



# Well-Being, PTSD, College Adjustment in Student Veterans With and Without Disabilities

Emre Umucu<sup>1\*</sup>, Fong Chan<sup>2</sup>, Beatrice Lee<sup>1</sup>, Jessica Brooks<sup>3</sup>, Antonio Reyes<sup>4</sup>,  
Thenral Mangadu<sup>5</sup>, Chung-Yi Chiu<sup>6</sup> and Joao Ferreira-Pinto<sup>7</sup>

<sup>1</sup>Department of Counseling, Educational Psychology and Special Education, Michigan State University, East Lansing, MI, United States, <sup>2</sup>Department of Rehabilitation Psychology and Special Education, University of Wisconsin-Madison, Madison, WI, United States, <sup>3</sup>UW School of Medicine and Public Health, University of Wisconsin-Madison, Madison, WI, United States, <sup>4</sup>Division of Special Education and Counseling, California State University, Los Angeles, CA, United States, <sup>5</sup>Department of Public Health Sciences, University of Texas at El Paso, El Paso, TX, United States, <sup>6</sup>Department of Kinesiology and Community Health, University of Illinois—Urbana Champaign, Champaign, IL, United States, <sup>7</sup>College of Health Sciences, University of Texas at El Paso, El Paso, TX, United States

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### \*Correspondence:

Emre Umucu  
umucuemr@msu.edu

### Specialty section:

This article was submitted to  
Higher Education,  
a section of the journal  
Frontiers in Education

**Received:** 11 October 2021

**Accepted:** 06 December 2021

**Published:** 20 January 2022

### Citation:

Umucu E, Chan F, Lee B, Brooks J,  
Reyes A, Mangadu T, Chiu C-Y and  
Ferreira-Pinto J (2022) Well-Being,  
PTSD, College Adjustment in Student  
Veterans With and Without Disabilities.  
*Front. Educ.* 6:793286.  
doi: 10.3389/feduc.2021.793286

We examined mediating effects of the pillars of well-being (i.e., positive emotion, engagement, relationships, meaning, and accomplishment) on the relationship between PTSD symptoms and college life adjustment for student veterans. We recruited 205 student veterans. Mediation analysis was conducted to test whether the pillars of well-being mediate the relationship between PTSD and college life adjustment. The results showed that positive emotion and accomplishment had mediating effects on the relationship between PTSD symptoms and college adjustment.

**Keywords:** PTSD, well-being, veterans, positive psychology, postsecondary education

## INTRODUCTION

Posttraumatic stress disorder (PTSD) is very common disability among student veterans, with up to 45.6% of student veterans reporting PTSD symptoms (Rudd et al., 2011). PTSD may negatively impact student veterans' well-being and, in turn, adjustment to college life (Elliot, 2015). However, relatively little is known about the relationships among PTSD, pillars of the well-being, college adjustment through the lens of contemporary theories.

The PERMA Theory of Well-Being is a contemporary theory explaining well-being with five core pillars: positive emotion (e.g., joy), engagement (e.g., flow), relationships (e.g., interpersonal relationships), meaning (e.g., purpose), and accomplishment (e.g., achievements) (Seligman, 2011). According to Seligman, well-being is not only the absence of mental illness (e.g., PTSD), it is also the presence of the five pillars of well-being (Seligman, 2011). The PERMA Model of Wellbeing was previously tested and evaluated in student veterans (Umucu, 2017; Umucu et al., 2020a). Umucu et al. (2020a) found that PERMA is a multidimensional construct to understand well-being in student veterans with and without disabilities. In addition, PERMA predicted college adjustment, physical and mental health quality of life, and life satisfaction in student veterans. In addition, PERMA was found to be positively associated with hope (Umucu et al., 2020b), optimism and resilience (Umucu et al., 2018), and negatively associated with depression and anxiety (Umucu et al., 2018). Yet, the relationship between PERMA and PTSD was not examined in student veterans.

