Original Article

Resilience, Psychological Well-Being, and Academic Success in Blended Learning: A Cross-Sectional Study among Healthcare Students

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ABSTRACT

Background: Students in healthcare are expected to face high clinical and academic stressors that may influence their psychological well-being and academic achievement. Resilience plays a significant role in helping students navigate these challenges while maintaining their well-being. The research examines the relationship between psychological well-being, resilience, and academic achievement among Universitas Brawijaya healthcare students in a blended learning environment.

Methods: A cross-sectional research design was employed, and 302 students participated through purposive sampling. Data were collected through the Academic Resilience Scale (ARS-30) and Ryff's Psychological Well-Being Scale, with GPA as an indicator of academic performance. This study was reported in accordance with the STROBE guidelines.

Results: A strong positive relationship between resilience and psychological well-being ($r = 0.615$, $p < 0.01$), highlighting the focus on resilience as an effective protective factor. There was, nonetheless, no significant correlation between resilience and GPA ($r = -0.006$, $p = 0.913$)..

Conclusion: Among the psychological well-being factors, environmental mastery, autonomy, and purpose in life contributed significantly to academic resilience. These findings suggest that cultivating psychological well-being, particularly ecological mastery and self-acceptance, can enable resilience in online learning environments.

Keywords: Psychological Well-Being; Resilience; Healthcare Student; Protective Factor.

Implications for Practice:

- Integrating resilience training into nursing curricula can enhance students' psychological well-being and support their academic success, particularly in blended learning environments that require high levels of independence and adaptability.
- Health education institutions should develop psychosocial support systems, such as counseling services, peer support groups, and mentoring programs, to help students manage academic stress and challenges during online and face-to-face learning.
- Implementing resilience enhancement strategies should be adapted to local contexts through community-based approaches and simple technologies to remain effective and sustainable, especially in educational settings with limited resources in low- and middle-income countries (LMICs).

Introduction

Healthcare students are frequently exposed to intense academic and clinical pressures that can significantly impact their psychological well-being (WB) (Labrague, 2024; Liepinaitienė et al., 2024; Mohamed et al., 2024). The high expectations placed on them, combined with demanding coursework and clinical training, often lead to mental health challenges such as anxiety, depression, and even suicidal thoughts (Steare et al., 2023). When academic stress becomes chronic, it can lead to burnout and diminished well-being, ultimately affecting students' academic performance and clinical competency (Andargeery et al., 2024; Avila-Carrasco et al., 2023; March-Amengual et al., 2022). Furthermore, persistent academic pressure has been linked to impaired cognitive function and decision-making, which may compromise the standard of care given by future healthcare practitioners (Musa et al., 2023).

Interestingly, research has found that mental health crises, including suicide rates, emergency psychiatric visits, and hospital admissions related to psychological distress, tend to decline during academic breaks (Hansen & Lang, 2011). This trend suggests that the alleviation of academic stress correlates with a reduction in severe mental health issues (Steare et al., 2023). Given these findings, exploring protective factors that help students cope with academic demands while maintaining their psychological well-being is imperative.

One such protective factor is resilience, which has been identified as a key determinant of mental health outcomes (Schäfer et al., 2023a; Shrivastava & Desousa, 2016a). Individuals with high resilience are better equipped to cope with stress and sustaining psychological stability, whereas those with lower resilience levels are more susceptible to mental health challenges (Sayed et al., 2024; Waugh & Sali, 2023a). Among healthcare students, resilience is crucial in adapting to the rigorous demands of educational and clinical environments. Internal factors such as coping strategies, self-efficacy, optimism, and emotional intelligence have been found to enhance resilience, allowing students to navigate high-stress environments while safeguarding themselves against burnout, anxiety, and depression (Park & Choi, 2025; Shorbagi, 2024). Additionally, growing evidence highlights the positive correlation between resilience, academic success, and overall well-being (Donnellan et al., 2024).

This study is grounded in Ryff's Psychological Well-Being Model and resilience theory, both offering a robust framework for understanding mental health in educational settings. Ryff's model defines psychological well-being as a multidimensional construct, including autonomy, environmental mastery, personal growth, positive relationships, purpose in life, and self-acceptance (García-Martínez et al., 2022; Sasaki et al., 2020). These dimensions are indicators of mental health and predictors of adaptive behavior, especially in challenging academic contexts(Mustafa et al., 2020). The Psychological Well-Being Scale used in this study consists of 18 items, with a total score ranging from 18 to 108. Based on the total score, participants' well-being levels are categorized as high (78-108), moderate (48-77), or low (18-47). Complementing this model, resilience theory conceptualizes resilience as the capacity to maintain or regain psychological well-being in response to adversity (Schäfer et al., 2023; Waugh & Sali, 2023). In academic environments, resilience enables students to persist, recover from serbacks, and regulate emotional responses, thus protecting against psychological distress and academic burnout (Donnellan et al., 2024; Shrivastava & Desousa, 2016).

