Saudi nursing students' academic resilience and positive mental health during the COVID-19 pandemic

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A B S T R A C T

This manuscript addresses the understudied area of academic resilience and positive mental health among Saudi Arabian nursing students. The aim was to elucidate the relationship and predictive factors between demographic characteristics and both academic resilience and positive mental health in the midst of the COVID-19 pandemic. Using a descriptive-correlational and cross-sectional methodology, the study collected data from 1413 nursing students from four government universities in Saudi Arabia using two self-report instruments. