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Understanding the relationship between resilience and psychological well-being among nursing students in Palestine

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Abstract

Background Nursing students are exposed to various academic, clinical, and emotional stressors that may negatively impact their well-being. Resilience has been identified as a protective factor against such stressors; however, the relationship between resilience and well-being among nursing students in Palestine remains underexplored.

Objective This study aimed to examine the relationship between resilience and well-being among nursing students in Palestine.

Methods A cross-sectional study was conducted involving 297 nursing students at Palestinian Ahliya University from January 10 to March 20, 2025. Data were collected using two standardized instruments: the World Health Organization-Five Well-Being Index (WHO-5) and the 10-item Connor-Davidson Resilience Scale (CD-RISC-10). Descriptive statistics summarized the sample characteristics and scale scores. Pearson correlation analysis was used to assess the relationship between resilience and well-being. Multiple linear regression was employed to identify predictors of well-being.

Results The mean well-being score was 81.8 (SD = 15.7), and the mean resilience score was 33.9 (SD = 3.8), indicating relatively high levels of well-being and resilience among participants. A significant positive correlation was found between resilience and well-being ($r=0.464, p < 0.001$), as well as between academic year ($r=0.216, p < 0.001$) and age ($r=0.133, p=0.021$) with well-being. Multiple linear regression analysis revealed that resilience was the only significant predictor of well-being ($B = 1.840, p < 0.001$). The overall model was statistically significant ($R^2 = 0.219$, adjusted $R^2 = 0.211, p < 0.001$), explaining 21.9% of the variance in well-being.

Conclusion Resilience is a significant predictor of well-being among Palestinian nursing students. This single-university sample, reliance on self-reported data and lack of control for potential confounders such as stress or academic performance limit the generalizability and causal interpretation of the findings. These findings highlight the importance of incorporating resilience-building strategies into nursing education to support student mental health. Further studies are recommended to explore additional psychosocial predictors and longitudinal outcomes.

Clinical trial Not applicable.

Keywords Nursing students, Resilience, Well-being, Palestine, Predictors

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Introduction

Nursing education is inherently demanding, exposing students to significant academic, clinical, and emotional stressors that can undermine their mental health, academic performance, and professional readiness [1–4]. Resilience—the capacity to adapt positively to adversity—has been identified as a key protective factor that helps nursing students cope with such challenges [5–7]. Resilient students are more likely to manage stress effectively, stay motivated, and perform well in both academic and clinical environments [6–10].

Similarly, well-being, encompassing physical, emotional, and psychological health, is essential for nursing students' academic success and clinical competence [11–13]. Poor well-being has been linked to burnout, fatigue, and attrition from nursing programs [14, 15]. Evidence suggests that higher resilience is associated with better well-being, and that resilience-building interventions can reduce academic stress and promote emotional stability [16–20].

Despite extensive international research on this topic, there is a lack of empirical evidence from Palestine, where nursing students face not only academic and clinical pressures but also unique socio-political stressors—including occupation-related instability, economic hardship, and limited mental health resources [5, 21, 22]. These factors may uniquely influence their resilience and well-being dynamics, yet remain underexplored.

This study addresses this gap by examining the relationship between resilience and well-being among Palestinian nursing students. The findings aim to inform culturally and contextually relevant interventions to support students' mental health, academic persistence, and readiness for professional practice.

While previous research has established a positive link between resilience and well-being among nursing students globally, few studies have examined this relationship within the unique socio-political and educational context of Palestine. Given the additional psychological burdens faced by Palestinian students, including political instability and resource constraints, it is essential to understand how resilience contributes to their well-being. This study seeks to address this gap by examining the relationship between resilience and well-being among nursing students. It is hypothesized that higher resilience will be significantly associated with greater well-being.

Methodology

Study design

A descriptive cross-sectional design was employed to examine the relationship between resilience and well-being among nursing students at Palestinian Ahliya University in Bethlehem between January 10 and March 20, 2025. This approach allowed for the collection of data at

a single point in time, providing insights into the association between resilience and well-being across different academic years.

