it helpful. Table 4 presents the results of a logistic regression model with veterans' perceptions of MWU's disability services helpfulness as the outcome variable. PTS ( $OR = 3.4$ ) and sensory injuries ( $OR = 3.21$ ) significantly increased the odds of finding disability services helpful ( $p < .05$ ). Student veterans with physical injuries ( $OR$

**Table 3***OLS Regression on Standardized Quality of Life Composite*

	<b>Coef.</b>	<b>95% CI</b>
Noticeability	0.31*	[0.04, 0.57]
<b>Injury Type</b>		
Physical	0.26*	[0.05, 0.47]
Other psychological	0.13	[-0.06, 0.33]
PTS	0.25*	[0.03, 0.47]
Sensory	0.14	[-0.10, 0.38]
TBI	0.22	[-0.06, 0.51]
Other	0.24	[-0.13, 0.61]
Adjusted r <sup>2</sup>	0.13	

Note. \*Significant at  $p \leq 0.05$ , ( $n = 211$ )

**Table 4***Logistic Regression on Finding Disability Services Helpful*

	<b>Odds Ratio</b>	<b>95% CI</b>
Noticeability	0.96	[0.31, 2.99]
<b>Injury Type</b>		
Physical	0.24**	[0.08, 0.74]
Other psychological	1.67	[0.66, 4.21]
Posttraumatic stress	3.40*	[1.15, 10.11]
Sensory	3.21*	[0.99, 10.44]
Traumatic brain injury	0.23*	[0.06, 0.82]
Other	0.10*	[0.01, 0.66]

Note. \*Significant at  $p < 0.05$ , \*\*significant at  $p < 0.01$ , ( $n = 101$ , including only those who indicated an SCD and answered the helpfulness question about disability services)



= .24), TBI ( $OR = .23$ ), and other injuries ( $OR = .1$ ) had significantly lower odds of finding disability services helpful ( $p < .05$ ). Unlike the results in Tables 2 and 3, noticeability of an injury was not a significant predictor in the logistic regression presented in Table 4. These results suggest that student veterans may not have universally positive views of campus disability services, and supports for specific injuries, such as physical injuries or TBI, may be underdeveloped.

## Discussion

This study set out to provide a deeper understanding of student veterans with disabilities by exploring the impacts of disability type and visibility on their perceptions of belonging, quality of life, and campus disability services. Although student veteran enrollment at MWU is higher than most campuses, the findings in this study provide insight for any campus with post-9/11 student veterans enrolled.

### Implications of Study Results

Our first research question looked at the impact of disability type and visibility on belonging. Belief that one's injury is noticeable, as well as PTS and other psychological injury, were significant predictors of participants feeling as if their disability makes them stick out in the classroom. While feeling one's disability is noticeable might logically lead to feeling one sticks out in the classroom, our findings regarding PTS and other psychological injuries concur with existing research on the impact of invisible disabilities (Flink, 2017). The increased awareness of PTS as the defining injury of post-9/11 veterans might lead veterans to feel that this injury is noticeable despite not necessarily having a physical manifestation. The sense that PTS and other psychological injuries make student veterans stick out in the classroom might also be related to the idea that the classroom is a space for academic activities and thus centers brain functioning and cognition as primary within the classroom space. This space for intellectual development and growth might lead student veterans to feel their PTS/psychological disability is noticeable as they engage in activities requiring speed of thought and clarity of presentation ideas.

TBI was a significant predictor of students feeling out of place in the civilian world. As with PTS, TBI—which might typically be viewed as an invisible disability—emerged as a significant predictor of students feeling out of place. Considering the findings of all three belongingness measures, the significance of PTS, TBI and other psychological injury are interesting in that they are generally thought of

as invisible disabilities and culturally associated with veteran status.

A surprising finding was the disparity in perceptions about fitting in on campus versus in the civilian world, with students feeling much stronger about not belonging on campus due to their disabilities. This finding suggests a unique effect of the campus environment and may have implications for military transition assistance programs. These programs traditionally focus on career readiness rather than support mechanisms for transitioning into higher education. Campus transition programs for veterans should place emphasis on belongingness. Efforts to promote belongingness include investing in support mechanisms such as a student veteran organization or peer-advising program. Moore (2017) emphasizes the importance of recognizing the diversity of perceptions of military service and veteran identity as one of many identities for student veterans.

