

EMPIRICAL RESEARCH

A Cross-sectional Study of Resilience and Well-being as Mediators for Sleep Disturbance and College Life Adjustment Among Student Veterans

Antonio Reyes, Ph.D.,¹ Fatima Akmal Leghari, M.S.,² Teresa Granger, Ph.D.,³ Emre Umucu, Ph.D.,⁴¹ Department of Human Service Studies, Elon University, ² Department of Educational Studies in Psychology, Research Methodology, & Counseling, University of Alabama, ³ Department of Educational Studies in Psychology, Research Methodology, & Counseling, University of Alabama, ⁴ Department of Public Health Sciences, University of Texas El Paso

Keywords: Veterans, Resilience, Sleep, Well-being, Students, Mediation

<https://doi.org/10.70385/001c.144895>

The Rehabilitation Professional

Vol. 33, Issue 2, 2025

Both military veterans and college students report sleeping disturbance as one of their most prevalent problems. However, few studies have explored and sought to understand sleep disturbance among student veteran populations. This study examines the relationships between sleep disturbance, resilience, well-being, and adjustment to college life for student veterans. Participants were 205 student Veterans from universities across the United States. A correlational analysis found that sleep disturbance was negatively correlated with resilience, well-being, and college life adjustment. Resilience was positively correlated with well-being and college life adjustment. Well-being was positively correlated with college life adjustment. A serial mediation analysis revealed a significant indirect effect of sleep disturbance on college life adjustment. The study highlights the negative impact of sleep problems on resilience, well-being, and college adjustment. The findings support that addressing sleep disturbance is crucial for supporting the successful transition and academic achievement of student veterans.

Military veterans comprise a substantial portion of the college population in the United States (U.S.). Over 900,000 student veterans received education benefits from the United States (U.S.) Department of Veteran Affairs (VA) between 2000 and 2012 (National Conference of State Legislation [NCSL], 2014) and significantly more veterans are likely to pursue college studies given recent modifications that allow for more flexible use of VA educational benefits (NCSL, 2014). However, many veterans experience a range of difficulties related to their military service that are associated with academic problems (Barry, 2015). For students, veteran or civilian, going to college is often a time of significant change and transition involving challenges in academic, social, and emotional adjustment (Chickering & Reisser, 1993). While some students manage to adapt and overcome those challenges, many do not. Student veterans may face especially difficult challenges, including sleep disturbance, when adjusting to college life.

Problems sleeping is one of the most frequently reported issues for veterans. Sleep disruption tends to be more common among veterans than in the general population (Bramoweth & Germain, 2013; Fung et al., 2013;

Hughes et al., 2018; McLay et al., 2010; Mustafa et al., 2005; Ocasio-Tascón et al., 2010; Torres-Palacios & Rodríguez-Cintrón, 2006). For example, the National Veteran Sleep Survey found that 76% of veterans reported that they do not get enough sleep, with 91% reporting that they often feel tired, fatigued, and sleepy during the day (Polley et al., 2012). Of the veterans surveyed in the study, 74.3% reported meeting the general clinical guidelines for insomnia (Polley et al., 2012), while in the general population the prevalence of chronic insomnia is 30% (Roth, 2007). The National Veteran Sleep Survey found that the two most common problems interfering with sleep initiation and maintenance were mental alertness (i.e., thoughts will not slow down) and pain. Veterans who engaged the enemy or actively participated in combat operations reported a much higher rate of trauma-related symptoms that interfered with sleep (Polley et al., 2012).

Like veteran populations, college students have more sleep problems than the general population (Brown et al., 2001; Lack, 2010). Buboltz and colleagues (2001) found that over 70% of college students reported frequent sleep difficulty, with falling asleep being one of the most common problems. Researchers have identified numerous potential contributors to sleep difficulties for college students including high levels of chemicals like nicotine, caffeine, and alcohol; and sleep schedule variation (Caldwell, 2003; Lack, 2010; McCann & Stewin, 1987; Riedel et al., 2004). Although we are not aware of any studies that examine the prevalence of sleep problems among student veterans compared with civilian students, given the increased prevalence of sleep problems among both veteran and college student populations separately, students who are veterans are very likely to experience sleep problems, perhaps with an even greater frequency. Gwin and colleagues (2012) found that addressing sleep difficulties, along with stress, was one of student veterans' most pressing and immediate needs. Understanding and addressing sleep problems for student veterans may be particularly important given recent findings that problems with sleep may have a greater negative effect on veterans' adjustment to college compared to civilian students (McGuffin et al., 2019).

Existing studies examining the relationship between sleep and adjustment to college life have found that sleep disturbance is associated with poorer academic outcomes (e.g., Kelly et al., 2001; Lack, 2010; Trockel et al., 2000). However, additional research is needed to understand the process through which sleep problems negatively affect college adjustment. The relationship between sleep and college adjustment may in part be explained by sleep disturbance's negative impact on positive personal factors, such as resilience and well-being, which are related to students' ability to withstand stressors and to flourish during the transition to college studies (Pidgeon et al., 2014; Tansey et al., 2017). Most students experience at least some level of stress due to demands that are inherent to college studies (Darlaston-Jones et al., 2003), which can lead to poor adjustment and cause students to abandon their studies without completing their degree (Akanpaadgi et al.,

2023). Stressors include too many assignments and not enough time, social demands, and increased competition for jobs (Kleemann & Richardson, 1985; Murphy & Archer, 1996; Russell & Petrie, 1992; Stone & Archer, 1990). As compared to other students, student veterans are also more likely to have hold multiple life roles and responsibilities; experience external stressors related to family, job, and environment; and experience internal stressors such as psychological and physical health issues (Alschuler & Yarab, 2016; Cunningham, 2012). Through its negative impact on their resilience and well-being, sleep disturbance might decrease student veterans' ability to navigate the difficulties they face as part of college life.