Study setting

The study was conducted at Palestinian Ahliya University, Bethlehem, within the Faculty of Nursing and Health Sciences. The nursing program at Palestinian Ahliya University in Bethlehem, within the Faculty of Allied Health Sciences, is designed to equip students with the skills and knowledge necessary for success in the healthcare field. The program blends theoretical coursework with practical, hands-on clinical experience, covering subjects such as anatomy, physiology, nursing practices, and research methods. Students benefit from clinical placements in local hospitals and healthcare institutions, where they apply their knowledge in real-world settings. The university emphasizes high-quality education, ensuring the curriculum meets national and international accreditation standards. Innovative teaching methods, such as simulation-based learning and e-learning, complement traditional teaching to enhance the learning experience. Students are encouraged to engage in research projects focused on healthcare issues relevant to Palestine, and faculty support fosters critical thinking and scientific inquiry. Additionally, the program promotes community health initiatives, encouraging students to actively participate in local healthcare outreach and health promotion campaigns. Through this comprehensive approach, the nursing program prepares students to provide quality, person-centered care while advancing their professional development.

Study population and sample

The target population consisted of 900 undergraduate nursing students enrolled across four academic years (first to fourth year) at the Palestinian Ahliya University. To ensure proportional representation across academic levels, a stratified random sampling technique was employed. The population was first divided into four strata based on academic year. The proportion of students selected from each academic year reflected their actual distribution in the total population. Within each stratum, participants were then randomly selected using a computer-generated random number list from enrollment records provided by the nursing department. The sample size was calculated using online Raosoft software with a 50% response rate, a 900 population size (nursing students), a 95% confidence level, and a 5% margin of error". For this study, 277 participants in total were required. In order to compensate for withdrawals and incomplete questionnaires, 315 participants were included. A sample of 297 nursing students who completed questionnaires was used for the study.

Inclusion and exclusion criteria

Inclusion and exclusion criteria were established to ensure the selection of appropriate participants for the study. Nursing students currently enrolled at Palestinian Ahliya University across all academic years and those who voluntarily consented to participate were included. Conversely, students who were on leave or had withdrawn from their studies were excluded from the study.

Data collection tools

The study utilized two standardized, validated instruments:

Demographic data composed of age, gender, academic year, medical or nursing personnel in the family, and interest in nursing.

Connor-Davidson resilience scale (CD-RISC)

The 10-item CD-RISC (CD-RISC-10) was used to measure resilience in university nursing students. It captures core features of resilience over the preceding month. Each item is rated on a five-point Likert scale ranging from 0 'never' to 4 'almost always'. The overall score ranges from 0 to 40, with higher scores indicating higher resilience capacity [23]. The scale has been tested in undergraduate samples and student nurses with satisfactory reliability and validity [23–25]. In the current study, Cronbach's alpha was 0.88.

The world health organization Well-Being index (WHO-5)

The World Health Organization Well-Being Index (WHO-5) is a brief and reliable tool used to assess subjective well-being, focusing on emotional and mental health. Comprising five items, the WHO-5 evaluates aspects such as mood, energy, and overall emotional state over the past two weeks. Respondents rate each item on a 6-point Likert scale, with scores ranging from 0 (At no time) to 5 (All of the time). To get a percentage score ranging from zero to 100, the raw score is multiplied by four. A percentage score of zero represents worst possible mental well-being; a score of 100 represents best possible mental well-being. A percentage score below 50 has been suggested as a cut-off for poor mental well-being and as an indication for further assessment for the possible presence of a mental health condition (e.g., depressive disorder) [26]. The instrument was translated to Arabic [27]. This tool is widely used in research to assess mental health among populations such as nursing students, offering valuable insights into their emotional resilience and overall psychological state. It has demonstrated good reliability and validity across different cultural contexts, making it a suitable instrument for both clinical and educational settings, where it can help identify students at risk of burnout or stress and evaluate the effectiveness of

well-being interventions [23, 28, 29]. In the current study, Cronbach's alpha was 0.84.

Both the WHO-5 and CD-RISC-10 instruments have been previously used in previous studies in Arab populations, including students, health professionals, and general adult populations [27, 30, 31].

Data collection procedure

The data collection procedure for this study was carried out in a structured and systematic manner to ensure accuracy, confidentiality, and voluntary participation. First, ethical approval was obtained from the Palestinian Ahliya University's Research Ethics Committee, and informed consent was secured from all participants. The survey was administered in a paper-based format to nursing students during their scheduled classes in Arabic version of the instruments. Participants were asked to complete the survey in a quiet and comfortable environment to ensure focused and thoughtful responses. They were given clear instructions on how to fill out the Likert-scale items and assured that their participation was entirely voluntary and anonymous. Each participant was provided with a sealed envelope in which they could place their completed questionnaire, ensuring that their responses remained confidential. Once the surveys were completed and collected, they were securely stored for analysis. The data collection process was designed to minimize participant burden, with the entire survey taking no more than 20 min to complete.