As higher education envolves, blended learning has emerged an increasingly

prominent instructional model, particularly following the widespread implementation of digital learning during the COVID-19 pandemic (Anthony Angwaomaodoko, 2024; Wang et al., 2024). By integrating virtual and in-person education, blended learning offers students greater flexibility and accessibility. However, this learning approach also introduces challenges, such as limited social interaction, difficulties in time management, and increased cognitive demands (Ashraf et al., 2021; Tong et al., 2022). While extensive research has examined the effects of academic pressure on students' psychological well-being, a gap exists in understanding how psychological well-being, particularly when maintained at an optimal level, contributes to resilience and academic achievement within a blended learning setting.

Although resilience plays an important role in maintaining students psychological well-being, few studies have specifically examined the relationship between psychological well-being, resilience, and academic performance among healthcare students, particularly within the context of blended learning. It also remins unclear whether this learning model strengthens or weakens that relationship. Addressing this research gap is essential for designing more effective educational and psychological interventions to support mental resilience and academic success among students at Universitas Brawijaya.

Methods

Study Design

This study employs a cross-sectional design utilizing a questionnaire-based approach. A cross-sectional study is an observational research design that captures data at a single point in time to assess the prevalence of a disease, phenomenon, or characteristic within a defined population without follow-ups (Capili, 2021). This study followed the STROBE guidelines to ensure transparent and standardized reporting of observational research.

Participants

The target population consists of undergraduate students enrolled in healthcare programs, including medicine, dentistry, nursing, midwifery, pharmacy, and nutrition at Universitas Brawijaya. A total of 302 students participated in the study, selected through purposive sampling to ensure representation of individuals meeting specific inclusion criteria. Purposive sampling is a deliberate selection of participants based on specific criteria to ensure relevant and in-depth data (Campbell et al., 2020). Participants must be healthcare students aged 18–25, actively enrolled in a relevant academic program, and engaged in blended learning. They should be willing to participate in resilience assessments, possess adequate communication skills, and provide informed consent for the study.

Instruments

This study utilized two validated instruments to measure students' academic resilience and psychological well-being, namely the Academic Resilience Scale (ARS-30) adapted from Cassidy (2016) and the Ryff's Psychological Well-Being Scale (18-item) adapted from Garcia, Kazemitabar, & Asgarabad (2023). The Ryff scale assesses six dimensions of psychological well-being: positive relations with others, environmental mastery, self-acceptance, autonomy, personal growth, and purpose in life. Participants responded to each item using a Likert scale ranging from 1 (Strongly Disagree) to 6 (Strongly Agree). Positive items were scored directly, while negative items were reverse-scored to ensure that higher total scores accurately reflected higher psychological well-being, using the formula: reversed score = (maximum scale value + 1) − response. The total score ranges

from 18 to 108, with scores categorized as high (78–108), moderate (48–77), and low (18–47) psychological well-being. The Ryff scale demonstrated high internal consistency, with a Cronbach's alpha of 0.806.

The ARS-30 measures academic resilience, with participants responding on a Likert scale (1 = Strongly Disagree to 5 or 6 = Strongly Agree, depending on the version). Total scores range from 30 to 150, categorized as high (101–150), moderate (61–100), and low (30–60) resilience. The ARS-30 showed very good internal consistency, with a Cronbach's alpha of 0.902. In addition, academic achievement was measured using students' Grade Point Average (GPA). The instruments can be analyzed both in terms of total scores and, for the Ryff scale, scores per dimension to provide a more detailed assessment of psychological well-being.

Data Collection

Data collection was conducted in December 2024. The research team gathered the data, assisted by trained enumerators who facilitated the process to ensure accuracy and consistency. All enumerators underwent prior training to ensure consistency and accuracy in data collection procedures to minimize information and selection bias. Nevertheless, the use of purposive sampling may introduce selection bias, and self-reported measures may be subject to response bias.

Data Analysis

IBM SPSS Statistics 26 is used to perform univariate, bivariate, and multivariate analyses to examine the relationships between resilience, psychological well-being, and academic achievement. Univariate analysis focuses on descriptive statistics, including mean and standard deviation, to summarize interval-scale data. Bivariate analysis employs Pearson correlation to assess the relationships between resilience, psychological well-being, and academic achievement. Multivariate analysis utilizes multiple linear regression to determine the predictive effect of resilience on psychological well-being and academic achievement while controlling for potential confounders.

