



## A multi-university study on the predictors of academic resilience of Saudi nursing students

Mohammed Hamdan Alshammari \*

*Mental Health Nursing Department, College of Nursing, University of Ha'il, Ha'il City, Saudi Arabia*

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### ABSTRACT

The COVID-19 pandemic has exerted an unprecedented impact on the mental health of nursing students globally, particularly due to the abrupt transition to online education. This study aims to: 1) delineate the demographic and academic profile of Saudi nursing students; 2) evaluate their academic resilience; and 3) identify predictors of academic resilience. Employing a cross-sectional approach, the research highlights the significant influence of gender and grade point average (GPA) on students' academic resilience and psychological well-being. Distinct challenges in academic motivation are evident among both male and female students, while a higher GPA correlates with increased optimism and resilience. This study underscores the enduring resilience and perseverance of nursing students in navigating the challenges posed by the pandemic, both prior to and subsequent to its onset.

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### 1. Introduction

Individuals who are resilient are able to bounce back quickly from adversity by meeting their own unique demands, both overt and latent, in terms of psychological, affective, and psychosocial resources (Infurna, 2020). Furthermore, resilience is the ability to bounce back rapidly from setbacks such as adverse life events, psychological illness, or extreme stress. Resilience is the capacity to bounce back swiftly from adversity and return to where you were before (Darkow, 2019). It's a trait that helps you overcome challenges and adapt to new circumstances. The ability to maintain one's own healthy development and characteristics, such as the ability to cope with difficult situations, are all part of it, even though it can be defined as mastery and mental durability (Yildirim et al., 2021). The ability to succeed academically while facing significant obstacles in life is an example of academic resilience. Most research using ILSA data agreed on defining academic resilience based on academic profile and accomplishment. However, there was substantial variation in the underlying theories, models, and explanations (Ye et al., 2021; Yildirim et al., 2013).

When people's mental health is strong, they exude confidence in themselves and their abilities, making meaningful contributions to society. Those who are mentally healthy are less prone to experience psychological problems, such as depression. The most efficient approach to reducing anxiety, therefore, is to enhance one's general psychological wellness (Grande et al., 2021; Gruppen et al., 2012).

There are two types of nursing programs available in Saudi Arabia: The regular nursing program (RNP) and the bridging nursing program (BNP). The RNP consists of four years of schooling, with the fifth year as the internship year. The first two semesters of the RNP are dedicated to the science concentration. Students receive support in developing their English language skills, broad science knowledge, and interpersonal and academic communication abilities. These courses are required for a nursing bachelor's degree. The second and third years are focused on general nursing science, whilst the fourth year offers more specialized courses, such as critical and emergency nursing care and geriatric nursing (Aljohani, 2020). Students are taught to develop their English language skills, scientific knowledge, communication skills, and educational progress. The BNP, on the other hand, allows students to concentrate on second to fourth-year specialized nursing courses, such as adult health nursing, psychiatric nursing, and others, as well as their prerequisite courses. These are the remaining two years of their program and their one-year internship. In the fourth year, students enroll in

advanced nursing courses, such as critical and emergency and geriatric nursing care. BNP students are also required to complete a six-month fifth-year course or internship, as opposed to the one-year requirement for RNP (Aljohani, 2020).

## 2. Background

Resilience is a mental characteristic exhibited by individuals who can persevere in the face of hardship. Resilience is an indicator of the valuable trait of being able to persevere despite difficulty. The concept of academic resilience is helpful in this regard since it contextualizes the resilience concept in terms of a student's increased likelihood of academic achievement despite setbacks (Cassidy, 2016). As institutions continue to deal with the financial ramifications of recurrent closures and students struggle to complete their studies in the face of the epidemic, experts in the field of higher education predict that academic researcher burnout will persist for some time (Gewin, 2021).

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In addition, those who are less emotionally fragile are more likely to be aware of the assets they might call on to improve their mental health. Therefore, college students who learn more about mental health are less likely to experience emotional distress when they go through the various stages of adulthood (Teixeira et al., 2015; Teixeira et al., 2022). The state of one's mind (psychological well-being) is crucial to health and happiness. In addition, it helps one's health and general functionality. One's mental health can be said to be in good shape if they have a healthy outlook on life, a positive self-image, and a constructive attitude toward their own growth and development, as well as the mental resources necessary to overcome obstacles (THL, 2022). Many nursing students attribute their overall academic achievement to their efforts to improve their mental health and academic resilience (Alshammari and Alboliteeh, 2022).