Resilience

Originating from the positive psychology movement (Seligman & Csikszentmihalyi, 2000), resilience is an asset-based construct defined as the process of and the capacity for successful adaptation during challenging or threatening circumstances (Masten et al., 1990). Wagnild and Young (1993) note that resilience can be considered an individual's ability to overcome adversity and to adapt successfully to his or her environment. Researchers suggest that resilience is an important protective factor that helps college students to adjust to college life despite stressors and high-risk conditions (Khawaja & Stallman, 2011; Masten, 2001). Studies support that resilience buffers the effects of a challenging academic environment, supporting positive college life adjustment and well-being (Cole et al., 2015; Galatzer-Levy et al., 2012; Hartley, 2011, 2013; Johnson et al., 2011; Klibert et al., 2014; Li & Yang, 2016; Morgan Consoli & Llamas, 2013).

Researchers have consistently identified a significant negative relationship between sleep disruption and resilience, with most studies finding that sleep problems as a cause of poorer resilience (Dahl & Harvey, 2007). In a 2014 study, Chatburn and colleagues found that sleep disturbances led to reduced resilience and identified resilience as a mediator of the relationship between increased sleep problems and internalizing and externalizing behavior problems, depression, and anxiety. Similarly, in a 2010 meta-analysis, Dewald and colleagues found significant support for the relationship between sleep disruption and emotional regulation.

In recent years, resilience has also gained momentum and recognition as a framework to understand well-being by examining the differences between students who flourish within the university environment and those who struggle to cope (Pidgeon et al., 2014; Seligman et al., 2009; Stallman, 2010). Researchers have found that resilience is a strong predictor and source of well-being and life satisfaction (Bajaj & Pande, 2016; Connor & Davidson, 2003; Karreman & Vingerhoets, 2012; Liu et al., 2012; Mak et al., 2011; Ryff & Keyes, 1995). By enhancing coping skills and promoting positive well-being, resilience may contribute to successful college adjustment for student veterans.

Well-being

Seligman (2011) suggests that an individual's state of well-being is comprised of positive emotions, engagement, relationships, meaning, and accomplishments (PERMA). Researchers have identified these aspects of well-being as being important predictors of successful adjustment to college life (e.g., Allen, 1992; DeWitz et al., 2009; Duckworth et al., 2007; Kuh, 2008; Trigwell et al., 2012) as well as positive life outcomes in general (e.g., Baltzell et al., 2014; Coffey et al., 2016; Kern et al., 2014; Seligman, 2011). In a study of college students, Tansey and colleagues (2017) found that PERMA was negatively associated with perceived stress, academic problems, and relationship problems and was positively correlated with life satisfaction, self-esteem, self-efficacy and locus of control. The elements of PERMA may serve as a buffer to negative factors impacting adjustment to college life.

However, research suggests that poor sleep habits and quality lead to lower life satisfaction, decreased well-being, and higher levels of tension and depression for college students (Pilcher et al., 1997). Researchers have also found associations between poor sleep quality and negative mood states (Bonnet, 1985; Gau, 2000; Lacks & Morin, 1992; Pilcher & Huffcutt, 1996) and poor social health (Jenkins et al., 2002), key aspects of well-being. Based on existing studies, it is likely that sleep problems impact student veterans' ability to adjust to college life in part through its negative influence on the elements of well-being.

Purpose of this Study

The purpose of this study is to examine the relationships between sleep disturbance, resilience, well-being, and adjustment to college life for student veterans. We hypothesize that there will be negative relationships between sleep disturbance and resilience, sleep disturbance and well-being, and sleep disturbance and college adjustment for student veterans. We also expect that resilience and well-being as will act as partial mediators of the relationship between sleep disturbance and college adjustment for student veterans, supporting that sleep disturbance's negative relationship with college adjustment is in part related to its impact on those positive personal factors.

Methods

Study Procedures

Participants (student veterans) were recruited from universities across the United States. The Institutional Review Board (IRB) from the University of Wisconsin-Madison approved our study's procedures and recruitment strategies. Followed by IRB approval, directors of student veteran programs at universities were identified and contacted to seek their assistance in recruiting student veterans to participate in the current study. Information about our research was disseminated electronically to student veterans on each affiliate's mailing list by directors of student veteran programs to recruit research

participants. Qualtrics was used to collect data online. All participants signed an online consent form before they started the survey. Participants received a \$15 gift card upon completion of the study.

Measures

Sleep disturbance. Sleep disturbance was measured by the *Patient-Reported Outcomes Measurement Information System (PROMIS) Short Form v1.0-Sleep Disturbance-4a* funded by the U.S. National Institutes of Health (Jensen et al., 2016; Yu et al., 2012). This measure assesses sleep quality, satisfaction, and concerns in the last 7 days. It consists of 4 items (e.g., my sleep quality was...) rated on a 5-point Likert scale ranging from 1 (very good) to 5 (very poor). The total raw score for each participant is transformed to a 32.0 to 73.3 T-score based on PROMIS guidelines (Health Measures, 2019). The PROMIS Sleep Disturbance Short Form demonstrated good reliability with Cronbach's alpha of .90 (Yu et al., 2012), and initial validation work has provided support for the use of this scale (Jensen et al., 2016; Yu et al., 2012).

College life adjustment. College life adjustment was measured by a score based on the four subscales of the *Inventory of Common Problems (ICP;* Hoffman & Weiss, 1986) and the *Patient Health Questionnaire for Depression and Anxiety (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. Each item is rated on a 5-point Likert-type scale ranging from 1 (*not at all*) to 5 (*very much*). The internal consistency reliability coefficient was found to be .85 for the total score (Hoffman & Weiss, 1986). The internal consistency reliability coefficients for the sum of four subscales was found to be .88 for total score. The PHQ-4 is a 4-item measure of depression and anxiety. Each item is rated on 4-point Likert-type scale ranging from 0 (*not at all*) to 3 (*nearly every day*). The Cronbach's alpha coefficient calculated in the present study was .90. 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.