Ethical Considerations

This study was conducted in accordance with ethical research principles, tackling important ethical issues such as the secrecy of the participants, informed consent, and the freedom to withdraw at any time. Permission was obtained from the Research Ethics Committee of the Universitas Brawijaya Faculty of Health Sciences.

Results

The participants comprised students across various academic levels and demographic backgrounds (**Table 1**). In terms of semester distribution, the majority were in their 5th semester (47.31%), followed by those in the 1st semester (29.87%) and 3rd semester (21.15%), while only a small proportion (1.68%) were in their final semester. The age range varied from 18 to 22 years, with the largest group being 20 years old (37.08%). The sample was predominantly female (83.77%), with males accounting for (16.23%).

Table 1. Characteristics of student participants

Category	Subcategory	N (302)	Percentage (%)
Semester	1st Semester	91	29.87%
	3rd Semester	63	21.15%
	5th Semester	143	47.31%
	7th Semester	5	1.68%
Age	18 years	45	14.89%
	19 years	54	17.89%
	20 years	112	37.08%
	21 years	71	23.51%
	22 years	20	6.62%
Gender	Male	49	16.23%
	Female	253	83.77%

The results indicate that personal growth is the strongest aspect of students' psychological well-being, suggesting a focus on self-improvement. In contrast, positive relations with others and purpose in life score lower, highlighting potential challenges in social connections and life direction. Moderate scores in autonomy, environmental mastery, and self-acceptance suggest a balanced sense of independence and control, though improvements in self-acceptance may be beneficial .

The results show perseverance as the strongest aspect of academic resilience, while negative affect and emotional response indicates moderate emotional challenges. The lower score self-reflection and adaptive support-seeking suggests a need to enhance students' ability to seek academic support .

The GPA distribution shows strong academic performance among most students, with a mean of 3.20 (SD = 1.191) and moderate variability. While many students maintain a GPA above 3.0, a notable portion falls below, indicating potential academic challenges (**Table 2**).

Table 2. Descriptive Statistics of psychological well-being, academic resilience, gpa distribution, and their correlation among students

Variables	Mean	SD
Psychological well-being subscales in students		
Autonomy	12,1325	2.22393
Environmental mastery	12.3940	2.16136
Personal growth	13.8212	2.40179
Positive relations with others	11.5199	3.10256
Purpose in life	11.4272	2.38760
Self-acceptance	12.2980	2.38571
Total	62.1656	8.77283
Academic resilience subscales in students		
Perseverance	49.8642	7.52701
Reflecting and adaptive help-seeking	22.0662	6.19148
Negative affect and emotional response	35.6159	6.26212
Total	110.9040	15.15021
Distribution of students' Grade Point Average (GPA)		
3.5 – 4.0	130	43.05%
3.0 – 3.5	115	38.12%
Below 3.0	57	18.83%

Mean	3.20
SD	1.191

SD (Standard Deviation).

Table 3 illustrates the Pearson correlation analysis examining the relationship between resilience and psychological well-being. The results indicate a significant positive correlation between resilience (ARS-30) and psychological well-being (WB) ($r = 0.615$, $p < 0.01$), suggesting that higher resilience levels are associated with greater psychological well-being. This strong correlation implies that students with greater resilience tend to experience better psychological well-being, reinforcing the importance of resilience in academic and personal development. The correlation between Academic Resilience (ARS) and Grade Point Average (GPA) among 302 participants. The Pearson correlation analysis shows a very weak, non-significant relationship ($r = -0.006$, $p = 0.913$), indicating that ARS has no meaningful impact on GPA. The high p-value suggests that academic resilience is not a determining factor in students' academic performance in this study.

Table 3. Correlation of Resilience with Psychological Well-Being and Grade Point Average

Variables	Pearson Correlation Coefficient (r)	Significance (2-tailed)
Psychological Well-Being	1	0.000*
Resilience (ARS-30) and Psychological Well-Being	0.61	—
Resilience (ARS-30) and Grade Point Average	1	0.913
Grade Point Average	-0.006	—

*$p < 0.05$.

Table 4 highlights the influence of psychological well-being (WB) dimensions on academic resilience (ARS). Environmental mastery (WB 4) has the strongest impact ($B = 0.412$, $p < 0.001$), indicating that effective management of the academic environment enhances resilience. Autonomy (WB 1) and purpose in life (WB 5) also contribute significantly ($p = 0.004$ and $p = 0.014$), emphasizing the role of independence and goal-setting in academic persistence. In contrast, personal growth (WB 2) and positive relations (WB 3) do not significantly affect ARS ($p > 0.05$), while self-acceptance (WB 6) shows a marginal effect ($p = 0.059$). These findings suggest that managing one's environment, autonomy, and purpose are key factors in academic resilience.