Ethical considerations

Ethical approval was obtained from the Research Ethics Committee at Palestinian Ahliya University prior to the commencement of the study. The study adhered to the ethical principles outlined in the Declaration of Helsinki. Informed consent was secured from all participants, who were fully informed about the study's purpose, their right to voluntary participation, and their freedom to withdraw at any time without negative consequences. Confidentiality and anonymity were strictly maintained—no personal identifiers were recorded, and all data were securely stored. Participants were assured that their responses would be used solely for research purposes.

Data analysis

Data were entered and analyzed using SPSS version 27 with no missing data reported. Descriptive statistics including frequencies, percentages, means, and standard deviations were used to summarize the study variables. Pearson correlation and multiple linear regression analyses were conducted to examine relationships between variables and identify predictors of well-being. To ensure data accuracy, a double data entry procedure was implemented, with discrepancies cross-checked and resolved

Table 1 Demographic characteristics of the participants (N = 297)

Characteristics		N (%)	M(SD)
Age			21.2(2.6)
Gender	Male	153 (51.5)	
	Female	144 (48.5)	
Academic year	First year	81 (27.3)	
	Second year	77 (25.9)	
	Third year	62 (20.9)	
	Fourth year	77 (25.9)	
Medical or Nursing Personnel in the Family	Yes	234 (78.8)	
	No	63 (21.2)	
Interest in nursing	Yes	269 (90.6)	
	No	28 (9.4)	

Table 2 Distribution of resilience and well-being (N = 297)

Variable	M	SD
Well-being	81.8	15.7
Resilience	33.9	3.8

to minimize errors. Pearson correlation was selected as it is suitable for assessing the strength and direction of relationships between continuous variables, such as resilience and well-being, provided that normality assumptions are met. Assumptions of normality, linearity, multicollinearity, and homoscedasticity were assessed using both graphical methods and statistical tests. The dependent variable, well-being, was normally distributed, and the final regression model satisfied all relevant assumptions, supporting the reliability of the findings regarding predictors of well-being.

Results

Participants' characteristics

Out of 315 nursing students invited to participate, 297 successfully completed the study, resulting in a high response rate of 94.3%. The participants had a mean age of 21.2 ± 2.6 years. The sample included 153 males (51.5%). Regarding academic level, 81 students (27.3%) were in their first year. Additionally, 234 participants (78.8%) reported having a family member working in the medical or nursing field. The majority of students 269 (90.6%) expressed an interest in nursing, as outlined in Table 1.

The mean well-being score was 81.8 (SD = 15.7), indicating a relatively high level of well-being among the participants. Similarly, the mean resilience score was 33.9 (SD = 3.8) out of a maximum of 40, suggesting that participants demonstrated relatively high resilience, as presented in Table 2.

The results revealed a significant positive correlation between resilience and well-being ($r = 0.464$, $p < 0.001$), indicating that higher resilience is associated with greater well-being. Additionally, academic year ($r = 0.216$,

Table 3 The relationship between resilience and well-being (N = 297)

Variable	Well-being	
	r	p-value
Resilience	0.464**	< 0.001
Age	0.133*	0.021
Gender	0.003	0.953
Academic year	0.216**	< 0.001
Medical or Nursing Personnel in the Family	0.010	0.857
Interest in nursing	0.083	0.151

***Correlation is significant at 0.01"

**Correlation is significant at 0.05

$p < 0.001$) and age ($r = 0.133$, $p = 0.021$) also showed significant positive correlations with well-being, suggesting that older students and those in more advanced academic years tend to report higher well-being. Gender, having medical or nursing personnel in the family, and interest in nursing were not significantly correlated with well-being. These findings are presented in Table 3.