Well-being. Well-being was measured by the PERMA-Profiler (Butler & Kern, 2016). The PERMA Profiler consists of 23 items, however, in the current study, 15 items were used to measure the five pillars of well-being (i.e., positive emotion, engagement, relationships, meaning, and accomplishment). Each item is rated on an 11-point scale ranging from 0 (never) to 10 (always), or 0 (not at all) to 10 (completely). The total well-being score was created by summing all five pillars. Higher scores indicated greater levels of well-being. Cronbach's alpha of the PERMA-Profiler in this study was .95.

Resilience. The Brief Resilience Scale (BRS; Smith et al., 2008) is a 6-item scale measuring resilience. Each scale item is rated from 1 (*strongly disagree*) to 5 (*strongly agree*). The Cronbach's alphas for the BRS ranged from .80 to .91 in previous research (Smith et al., 2008). The Cronbach's alpha coefficient calculated in the present study was .85.

Data Analysis

Descriptive analyses were conducted to identify participants' characteristics. A correlation analysis was conducted to explore the bivariate associations among the study variables. In order to test our main hypothesis, we conducted a serial mediation analysis to examine the indirect effect of sleep disturbance on college life adjustment through resilience and well-being. The specific indirect effects in this model were (a) through resilience (a_1b_1); (b) through well-being (a_2b_2); and (c) through resilience and well-being ($a_1d_{21}b_2$). If final indirect effect is significant, it supports serial multiple mediation (Hayes, 2013). In addition, bootstrap test (5000 bootstrap samples; 95% CI) was used to test the indirect effects of the sleep disturbance on the college life adjustment through the mediators (Preacher & Hayes, 2008). The Statistical Package for the Social Sciences (SPSS) 24.0 was used to perform all analyses. We used PROCESS macro (Hayes, 2013) for the serial mediation analysis.

Results

Sample Characteristics

Participants were 205 student Veterans ($M_{age} = 29.3$, $SD_{age} = 8.0$) from universities across the United States. The sample comprised 147 (71.7%) males and 57 (27.8%) females, and were mostly White (80.5%), followed by Hispanic/Latino (10.2%), African American (2.9%), bi-racial (2.4%), Asian (1.5%), and others (2.5%). Forty percent served in the Army, followed by the Air Force (22.4%), Marine Corps (20.5%), Navy (16.6%), and Coast Guard (0.5%). Thirty-nine percent of participants had service-connected disabilities, with 73 (35.6%) participants reporting a physical disability, 42 (20.5%) reporting a mental/ psychiatric disability, and 9 (4.4%) of them reporting a cognitive disability. Fifty-eight reported having other types of disabilities.

Correlation Analyses

The association among variables were examined by Pearson's correlation coefficient. Sleep disturbance was negatively correlated with resilience ($r = -.31$, $p < .001$), well-being ($r = -.43$, $p < .001$), and college life adjustment ($r = -.59$, $p < .001$). Resilience was positively correlated with well-being ($r = .48$, $p < .001$) and college life adjustment ($r = .55$, $p < .001$). Well-being was positively correlated with college life adjustment ($r = .70$, $p < .001$).

Serial Mediation Analysis

A serial mediation analysis was applied to examine resilience and well-being as mediators of the relationship between sleep disturbance and college life adjustment. The PROCESS macro (Hayes, 2013) was used to identify total, direct, and indirect effects. The specific indirect effects in this model were (a) through resilience (a_1b_1); (b) through well-being (a_2b_2); and (c) through resilience and well-being ($a_1d_{21}b_2$).

Sleep disturbance was negatively correlated with college life adjustment (path $c = -.04$). Sleep disturbance was directly and negatively linked to resilience and well-being (path $a_1 = -.03$ and path $a_2 = -.03$, respectively). Resilience was positively linked to well-being and college life adjustment (path $d_{21} = .39$ and path $b_1 = .17$, respectively). Well-being was directly linked to college life adjustment (path $b_2 = .36$). The relationship between sleep disturbance and college life adjustment stayed significant (path $c' = -.02$), indicating that resilience and well-being partially mediated the relationship between sleep disturbance and college life adjustment. The R^2 for the serial mediation model analysis was found to be .63, indicating that 63% of the variance in college life adjustment was explained by sleep disturbance, resilience, and well-being.

Using PROCESS macro with 5000 bootstrap samples (95% CI) revealed a significant indirect effect of sleep disturbance on college life adjustment. The first indirect path from sleep disturbance to college life adjustment through resilience was significant (point estimate = $-.005$, 95% CI = $-.009$, $-.003$). The second indirect path from sleep disturbance to college life adjustment through well-being was significant (point estimate = $-.011$, 95% CI = $-.016$, $-.006$). Finally, the third indirect path from sleep disturbance to college life adjustment through resilience and well-being was significant (point estimate = $-.004$, 95% CI = $-.008$, $-.002$).

Discussion

We examined the relationship of resilience and well-being on the association between sleep disturbance and college life adjustment among 205 student veterans. We hypothesized that there would be negative relationships between sleep disturbance and resilience, sleep disturbance and well-being, and sleep disturbance and college adjustment for student veterans. We also expected that resilience and well-being as would function as partial mediators of the relationship between sleep disturbance and college adjustment for student veterans, supporting that sleep disturbance's negative relationship with college adjustment is in part related to its impact on those positive personal factors. Our findings support our hypothesis and provide substantive advancement of our understanding of the effect of positive psychology factors (i.e., resilience, well-being) on sleep and college life adjustment in student veterans.