Table 4. Influence of Psychological Well-Being (WB) Dimensions on Academic Resilience (ARS)

WB Factor	Coefficient (B)	Std. Error	Wald	Sig. (p-value)	Interpretation
WB 1 (Autonomy)	0.156	0.055	8.194	0.004	Significant
WB 2 (Personal Growth)	0.005	0.043	0.014	0.907	Not Significant
WB 3 (Positive Relations with Others)	-0.015	0.063	0.057	0.812	Not Significant
WB 4 (Environmental Mastery)	0.412	0.055	56.486	0.000	Most Significant
WB 5 (Purpose in Life)	0.122	0.050	5.998	0.014	Significant
WB 6 (Self-Acceptance)	0.096	0.051	3.567	0.059	Marginal (Near Significant)

One inherent limitation of this study is the sample size, which, while providing valuable insights, could be expanded to include a more diverse range of students from different institutions, academic disciplines, and cultural backgrounds. A broader sample would enhance the generalizability of the findings and provide a more comprehensive understanding of the factors influencing psychological well-being and academic resilience. Future research could benefit from a larger and more varied participant group to capture a wider spectrum of student experiences and challenges.

Discussion

Blended learning has gained increasing popularity as a learning method, particularly since the coronavirus crisis necessitated a transition to digital learning. Over time, this approach has been adopted to balance learning effectiveness while maintaining health protocols. By integrating virtual and in person sessions, blended learning offers flexibility for students; however, it also presents challenges such as limited social interaction and difficulties in managing time and study workload.

Psychological well-being plays a crucial role in students' academic achievement. When psychological well-being improves, academic performance tends to follow suit. Research has established a strong positive relationship between aspects of psychological well-being, such as environmental mastery, personal growth, positive relationships, life purpose, self-acceptance,and academic achievement (García-Martínez et al., 2022; Mustafa et al., 2020).

Although online learning remains effective, transitioning to blended learning provides additional benefits, particularly in enhancing students' motivation. However, one of the biggest challenges of this model is the reduced direct social interaction, which can affect student well-being. To address this, fostering positive relationships through online discussions, collaborative projects, and peer mentoring programs has been shown to enhance students' sense of belonging and academic engagement (Lestari & Widyastuti, 2023;Cuartero & Tur, 2021). Additionally, direct interactions with lecturers and mentors play a critical role in maintaining learning motivation, especially during the pandemic when access to academic guidance was more limited. If institutions fail to provide adequate psychological and social support, students may encounter learning obstacles that ultimately lead to decreased academic motivation (Ali et al., 2022; Bolatov et al., 2022).

Students ' personal satisfaction is another key factor contributing to academic motivation in blended learning. Opportunities for face-to-face interaction boost student engagement andnforce their motivation to learn beyond mere physical attendance on campus (Bolatov et al., 2022; Babi et al., 2020). One psychological well-being aspect relevant in this context is self-acceptance, the ability to acknowledge and embrace one's strengths and weaknesses without excessive self-doubt or dissatisfaction (Sasaki et al., 2020). Students with high level of self-acceptance tend to be more self-assured, have a positive self-perception, and experience greater life satisfaction (Mustafa et al., 2020). In blended learning, strong self-acceptance helps students adapt to academic challenges, enhance resilience, and reduce academic pressure, including anxiety related to exams and online assignments (Lv & Li, 2024).

Apart from self-acceptance, environmental mastery is also integral to blended learning. Environmental mastery means an individual's skill in managing his/her environment so that individual and academic needs can be met (Michel et al.,

2022). Highly environmentally mastered students have no problem getting familiar with Learning Management Systems (LMS) and other computer-supported learning technologies, ultimately optimizing their learning efficiency (Anazifa et al., 2024). Besides, they are more effective in organizing study schedules, avoiding procrastination, and optimizing time for discussions and studies (Ali et al., 2022). These skills help students deal with problems such as poor internet connectivity or reduced interactions with lecturers and peers (Bai, et al., 2020).

Blended learning also results in the personal growth of students. This learning model allows students to learn interpersonal, leadership, and problem-solving skills, all of which are important for personal development. Blended learning at universities is believed to promotee personal development (Green, 2024; Ko et al., 2024). Students who experience personal development also experience higher psychological well-being because they are more confident and possess more academic self-efficacy. Blended learning has also been discovered to enhance personal growth initiative (PGI), referring to students' tendency to improve their abilities (Green, 2024).

Autonomy of learning is also another core theme of blended learning. Autonomy helps students be in charge, coordinate study activities, and cultivate critical thinking as well as creativity competencies (Siddiqui et al., 2020). The independence inherent in blended learning supports this independence's formation, with direct effects on the psychological well-being of learners. Fundamental psychological needs like autonomy, competence, and social connection can be satisfied through blended learning, leading to students' well-being (Siddiqui, Soomro, & Thomas, 2020;Li, Peng, Yeh, & Lou, 2022). Highly autonomous students are also more likely to be engaged and confident in overcoming learning obstacles. Moreover, autonomy in blended learning is positively correlated with academic self-efficacy, i.e., students are more able to manage and adjust their learning strategies to academic success (Bai et al., 2020).

