

Exam Anxiety, Fear of Failure, Academic Self-Efficacy, and Academic Motivation as Predictors of Psychological Well-Being Among Nursing Students

Manal Hassan Bageas

Northern Border University

Amal Ahmed Elbilgahy

moazam@mans.edu.eg

Northern Border University

Khaldoun Mahmoud Ismail

Northern Border University

Faten Shawky Kandil

University of Jeddah

Fares Hameed

University of Hafr Al-Batin

Amany Lotfy Ahmed

Kafr Elsheikh University

Fathia Ahmed Mersal

Northern Border University

Research Article

Keywords: psychological well-being, nursing students, exam anxiety, fear of failure, academic self-efficacy, academic motivation

Posted Date: September 9th, 2026

DOI: <https://doi.org/10.21203/rs.3.rs-10856158/v1>

License:   This work is licensed under a Creative Commons Attribution 4.0 International License. [Read Full License](#)

Additional Declarations: No competing interests reported.

Abstract

Background

Nursing students often experience academic pressures that may affect their psychological well-being. Exam anxiety and fear of failure may negatively influence well-being, whereas academic self-efficacy and academic motivation may have protective effects.

Purpose

This study examined the relationships of exam anxiety, fear of failure, academic self-efficacy, and academic motivation with psychological well-being and identified predictors of psychological well-being among nursing students.

Methods

A descriptive cross-sectional correlational design was used among 247 undergraduate nursing students from the Faculty of Nursing at Northern Border University, Saudi Arabia, through convenience sampling. Data were collected using standardized measures of psychological well-being, exam anxiety, fear of failure, academic self-efficacy, and academic motivation. Descriptive statistics, correlation analyses, and hierarchical multiple regression were performed.

Results

Psychological well-being was positively correlated with academic self-efficacy ($r = 0.31$, $p < 0.001$) and anxiety ($r = 0.13$, $p = 0.048$). Hierarchical multiple regression revealed that the final model significantly predicted psychological well-being, explaining 17.4% of the variance ($R^2 = 0.174$, $p < 0.01$). Academic self-efficacy was the strongest predictor ($\beta = 0.4$, $p < 0.001$) with small-to-medium effect ($f^2 = 0.14$), while anxiety, age, study year, and marital status were also significant predictors with small effect ($f^2 = 0.02$). GPA, sex, fear of failure, and academic motivation were not significant.

Conclusion

Academic self-efficacy was the strongest predictor of psychological well-being among nursing students. Strategies that enhance students' confidence in their academic abilities may contribute to improved psychological well-being.

Introduction

Nursing students represent the future nursing workforce, and their educational experiences play a critical role in their academic success, professional development, and readiness to enter the profession. Nursing education programs worldwide face challenges related to stress, mental health concerns, and academic pressures that may adversely affect students' well-being and academic outcomes [1–3]. These challenges are particularly concerning given the global nursing shortage and the increasing demand for a competent and resilient nursing workforce [4,5]. Nursing students frequently encounter demanding academic and clinical environments, emotional stressors, and

uncertainties associated with professional preparation [6]. Therefore, identifying factors that influence psychological well-being among nursing students is essential for promoting academic success and supporting future workforce sustainability.

Psychological well-being reflects positive psychological functioning and extends beyond the absence of psychological distress [7]. According to Ryff & Keyes, (1995) [8], psychological well-being encompasses six dimensions: autonomy, environmental mastery, personal growth, positive relations with others, purpose in life, and self-acceptance. Higher levels of psychological well-being have been associated with resilience, academic persistence, satisfaction, and adaptive coping among university students, particularly those enrolled in demanding health-related programs such as nursing [9]. Conversely, poor psychological well-being has been linked to stress, burnout, disengagement, and reduced academic functioning [8].

One factor that may negatively influence psychological well-being is exam anxiety. Exam anxiety is characterized by excessive worry, physiological arousal, and cognitive disruption before or during examinations [10]. Although mild anxiety may enhance preparation and performance, excessive anxiety can impair concentration, memory retrieval, and academic achievement. Nursing students often face frequent high-stakes assessments in both theoretical and clinical courses, making exam anxiety a common concern [11]. Previous studies have demonstrated associations between test anxiety and poorer academic performance, reduced confidence, and lower well-being among healthcare students [12]. Persistent anxiety may therefore contribute to declines in psychological well-being over time [13].

Fear of failure is another psychological factor that may affect students' well-being. Conroy et al. (2002) [14] conceptualized fear of failure as concerns about the negative consequences of failing, including feelings of shame, embarrassment, and loss of self-worth. In nursing education, students may perceive academic or clinical mistakes as having significant personal and professional consequences. Research has linked fear of failure to perfectionism, avoidance behaviors, procrastination, negative emotions, and poorer well-being. Consequently, students with higher levels of fear of failure may experience greater psychological distress and lower levels of well-being [15].

In contrast, academic self-efficacy may serve as a protective factor. Academic self-efficacy refers to students' beliefs in their ability to successfully perform academic tasks and overcome educational challenges. Students with high self-efficacy tend to approach difficulties as opportunities for growth rather than threats. Among nursing students, self-efficacy has been associated with greater clinical competence, motivation, effective coping, and lower levels of anxiety. Furthermore, academic self-efficacy has been identified as an important predictor of well-being and successful academic adjustment [16,17].

Academic motivation is another important determinant of students' educational experiences and psychological outcomes. Based on self-determination theory, motivation influences the extent to which students engage in learning activities and persist despite challenges. Nursing students who are intrinsically motivated by personal growth, learning, and professional development are more likely to demonstrate engagement, persistence, and academic success. Conversely, low motivation or amotivation may contribute to disengagement and reduced well-being. Understanding the relationship between academic motivation and psychological well-being may provide valuable insights for supporting nursing students throughout their educational journey [18].