The data demonstrated resilience and well-being partially mediated the relationship between sleep disturbance and college adjustment for student veterans, accounting for 63% of the variance in college life adjustment. We found significant negative relationships between sleep disturbance and both resilience and well-being among student veterans. This supports previous research that has shown a strong association between sleep disruption and reduced resilience, as well as poorer emotional regulation (Steptoe et al., 2006). It also aligns with studies that have linked poor sleep quality to lower

life satisfaction and decreased well-being (Saper et al., 2005). The findings emphasize the necessity of addressing sleep issues for student veterans, since sleep disruption can impair their capacity to adjust and thrive in college.

Furthermore, the study found a link between sleep disruption and college life adjustment among student veterans. This implies that sleep issues may hinder their successful transition to college education. For students, sleep disruption may impair their cognitive functioning, increase fatigue, and affect their ability to concentrate, leading to academic difficulties (Medic et al., 2017). A study conducted in 2022 reported that sleep disturbance and sleep deprivation can predict new onset and persistence of post-traumatic stress disorder (PTSD) and depression among college students (Wang et al., 2022). Moreover, poor sleep quality can contribute to negative mood states and social health problems, further complicating students' adjustment to college life. These findings emphasize support programs for student veterans to address sleep problems.

The study also examined the mediating roles of resilience and well-being in the relationship between sleep disturbance and college life adjustment. Sleep disturbance was found to have indirect effects on college life adjustment through its impact on resilience and well-being. This suggests that sleep problems may influence college adjustment by reducing students' ability to cope with stressors and affecting their overall sense of well-being. Another study conducted by Bishop et al. (2020) found that sleep disturbance in veterans was associated with suicidal ideation even after controlling for age, alcohol dependence, depression, and PTSD. Interventions that target both sleep disturbance and the promotion of resilience and well-being may be particularly effective in supporting student veterans' adjustment to college life.

Implications for Practice

The findings of this study have significant implications for practice, particularly in relation to supporting the well-being and college life adjustment of student veterans. Firstly, this study supports that practitioners should prioritize sleep interventions given that sleep disturbance is strongly associated with resilience and well-being. Education on sleep hygiene practices and the promotion of healthy sleep habits can be integral to improving sleep quality and overall well-being (Dinis & Bragança, 2018). Secondly, resilience-building programs tailored specifically to student veterans should be developed and implemented, as resilience was found to mediate the relationship between sleep disturbance and well-being. These programs should focus on improving coping strategies, social support networks, and self-efficacy skills (Freire et al., 2020). Third, given the negative health impact of sleep disturbances, the availability of mental health support services is crucial. Addressing mental health issues and facilitating appropriate referrals for counseling and treatment can increase well-being.

Overall, universities and colleges must be aware of the unique challenges faced by student veterans so that they may provide appropriate resources and support. This includes establishing dedicated student veteran centers, organizing support groups, and offering tailored academic and career counseling (Barry et al., 2014). Additionally, longitudinal support programs are recommended to track the well-being and adjustment of student veterans throughout their college journey, facilitating timely interventions and promoting successful educational completion. To ensure evidence-based and responsive interventions continue to meet the evolving needs of student veterans, universities should implement structures for continuous program evaluation (Watkins et al., 2011). By implementing these implications, institutions and practitioners can effectively support the well-being, resilience, and successful college life adjustment of student veterans, thereby enhancing their overall educational experience.

Limitations

Our findings should be considered in the context of the study's limitations. First, generalizability is limited by our homogenous sample, consisting of mostly Caucasian males. Second, due to the online nature of our data collection, participants with greater access to the internet may have been more likely to complete the study, which can result in sampling bias. Third, the study relied on self-report measures, which are susceptible to personal interpretation, memory biases, and social desirability bias. Finally, the study did not include in its analysis any external factors such as social support, academic engagement, and coping methods, which could have provided new insights into the adjustment process for student veterans. Therefore, it is crucial to consider these limitations when interpreting the study's findings and to encourage additional research that will address these concerns and advance our knowledge of the variables that influence the college experience of veteran students.

Conclusion

In conclusion, this study provides insight into the relationships between sleep disturbance, resilience, well-being, and adjustment to college life for student veterans. The findings highlight the negative impact of sleep problems on resilience, well-being, and college adjustment. From these findings, we argue that addressing sleep disturbance is crucial for supporting the successful transition and academic achievement of student veterans. In addition, the study emphasizes the significance of developing resilience and well-being as protective characteristics that can offset the detrimental impacts of sleep disruption. Comprehensive support programs should consider incorporating strategies to improve sleep quality, enhance resilience, and foster well-being among student veterans. By addressing these aspects, universities and institutions can better accommodate student veterans' special requirements while also promoting their overall success and well-being in college.