Our second research question explored the impact of disability type and visibility on quality of life. A significant proportion of students in our sample reported a detrimental impact from their disability. Of the students who reported an SCD, 46% ( $n = 94$ ) experienced their disability as both severe and as having a worsening impact on their quality of life. Feeling as if one's injury is easily noticeable, physical injury, and PTS were all significant predictors of decreased quality of life. Our findings suggest that despite concerns about a possible over-diagnosis (Gallagher, 2016) of PTS and VA benefit claims among post-9/11 veterans (nearly one of every four veterans according to Fulton et al., 2015), these injuries reflect real challenges that some student veterans face.

Finally, the third research question investigated the impact of disability type and visibility on views of campus disability services. Finding that certain SCDs increase the odds of finding campus disability services helpful (PTS, sensory injury) and other SCDs decrease the odds (physical injury, TBI, other) indicates the importance of building self-advocacy skills for veterans with disabilities (Kinney & Eakman, 2017) and breaking down the barriers identified in the literature related to stigma and misperceptions about disability services (Kranke et al., 2017; Lange et al., 2016).

### Implications for Practice

Issues such as stigma, a lack of understanding about veteran experiences on campus, lack of advocacy skills by veterans, and a feeling of otherness can lead student veterans to cloak their disability status and ignore opportunities for accommodations and support (Kranke et al., 2017). This decision is particularly the case for student veterans with invisible

disabilities, such as PTS, TBI, and other psychological injuries (Rudd et al., 2011; Currier et al., 2018). Throughout our analyses, PTS was a predictive factor for the outcomes belongingness, quality of life, and perceptions of support for student veterans. However, we found an increase in the odds of finding campus disability services helpful for students with PTS. Given the high numbers of students reporting PTS as a disability (37.9%) and given the high proportions of student veterans with PTS reported in the literature (Fulton et al., 2015; Rudd et al., 2011) this is an encouraging finding. While usage of disability services by veterans is reported lower than non-veterans on campus (Safer et al., 2020), our findings demonstrate the value of disability services for students who have PTS and sensory injuries and signal the importance of faculty and staff efforts to encourage registration/enrollment with disability services for student veterans.

Although collecting disability status information for incoming student veterans may violate privacy rights, there are no limitations around provision of information about disability services and accommodations to new students. Opportunities for outreach include new student orientations, student veteran organization meetings, campus events for veterans (e.g. Veteran's Day celebrations), and through the veteran services office programs (e.g. peer advising programs, etc.). Messaging about accommodations can take the form of briefings, first-person accounts from willing student veterans with positive experiences with disability services, and through strong partnerships across campus to consistently promote accommodation services. Although a smaller proportion of student veterans are enrolled in the Veteran Readiness and Employment program (i.e. Voc Rehab) (VA Factsheet, 2021), this program is facilitated through VA employed counselors who work directly with students to support and approve their educational/degree plans. Only students with significant SCDs are eligible for the Voc Rehab program, thus all these students would likely benefit from registering with disability services. Creating open communication and partnerships between campus disability services and the Voc Rehab counselors can promote help-seeking and better outcomes for students.

Any campus efforts should also consider the stigma barriers that exist and implement countermeasures to ensure students recognize the importance of seeking help (Valenstein et al., 2020). Romero et al. (2015) found that avoidant coping significantly predicted depressive and anxiety symptoms as well as posttraumatic stress symptoms among a sample of student veterans, emphasizing the need to actively reach out to student veterans with sources of sup-

port. For example, campuses could create a system where students are pre-enrolled with disability/access services based on their veteran status, effectively creating an opt-out service model rather than a traditional opt-in model. Veterans, who were acculturated to mandatory participation in programs would likely accept an additional check-the-box procedure as part of their campus orientation. This procedural change would create an immediate source of support and touchpoint for all student veterans through the disability services office. This type of business process could lead to changes in mindset around stigma, from "those services are for other people" to a normalized best-practice for student success.