In Saudi Arabia, strengthening the nursing workforce remains a national priority as the healthcare sector continues to expand and evolve. Nursing students in Saudi universities may experience unique educational, cultural, and social challenges that influence their psychological well-being, including academic demands, family expectations, and the emotional burden associated with clinical training [19]. Despite these challenges, limited research has examined the combined influence of exam anxiety, fear of failure, academic self-efficacy, and academic motivation on

psychological well-being among Saudi nursing students. Findings from international studies may not be fully applicable because of differences in cultural and educational contexts. Therefore, the present study aimed to examine the relationships of exam anxiety, fear of failure, academic self-efficacy, and academic motivation with psychological well-being and identified predictors of psychological well-being among nursing students at Northern Border University, Saudi Arabia. Understanding these relationships may assist nursing educators in developing targeted interventions to enhance student well-being, strengthen resilience, and promote academic success.

Objectives

1. To assess the levels of perceived psychological well-being, anxiety, fear of failure, academic self-efficacy, and academic motivation among nursing students.
2. To examine the relationship between exam anxiety, fear of failure, academic self-efficacy, and academic motivation, with psychological well-being among nursing students.
3. To determine whether demographic characteristics, exam anxiety, fear of failure, academic self-efficacy, and academic motivation significantly predict psychological well-being among nursing students.

Methods

Study Design

A descriptive cross-sectional correlational design was used in this study to explore levels of psychological well-being, exam anxiety, fear of failure, academic self-efficacy and academic motivation and examine their relationships. In addition, to assess if these factors predict the level of psychological well-being of nursing students.

Settings

All data was collected from the Faculty of Nursing at Northern Border University, Arar, Saudi Arabia as this setting is an ideal representation of the northern region in cultural, social and academic aspects.

Participants and Sampling Method

Participants in this study were undergraduate nursing students in all levels of the program (first-year to final year). A convenience sampling technique was used. The required sample was calculated using G*Power (v3.1). For a multiple regression with 9 predictors, to detect a moderate effect size at a significance level of $\alpha = 0.05$, and 95% power ($1 - \beta = 0.95$), we need at least 133 participants. To ensure that we have enough data for analysis and to compensate for any missing, invalid, or lost data, we aimed to include at least 180 students from the northern Saudi Arabia nursing faculty.

Inclusion and Exclusion Criteria

For this study, participants will include undergraduate nursing students enrolled in the Faculty of Nursing at Northern Border University, Arar, Saudi Arabia, who are able to provide informed consent and voluntarily agree to participate after receiving adequate information about the study. Both male and female students will be eligible for inclusion. Students will be excluded if they do not consent to participate, are not currently enrolled in the Faculty of Nursing at Northern Border University or are postgraduate (Master's) students or nursing graduates.

Instruments

Demographic questionnaire

A brief demographic questionnaire was developed by the researchers to collect basic background and academic information from participants. The questionnaire included items on sex, marital status, age, current academic year (first to fourth year), and grade point average (GPA).

Psychological Well-Being Scale–18 (PWB-18)

Psychological well-being was assessed using the 18-item Psychological Well-Being Scale (PWB-18), derived from Ryff's multidimensional model of psychological well-being. The scale measures six dimensions: autonomy, environmental mastery, personal growth, positive relations with others, purpose in life, and self-acceptance. Responses are rated on a 7-point Likert scale ranging from strongly disagree to strongly agree. Total scores are calculated by summing item responses, with higher scores indicating greater psychological well-being. Previous studies have reported satisfactory reliability and validity for the instrument, with Cronbach's alpha coefficients ranging from 0.70 to 0.80 [20].

Westside Test Anxiety Scale (WTAS)

Test anxiety was measured using the Westside Test Anxiety Scale (WTAS). The WTAS was developed by (Driscoll, 2007) [21] and consists of 10 items rated on a 5-point Likert scale. The overall score is calculated as the mean of all item responses, with higher scores indicating greater levels of test anxiety. The scale has demonstrated good psychometric properties, with reported Cronbach's alpha values ranging from 0.78 to 0.89.

Performance Failure Appraisal Inventory–Short Form (PFAI-SF)

Fear of failure was assessed using the 5-item Performance Failure Appraisal Inventory–Short Form (PFAI-SF) [14]. Participants rate each item on a scale from – 2 (do not believe at all) to + 2 (believe 100% of the time). Mean scores are computed across items, with higher scores reflecting greater fear of failure. The PFAI-SF has demonstrated acceptable validity and internal consistency, with reported Cronbach's alpha coefficients ranging from 0.72 to 0.86.

Academic Self-Efficacy Scale (ASES)

Academic self-efficacy was measured using the 9-item Academic Self-Efficacy Scale (ASES) [22]. Items are rated on a 7-point Likert scale, with higher scores indicating greater confidence in managing academic tasks and achieving academic goals. The instrument has demonstrated excellent reliability, with a reported Cronbach's alpha coefficient of 0.93.

Short Academic Motivation Scale (SAMS)

Academic motivation was assessed using the 14-item Short Academic Motivation Scale (SAMS) [23]. The SAMS evaluates seven dimensions of academic motivation and uses a 7-point Likert response format. Subscale scores are calculated by summing or averaging the relevant items, with higher scores indicating stronger endorsement of the corresponding motivational dimension. The scale has demonstrated satisfactory construct validity and acceptable to good internal consistency, with Cronbach's alpha coefficients ranging from 0.70 to 0.86.

Ethical Considerations

The study was done following the accepted ethical considerations, including the Declaration of Helsinki, National Committee of Bioethics (NCBE) guidelines of Saudi Arabia and institutional rules of Northern Border University. The research project was approved by the Local Committee of Bioethics at Northern Border University (HAP-09-A-043), Approval No. (15/26/H). Data were gathered using an online survey. An electronic consent to participate in the research project was included in the beginning of the survey, with respondents having to choose one of the options and ticking the corresponding box. Respondents answering 'yes' were allowed to continue with the survey, whereas those answering 'no' were automatically exited from the survey process. All respondents were clearly told that their participation was completely voluntary, without any penalties for non-participation. In addition, they had the opportunity to leave the survey whenever they wanted, without giving any reasons.