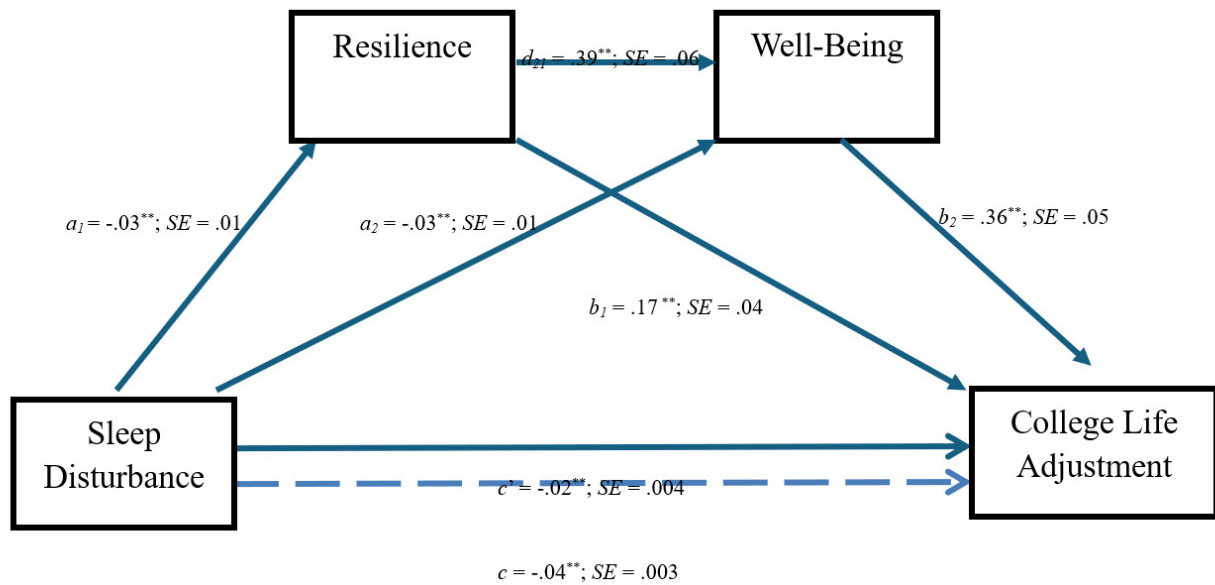


Figure 1. Path Coefficients for Serial Mediation Analysis on College Life Adjustment (N = 205)

Note. Dotted line denotes the total effect of sleep disturbance on college life adjustment when resilience and well-being are not included as serial mediators.

* $p < .05$, ** $p < .01$, + $p = \text{n.s.}$

Submitted: May 26, 2025 CDT. Accepted: September 27, 2025 CDT. Published: October 15, 2025 CDT.



This is an open-access article distributed under the terms of the Creative Commons Attribution 4.0 International License (CCBY-NC-ND-4.0). View this license's legal deed at <https://creativecommons.org/licenses/by-nc-nd/4.0> and legal code at <https://creativecommons.org/licenses/by-nc-nd/4.0/legalcode> for more information.

References

- Akanpaadgi, E., Binpimbu, F., & Kuuyelleh, E. N. (2023). The impact of stress on students' academic performance. *Eureka: Journal of Educational Research*, 2(1), 60–67. <https://doi.org/10.56773/ejer.v2i1.17>
- Allen, W. R. (1992). The color of success: African-American college student outcomes at predominantly White and historically Black public colleges and universities. *Harvard Educational Review*, 62(1), 26–44. <https://doi.org/10.17763/haer.62.1.wv5627665007v701>
- Alschuler, M., & Yarab, P. E. (2016). The transition from military to civilian life: A review of veteran adjustment and transition services. *Journal of Vocational Rehabilitation*, 44(3), 191–206. <https://doi.org/10.3233/JVR-160791>
- Bajaj, B., & Pande, N. (2016). Mediating role of resilience in the impact of mindfulness on life satisfaction and affect as indices of subjective well-being. *Personality and Individual Differences*, 93, 63–67. <https://doi.org/10.1016/j.paid.2015.09.005>
- Baltzell, A., Akhtar, V. L., & Summers, J. (2014). Mindfulness meditation training for sport (MMTS): A qualitative study of Division I female athletes. *Journal of Clinical Sport Psychology*, 8(3), 221–244. <https://doi.org/10.1123/jcsp.2014-0030>
- Barry, A. E. (2015). Understanding the challenges of student veterans: A review of the literature. *Journal of American College Health*, 63(7), 437–441. <https://doi.org/10.1080/07448481.2015.1040402>
- Barry, A. E., Whiteman, S. D., & MacDermid Wadsworth, S. (2014). Student service members/veterans in higher education: A systematic review. *Journal of Student Affairs Research and Practice*, 51(1), 30–42. <https://doi.org/10.1515/jsarp-2014-0003>
- Bishop, T. M., Walsh, P. G., Ashrafioun, L., Lavigne, J. E., & Pigeon, W. R. (2020). Sleep, suicide behaviors, and the protective role of sleep medicine. *Sleep Medicine*, 66, 264–270. <https://doi.org/10.1016/j.sleep.2019.09.016>
- Bonnet, M. H. (1985). Effects of sleep disruption on sleep, performance, and mood. *Sleep*, 8(1), 11–19. <https://doi.org/10.1093/sleep/8.1.11>
- Bramoweth, A. D., & Germain, A. (2013). Deployment-related insomnia in military personnel and veterans. *Current Psychiatry Reports*, 15(10), 401. <https://doi.org/10.1007/s11920-013-0401-4>
- Brown, F. C., Buboltz, W. C., Jr., & Soper, B. (2001). The impact of sleep on academic performance in college students. *Journal of American College Health*, 49(3), 125–131. <https://doi.org/10.1080/07448480109596017>
- Buboltz, W. C., Jr., Brown, F., & Soper, B. (2001). Sleep habits and patterns of college students: A preliminary study. *Journal of American College Health*, 50(3), 131–135. <https://doi.org/10.1080/07448480109596017>
- Butler, J., & Kern, M. L. (2016). The PERMA-Profler: A brief multidimensional measure of flourishing. *International Journal of Wellbeing*, 6(3), 1–48. <https://doi.org/10.5502/ijw.v6i3.526>
- Caldwell, J. A. (2003). The impact of fatigue in air medical and other types of operations: A review of fatigue facts and potential countermeasures. *Air Medical Journal*, 22(1), 25–32. [https://doi.org/10.1016/S1067-991X\(03\)00003-1](https://doi.org/10.1016/S1067-991X(03)00003-1)
- Chickering, A. W., & Reisser, L. (1993). *Education and identity* (2nd ed.). Jossey-Bass.
- Coffey, J. K., Wray-Lake, L., Mashek, D., & Branand, B. (2016). The day reconstruction method: A review and evaluation. *Social Indicators Research*, 126(1), 341–365. <https://doi.org/10.1007/s11205-015-0589-1>