Other than autonomy, purpose in life also significantly influences blended learning performance. Students with high purpose are more motivated to learn and more resilient to academic challenges. They are also more aware of the value of their education and are more inclined towards successfully completing their studies (Li et al., 2022). Blended learning has also been more effective in preparing students for professional life, particularly in building practical skills like lifesaving techniques (Ko et al., 2024). This means that students with higher purpose knowledge are likely to confront challenges with higher confidence.

Another significant consideration in blended learning is academic resilience. Highly resilient students are more optimistic, perceive obstacles as challenges to be overcome, and are less impacted by academic difficulties (Babi et al., 2020; (García-Martínez et al., 2022) Students, particularly in the health sciences in universities, do face a tremendous amount of clinical and academic stress. Resilience helps them overcome the stress while enhancing psychological well-being as well as academic performance (García-Martínez et al., 2022). Resilient students are better able to change their mindset, perceive failure as a learning process, and maintain focus on academic work (Cuartero & Tur, 2021).

However, an unexpected finding emerged, academic resilience was not significantly correlated with students' GPA. This contrasts with previous literature that often associates resilience with improved academic performance (Donnellan et al., 2024; García-Martínez et al., 2022). Several

factors such as academic performance in structured systems like Universitas Indonesia may be more influenced by rigid grading standards and institutional expectations than by students' coping abilities (Ali et al., 2022) Cultural norms in collectivist societies may discourage help-seeking, limiting the behavioral expression of resilience and its impact on academic outcomes (Cuartero & Tur, 2021). These finding external and cultural factors likely moderate or obscure the relationship between resilience and academic achievement.

Therefore, while resilience is vital in sustaining students' mental health, its impact on academic success may be indirect or moderated by broader socio-institutional factors. Future research should incorporate qualitative or longitudinal approaches to better understand how resilience translates into academic success over time and across different learning environments. Investigating mediating variables such as academic support, institutional culture, and digital competency may also help clarify the complex relationship between resilience and academic achievement.

Based on the various benefits and limitations of blended learning, this type of learning may be highly effective if supported with high psychological well-being, best environmental mastery, and high resilience. Students who can develop these skills will not only study better but also be capable of withstanding future career challenges more effectively.

However, it is important to note that the findings of this study are based on self-report data, which are susceptible to personal perception bias and social desirability tendencies that may affect the accuracy of responses. In addition, local cultural context and specific academic norms also influence studennts' experiences in blended learning, so the generalization of the findings to other contexts should be cautiously approached.

Implications and limitations

The findings of this study highlight the importance of integrating resilience-building strategies into health education curricula to enhance students' psychological well-being and academic success. Educational institutions are encouraged to provide psychosocial support systems tailored to online and face-to-face learning environments, including counseling, peer support, and mentoring. In low- and middle-income countries or resource-limited settings, such strategies should leverage community-based approaches and simple technologies to ensure sustainability and effectiveness. However, this study has some limitations, including a focus on a specific group of healthcare students, which may limit the generalizability of the findings. Additionally, the reliance on self-reported measures could introduce response bias, and the cross-sectional design prevents conclusions about causality.

Relevance to for Practice

The study draws attention to the importance of resilience and psychological well-being in preparing students for clinical practice. Resilience and high well-being enable students to manage academic and clinical stress and remain flexible under intense pressure. Institutions should offer mental health support, mentoring programs, and interactive learning approaches to foster emotional stability, self-directed learning, and adaptive coping. For instance, resilience training can be integrated into clinical rotations to help students develop practical coping strategies during high-stakes situations. In addition, peer-support groups facilitated by trained professionals can provide a safe space for students to share experiences, reduce

emotional burden, and build social connection. These findings can also inform student mentoring programs and guide the design of well-being-oriented curricula, ensuring that future healthcare professionals are clinically competent and mentally prepared to face the demands of real-world practice.

Conclusion

This study underscores that psychological well-being and resilience are crucial for student success, with personal growth being the most prominent aspect of well-being, while social support and meaning in life require enhancement. Although resilience correlates strongly with well-being and persistence aids adaptation, many students face challenges in seeking help or coping with setbacks, and academic performance is influenced by multiple factors beyond resilience. These findings are particularly relevant for students in LMICs, where access to mental health resources may be limited, highlighting the need for educators and policymakers to create learning environments that foster autonomy, self-acceptance, and effective coping strategies, especially in blended learning contexts. Practical measures include integrating psychological skills training into curricula, establishing structured mentorship and peer-support systems, and developing institutional policies that actively promote student mental health and resilience.