Data Analysis

All data has been uploaded to and analyzed using IBM SPSS (v21). Data has been cleaned and tested for normality and linearity. All tests considered $\alpha \leq 0.05$ as value for determining significance. Means, standard deviations, frequencies, and percentages were described demographics characteristics including sex, marital status, age, GPA, and study year. Cronbach's alpha was conducted to assess internal consistency for each scale. Descriptive stats (means, SDs, ranges) were summarized perceived psychological well-being (PWB-18), exam anxiety (WTAS), fear of failure (PFAI-SF), academic self-efficacy (ASES), and academic motivation. Data normality was assessed using the skewness and kurtosis statistics. Variables were approximately normally distributed when skewness values were within ± 2 and kurtosis values were within ± 7 , consistent with the recommendations of Groeneveld and Meeden (1984), Byrne (2016), and Hair et al. (2019) [24–26].

As the data were normally distributed, Pearson correlations were conducted to examine the relationships between exam anxiety (WTAS), fear of failure (PFAI-SF), academic self-efficacy (ASES), and academic motivation (SAMS) with psychological well-being (PWB-18). A hierarchical multiple linear regression in SPSS has been conducted to assess predictors of Psychological Well-Being among students. While dependent variable was PWB-18 and independent variables were Demographics (sex, marital status, age, GPA, and study year), exam anxiety, fear of failure, academic self-efficacy, and academic motivation. The effect size using Cohen's f^2 was calculated to assess the extent to which a new variable (added to the set) explains the outcome [27].

Results

Demographic characteristics

A total of 247 nursing students participated in this study as illustrated in Table 1. The participants had a mean age of 22.83 years (SD = 4.91), with ages ranging from 18 to 49 years. The mean GPA was 4.2 (SD = 0.55). Most participants were single (89.9%, $n = 222$) and female (57.9%, $n = 143$). Concerning academic level, more than half of the participants were enrolled in the fourth year of study (53.4%, $n = 132$), while only a small proportion of participants were first-year students (2.4%, $n = 6$).

Table 1: Demographic Characteristics of the Participants (n = 247)		
Characteristic	n = 247	Min–Max
Age (years), (mean $\pm$ SD)	22.83 $\pm$ 4.91	18 - 49
GPA, (mean $\pm$ SD)	4.2 $\pm$ 0.55	2.0 - 5.0
Sex, N (%)		
Male	104 (42.1)	
Female	143 (57.9)	
Marital Status, N (%)		
Single	222 (89.9)	
Married	25 (10.1)	
Study Year, N (%)		
1st year	6 (2.4)	
2nd year	50 (20.2)	
3rd year	59 (23.9)	
4th year	132 (53.4)	

Levels of Psychological Well-Being, Social Support, Anxiety, Fear of Failure, Academic Self-efficacy, and Academic Motivation

Table 2 presents the levels and descriptive statistics for psychological well-being, social support, anxiety, fear of failure, academic self-efficacy, and academic motivation. Overall, participants reported a moderately high level of psychological well-being, with a mean score of 4.95 (SD = 1.28). The mean score for academic self-efficacy was 5.27 (SD = 1.26), indicating a high level of confidence in academic capabilities. Participants also demonstrated a moderately high level of academic motivation, with a mean score of 4.51 (SD = 1.27). Regarding anxiety, the mean score on the Westside Test Anxiety Scale was 3.31 (SD = 0.97), suggesting a moderate level of test anxiety among the students. The mean score for fear of failure was 0.31 (SD = 1.00), indicating a relatively low to moderate tendency to perceive failure as threatening or aversive.

Table 2

Levels and descriptive statistics for psychological well-being, anxiety, fear of failure, academic self-efficacy, and academic motivation (n = 247)

Variable	Scale Range	Mean $\pm$ SD	Skewness	Kurtosis	Level*
Psychological Well-Being (PWB-18)	1–7	4.95 $\pm$ 1.28	-0.77	1.18	Moderate to High
Anxiety (WTAS)	1–5	3.31 $\pm$ 0.97	-0.36	0.9	Moderate
Fear of Failure (PFAI-SF)	-2 to + 2	0.31 $\pm$ 1.00	-0.13	-0.15	Low to Moderate
Academic Self-Efficacy (ASES)	1–7	5.27 $\pm$ 1.26	-0.60	0.18	High
Academic Motivation (SAMS)	1–7	4.51 $\pm$ 1.27	-0.13	0.06	Moderate to High
*Levels were interpreted according to the midpoint and possible score range of each instrument.					

Reliability of Study Scales

Reliability analysis revealed satisfactory internal consistency for all study measures. Cronbach's alpha coefficients ranged from .804 to .935. The Psychological Well-Being Scale demonstrated good reliability ($\alpha = .804$), while the Westside Test Anxiety Scale ($\alpha = .916$), Academic Self-Efficacy Scale ($\alpha = .935$), and Short Academic Motivation Scale ($\alpha = .921$) demonstrated excellent reliability. The Performance Failure Appraisal Inventory–Short Form also exhibited good internal consistency ($\alpha = .862$). These findings indicate that all scales were reliable for use in the present study. (Table 3)

Table 3

Internal Consistency of the Study Instruments (n = 247)

Instrument	Number of Items	Cronbach's Alpha (α)
Psychological Well-Being Scale (PWB-18)	18	0.80
Westside Test Anxiety Scale (WTAS)	10	0.92
Performance Failure Appraisal Inventory–Short Form (PFAI-SF)	5	0.86
Academic Self-Efficacy Scale (ASES)	9	0.94
Short Academic Motivation Scale (SAMS)	14	0.92

Relationships of anxiety, fear of failure, academic self-efficacy, and academic motivation, with Psychological Well-Being

Table 4 shows that academic self-efficacy was significantly and positively correlated with psychological well-being ($r = .305, p < .001$), indicating that students with higher levels of confidence in their academic abilities tended to report better psychological well-being. Moreover, a statistically significant weak positive correlation was also found between anxiety and psychological well-being ($r = .126, p = .048$). In contrast, fear of failure was not significantly associated with psychological well-being ($r = .033, p = .610$), indicating that students' perceptions of failure did not appear to be related to their psychological well-being. Similarly, academic motivation was not significantly correlated with psychological well-being ($r = .076, p = .231$), suggesting that levels of academic motivation were not directly associated with psychological well-being in this sample.

Table 4
Relationships Between Psychological Well-Being and Anxiety, fear of failure, academic self-efficacy, and academic motivation (n = 247)

Variable	r with Psychological Well-Being	p-value
Anxiety (WTAS)	0.13	0.048*
Fear of Failure (PFAI-SF)	0.03	0.610
Academic Self-Efficacy (ASES)	0.31	< 0.001*
Academic Motivation (SAMS)	0.08	0.231

Predictors of Psychological Well-Being

A hierarchical multiple regression analysis was conducted to examine predictors of psychological well-being among nursing students as presented in Table 5. Predictors were entered in nine sequential steps: study year, sex, age, marital status, GPA, anxiety, fear of failure, academic self-efficacy, and academic motivation. The final model was statistically significant, $F(9, 237) = 5.54, p < 0.001$, explaining 17.4% of the variance in psychological well-being ($R^2 = 0.174$, adjusted $R^2 = 0.142$). The overall model demonstrated a medium effect size according to Cohen's criteria ($f^2 = 0.21$). Across the hierarchical steps as shown in Table 5, among demographics, marital status showed a small contribution to the model with R^2 change = 0.02, F change (1, 238) = 3.48, $p < 0.03$ corresponding to a very small effect ($f^2 = 0.01$). While academic self-efficacy made the largest unique contribution to the model. When academic self-efficacy was entered at Step 8, it explained an additional 11.9% of the variance in psychological well-being, change in R^2 change = 0.119, F change (1, 238) = 33.88, $p < 0.001$ corresponding to a small-to-medium effect ($f^2 = 0.14$). Anxiety also made a significant contribution when entered at Step 6, R^2 change = 0.019, F change (1, 240) = 4.81, $p = 0.029$ corresponding to a small effect ($f^2 = 0.02$). In contrast, the addition of academic motivation at the final step did not significantly improve the model, R^2 change = 0.007, F change (1, 237) = 1.99, $p = 0.160$.

Table 5
Hierarchical Multiple Regression for Psychological Well-Being Predictors (n = 247)

Step	Predictor Entered	B	SE	β	t	p	R ²	R ² Change	F Change	p for F Change	Cohen's f^2_{**}
1	Study Year	-0.15	0.09	-0.11	-1.66	0.10	0.01	0.01	2.74	0.10	.011
2	+Sex	0.05	0.17	0.02	0.31	0.76	0.01	0.00	0.10	0.76	.000
3	+Age	0.01	0.02	0.05	0.68	0.50	0.01	0.00	0.46	0.50	.002
4	+Marital Status	-.68	0.36	-0.16	-1.87	0.06	0.03	0.02	3.48	0.06	.014**
5	+GPA	.09	0.15	0.04	0.59	0.56	0.03	0.00	0.34	0.56	.001
6	+Anxiety	0.18	0.08	0.14	2.19	0.03*	0.05	0.02	4.81	0.03*	.023**
7	+Fear of Failure	-0.03	0.08	-0.02	-0.31	0.75	0.05	0.00	0.10	0.75	.000
8	+Academic Self-Efficacy	0.36	0.06	0.36	5.82	< 0.01*	0.17	0.12	33.88	< 0.01*	.144**
9	+Academic Motivation	-0.10	0.07	-0.10	-1.41	0.16	0.17	0.01	1.99	0.16	.008
Cohen's f^2 were calculated based on Cohen J. E. (1988). Statistical Power Analysis for the Behavioural Sciences. Hillsdale, NJ: Lawrence Erlbaum Associates, Inc.											

In the final model as presented in Table 6, academic self-efficacy was the strongest positive predictor of psychological well-being ($\beta = 0.40, p < 0.001$). This suggests that students who reported greater confidence in their academic abilities also tended to report higher psychological well-being. Age was also a significant positive predictor ($\beta = 0.21, p = 0.02$), indicating that older students reported slightly higher levels of well-being. Anxiety was also positively associated with psychological well-being ($\beta = 0.20, p = 0.001$). Although this direction may appear unexpected, it suggests that, after controlling for the other variables in the model, students with higher anxiety scores also reported higher psychological well-being. Study year was a significant negative predictor ($\beta = -0.17, p = 0.01$), indicating that students in higher academic years tended to report lower psychological well-being. Marital status was also a significant negative predictor ($\beta = -0.18, p = 0.03$). This indicates that married students reported lower psychological well-being than single students, after controlling the other predictors. Sex, GPA, fear of failure, and academic motivation were not significant predictors in the final model.

Table 6
Final Regression Model Predicting Psychological Well-Being (n = 247)

Predictor	B	β	t	p	Interpretation
Study Year	-0.25	-0.17	-2.68	0.01*	Higher study year predicted lower well-being
Sex	0.12	0.05	0.72	0.47	Not significant
Age	0.06	0.21	2.47	0.02*	Older age predicted higher well-being
Marital Status	-0.75	-0.18	-2.20	0.03*	Married students reported lower well-being than single students
GPA	0.03	0.01	0.21	0.84	Not significant
Anxiety	0.26	0.20	3.25	0.001*	Higher anxiety predicted higher well-being
Fear of Failure	-0.08	-0.06	-0.98	0.33	Not significant
Academic Self-Efficacy	0.41	0.40	5.82	< .001*	Higher self-efficacy predicted higher well-being
Academic Motivation	-0.10	-0.10	-1.41	0.16	Not significant

Discussion

The present study examined whether exam anxiety, fear of failure, academic self-efficacy, and academic motivation predict psychological well-being among undergraduate nursing students. The findings suggest that academic self-efficacy was the strongest predictor within the model of psychological well-being ($\beta = .401, p < .001$), while age ($\beta = .212, p = .014$) and exam anxiety ($\beta = .200, p = .001$) were also positively associated with well-being. In contrast, marital status ($\beta = -.177, p = .029$) and year of study ($\beta = -.173, p = .008$) were negatively associated with well-being, whereas fear of failure, academic motivation, sex, and GPA were not statistically significant in the multivariable model. The overall model explained 17.4% of the variance in psychological well-being, indicating modest but meaningful explanatory power. These findings suggest that psychological well-being in nursing students may be shaped more by cognitive-emotional resources and role-related demands than by academic performance alone.