A multiple linear regression analysis was conducted to identify predictors of well-being among nursing students. The overall model was statistically significant ($p < 0.001$, $R^2 = 0.219$, adjusted $R^2 = 0.211$), indicating that 21.9% of the variance in well-being was explained by the predictors. Resilience was only the significant predictor ($B = 1.840$, $p < 0.001$), suggesting that higher resilience is strongly associated with better well-being, as shown in Table 4. These findings underscore the importance of resilience-building interventions as a strategy to enhance student well-being.

Discussion

This study found that Palestinian nursing students reported relatively high levels of well-being, as measured by the WHO-5 Index. Comparable findings have been reported in Taiwan, where academic satisfaction and peer support were positively associated with student well-being [32]. In contrast, studies conducted in Saudi Arabia and Hong Kong—both utilizing cross-sectional designs with self-reported measures—reported lower mean well-being scores, suggesting that academic stress and clinical workload may negatively affect students' psychological health in those contexts [23, 33]. Similarly, a comparative study involving nursing students in the United Kingdom and China found moderate well-being scores, pointing to cultural and systemic differences in support structures and mental health awareness [34]. Interestingly, despite the limited availability of formal mental health services in Palestine, students in this study reported high well-being. This may reflect several unique contextual factors. First, tight-knit social and family structures common in Palestinian society may provide informal emotional support, helping students cope with academic stress. Second, a

Table 4 Predictors of well-being: multiple linear regression

Model					95.0% Confidence Interval	
	B	Beta	t	p. Value	Lower Bound	Upper Bound
Resilience	1.840	0.450	8.044	< 0.001	1.390	2.290
Academic year	1.180	0.086	1.202	0.230	-0.751	3.111
Age	-0.369	-0.062	-0.891	0.374	-1.185	0.446

strong sense of national identity and resilience shaped by exposure to political instability—may foster adaptive coping mechanisms that translate into higher self-perceived well-being. Third, nursing as a profession may be viewed as a stable and respected career path, offering psychological reassurance amid broader socioeconomic uncertainty. Finally, students' high interest in nursing (90.6%) and the presence of family members in health-care roles (78.8%) may reinforce professional motivation and a sense of purpose, both of which are protective factors for mental well-being.

The study also revealed relatively high resilience scores among participants, suggesting a strong capacity to manage stress and adversity within the context of a demanding academic and clinical environment. These findings surpass resilience scores reported in studies from Saudi Arabia, Hong Kong, the UK, and China, where students generally demonstrated moderate resilience levels [23, 33, 34]. A systematic review further supports this, indicating that resilience among nursing students worldwide tends to be moderate on average [35]. The elevated resilience in the current study may be attributed to strong familial and peer support, as well as adaptive coping mechanisms shaped by the broader socio-political context in Palestine. One possible explanation is the exposure to chronic sociopolitical adversity, which may have fostered psychological hardiness and adaptive coping skills from a young age.

Crucially, resilience emerged as a significant predictor of well-being in this study, reinforcing its role as a protective factor. The model explained only 21.9% of the variance in well-being ($R^2 = 0.219$), indicating that a substantial proportion of well-being is influenced by other unmeasured variables. Factors such as perceived stress, academic workload, financial hardship, social support, and mental health history, none of which were included in this study may also play critical roles. Therefore, although resilience appears to be a meaningful contributor to well-being, it is likely only one part of a broader, more complex picture. Students with higher resilience reported better well-being, aligning with previous findings from Taiwan, Saudi Arabia, and Turkey, where resilience was linked to improved mental health outcomes, life satisfaction, and reduced stress [36–38]. These results are consistent with global research from Europe and the United States, which highlights resilience as a buffer against burnout and emotional exhaustion

[39]. Therefore, integration of mind-body relaxation approaches such as guided imagery and progressive muscle relaxation into nursing curricula is essential [40–44]. In the Palestinian context, this relationship is particularly meaningful given the chronic exposure to sociopolitical stressors, economic hardship, and limited institutional mental health support. Resilience may serve as a psychological adaptation to ongoing adversity, where students develop coping mechanisms not only through individual traits but also through community solidarity, religious faith, and a strong sense of purpose. Many students enter nursing as a means of contributing to societal welfare or achieving professional stability, which may heighten their motivation to persevere despite obstacles. Thus, resilience in this setting may reflect both psychological hardiness and culturally embedded values of endurance and responsibility.