PTSD could be a significant issue for wellbeing and college adjustment in student veterans. Barry et al. (2012) reported that PTSD is negatively linked to academic accomplishment. Elliott (2015) reported that PTSD was positively correlated with more frequent reports of troubling experiences at

school, social tension, and lower GPA. Elliott (2015) explored the predictors of student veterans' problems on campus and found that PTSD was positively correlated with dissatisfaction with college performance, financial hardship, more frequent reports of troubling experiences at school, and social tension (i.e., tension with veteran friends, criticism from veteran friends, and criticism from family). In the same study, researchers concluded that PTSD was negatively associated with social support from family and friends and with Grade Point Average (GPA). Rudd et al. (2011) explored the relationship between psychological symptoms and suicide risk and found that 82% of student veterans with PTSD experience at least one significant suicide attempt. In our recent study, we found that 1) functional limitations mediate the relationship between PTSD symptoms and college adjustment (Umucu et al., Forthcoming 2022) and 2) COVID-19-related stress mediated the relationship between PTSD symptoms and college adjustment in student veterans with PTSD symptoms (Umucu et al., under review<sup>1</sup>). Previous research clearly articulates that PTSD symptoms are associated with problems in well-being and college life adjustment for veterans.

So far, no studies, from our knowledge, have explored whether the pillars of well-being defined by Seligman (2011) mediate the negative impact of PTSD symptoms on college adjustment for student veterans. Given PERMA was found to be correlated with positive health and academic outcomes in student veterans, we wanted to test whether PERMA may mediate the relationship between the PTSD symptoms and college life adjustment. Therefore, the purpose of this study is to evaluate the extent that the pillars of well-being serve as mediators to explain the relationship between PTSD and college adjustment in student veterans so that our findings can inform rehabilitation, counseling, and mental health professionals. We hypothesized that each the pillars of well-being serve as a mediator for the relationship between PTSD symptoms and college adjustment in student veterans. Our mediation analysis findings may serve developing targeted interventions helping student veterans reduce negative impact of PTSD on their college adjustment.

## METHODS

A quantitative descriptive design, utilizing multiple mediation analysis, was used for the present study to determine whether PERMA may mediate the relationship between the PTSD symptoms and college life adjustment. Participants were recruited from higher education institutions following IRB approval from the University of Wisconsin-Madison. To recruit participants, we reached out student veteran offices in higher education institutions. Student veteran offices shared our survey link with student veterans. To be eligible for inclusion in the study, participants had to meet the following criteria: 1) at least 18 years or older; 2) retired from active-duty service or a National Guard or Reserve member of the United States Armed Services with active-

duty service, and 3) currently enrolled in a college or university. Each participant filled out an online consent form before starting our survey. Participants were offered a \$15 gift card. This data is a part of a larger cross-sectional dissertation study (blinded). Data were collected via an online survey platform. Our participants were informed of the voluntary nature of our research, their rights as a research participant, and the potential effects and benefits from participating in our study.

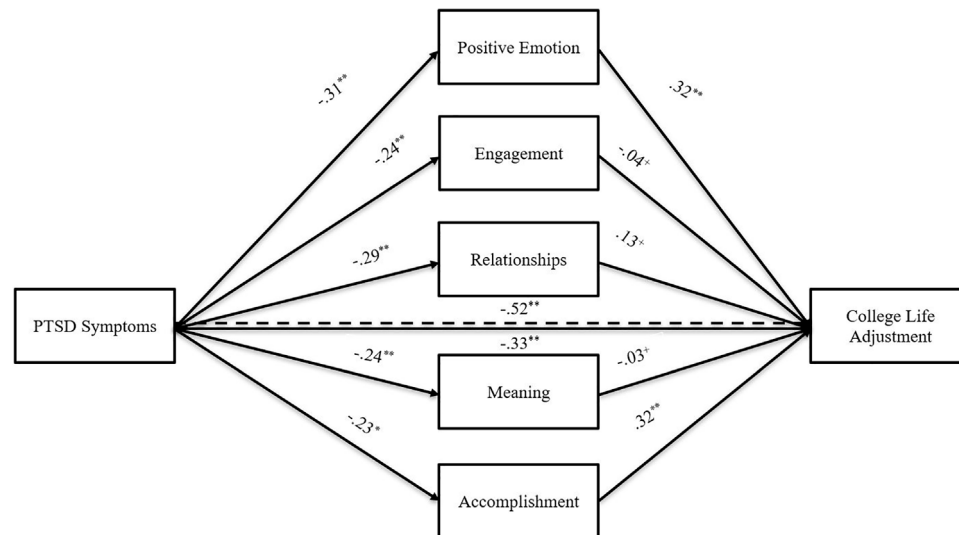
PTSD symptoms were measured by 4-item *PC-PTSD* screen (Prins et al., 2003). We used the scale as a continuous measure of PTSD symptom. The five pillars of well-being (i.e., positive emotion, engagement, relationships, meaning, and accomplishment) were measured by the *PERMA-Profiler* (Butler and Kern, 2016). The scale was reported to be reliable and valid by Butler and Kern (2016). College life adjustment was measured by a generated college life adjustment score based on the four subscales of the *Inventory of Common Problems* (ICP; Hoffman and Weiss, 1986) and the PHQ-4 (Kroenke et al., 2009). The four subscales of the ICP are composed of 16 items: academic problems, interpersonal problems, substance use problems, and physical health problems. The PHQ-4 is a 4-item measure of depression and anxiety. After negatively worded items were recoded, we summed up the standardized values of the ICP and the PHQ-4 to generate a college life adjustment score, with higher scores indicating a better college life adjustment.