The central role of academic self-efficacy emerged as the most notable finding in this study. Academic self-efficacy exhibited the largest standardized coefficient and remained a significant positive predictor of well-being, even after controlling for other variables. This outcome aligns with previously cited literature, which identifies self-efficacy as a protective factor against academic stress and emotional strain. Studies by [28–30] corroborate the association between stronger self-efficacy and improved psychological adaptation, as well as reduced vulnerability to anxiety-related challenges. Recent evidence from nursing research further supports these findings. Atak and Meriç (2022) [31] reported a positive correlation between academic self-efficacy, resilience, and academic success among nursing students. Conversely, El-Sayed et al. (2025) [32] indicated that perceived stress and cognitive failure negatively impact academic self-efficacy in postgraduate nursing candidates. Additionally, Liu and Zhang (2026) [33] demonstrated that stable or improving academic self-efficacy trajectories are associated with reduced anxiety over time, whereas declining self-efficacy correlates with worsening anxiety symptoms. Collectively, these findings suggest that academic self-efficacy transcends being merely an academic belief; it constitutes a fundamental psychological resource that enables nursing students to perceive demands as manageable and maintain emotional well-being under pressure.

An unexpected finding in this study was the positive association between exam anxiety and psychological well-being. This result contrasts with much of the literature cited in the original discussion, where anxiety has generally been linked to poorer engagement, increased distress, and impaired academic functioning [34–37]. It also differs from more recent evidence showing that test anxiety is negatively associated with academic performance among nursing students (Hayat et al., 2025) and that anxiety and depressive symptoms tend to interfere with academic achievement and functioning among university students more broadly [38]. A cautious interpretation is therefore needed. In this sample, a modest degree of exam-related anxiety may have reflected alertness, concern for performance, or academic investment rather than dysregulating distress. This explanation is partly consistent with Sabaliauskas et al. (2025) [39], who suggested that internalized academic pressure may not uniformly diminish vitality under all conditions. Nevertheless, the present finding should not be interpreted as evidence that anxiety is beneficial. Rather, it may indicate that the meaning of anxiety depends on its intensity, duration, and the extent to which students possess compensatory resources such as self-efficacy.

This interpretation is further strengthened when considered alongside evidence identifying factors that exacerbate harmful anxiety. Wadi et al. (2022) [40] demonstrated that negative cognitions, sleep deprivation, inadequate self-care, curriculum overload, and intimidating examiner behaviors contribute significantly to test anxiety. In a similar context, Alsayed et al. (2025) [25] found that anxiety was a strong negative predictor of self-efficacy among Saudi nursing students undergoing academic reform, while effective academic advising served as an important protective factor. Likewise, Kristensen et al. (2023) [36] suggested that academic stress may undermine psychological functioning partly through its detrimental effects on self-efficacy. Therefore, although anxiety in the present study may reflect a form of regulated evaluative arousal, the broader evidence consistently indicates that persistent or poorly managed anxiety is more likely to operate as a risk factor rather than a beneficial influence in nursing education.

The absence of significant direct effects for fear of failure and academic motivation is also important. In the present study, both variables showed weak associations with psychological well-being and did not remain significant in the multivariable model. This suggests that their influence may be indirect rather than direct. As proposed in the original manuscript, fear of failure may operate through anxiety, avoidance, or self-evaluative processes rather than exerting an immediate effect on well-being, a position that is compatible with Jia et al. (2023) and Imran et al. (2023) [41,34]. Similarly, academic motivation may be more closely related to persistence, effort, and goal pursuit than to psychological well-being itself. In demanding nursing programs, students may remain highly motivated while still experiencing considerable emotional strain. This distinction is clinically relevant because it challenges the assumption that motivation necessarily indicates healthy adjustment.

The demographic findings further suggest that well-being is unevenly distributed across student subgroups. Older students reported better well-being, possibly reflecting greater maturity and more developed coping capacities. By contrast, married students and those in later years of study reported poorer well-being, which may indicate the cumulative burden of balancing academic expectations, clinical responsibilities, and personal or family roles. This interpretation is consistent with Komariah et al. (2025) [42], who emphasized the importance of psychosocial adaptation, stress exposure, and support systems in shaping nursing students' quality of life, and with Alsayed et al. (2025) [32], who described how structural academic demands can heighten emotional distress. The negative association with later years of study is particularly noteworthy because it suggests that well-being does not necessarily improve with academic progression; instead, advancement through training may bring heavier responsibilities and greater psychological load.

Another meaningful finding is that GPA was not significantly associated with psychological well-being. This suggests that academic performance, while important, does not fully capture the emotional reality of students' experiences. A student may achieve acceptable grades while struggling psychologically, especially in a demanding professional program such as nursing. This interpretation complements the work of Atak and Meriç (2022) [31], who found only modest links between academic variables and psychological strengths, and it reinforces the present study's broader conclusion that emotional well-being depends more on perceived competence and coping resources than on grades alone.

From a practical perspective, the findings indicate that nursing education should prioritize interventions that strengthen academic self-efficacy while identifying and managing maladaptive anxiety early. Strategies such as structured mentoring, psychologically informed academic advising, formative feedback, and mindfulness-based or stress-regulation approaches may be beneficial. Hayat et al. (2025) [43] support the value of mindfulness-related processes in reducing test anxiety, while Alsayed et al. (2025) [32] highlight the supportive role of academic advising. Ahmed et al. (2024) also suggest that strengthening self-efficacy may improve students' academic regulation and reduce maladaptive patterns such as procrastination. These approaches may be particularly important for senior students and those with family responsibilities, who appear more vulnerable to poorer well-being. Future research should build on these findings using longitudinal designs and broader explanatory models that include social support, sleep, financial stress, and clinical learning conditions. Despite its modest explanatory power, the present study contributes useful evidence by showing that psychological well-being in nursing students is closely tied to self-belief and contextual strain, with clear implications for educational support and student mental health.