- Cole, D. A., Martin, N. C., Powers, B., & Truglio, R. T. (2015). Longitudinal study of the role of resilience in the adjustment of college students. *Journal of American College Health*, 63(8), 550–557. <https://doi.org/10.1080/07448481.2015.1040408>
- Connor, K. M., & Davidson, J. R. T. (2003). Development of a new resilience scale: The Connor-Davidson Resilience Scale (CD-RISC). *Depression and Anxiety*, 18(2), 76–82. <https://doi.org/10.1002/da.10113>
- Cunningham, M. (2012). The impact of deployment on student veterans. *Journal of College Student Development*, 53(3), 361–365. <https://doi.org/10.1353/csd.2012.0035>
- Dahl, R. E., & Harvey, A. G. (2007). Sleep and emotional regulation: An emerging pathway for understanding the development of psychopathology. *Child Development Perspectives*, 1(1), 66–70. <https://doi.org/10.1111/j.1750-8606.2007.00006.x>
- Darlaston-Jones, D., Cohen, L., Haunold, S., Pike, L., & Young, A. (2003). The retention and persistence support (RAPS) project: A transition initiative. *Issues in Educational Research*, 13(2), 1–13.
- DeWitz, S. J., Woolsey, M. L., & Walsh, W. B. (2009). The relationship between self-efficacy and academic success in college students. *Journal of College Student Development*, 50(3), 287–296. <https://doi.org/10.1353/csd.0.0079>
- Dinis, J., & Bragança, M. (2018). Quality of sleep and depression in college students: A systematic review. *Sleep Science*, 11(4), 290–301. <https://doi.org/10.5935/1984-0063.20180045>
- Duckworth, A. L., Peterson, C., Matthews, M. D., & Kelly, D. R. (2007). Grit: Perseverance and passion for long-term goals. *Journal of Personality and Social Psychology*, 92(6), 1087–1101. <https://doi.org/10.1037/0022-3514.92.6.1087>
- Freire, C., Ferradás, M. D. M., Regueiro, B., Rodríguez, S., Valle, A., & Núñez, J. C. (2020). Resilience and its relationship with academic performance and mental health in university students. *Journal of American College Health*, 68(1), 1–9. <https://doi.org/10.1080/07448481.2018.1546188>
- Fung, C. H., Martin, J. L., Joseph, J. W., Fiorentino, L., Dzierzewski, J. M., Jouldjian, S., ... Alessi, C. A. (2013). Sleep disorders among veterans: A national health survey. *Journal of Clinical Sleep Medicine*, 9(5), 453–459. <https://doi.org/10.5664/jcsm.2650>
- Galatzer-Levy, I. R., Huang, S. H., & Bonanno, G. A. (2012). Resilience and mental health: A review of the literature. *Clinical Psychology Review*, 32(2), 95–105. <https://doi.org/10.1016/j.cpr.2011.10.004>
- Gau, S. F. (2000). Sleep quality and its relationship to academic performance in college students. *Journal of American College Health*, 49(3), 125–131. <https://doi.org/10.1080/07448480009596294>
- Gwin, D., Leach, D., & Ramseur, J. (2012). Identifying needs of student veterans in higher education. *Journal of Postsecondary Education and Disability*, 25(1), 37–52.
- Hartley, M. T. (2011). Examining the relationships between resilience, mental health, and academic persistence in undergraduate college students. *Journal of American College Health*, 59(7), 596–604. <https://doi.org/10.1080/07448481.2010.515632>
- Hartley, M. T. (2013). Investigating the relationship of resilience, college adjustment, and academic achievement in college students with disabilities. *Rehabilitation Counseling Bulletin*, 56(4), 240–250. <https://doi.org/10.1177/0034355213480527>
- Hayes, A. F. (2013). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach*. Guilford Press.
- Health Measures. (2019). *PROMIS Sleep Disturbance Short Form*. <https://www.healthmeasures.net>