Multiple mediation analysis using PROCESS Macro (Hayes, 2013) was conducted to explore whether the pillars of well-being (i.e., positive emotion, engagement, relationships, meaning, and accomplishment) mediate the relationship between PTSD and college life adjustment. In addition, bootstrap test (5000 bootstrap samples; 95% CI) for multiple mediators was used to test the indirect effects of the PTSD on the college life adjustment through the mediators (Preacher and Hayes, 2008). We decided to conduct multiple mediation given the PERMA model has five different pillars.

## RESULTS

Participants consisted of 205 student veterans, with a mean age of 29.3 ( $SD = 8.0$ ). The majority of sample was male (71.7%), Caucasian (80.5%), and employed (59.0%). The association between PTSD symptoms and college life adjustment was negative and significant:  $\beta$  (95%CI) =  $-0.52$  ( $-0.64, -0.41$ ). PTSD symptoms were negatively and significantly related to positive emotion, engagement, relationships, meaning, and accomplishment:  $\beta$ s (95% CIs) =  $-0.31$  ( $-0.45, -0.18$ ),  $-0.24$  ( $-0.38, -0.11$ ),  $-0.29$  ( $-0.42, -0.16$ ),  $-0.24$  ( $-0.40, -0.10$ ), and  $-0.23$  ( $-0.36, -0.09$ ), respectively. Two of the five putative mediators were significantly associated with the college life adjustment,  $\beta$ s (95%CIs) =  $0.31$  ( $0.13, 0.51$ ) for positive emotion and  $0.32$  ( $0.19, 0.46$ ) for accomplishment, while statistically controlling for the PTSD symptoms. The model accounted for 63% of the variance in college life adjustment,  $R = 0.795$ ,  $R^2 = 0.63$ ,  $F(6,198) = 57.02$ ,  $p < 0.001$ . The  $\beta$  for PTSD symptoms were reduced from  $-0.52$  to  $-0.33$  after controlling for the effect of the mediators. Thus, although the intervening variables helped to explain the link between PTSD symptoms

<sup>1</sup>Umucu, E., Grenawalt, T., Prasath, P. R., Ysasi, N. A. (under review). COVID-19 Stress, PTSD, and College Adjustment Among Student Veterans. *J. Coll. Couns.*



**FIGURE 1** | Multiple Mediation Model Examining the Relationship Between PTSD Symptoms and College Life Adjustment. Note. Dotted line denotes the effect of PTSD Symptoms on college life adjustment when mediators are not included \* $p < 0.01$ , \*\* $p < 0.001$ ,  $\bar{p} = n.s.$

and college life adjustment, they did not completely explain the relationship between PTSD symptoms and college life adjustment. Finally, bootstrap test revealed significant indirect effect of the PTSD symptoms on the college life adjustment through the mediators ( $ab_{positiveemotion}$  [95%CI] =  $-0.10$  [ $-0.19$ ,  $-0.04$ ] and  $ab_{accomplishment}$  [95%CI] =  $-0.07$  [ $-0.14$ ,  $-0.03$ ]). Please see **Figure 1**.