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CrediT Authorship Contributions Statement

Nuraeni Effendy : Conceptualization, Methodology, Investigation, Writing - Original Draft, Supervision

Rustiana Tasya Ariningpraja : Formal Analysis, Data Curation, Writing - Review & Editing, Validation

Retno Lestari : Resources, Project Administration, Visualization, Writing - Review & Editing

Conflicts of Interest

There is no conflict of interest.

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Supplementary Materials

Supplementary File S1: Questionnaire contains the full questionnaire used for data collection.

References

Ali, M., Disman, Permanasari, A., Hadiapurwa, A., Risdiyanto, & Lestari, H. (2022). Blended Learning in the Implementation of Environment Dimension of ESD Infused into Junior High School Science. *Journal of Hunan University Natural Sciences*, *49*(2), 139–149. https://doi.org/10.55463/issn.1674-2974.49.2.14

Anazifa, R. D., Paidi, P., Tias Pratama, A., & Kurniawati, A. (2024). *Development of argument-driven inquiry model with blended learning approach in environmental science course*. https://doi.org/10.22219/raden.v4i2.3

Andargeery, S. Y., Taani, M. H., Alhalwani, R. A., & El-Gazar, H. E. (2024). Psychological Distress, Academic Stress, and Burnout among Saudi Undergraduate Nursing Students. *Journal of Clinical Medicine*, *13*(12), 3357. https://doi.org/10.3390/jcm13123357

Anthony Angwaomaodoko, E. (2024). A Review of Blended Learning after the COVID-19 Pandemic. *International Research in Education*, *12*(1), 86. https://doi.org/10.5296/ire.v12i1.21849

Ashraf, M. A., Yang, M., Zhang, Y., Denden, M., Tlili, A., Liu, J., Huang, R., & Burgos, D. (2021). A Systematic Review of Systematic Reviews on Blended Learning: Trends, Gaps and Future Directions. *Psychology Research and Behavior Management*, *Volume 14*, 1525–1541. https://doi.org/10.2147/PRBM.S331741

Avila-Carrasco, L., Díaz-Avila, D. L., Reyes-López, A., Monarrez-Espino, J., Garza-Veloz, I., Velasco-Elizondo, P., Vázquez-Reyes, S., Mauricio-González, A., Solís-Galván, J. A., & Martinez-Fierro, M. L. (2023). Anxiety, depression, and academic stress among medical students during the COVID-19 pandemic. *Frontiers in Psychology*, *13*. https://doi.org/10.3389/fpsyg.2022.1066673

Babi, R., Babi, M., Rastovi, P., Urlin, M., Šimi, J., Mandi, K., & Pavlovi, K. (2020). RESILIENCE IN HEALTH AND ILLNESS. In *Review © Medicinska naklada* (Vol. 32).

Bai, X., Wang, X., Wang, J., Tian, J., & Ding, Q. (2020). College Students' Autonomous Learning Behavior in Blended Learning: Learning Motivation, Self-Efficacy, and Learning Anxiety. *Proceedings - 2020 International Symposium on Educational Technology, ISET 2020*, 155–158. https://doi.org/10.1109/ISET49818.2020.00042

Bolatov, A. K., Gabbasova, A. M., Baikanova, R. K., Igenbayeva, B. B., & Pavalkis, D. (2022). Online or Blended Learning: the COVID-19 Pandemic and First-Year Medical Students' Academic Motivation. *Medical Science Educator*, *32*(1), 221–228. https://doi.org/10.1007/s40670-021-01464-y

Campbell, S., Greenwood, M., Prior, S., Shearer, T., Walkem, K., Young, S., Bywaters, D., & Walker, K. (2020). Purposive sampling: complex or simple? Research case examples. *Journal of Research in Nursing*, *25*(8), 652–661. https://doi.org/10.1177/1744987120927206

Capili, B. (2021). Cross-Sectional Studies. *AJN, American Journal of Nursing*, *121*(10), 59–62. https://doi.org/10.1097/01.NAJ.0000794280.73744.fe

Cassidy, S. (2016). The Academic Resilience Scale (ARS-30): A New Multidimensional Construct Measure. *Frontiers in Psychology*, *7*. https://doi.org/10.3389/fpsyg.2016.01787

Cuartero, N., & Tur, A. M. (2021). Emotional intelligence, resilience and personality traits neuroticism and extraversion: predictive capacity in perceived academic efficacy. *Nurse Education Today*, *102*. https://doi.org/10.1016/j.nedt.2021.104933

Donnellan, C., Chakkittakandy, D., & Lydon, C. (2024). Conceptual Considerations for Understanding Resilience in Healthcare Students. In *Nursing open*