- Hoffman, M. A., & Weiss, B. (1986). A new system for conceptualizing college students' problems: Types, severity, and help-seeking. *Journal of American College Health*, 34(6), 259–266. <https://doi.org/10.1080/07448481.1986.9938975>
- Hughes, J. M., Ulmer, C. S., Hastings, S. N., Gierisch, J. M., Howard, M. O., & Mid-Atlantic VA MIRECC Workgroup. (2018). Sleep, resilience, and psychological distress in United States military veterans. *Military Psychology*, 30(5), 404–414. <https://doi.org/10.1080/08995605.2018.1478551>
- Jenkins, C. D., Alderman, B. L., Means-Christensen, A. J., & Stewart, S. H. (2002). Sleep quality and social functioning in college students. *Journal of American College Health*, 50(3), 125–131. <https://doi.org/10.1080/07448480209596021>
- Jensen, R. E., Mennin, D. S., Taylor, K. L., Reeve, B. B., Rothrock, N. E., Swanholm, E., & Cella, D. (2016). Validation of the PROMIS Sleep Disturbance and Sleep-Related Impairment item banks in a U.S. general population sample. *Sleep*, 39(1), 55–65. <https://doi.org/10.5665/sleep.5344>
- Johnson, J. L., Bloom, A. M., & Ramachandran, K. (2011). Resilience as a predictor of college adjustment among students with disabilities. *Rehabilitation Counseling Bulletin*, 54(4), 190–201. <https://doi.org/10.1177/0034355210392322>
- Karremans, A., & Vingerhoets, A. J. J. M. (2012). Attachment and well-being: The mediating role of emotion regulation and resilience. *Personality and Individual Differences*, 53(7), 821–826. <https://doi.org/10.1016/j.paid.2012.06.014>
- Kelly, W. E., Kelly, K. E., & Clanton, R. C. (2001). The relationship between sleep length and grade-point average among college students. *College Student Journal*, 35(1), 84–86.
- Kern, M. L., Waters, L. E., Adler, A., & White, M. A. (2014). Measuring well-being: The PERMA-Profiler. *International Journal of Wellbeing*, 6(3), 1–48. <https://doi.org/10.5502/ijw.v6i3.526>
- Khawaja, N. G., & Stallman, H. M. (2011). Understanding the coping strategies of international students: A qualitative approach. *Australian Journal of Guidance and Counselling*, 21(2), 201–224. <https://doi.org/10.1375/ajgc.21.2.201>
- Kleemann, G. L., & Richardson, R. C., Jr. (1985). Student characteristics and perceptions of university effectiveness. *The Review of Higher Education*, 9(1), 5–20. <https://doi.org/10.1353/rhe.1985.0001>
- Klibert, J. J., Lamis, D. A., Collins, W., Smalley, K. B., Warren, J. C., & Hasan, N. T. (2014). Resilience and college adjustment: Mediating effects of stress and self-esteem. *Journal of American College Health*, 62(7), 502–510. <https://doi.org/10.1080/07448481.2014.923429>
- Kroenke, K., Spitzer, R. L., Williams, J. B. W., & Löwe, B. (2009). An ultra-brief screening scale for anxiety and depression: The PHQ-4. *Psychosomatics*, 50(6), 613–621. [https://doi.org/10.1016/S0033-3182\(09\)70864-3](https://doi.org/10.1016/S0033-3182(09)70864-3)
- Kuh, G. D. (2008). *High-impact educational practices: What they are, who has access to them, and why they matter*. Association of American Colleges and Universities.
- Lack, L. C. (2010). Delayed sleep and sleep loss in university students. *Journal of the American College Health Association*, 35(3), 105–110. <https://doi.org/10.1080/07448481.1986.9938970>
- Lacks, P., & Morin, C. M. (1992). Recent advances in the assessment and treatment of insomnia. *Journal of Consulting and Clinical Psychology*, 60(4), 586–594. <https://doi.org/10.1037/0022-006X.60.4.586>
- Li, M.-H., & Yang, Y. (2016). A cross-cultural study on a resilience–stress path model for college students. *Journal of Counseling & Development*, 94(3), 319–332. <https://doi.org/10.1002/jcad.12088>

- Liu, Y., Wang, Z., Zhou, C., & Li, T. (2012). Affect and self-esteem as mediators between trait resilience and psychological adjustment. *Personality and Individual Differences*, 53(7), 884–888. <https://doi.org/10.1016/j.paid.2012.07.011>
- Mak, W. W. S., Ng, I. S. W., & Wong, C. C. Y. (2011). Resilience: Enhancing well-being through the positive cognitive triad. *Journal of Counseling Psychology*, 58(4), 610–617. <https://doi.org/10.1037/a0025195>
- Masten, A. S. (2001). Ordinary magic: Resilience processes in development. *American Psychologist*, 56(3), 227–238. <https://doi.org/10.1037/0003-066X.56.3.227>
- Masten, A. S., Best, K. M., & Garmezy, N. (1990). Resilience and development: Contributions from the study of children who overcome adversity. *Development and Psychopathology*, 2(4), 425–444. <https://doi.org/10.1017/S0954579400005812>
- McCann, I. L., & Stewin, L. L. (1987). Academic stress and its relation to anxiety in college students. *Journal of College Student Personnel*, 28(1), 94–98.
- McGuffin, J. A., Riggs, S. A., & Taylor, D. J. (2019). Role of combat exposure and insomnia in student veterans' adaptation to college. *Behavioral Sleep Medicine*, 17(2), 213–223. <https://doi.org/10.1080/15402002.2017.1363041>
- McLay, R. N., Klam, W. P., & Volkert, S. L. (2010). Insomnia is the most commonly reported symptom and predicts other symptoms of post-traumatic stress disorder in U.S. service members returning from military deployments. *Military Medicine*, 175(10), 759–762. <https://doi.org/10.7205/milmed-d-10-00193>
- Medic, G., Wille, M., & Hemels, M. E. H. (2017). Short- and long-term health consequences of sleep disruption. *Nature and Science of Sleep*, 9, 151–161. <https://doi.org/10.2147/NSS.S134864PubMed>
- Morgan Consoli, M. L., & Llamas, J. D. (2013). The relationship between Mexican American cultural values and resilience among Mexican American college students: A mixed methods study. *Journal of Counseling Psychology*, 60(4), 617–624. <https://doi.org/10.1037/a0033998>
- Murphy, M. C., & Archer, J. (1996). Stressors on the college campus: A comparison of 1985 and 1993. *Journal of College Student Development*, 37(1), 20–28.
- Mustafa, M., Erokwu, N., Ebose, I., & Strohl, K. (2005). Sleep problems and the risk for sleep disorders in an outpatient veteran population. *Sleep and Breathing*, 9(2), 57–63. <https://doi.org/10.1007/s11325-005-0016-zPBM>
- National Conference of State Legislatures. (2014, May 30). *Veterans and college: State and community roles in supporting college completion for veterans*. <https://www.ncsl.org/research/education/veterans-and-college.aspx>
- Ocasio-Tascón, M. E., Nguyen, Q. V., & Haddad, R. (2010). Sleep-disordered breathing in patients with post-traumatic stress disorder: A matched control study. *Sleep and Breathing*, 14(4), 333–339. <https://doi.org/10.1007/s11325-009-0301-4>
- Pidgeon, A. M., Rowe, N. F., Stapleton, P., Magyar, H. B., & Lo, B. C. Y. (2014). Examining characteristics of resilience among university students: An international study. *Open Journal of Social Sciences*, 2(11), 14–22. <https://doi.org/10.4236/jss.2014.211003>
- Pilcher, J. J., Ginter, D. R., & Sadowsky, B. (1997). Sleep quality versus sleep quantity: Relationships between sleep and measures of health, well-being and sleepiness in college students. *Journal of Psychosomatic Research*, 42(6), 583–596. [https://doi.org/10.1016/S0022-3999\(97\)00004-4](https://doi.org/10.1016/S0022-3999(97)00004-4)
- Pilcher, J. J., & Huffcutt, A. I. (1996). Effects of sleep deprivation on performance: A meta-analysis. *Sleep*, 19(4), 318–326. <https://doi.org/10.1093/sleep/19.4.318>