Evidence from studies has established that recovery from PTS and other psychological injuries are much more effective for individuals who have a strong social support system (Geuzinge et al., 2020). Further evidence suggests that the impacts of PTS are lessened for those living in cultures where there is broad understanding about the source of the trauma (i.e., war) and a shared burden of the impacts from all members of the community (Junger, 2016; Hautzinger & Scandlyn, 2014). For veterans entering higher education, too often this transition occurs in isolation, and the culture they enter has very little understanding of the nature of war and associated trauma (Borsari et al., 2017).

To address the cultural divide between faculty and staff and military veterans, training programs have been established on campuses (Dillard & Yu, 2018). These trainings, designed to develop a visible network of faculty and staff to whom student veterans can go to receive assistance, can build empathy and communication channels between faculty and staff and transitioning student veterans (Dillard & Yu, 2018). An awareness by faculty of topics such as transitioning from military to civilian life and accommodating service-connected disability has been identified as an effective step in generating an inclusive environment on campus (Gonzalez & Elliot, 2012; Osborne 2014; Ghosh et al., 2020).

Moreover, disability resources offices are increasingly offering training and outreach to improve campus access. In a national survey of disability resources offices on 399 college campuses, disability resources offices reported partnerships with several other campus entities. For example, 50% of respondents reported working with counseling and psychological services (Scott, 2019). Another initiative sought to improve access and inclusion for students with disabilities through the Disability Awareness, Training, and Empowerment (DATE) program (Roth et al., 2018). These collaborative approaches to sup-

porting inclusion by disability offices can serve as templates for addressing the unique needs of student veterans through training campus personnel.

### Limitations and Suggestions for Future Inquiry

The co-occurring existence of PTS and TBI for veterans is commonly discussed in the literature, with clear linkages between the two conditions regarding mental health consequences such as suicide attempts and ideation (Brenner et al., 2015; Wisco et al., 2014). Studies have indicated as high as 80% of post-9/11 veterans who have sustained a TBI also identify symptoms of or are treated for PTS (Hayes, 2019). In our study, 32% of participants with an SCD had both PTS and TBI. We attempted to examine co-occurrence by including interaction effects in the regression models. However, when introducing interaction effects, we found no statistically significant effects, which is inconsistent with the literature. This finding is, in part, due to the limitation of using interaction effects in logistic regression models, specifically for questions one and three (Hoffman, 2016). An interaction may not show up due to a lack of variance in the sample or it may be that the cluster of symptoms converges to such an extent that, within our sample, the binary variables are capturing the same conditions. Evidence of this relationship can be seen in the high correlation between PTS and TBI among the sample ( $r = 0.51$ ).

Additionally, there are methodological limitations that may limit generalizability. For example, our data were cross-sectional. A longitudinal study or access to student records would be necessary to investigate long-term impacts of disability for student veterans. Further, all data were collected at one institution, and the conditions of the campus and community may limit generalizability beyond analogous campuses. Future studies should seek to capture data from a wider scale of geography, sector type, and student enrollment profile.

Regarding future research on student veterans' disability impacts, additional inquiry is needed to understand interactions with disability services on campus. Southwell et al. (2018) found significant differences in SSM/Vs and civilian students' frequency of visits to faculty and academic advisors, but their study did not cover visits or usage of disability services offices. Deeper understanding of student veterans' experiences with accommodations (e.g. how they learn about services, the unique impacts of accommodations, and what is lacking) can help lead to more effective interventions and tailored accommodations.

### Conclusion

Student veterans in this study were more likely to feel out of place on campus than in other contexts, and the invisible disabilities they bring to campus were more impactful than visible injuries. Although stigma and other challenges may limit help seeking and advocacy behavior, those who did seek help from the disabilities service office found the services to be helpful. As we continue to support student veterans, it will be important to fully understand their unique needs and concerns and consider effective strategies for increasing engagement with campus services.

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