Theoretical framework

The findings can be interpreted within a cognitive emotional interaction framework of student well-being, in which academic self-efficacy functions as a central cognitive appraisal resource shaping how students evaluate and respond to academic demands. In the present study, self-efficacy showed the strongest association with psychological well-being, suggesting its key role in emotional adjustment under pressure, consistent with evidence that it transforms perceived challenges into manageable tasks and buffers anxiety effects [28,35]. Within this framework, anxiety is conceptualized as a context-dependent emotional response that may range from adaptive arousal to maladaptive distress depending on its intensity, appraisal, and regulation. Furthermore, the absence of direct effects for fear of failure and academic motivation indicates that these constructs may influence well-being indirectly through cognitive and emotional pathways, such as anxiety and self-evaluation. Overall, psychological well-being is understood as the outcome of dynamic interactions among self-efficacy, emotional regulation, and contextual academic demands, rather than the result of isolated factors.

Conclusion

This study indicates that academic self-efficacy is the strongest predictor of psychological well-being among undergraduate nursing students within the tested model, while age and exam anxiety show positive associations, and marital status and study year are negatively related. The model explained a modest proportion of variance (17.4%), and fear of failure, academic motivation, sex, and GPA were not independently associated with well-being. These findings suggest that psychological well-being is more closely linked to students perceived academic capability and emotional regulation than to traditional performance indicators. The results also support a cognitive–emotional perspective, in which self-efficacy shapes how students appraise and manage academic stress, and anxiety may function as either adaptive or maladaptive depending on its regulation. Future longitudinal and intervention research

is needed to clarify causal pathways and determine whether strengthening self-efficacy can produce sustained improvements in student well-being.

Limitations

Several limitations should be acknowledged. First, the cross-sectional design precludes causal inference, and the directionality of the associations remains unclear. Second, the use of a single-site convenience sample with an uneven composition (predominantly fourth year and single students) limits generalizability and may introduce sampling bias, particularly regarding demographic effects. Third, reliance on self-report measures increases the risk of shared method variance and social desirability bias, and potential overlap between emotional constructs may have influenced the observed relationships. Fourth, the regression model explained a modest proportion of variance (17.4%), indicating that other relevant factors such as social support, resilience, and contextual academic stressors were not captured, and no mediation or moderation pathways were tested. Finally, the positive association between anxiety and well-being should be interpreted cautiously, as it may reflect a context-specific or statistical effect rather than a stable or generalizable pattern.

Implications for practice and future research

The findings suggest several practical implications for nursing education. Primary interventions should focus on strengthening academic self-efficacy through strategies such as structured mentoring, scaffolded learning experiences, and supportive feedback. Secondary efforts may target the identification and management of maladaptive anxiety, particularly during high-stakes assessments, while tertiary support may be directed toward potentially vulnerable groups, including students in later years and those with competing responsibilities.

Theoretically, the results support a cognitive emotional interaction model of student well-being, indicating that self-efficacy, anxiety appraisal, and contextual demands operate jointly, and that some constructs, such as fear of failure and motivation, may exert indirect rather than direct effects. At a policy level, integrating psychological support within routine academic systems, such as advising and curriculum design, may enhance early identification and support of at-risk students. Future research should adopt longitudinal and multicenter designs to clarify causal pathways and generalizability. Studies should examine the mediating and moderating roles of self-efficacy and anxiety and evaluate whether interventions targeting these mechanisms can sustainably improve psychological well-being among nursing students.

Declarations

Ethics approval and consent to participate

The study was done following the accepted ethical considerations, including the Declaration of Helsinki, National Committee of Bioethics (NCBE) guidelines of Saudi Arabia and institutional rules of Northern Border University. The research project was approved by the Local Committee of Bioethics at Northern Border University (HAP-09-A-043), Approval No. (15/26/H). Data were gathered using an online survey. An electronic consent to participate in the research project was included in the beginning of the survey, with respondents having to choose one of the options and ticking the corresponding box. Respondents answering 'yes' were allowed to continue with the survey, whereas those answering 'no' were automatically exited from the survey process. All respondents were clearly told that their participation was completely voluntary, without any penalties for non-participation. In addition, they had the opportunity to leave the survey whenever they wanted, without giving any reasons.

Consent for publication: Not applicable.

Conflict of interest: The authors declare no competing interests.

Fund: This research did not receive any specific grants or financial support from any public, commercial, or not-for-profit funding agency.

Data availability: The datasets generated and/or analyzed during the current study are available from the corresponding author upon reasonable requests.

Acknowledgments: The authors would like to express their sincere gratitude to all nursing students who participated in this study across the Northern Border Region of Saudi Arabia. Their willingness to engage, share their experiences, and provide valuable insights was essential to the successful completion of this research.

Author Contributions (CRediT Statement)

Manal Hassan Baqeas: Conceptualization, methodology, investigation, data curation, formal analysis, and writing of the original draft.

Amal Ahmed Elbilgahy: Conceptualization, methodology, supervision, interpretation of data, writing of the original draft, review and editing of the manuscript, correspondence, and overall coordination of the research project.

Khaldoun Mahmoud Ismail: Investigation, data collection, validation, data curation, and manuscript review.

Faten Shawky Kandil: Methodology, supervision, interpretation of findings, and critical review of the manuscript.

Fares Hameed D. Alshammari: Investigation, validation, data collection, manuscript review, and editing.

Amany Lotfy Ahmed: Formal analysis, methodology, interpretation of findings, writing, review, and editing of the manuscript.

Fathia Ahmed Mersal: Conceptualization, supervision, methodology, formal analysis, validation, critical revision of the manuscript, and overall guidance of the research project.

All authors contributed to the study design, critically reviewed the manuscript, approved the final version for publication, and agreed to be accountable for all aspects of the work.