(Vol. 11, Issue 10, p. e70061). https://doi.org/10.1002/nop2.70061

Garcia, D., Kazemitabar, M., & Asgarabad, M. H. (2023). The 18-item Swedish version of Ryff's psychological wellbeing scale: psychometric properties based on classical test theory and item response theory. *Frontiers in Psychology*, *14*. https://doi.org/10.3389/fpsyg.2023.1208300

García-Martínez, I., Augusto-Landa, J. M., Quijano-López, R., & León, S. P. (2022). Self-Concept as a Mediator of the Relation Between University Students' Resilience and Academic Achievement. *Frontiers in Psychology*, *12*. https://doi.org/10.3389/fpsyg.2021.747168

Green, Z. A. (2024). Strengths intervention imparted through a blended learning approach to advance personal growth initiative among Pakistan's university students during COVID-19. *Studies in Educational Evaluation*, *81*. https://doi.org/10.1016/j.stueduc.2024.101343

Hansen, B., & Lang, M. (2011). Back to school blues: Seasonality of youth suicide and the academic calendar. *Economics of Education Review*, *30*(5), 850–861. https://doi.org/10.1016/j.econedurev.2011.04.012

Ko, Y. C., Lin, H. Y., Chiang, W. C., Yang, C. W., Hsieh, M. J., & Ma, M. H. M. (2024). Comparing the effects of blended learning and traditional instruction on basic life support for laypersons: A randomized controlled trial. *Journal of the Formosan Medical Association*, *123*(6), 687–692. https://doi.org/10.1016/j.jfma.2023.10.017

Labrague, L. J. (2024). Umbrella Review: Stress Levels, Sources of Stress, and Coping Mechanisms among Student Nurses. *Nursing Reports*, *14*(1), 362–375. https://doi.org/10.3390/nursrep14010028

Lestari, R. P., & Widyastuti, W. (2023). Psychological Well-Being of Students from Intact Families. *Psikologia : Jurnal Psikologi*, *9*. https://doi.org/10.21070/psikologia.v9i0.1701

Li, R. H., Peng, H. L., Yeh, M. H., & Lou, J. (2022). Psychological Well-Being Increment as Post-Traumatic Growth in Women with Breast Cancer: A Controlled Comparison Design Using Propensity Score Matching. *Healthcare (Switzerland)*, *10*(8). https://doi.org/10.3390/healthcare10081388

Liepinaitienė, A., Jotautis, V., Jankauskaite, S., Navickiene, L., Bartusiene, D., Lamsodiene, E., Gaiziunaite, R., Valalyte, V., Vaitkiene, R., Korżyńska-Piętas, M., Gudre, L., & Piscalkiene, V. (2024). Prevalence and associations of neurodevelopmental and mental health disorders with academic and well-being challenges among nursing and midwifery students: A cross-sectional study. *European Journal of Midwifery*, *8*(December), 1–7. https://doi.org/10.18332/ejm/195808

Lv, N., & Li, Z. (2024). The Effects of Blended Learning Environment on College Students' Learning Effectiveness: Exploring the Role of Behavioral Intentions and Self-Efficacy Through the UTAUT2 Model. *SAGE Open*, *14*(2). https://doi.org/10.1177/21582440241251604

March-Amengual, J.-M., Cambra Badii, I., Casas-Baroy, J.-C., Altarriba, C., Comella Company, A., Pujol-Farriols, R., Baños, J.-E., Galbany-Estragués, P., & Comella Cayuela, A. (2022).

Psychological Distress, Burnout, and Academic Performance in First Year College Students. *International Journal of Environmental Research and Public Health*, *19*(6), 3356. https://doi.org/10.3390/ijerph19063356

Michel, N., Guillaume, M., Lawrence, P., & Peter, S. (2022). *Head Title: STRESS, RECOVERY AND ENVIRONMENTAL MASTERY IN EXTREME ENVIRONMENTS Dynamics of stress and recovery and relationships with perceived environmental mastery in extreme environments*.

Mohamed, N. A., Ali, S. O., Ehrahim, E. E. E., Ahmed, A. L., & Wahba, A. M. (2024). Predictors of Academic and Clinical Stress Among Nursing Students. *SAGE Open Nursing*, *10*. https://doi.org/10.1177/23779608241290392

Musa, M., Majin, R., Mamat, R., & Noh, M. M. (2023). THE QUALITY OF LIFE AMONG NURSING STUDENTS RELATED TO STRESS AND ACADEMIC PRESSURE IN NORTH BORNEO LOCAL UNIVERSITY How to cite (in APA style. *Indonesian Journal of Global Health Research*, *5*(4), 879. https://doi.org/10.37287/ijghr.v5i4.2516