Therefore, the objectives of this study are to: (1) identify the profile of Saudi nursing students in terms of gender, year level, units enrolled in the

current semester, and their university affiliation; and (2) assess their academic resilience and (3) determine the predictor variables to their academic resilience.

### 2.1. Theoretical foundations

This research draws its conceptual underpinnings from the theoretical constructs proposed by Laura Polk in her resilience theory. Polk holds an academic position as an Assistant Professor of Nursing at Southern Maryland University. Polk's (1997) seminal work marked the inaugural integration of the resilience concept into a theoretical model specifically tailored for the nursing discipline. Although categorized as a middle-range theory, Polk's (1997) exposition on resilience is distinguished for its focused elucidation of certain facets pertinent to nursing. The resilience theory articulated by Polk (1997) extends its applicability across multiple phenomena, offering a structured approach to decipher and manage the complexities inherent in diverse nursing contexts. Polk (1997) conceptualizes resilience as the capacity to transform adversity into an educational experience, thereby fostering continued progress. She posits that nurses' engagement with significant life events enhances their resilience, equipping them to effectively navigate stress and hardship. According to Polk's (1997) framework, resilience is compartmentalized into four distinct categories. This categorization encompasses both physiological and psychological dimensions within an attributional model. As outlined by UNM (2023), these resilience dimensions include the maintenance of optimal emotional and mental states, as well as robust physical health. Furthermore, the theory acknowledges an interpersonal pattern, categorized as an interactional paradigm, predicated on the dynamics of human interactions. Additionally, Polk's model reconceptualizes resilience within the context of situational patterns, emphasizing the individual's adaptive strategies in response to specific circumstances.

## 3. Materials and methods

This descriptive, correlational, cross-sectional study investigated the academic resilience predictors of Saudi nursing students enrolled in four different state universities in Saudi Arabia.

The research was conducted in Saudi Arabia at four state universities with bachelor nursing programs. In 2005, University 1 was founded, and its nursing college in 2010. The location of the university is in the north-central region. The second university was founded in 2006 in northern Saudi Arabia, close to the Jordanian border. Under the College of Applied Sciences, the Department of Nursing was founded in 2009. This university is a public university located in Al Ahsa, Saudi Arabia, which was established in 1975 in the city of Hofuf. The fourth university four is in southwestern Saudi

Arabia near the Yemeni border. In 2006, King Abdullah Bin Abdulaziz elevated the institution from community college to university status.

Data were collected using consecutive sampling over the school year 2022-2023. All data were gathered between December 10, 2022, and March 3, 2023. There were 1500 Google online survey forms sent out, and 1100 of them were sent back to the researcher. After carefully checking for mistakes and missing information, 1080 of the 1500 online forms that were turned in met the requirements to be included in the final data set. Students enrolled in the nursing program at any of the four study sites at any year level between the second and fourth years during the academic years 2022 and 2023, regardless of gender, are eligible for this study. Interns and fifth-year students were not involved.

Cassidy's (2016) academic resilience scale (ARS-30) was used for this investigation. The ARS-30 was designed to measure academic resilience by observing how students cope with challenging schoolwork. The scale's items, drawn from research on self-efficacy, self-regulated learning, and psychological resilience, provide a spectrum of positive and negative cognitive-affective and behavioral responses to adversity. Participants used a 5-point Likert scale ranging from very likely (1) to very unlikely (5) to rate each of the 30 items on the scale (5). Three variables were identified through exploratory factor analysis of the ARS-30's factor structure (Cassidy, 2016). Perseverance is seen as the most important trait, followed by introspection and the ability to search for creative solutions to problems. Forty-two percent of the variation in academic resilience scores can be attributed to the developing components, which also represent self-regulation and self-efficacy and are similar to those previously documented in resilience assessment research. Twenty-seven percent of the variation might be attributed to perseverance alone. The second largest contributor to the variance (9.1%) was reflective and adaptive help-seeking behavior, which occurred after negative affect and emotional response contributed to only 5.5% of the variance. Cronbach's alpha for the instrument was 0.90, well above the 0.70–0.80 range normally considered adequate for establishing reliability and validity (Cassidy, 2016).

Statistical analyses were performed using STATA Statistical Software, Version 13, College Station, TX: StataCorp LP. A  $p$ -value  $\leq 0.05$  was considered statistically significant. Descriptive statistics included frequency and percentage for categorical and mean and standard deviation for continuous-level variables. Comparative analyses of the nursing students' academic resilience and subscale scores were conducted using One-Way Analysis of Variance and an independent  $t$ -test. Univariate linear regression analysis was conducted to determine the demographic characteristics that predict nursing students' academic resilience (Daniel and Cross, 2018).