Author Information:

Dr. Manal Hassan Baqeas

Assistant Professor, Public Health Nursing Department, College of Nursing, Northern Border University, Arar, Kingdom of Saudi Arabia

Manal.Buqays@nbu.edu.sa

Amal Ahmed Elbilgahy

Associate Professor of Pediatric Nursing, Maternal & Child Health Nursing Department, Faculty of Nursing, Northern Border University, Arar, Saudi Arabia

Professor of Pediatric Nursing, Pediatric Nursing Department, Faculty of Nursing, Mansoura University, Mansoura, Egypt

E-mail: - moazam@mans.edu.eg

ORCID ID: <https://orcid.org/0000-0002-0465-6061>

Khaldoun Mahmoud Ismail

khuldonwidyan@yahoo.com

Public Health Department, College of Nursing, Northern Border University

ORCID: 0000-0001-7984-6073

Dr. Fares Hameed D Alshammari

fhalshammari@uhb.edu.sa

Assistant professor, College of Nursing, University of Hafr Albatin , Hafr Albatin , Saudi Arabia

ORCID ID: 0000-0002-1223-1426

Faten Shawky Kandil

Assistant professor, Department of Nursing, College of Applied Medical Sciences, University of Jeddah, Jeddah, Saudi Arabia

Fskandil@uj.edu.sa

ORCID ID: <https://orcid.org/0000-0002-6471-5772>

Amany Lotfy Ahmed

Assistant professor of Community Health Nursing, Faculty of Nursing, Kafr Elsheikh University, Kafr Elsheikh, Egypt.

Nursing department, North private college of Nursing, Arar, Saudi Arabia.

Email: Amany_emara_2014@Nur.kfs.edu.eg

ORCID ID: 0009-0005-9740-5075

Fathia Ahmed Mersal

Professor of community health nursing, Public Health Nursing Department, Faculty of Nursing, Northern Border University, Arar, Saudi Arabia

E-mail: Fathia.hassan@nbu.edu.sa

<https://orcid.org/0000-0002-6450-5097>

References

1. de Alencar Ribeiro AA, Fernandes MA, Vedana KGG, Lira JAC, Barbosa NS, Rocha EP, et al. Mental health and university dropout among nursing students: a cross-sectional study. *Nurse Educ Today*. 2025;147:106571.
2. Labrague LJ, Rosales RA, Arteche DL, Santos MC, Calimbas NDL, Yboa BC, et al. How academic pressure drives dropout intentions: the mediating roles of life satisfaction and stress in nursing students. *Teach Learn Nurs*. 2025;20(1):61-68.
3. Matteau L, Toupin I, Ouellet N, Beaulieu M, Truchon M, Gilbert-Ouimet M. Nursing students' academic conditions, psychological distress, and intention to leave school: a cross-sectional study. *Nurse Educ Today*. 2023;129:105877.
4. Peters M. Time to solve persistent, pernicious and widespread nursing workforce shortages. *Int Nurs Rev*. 2023;70(2):247-253.
5. Lundell Rudberg S, Westerbotn M, Sormunen T, Scheja M, Lachmann H. Undergraduate nursing students' experiences of becoming a professional nurse: a longitudinal study. *BMC Nurs*. 2022;21(1):219.
6. Martela F. What is positive psychological functioning? *J Posit Psychol*. 2026;21(2):207-224.
7. Ryff CD, Keyes CLM. The structure of psychological well-being revisited. *J Pers Soc Psychol*. 1995;69(4):719-727. doi:10.1037/0022-3514.69.4.719.
8. Elbarbary AR, Shalaby MH, Abo-Elyazed SM, Mohamed SR. Academic burnout, resilience and their relations with psychological wellbeing of baccalaureate nursing students. *Tanta Sci Nurs J*. 2023;31(4):126-156.
9. Kaur Khaira M, Raja Gopal RL, Mohamed Saini S, Md Isa Z. Interventional strategies to reduce test anxiety among nursing students: a systematic review. *Int J Environ Res Public Health*. 2023;20(2):1233.
10. Khaira MK, Gopal RLR, Saini SM, Isa ZM. Prevalence of test anxiety and its determinants among nursing students in Selangor, Malaysia. *Heliyon*. 2024;10(4).
11. Thomas T, Joseph G, Paul S. A study to assess the correlation between academic test anxiety and self-esteem among undergraduate students. *J Health Allied Sci NU*. 2022;12(4):417-422.
12. Cruz AFP, Pereira WDS, Ribeiro NG, Sousa JN, Macedo MTS, Baldo TOF, et al. Anxiety in the academic environment: impacts on quality of life and well-being of university students. *Int J Educ Res*. 2026;136:102916.
13. Conroy DE, Willow JP, Metzler JN. Multidimensional fear of failure measurement: the Performance Failure Appraisal Inventory. *J Appl Sport Psychol*. 2002;14(2):76-90. doi:10.1080/10413200252907752.
14. Nakhla G. The modulatory role of extrinsic motivation in the relationship between fear of failure and student engagement. *J Univ Teach Learn Pract*. 2025;22(2):1-22.
15. Bahari G, Alharbi KN, Alenazi L. Learning motivation and self-efficacy towards improved clinical performance in undergraduate nursing students: a cross-sectional study. *J Clin Diagn Res*. 2022;16(2):LC10-LC13.
16. Ozsaker E, Aykut Z, Doruker NC, Koze BS, Gecit S. The relationship between academic self-efficacy and perceived stressors among nursing students in clinical settings: a cross-sectional study. *BMC Nurs*. 2025;24(1):216.
17. Zhu J, Xie X, Pu L, Zou L, Yuan S, Wei L, et al. Relationships between professional identity, motivation, and innovative ability among nursing intern students: a cross-sectional study. *Heliyon*. 2024;10(7).
18. Alrawili JTQ, Alanazi NMS, Alanazi AMS, MashujAlanazi FA, Alruwaili NKM, Alanazi MAT, et al. Challenges facing nursing professionals in Saudi Arabia today. *J Int Crisis Risk Commun Res*. 2024;7(S7):1329.
19. Ryff CD, Almeida DM, Ayanian JS, Carr DS, Cleary PD, Coe C, et al. National Survey of Midlife Development in the United States (MIDUS II), 2004-2006: Documentation of psychosocial constructs and composite variables in MIDUS II Project 1. Ann Arbor (MI): Inter-university Consortium for Political and Social Research; 2010.
20. Driscoll R. Westside Test Anxiety Scale Validation. American Test Anxiety Association; 2007. Available from: <http://www.amtaa.org/westside.html>