## DISCUSSION

Congruent with previous research (e.g., Barry et al., 2012; Elliott, 2015), our findings revealed that student veterans with PTSD symptoms had poorer adjustment to college life. Our results also suggested that PTSD symptoms were negatively associated with well-being. Conversely, student veterans who endorsed higher scores in the pillars of well-being demonstrated higher scores in adjustment to college life.

Our analysis revealed that positive emotion and accomplishment served as mediators explaining the relationship between PTSD symptoms and college adjustment in student veterans. The results are consistent with previous research suggesting that positive emotion helps people construct desirable outcomes, which further engenders successes across other life domains (Cohn et al., 2009). Despite living under stress, individuals with positive emotion are more likely to 1) focus on the “good”, 2) develop problem-solving skills, and 3) create positive meaning in life events (Folkman and Moskowitz, 2000). Additionally, having a sense of accomplishment is important as individuals make progress towards their goals (Butler and Kern, 2016). Previous research has also revealed that accomplishment in social roles was associated with numerous positive outcomes including higher well-being (Levasseur et al., 2010).

Student veterans may face with many adverse internal and external stressors due to transition-related challenges, academic-related challenges, disability-related stressors, and more on (Umucu et al., 2019). Transition from military to civilian life can be very challenging and demanding for veterans, especially for those with disabilities, which causes significant distress and challenges for veterans. For example, many veterans may experience mental illness, pain, suicidal ideation, functional limitations, and disabilities causing significant challenges in transition, well-being, and quality of life (Umucu, 2021; Umucu et al., 2021a; Umucu et al., 2021b; Umucu et al., 2021c). We believe postsecondary education is a great opportunity to have a smooth transition to civilian and quality life for Veterans. However, due to disabilities, service-connected or not, they may have difficulties in academic settings. PTSD is one of the most common psychiatric disability among student veterans. We believe that future education, rehabilitation, counseling, and mental health research, based on our current findings, can focus on developing and/or testing positive psychology interventions to help student veterans with PTSD. Such interventions could be used in conjunction with current evidence-based counseling approaches. For example, researchers have suggested that visualizing one’s “Best Possible Selves” (BPS) is a promising strategy for positive affect elevation (Sheldon and Lyubomirsky, 2006). Regarding the sense of accomplishment, researchers might evaluate Snyder (1994) hope theory whose constructs are related to pursuing and accomplishing goals. When student veterans achieve their goals, it fosters a sense of accomplishment. Therefore, counselors can implement positive psychology interventions to improve well-being in student veterans with PTSD symptoms.

Our study has multiple limitations. First, this is a cross-sectional study limiting our ability to draw causal conclusions. Second, the majority of participants are male and Caucasians that limit the

generalizability of the current study. Finally, we did not find engagement, relationships, and meaning as mediators, which can be due to sample size. Given the intercorrelation among the five pillars of well-being is very high, this can cause a need of higher sample size.

## DATA AVAILABILITY STATEMENT

The datasets presented in this article are not readily available because Ethical Permission and Consent Form. Requests to access the datasets should be directed to UW-Madison's IRB Office.

## ETHICS STATEMENT

The studies involving human participants were reviewed and approved by UW-Madison IRB. The patients/participants

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provided their written informed consent to participate in this study.

## AUTHOR CONTRIBUTIONS

All authors listed have made a substantial, direct, and intellectual contribution to the work and approved it for publication.

## FUNDING

The contents of this article were developed with support from the Rehabilitation Research and Training Center (RRTC) on Employment of People with Physical Disabilities. The RRTC was funded by the National Institute on Disability, Independent Living, and Rehabilitation Research Grant H133B13001 to Virginia Commonwealth University.

Veterans with PTSD Symptoms: A Mediation Analysis Study. *Rehabil. Res. Pol. Edu.*

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