## 4. Results

Table 1 illustrates the demographic profile of the participants. It can be noted that most of the participants were females (69.84%), were third-year level (36.13%), and had enrolled in 100% of the offered units for the semester (75.00%). In addition, most participants came from University 3 (42.11%).

**Table 1:** Demographic profile of the participants (N = 988)

Characteristics	Frequency (f)	Percentage (%)
<b>Sex</b>		
Female	690	69.84%
Male	298	30.16%
<b>Year Level</b>		
Second year	288	29.15%
Third year	357	36.13%
Fourth year	343	34.72%
<b>Units enrolled in current semester</b>		
<40% of the offered units	70	7.09%
>40% of the offered units	177	17.91%
100% of the offered units	741	75.00%
<b>University</b>		
University 1	144	14.57%
University 2	247	25.00%
University 3	416	42.11%
University 4	181	18.32%

Table 2 shows the comparative analyses of the nursing students' academic resilience scores are presented in Table 2. It can be noted that the overall mean academic resilience of the participants was 56.02 (SD=10.60), while the mean scores of the subscales of optimism, communication, self-evaluation, self-awareness, trustworthiness, and self-regulation were 55.48 (SD=12.73), 55.18 (SD=12.18), 58.77 (SD=10.82), 63.87 (SD=13.28), 51.73 (SD=12.85), and 52.88 (SD=15.18), respectively. Comparative analyses of the overall mean academic resilience score indicated that this was significantly different according to sex ( $p=0.008$ ), year level ( $p=0.015$ ), and university ( $p=0.001$ ) but not by the units enrolled for the semester ( $p=0.127$ ). In particular, results showed that females have higher self-esteem ( $59.56\pm 9.50$ ,  $p=0.001$ ), self-awareness ( $66.86\pm 12.39$ ,  $p=0.001$ ), self-regulation ( $53.79\pm 12.76$ ,  $p=0.004$ ), and overall academic resilience ( $56.60\pm 9.92$ ,  $p=0.008$ ) compared to their male counterparts. Post-hoc analysis, using Bonferroni adjustment, of the mean subscale and overall scale scores according to year level indicated that third-year level participants had significantly higher scores for optimism ( $56.54\pm 12.77$ ,  $p=0.030$ ), communication ( $56.51\pm 12.22$ ,  $p=0.001$ ), self-regulation ( $54.27\pm 15.36$ ,  $p=0.013$ ), and overall academic resilience ( $56.95\pm 10.63$ ,  $p=0.030$ ) compared to fourth-year level students. However, the mean scores of third-year participants were not significantly different from those of second-year participants ( $p>0.05$ ). In terms of university, results showed that the mean subscale and overall scale scores of those from university 2 were significantly higher than the rest of the other universities ( $p=0.001$ ).

Table 3 presents the outcomes of univariate linear regression analyses, elucidating the relationship between demographic characteristics

and the overall academic resilience of nursing students. The analyses reveal that all demographic variables significantly influence academic resilience ( $p < 0.05$ ). Specifically, male students exhibit a 0.08-unit lower resilience score ( $\beta = -0.08$ ,  $p = 0.008$ ) compared to females. Fourth-year students demonstrate a 0.08-unit reduction in resilience ( $\beta = -0.08$ ,  $p = 0.044$ ) relative to second-year students, whereas third-year students show no significant correlation. Students with a unit load greater than 40% exhibit a 0.11-unit decrease in resilience ( $\beta = -0.11$ ,  $p = 0.042$ ) compared to those with less than 40% load, while a full 100% unit load does not

significantly associate with resilience ( $\beta = -0.09$ ,  $p = 0.102$ ). The analysis also indicates that university affiliation markedly predicts academic resilience. Specifically, students from University 2 display a 0.29-unit increase in resilience ( $\beta = 0.29$ ,  $p = 0.001$ ), whereas those from University 3 show a 0.28-unit decrease ( $\beta = -0.28$ ,  $p = 0.001$ ), both in comparison to University 1. Of all demographic factors, university affiliation accounts for 24.79% of the total variance in academic resilience, while sex, year level, and unit load individually account for less than 1% of the variance.