21. Chemers MM, Hu LT, Garcia BF. Academic self-efficacy and first-year college student performance and adjustment. *J Educ Psychol.* 2001;93(1):55-64. doi:10.1037/0022-0663.93.1.55.
22. Kotera Y, Conway E, Green P. Construction and factorial validation of a short version of the Academic Motivation Scale (SAMS). *Br J Guid Couns.* 2020;50(2):1-13. doi:10.1080/03069885.2020.1804723.
23. Groeneveld RA, Meeden G. Measuring skewness and kurtosis. *Statistician.* 1984;33(4):391-399.
24. Byrne BM. *Structural Equation Modeling with AMOS: Basic Concepts, Applications, and Programming.* 3rd ed. New York: Routledge; 2016.
25. Hair JF, Babin BJ, Anderson RE, Black WC. *Multivariate Data Analysis.* 8th ed. Harlow: Pearson; 2019.
26. Cohen J. *Statistical power analysis for the behavioral sciences.* 2nd ed. Hillsdale: Lawrence Erlbaum Associates; 1988.
27. Nawawi E. Self-efficacy as a protective factor against academic stress and anxiety: evidence from a systematic literature review. *Adv Educ J.* 2025.
28. Fitriawan AS, Kurniawan D, Nailufar Y, Retnaningsih LN, Achmad BF, Setyaningsih WAW. Association between self-efficacy and psychological distress with readiness for online learning among nursing students. *Malays J Med Health Sci.* 2023.
29. Khosraviani A. Examining the relationship between academic self-efficacy and exam anxiety among students of Zanjan University. *Int J New Findings Health Educ Sci.* 2025. doi:10.63053/ijhes.156.
30. Atak NT, Meriç M. The determination of the psychological resilience, academic achievement and academic self-efficacy of nursing students. *Cyprus J Med Sci.* 2022;7(6):767-773. doi:10.4274/cjms.2020.2343.
31. Alsayed SA, Abou Hashish EA, Alanazi M, Timraz SM, Bahanshal S, Bajamal EZ, et al. Psychological distress, self-efficacy, and academic advising among Saudi nursing students during academic reform: a mixed-methods study. *BMC Med Educ.* 2025;25:1724. doi:10.1186/s12909-025-08229-w.
32. Liu X, Zhang Y. Trajectory patterns of academic self-efficacy, the related factors, and anxiety among Chinese college students. *New Dir Child Adolesc Dev.* 2026;2026:9993323. doi:10.1155/cad/9993323.
33. Imran Z, Malik AM, Mehboob I, Sair SA. Performance anxiety during exams: predictors of students' academic failure. *J Soc Sci Rev.* 2023;3(1):104-117. doi:10.54183/jssr.v3i1.100.
34. Lizarte Simón EJ, Gijón MK, Puerta JG, Galván Malagón MC. Influence of self-efficacy, anxiety and psychological well-being on academic engagement during university education. *Educ Sci.* 2024;14:1367.
35. Kristensen SM, Larsen TMB, Urke HB, Danielsen AG. Academic stress, academic self-efficacy, and psychological distress: a moderated mediation of within-person effects. *J Youth Adolesc.* 2023;52:1512-1529. doi:10.1007/s10964-023-01770-1.
36. Seshabela HD, Shakwane S. Impact of anxiety-related conditions on nursing students' academic excellence. *Curationis.* 2024;47(1):2571. doi:10.4102/curationis.v47i1.2571.
37. Awadalla S, Davies EB, Glazebrook C. The impact of depressive and anxiety symptoms on academic achievement among undergraduate university students: a systematic review. *OBM Neurobiol.* 2024;8(4):261.
38. Sabaliauskas S, Ingelevič K, Misiūnienė O, Jakavonytė-Akstinienė A. The relationship between stress, academic motivation, and subjective vitality among nursing students. *Nurs Rep.* 2025;15(8):300. doi:10.3390/nursrep15080300.
39. Wadi M, Yusoff MSB, Abdul Rahim AF, Nik Lah NAZ. Factors affecting test anxiety: a qualitative analysis of medical students' views. *BMC Psychol.* 2022;10:8. doi:10.1186/s40359-021-00715-2.
40. Jia J, Ma Y, Sun W, Liu L, Ma X, Zhang Y, et al. Effect of academic self-efficacy on test anxiety of higher vocational college students: the chain mediating effect. *Psychol Res Behav Manag.* 2023.

41. Komariah M, Eriyani T, Rahayuwati L, Agustina HR, Nurhakim F, Somantri I, et al. Quality of life, self-esteem, and stress among first-semester student nurses in Indonesia: a cross-sectional study. *SAGE Open Nurs.* 2025;11:1-10. doi:10.1177/23779608251317805.
42. Hayat AA, Soltani R, Tazangi TB, Baradaranfar F, Zareh A, Norouzi A, et al. Relationship between mindfulness, test anxiety, and academic performance among nursing students. *J Educ Health Promot.* 2025;14:93. doi:10.4103/jehp.jehp_1501_23.
43. Cohen JE. *Statistical Power Analysis for the Behavioral Sciences.* 2nd ed. Hillsdale (NJ): Lawrence Erlbaum Associates; 1988.
44. El-Sayed MM, AbdElhay ES, Hassan BH, Taha SM. Unraveling the interplay of stress, cognitive failure, and academic self-efficacy among postgraduate nursing candidates: a mediational path analysis. *BMC Nurs.* 2025;24:974. doi:10.1186/s12912-025-03630-8.
45. Ryff CD, Almeida DM, Ayanian JS, Carr DS, Cleary PD, Coe C, et al. *National Survey of Midlife Development in the United States (MIDUS II), 2004-2006: Documentation of Psychosocial Constructs and Composite Variables in MIDUS II Project 1.* Ann Arbor (MI): Inter-university Consortium for Political and Social Research; 2010.