Strengths and limitations of the study

The current study has several strengths and limitations that should be considered when interpreting its findings. One of the main strengths is its contribution to the Palestinian context, providing valuable insights into the well-being and resilience of nursing students in a region with unique socio-political challenges. The use of multiple linear regression analysis enabled a comprehensive understanding of the predictors of well-being, and the identification of resilience as a significant factor adds robustness to the findings. Additionally, the study focused on an important issue nursing student well-being which is essential for preventing burnout and promoting effective learning. However, there are also limitations to consider. Although the findings indicate relatively high levels of resilience among participants, caution is warranted in generalizing these results to all Palestinian nursing students. The cross-sectional design of the study prevents causal conclusions, as it does not allow for the determination of whether resilience leads to better well-being or vice versa. As the study was conducted at a single university, the findings may not be generalizable to all nursing students in Palestine or other settings, thereby limiting the external validity of the results. The reliance on self-reported data introduces the possibility of social desirability bias, whereby participants may overreport positive attributes such as resilience and well-being. Moreover, the instruments used in this study, such as the WHO-5 Well-Being Index and the resilience

scales, were not specifically validated in the Palestinian context. Given that these tools were designed and validated in different cultural settings, there is a potential for cultural bias in how participants interpret and respond to the items. The applicability of these instruments may vary depending on the sociocultural environment, particularly in regions like Palestine, where collectivist values and unique stressors may influence psychological well-being and resilience. Although data on academic year and gender were collected, subgroup analyses were not extensively conducted. Future studies should investigate how demographic and academic variables may moderate the relationship between resilience and well-being. Finally, the study did not measure or adjust for key potential confounders such as academic performance, financial stress, or family support, which may influence both resilience and well-being. The absence of these variables in the analysis limits the ability to draw conclusions about the independence of the observed relationship.

Recommendations

Based on the findings of this study, several recommendations can be made for future research and practical applications. Future studies should adopt a longitudinal design to explore causal relationships between resilience and well-being over time and include larger, more diverse samples from multiple universities to enhance the generalizability of the results. Additionally, exploring other potential predictors such as academic stress, social support, and coping strategies would offer a more comprehensive understanding of well-being among nursing students. Furthermore, it is recommended to develop and implement resilience-enhancing interventions within nursing curricula. These interventions could include stress management programs, such as mindfulness and relaxation techniques, emotional regulation training to help students manage the emotional challenges of the profession, and peer support networks to foster a sense of community. Reflective practice initiatives and resilience training programs, focusing on adaptability, positive thinking, and problem-solving, could also be incorporated. These approaches would help prepare students for the emotional and psychological demands of the nursing profession and ultimately contribute to their overall well-being and resilience.

Conclusion

This study highlights the significant positive relationship between resilience and well-being among nursing students in Palestine. Findings suggest that higher resilience is a key predictor of better mental well-being, underscoring the importance of integrating resilience-building strategies into nursing education. Promoting resilience may enhance students' ability to cope with academic and

emotional challenges, ultimately supporting their success and mental health. This could involve integrating stress management techniques, emotional regulation, and peer support networks to help students navigate both academic and external challenges. Furthermore, policymakers should consider the role of resilience in shaping the future nursing workforce and invest in initiatives that enhance psychological well-being, ultimately ensuring a more resilient and effective healthcare workforce in Palestine.

Acknowledgements

We would like to express our thanks to all nursing students who participated in the study.

Author contributions

A.A, M.AE, A.B designed the study. M.A, M.AE collected the data. A.A, A.B analyzed the data. All authors prepared the manuscript. All authors approved the final version for submission.

Funding

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Data availability

The datasets generated and/or analyzed during the current study are not publicly available but are available from the corresponding author on a reasonable request.

Declarations

Ethics approval and consent to participate

Ethical approval was obtained from the Institutional Review Board (IRB) at Palestinian Ahliya University prior to the commencement of the study with reference No# CAMS/ BSN/8/2025. The study adhered to the ethical principles outlined in the Declaration of Helsinki. The researcher clearly explained the study's objectives to the nursing students and informed them that they could withdraw from the study at any point. Additionally, the study carefully protected the participants' confidentiality by not revealing their names or any other personal information. Nursing students who approved to participate signed the informed consent form. Participants were informed that their involvement in the study was voluntary.

Consent for publication

Not applicable.

Competing interests

The authors declare no competing interests.

Received: 16 April 2025 / Accepted: 8 July 2025

Published online: 09 July 2025

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