Mustafa, M. B., Rani, N. H. M., Bistaman, M. N., Salim, S. S. S., Ahmad, A., Zakaria, N. H., & Safian, N. A. A. (2020). The Relationship between Psychological Well-Being and University Students Academic Achievement. *International Journal of Academic Research in Business and Social Sciences*, *10*(7). https://doi.org/10.6007/ijarbss/v10-i7/7454

Park, S., & Choi, M.-Y. (2025). Resilience of nursing students: A concept analysis study. *Nurse Education Today*, *144*, 106463. https://doi.org/10.1016/j.nedt.2024.106463

Sasaki, N., Watanabe, K., Imamura, K., Nishi, D., Karasawa, M., Kan, C., Ryff, C. D., & Kawakami, N. (2020). Japanese version of the 42-item psychological well-being scale (PWBS-42): A validation study. *BMC Psychology*, *8*(1). https://doi.org/10.1186/s40359-020-00441-1

Sayed, T., Malan, H., & Fourie, E. (2024). Exploring the associations between resilience and psychological well-being among South Africans during COVID-19. *Frontiers in Psychology*, *15*. https://doi.org/10.3389/fpsyg.2024.1323466

Schäfer, S. K., Fritz, J., Sopp, M. R., Kunzler, A. M., von Boros, L., Tüscher, O., Göritz, A. S., Lieb, K., & Michael, T. (2023a). Interrelations of resilience factors and their incremental impact for mental health: insights from network modeling using a prospective study across seven timepoints. *Translational Psychiatry*, *13*(1), 328. https://doi.org/10.1038/s41398-023-02603-2

Schäfer, S. K., Fritz, J., Sopp, M. R., Kunzler, A. M., von Boros, L., Tüscher, O., Göritz, A. S., Lieb, K., & Michael, T. (2023b). Interrelations of resilience factors and their incremental impact for mental health: insights from network modeling using a prospective study across seven timepoints. *Translational Psychiatry*, *13*(1). https://doi.org/10.1038/s41398-023-02603-2

Shorbagi, A. I. (2024). Promoting resilience among medical students using the Wadi framework: a clinical teacher's perspective. *Frontiers in Medicine*, *11*. https://doi.org/10.3389/fmed.2024.1488635

Shrivastava, A., & Desousa, A. (2016a). Resilience: A psychobiological construct for psychiatric disorders. *Indian Journal of Psychiatry*, *58*(1), 38. https://doi.org/10.4103/0019-5545.174365

Shrivastava, A., & Desousa, A. (2016b). Resilience: A psychobiological construct for psychiatric disorders. In *Indian Journal of Psychiatry* (Vol. 58, Issue 1, pp. 38–43). Medknow Publications. https://doi.org/10.4103/0019-5545.174365

Siddiqui, S., Soomro, N. N., & Thomas, M. (2020). Blended learning source of satisfaction of psychological needs: An empirical study conducted on O-levels chemistry students in metropolis city of Pakistan. *Asian Association of Open Universities Journal*, *15*(1), 49–67. https://doi.org/10.1108/AAOUJ-11-2019-0054

Steare, T., Gutiérrez Muñoz, C., Sullivan, A., & Lewis, G. (2023). The association between academic pressure and adolescent mental health problems: A systematic review. In *Journal of Affective Disorders* (Vol. 339, pp. 302–317). Elsevier B.V. https://doi.org/10.1016/j.jad.2023.07.028

Tong, D. H., Uyen, B. P., & Ngan, L. K. (2022). The effectiveness of blended learning on students' academic achievement, self-study skills and learning attitudes: A quasi-experiment study in teaching the conventions for coordinates in the plane. *Heliyon*, *8*(12), e12657. https://doi.org/10.1016/j.heliyon.2022.e12657

Wang, X., Liu, J., Jia, S., Hou, C., Jiao, R., Yan, Y., Ma, T., Zhang, Y., Liu, Y., Wen, H., Wang, Y.-F., Zhu, H., & Liu, X.-Y. (2024). Hybrid teaching after COVID-19: advantages, challenges and optimization strategies. *BMC Medical Education*, *24*(1), 753. https://doi.org/10.1186/s12909-024-05745-z

Waugh, C. E., & Sali, A. W. (2023a). Resilience as the Ability to Maintain Well-Being: An Allostatic Active Inference Model. *Journal of Intelligence*, *11*(8), 158. https://doi.org/10.3390/jintelligence11080158

Waugh, C. E., & Sali, A. W. (2023b). Resilience as the Ability to Maintain Well-Being: An Allostatic Active Inference Model. In *Journal of Intelligence* (Vol. 11, Issue 8). Multidisciplinary Digital Publishing Institute (MDPI). https://doi.org/10.3390/jintelligence11080158