**Table 2:** Comparative analyses of the nursing students academic resilience scores among the participants according to demographic characteristics (N = 988)

	Dimensions of nursing students academic resilience <sup>a</sup>						Overall resilience
	Optimism	Communication	Self-esteem	Self-awareness	Trustworthiness	Self-regulation	
<b>Sex</b>							
Female	55.24 (13.29)	54.92 (12.59)	59.56 (9.50)	66.86 (12.39)	51.61 (11.24)	53.79 (12.76)	56.60 (9.92)
Male	56.04 (11.32)	55.81 (11.14)	56.94 (13.23)	56.94 (12.68)	52.01 (15.98)	50.77 (19.52)	54.66 (11.93)
<i>p</i> -value (Two-tailed)	0.364	0.291	0.001**	0.001**	0.648	0.004**	0.008**
<b>Year level</b>							
Second year	55.85 (12.79)	55.79 (12.30)	59.07 (11.01)	63.74 (13.20)	52.37 (13.11)	53.39 (15.10)	56.42 (10.66)
Third year	56.54 (12.77)	56.51 (12.22)	59.37 (10.94)	63.87 (13.01)	52.52 (13.17)	54.27 (15.36)	56.95 (10.63)
Fourth year	54.07 (12.54)	53.30 (11.82)	57.89 (10.51)	63.97 (13.66)	50.36 (12.19)	51.01 (14.90)	54.71 (10.40)
<i>p</i> -value (Two-tailed)	0.031*	0.001**	0.168	0.978	0.051	0.014*	0.015*
<b>Units enrolled in current semester</b>							
<40% of the offered units	56.43 (11.65)	56.96 (11.34)	61.25 (8.42)	67.02 (9.56)	53.93 (12.18)	55.71 (11.90)	58.18 (8.23)
>40% of the offered units	55.31 (12.49)	54.59 (11.98)	57.94 (11.26)	62.66 (13.94)	50.94 (12.34)	51.19 (15.82)	55.14 (10.78)
100% of the offered units	55.43 (12.89)	55.16 (12.30)	58.73 (10.90)	63.86 (13.39)	51.71 (13.02)	53.02 (15.26)	56.02 (10.73)
<i>p</i> -value (Two-tailed)	0.807	0.383	0.095	0.067	0.257	0.095	0.127
<b>University</b>							
University 1	60.10 (11.43)	54.90 (10.89)	59.42 (9.29)	65.39 (12.12)	52.08 (11.04)	50.28 (13.29)	56.73 (8.32)
University 2	66.64 (6.90)	64.27 (10.50)	60.53 (13.36)	66.80 (9.32)	61.47 (11.59)	63.18 (15.46)	63.88 (9.59)
University 3	47.07 (10.48)	49.46 (10.34)	57.20 (10.03)	60.70 (15.68)	44.85 (9.89)	47.44 (13.34)	50.66 (9.23)
University 4	55.91 (10.88)	56.18 (11.45)	59.46 (9.33)	65.93 (11.12)	53.96 (12.44)	53.40 (12.87)	57.03 (9.26)
<i>p</i> -value (Two-tailed)	0.001**	0.001**	0.001**	0.001**	0.001**	0.001**	0.001**

a: Comparative analyses for the test statistic were conducted using independent *t*-test or one-way ANOVA; \*: Significant at 0.05; \*\*: Significant at 0.01

**Table 3:** Univariate linear regression analyses of the association of demographic characteristics with overall nursing students academic resilience (N = 988)

Demographic characteristics	Overall nursing students academic resilience			R2
	Beta coefficient	Standard error	<i>p</i> -value (Two-tailed)	
Sex (Male)	-0.08	0.73	0.008**	0.71%
Year level				0.85%
Second year	Referent	-	-	
Third year	0.02	0.84	0.526	
Fourth year	-0.08	0.84	0.044*	
Units enrolled in current semester				0.42%
<40% of the offered units	Referent	-	-	
>40% of the offered units	-0.11	1.49	0.042*	
100% of the offered units	-0.09	1.32	0.102	
University				24.79%
University 1	Referent	-	-	
University 2	0.29	0.96	0.001**	
University 3	-0.28	0.89	0.001**	
University 4	0.01	1.03	0.772	

\*: Significant at 0.05; \*\*: Significant at 0.01

## 5. Discussion

The purpose of this research is to explore the academic resilience of Saudi nursing students. The majority of the participants in our study are females, reinforcing the concept that nursing is a traditionally

female-dominated profession (Mao et al., 2021). This may not be a significant concern in most cases, but our analysis demonstrates that third-year students participate in research at significantly higher rates than lower-year-level students. For example, (Fooladi et al., 2022; Song et al., 2014). The highest

mark attained by the vast majority of participants was a B or B+, and over half of all participants achieved one of these grades. This result suggested that most participants are deemed intellectually exceptional, which has consequences for their academic resilience and the significance of positive mental health in the context of their studies. The mark a student earns is indicative of not only his or her academic success but also of his or her ability to apply effective coping and disposition in life (Berdida et al., 2023; Doggrell, 2020).