- Polley, L. A. (2012). National Veteran Sleep Survey. *Sleep*, 35(Abstract Suppl), A316.
- Preacher, K. J., & Hayes, A. F. (2008). Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behavior Research Methods*, 40(3), 879–891. <https://doi.org/10.3758/BRM.40.3.879>
- Riedel, B. W., Lichstein, K. L., & Dwyer, W. O. (2004). Sleep hygiene and behavior in a college student population. *Behavioral Medicine*, 30(4), 165–168. <https://doi.org/10.3200/BMED.30.4.165-168>
- Roth, T. (2007). Insomnia: Definition, prevalence, etiology, and consequences. *Journal of Clinical Sleep Medicine*, 3(5 Suppl), S7–S10. <https://doi.org/10.5664/jcsm.26929>
- Russell, R. K., & Petrie, T. A. (1992). Academic adjustment of college students: Assessment and counseling. In S. D. Brown & R. W. Lent (Eds.), *Handbook of Counseling Psychology* (2nd ed., pp. 485–511). John Wiley & Sons.
- Ryff, C. D., & Keyes, C. L. M. (1995). The structure of psychological well-being revisited. *Journal of Personality and Social Psychology*, 69(4), 719–727. <https://doi.org/10.1037/0022-3514.69.4.719>
- Saper, C. B., Scammell, T. E., & Lu, J. (2005). Hypothalamic regulation of sleep and circadian rhythms. *Nature*, 437(7063), 1257–1263. <https://doi.org/10.1038/nature04284>
- Seligman, M. E. P. (2011). *Flourish: A visionary new understanding of happiness and well-being*. Free Press.
- Seligman, M. E. P., & Csikszentmihalyi, M. (2000). Positive psychology: An introduction. *American Psychologist*, 55(1), 5–14. <https://doi.org/10.1037/0003-066X.55.1.5>
- Seligman, M. E. P., Ernst, R. M., Gillham, J., Reivich, K., & Linkins, M. (2009). Positive education: Positive psychology and classroom interventions. *Oxford Review of Education*, 35(3), 293–311. <https://doi.org/10.1080/03054980902934563>
- Smith, B. W., Dalen, J., Wiggins, K., Tooley, E., Christopher, P., & Bernard, J. (2008). The brief resilience scale: Assessing the ability to bounce back. *International Journal of Behavioral Medicine*, 15(3), 194–200. <https://doi.org/10.1080/10705500802222972>
- Stallman, H. M. (2010). Psychological distress in university students: A comparison with general population data. *Australian Psychologist*, 45(4), 249–257. <https://doi.org/10.1080/00050067.2010.482109>
- Stepptoe, A., Peacey, V., & Wardle, J. (2006). Sleep duration and health in young adults. *Archives of Internal Medicine*, 166(16), 1689–1692. <https://doi.org/10.1001/archinte.166.16.1689>
- Stone, G. L., & Archer, J. (1990). College and university counseling centers in the 1990s: Challenges and limits. *The Counseling Psychologist*, 18(4), 539–607. <https://doi.org/10.1177/0011000090184001>
- Tansey, T. N., Smedema, S. M., Umucu, E., Iwanaga, K., Wu, J. R., Cardoso, E. D. S., & Strauser, D. (2017). Assessing college life adjustment of students with disabilities: Application of the PERMA framework. *Rehabilitation Counseling Bulletin*, 60(4), 210–220. <https://doi.org/10.1177/0034355216650104>
- Torres-Palacios, A., & Rodríguez-Cintrón, W. (2006). Sleep disorders in veterans. *Puerto Rico Health Sciences Journal*, 25(2), 151–154.
- Trigwell, K., Ellis, R. A., & Han, F. (2012). Relations between students' approaches to learning, experienced emotions and outcomes of learning. *Studies in Higher Education*, 37(7), 811–824. <https://doi.org/10.1080/03075079.2010.549220>

- Trockel, M. T., Barnes, M. D., & Egget, D. L. (2000). Health-related variables and academic performance among first-year college students: Implications for sleep and other behaviors. *Journal of American College Health*, 49(3), 125–131. <https://doi.org/10.1080/07448480009596294>
- Wagnild, G. M., & Young, H. M. (1993). Development and psychometric evaluation of the Resilience Scale. *Journal of Nursing Measurement*, 1(2), 165–178.
- Wang, D., Zhao, J., Zhai, S., Ye, H., Bu, L., & Fan, F. (2022). Does sleep disturbance predict posttraumatic stress disorder and depression among college students during COVID-19 lockdown? A longitudinal survey. *Frontiers in Public Health*, 10, 986934. <https://doi.org/10.3389/fpubh.2022.986934>
- Watkins, K. E., Pincus, H. A., Smith, B., Paddock, S. M., Mannle, T. E., Jr., Woodroffe, A., & Call, C. (2011). *Veterans Health Administration mental health program evaluation*. RAND Corporation. https://www.rand.org/pubs/technical_reports/TR956.html
- Yu, L., Buysse, D. J., Germain, A., Moul, D. E., Stover, A., Dodds, N. E., Johnston, K. L., Shablesky-Cade, M. A., & Pilkonis, P. A. (2012). Development of short forms from the PROMIS™ sleep disturbance and Sleep-Related Impairment item banks. *Behavior Sleep Medicine*, 10(1), 6–24. <https://doi.org/10.1080/15402002.2012.636266>