On the Nursing Student Academic Resilience Inventory (NSARI), the participants averaged 3.23 out of a possible 4.0, with a standard deviation of 0.44. The high level of academic resilience is the result of several factors. Students' motivation and ability to make good use of available academic materials also play a role. Students' well-being depends on many factors beyond their schoolwork, including their relationships with family and friends and their extracurricular activities. The Evidence-Based Nursing Blog, "*Student Life: One Nursing Student's Perspective*," states that intentional conduct is significantly linked to feelings of contentment and fulfillment. For instance, various measures of well-being, adaptation, and happiness are positively correlated with objectives connected to self-improvement and development, whereas deterrent tendencies are correlated with a number of stresses (Hwang and Kim, 2022). Affluent teenagers, according to Travers et al. (2013), get a deeper understanding of how goal orientation mediates the connection between the school's motivational climate and their development as individuals. They found that these two elements work together to help students comprehend why resilience is crucial for triumphing over academic difficulties (Travers et al., 2013).

When a person's mental health is strong, they are able to enjoy life to the fullest. Students who are mentally well are more likely to get the most out of the many learning and extracurricular opportunities available to them. Students in the best of mental health are resilient enough to weather the storms of university life. According to McDermott et al. (2021), symptoms of depression and anxiety are similarly seen as qualities that negatively impact the academic success of college students (McDermott et al., 2021). Using conditional process modeling, the relationships between resilience and academic distress components and positive thinking with depression, social belonging, and happiness have been found to be potential mediators. In addition, evaluations of the campus environment were thought to act as moderators of these mediating effects (Mcdermott et al., 2020).

The onset of the COVID-19 pandemic made conditions more difficult for nursing students and their educational pursuits. Researchers found that teachers and professors were caught off guard by the frequency with which nursing students reported experiencing mental health problems like PTSD, melancholy, and anxiety during the epidemic. As a

result, there was never a widespread adoption of online mental health counseling (Gao et al., 2021). The study also found a considerable rise in stress and anxiety among Saudi nursing students based on responses to the measures utilized; however, this increase was confined and had minor or no influence on the students. In Saudi Arabia, the health ministry is prepared for the physical and psychological impacts of the pandemic on students and non-students due to the proactive actions of nurse educators in nursing schools (Alshammari and Alboliteh, 2022).

### 5.1. Limitations

There would be caveats to this study, even with a huge sample size and multiple dimensions. It is difficult to generalize the results to other health-linked professionals. It would have been ideal if more medical and healthcare students were involved. Second, a modeling approach would have been used in the design instead of traditional statistical methods like correlation and regression analysis to ascertain the link more precisely between resilience and healthy mental states. Finally, the difficulty of gathering information due to the pandemic. If the data were collected in person over the whole data collection period, a more detailed description of the study protocol processes would have been ideal.

### 5.2. Recommendation

The findings of this research suggest that nursing schools should adopt innovative methods of evaluating the emotional well-being of their students. This would allow for the timelier implementation of appropriate management, decreasing the likelihood of the situation escalating. Students need help boosting their positive mental health and ability to adapt to academic difficulties, as nursing school is one of the most challenging programs of study in higher education. Despite the small sample size of this study, a similar investigation may be conducted at other universities in the Kingdom of Saudi Arabia, the Middle East, and elsewhere in the world, and not just with nursing students but with students of various academic backgrounds.

### 6. Conclusion

The COVID-19 pandemic has exerted an unparalleled influence on the mental health of nursing students, significantly altering their educational landscape with the abrupt transition to online learning. This shift from traditional classroom settings has had a profound global impact, particularly on student life. The study reveals that both gender and GPA play crucial roles in shaping the academic resilience and psychological well-being of nursing students. Notably, students of both

genders encounter distinct challenges in maintaining academic motivation. A higher GPA, on the other hand, is associated with increased optimism and resilience. This research underscores the remarkable resilience and perseverance exhibited by nursing students in overcoming these challenges, a testament to their adaptability and mental strength. These attributes are evident in their response to the adversities posed by the pandemic, both prior to and following its onset. The findings highlight the need for targeted support mechanisms and educational strategies to bolster mental health and academic resilience among nursing students, ensuring their well-being and academic success in such unprecedented times.

## Compliance with ethical standards

### Ethical considerations

The university ethical committee gave their consent to this study after reviewing the paperwork and Arabic translations that were submitted. The online survey's first portion serves as the consent form. The title, goals, outcomes, and potential hazards of the study are all detailed. Furthermore, the consent form made it clear that no one was obligated to fill it out or send it back if they didn't want to. Participants' implied consent to participate is shown by their completion and return of the online form.

### Conflict of interest

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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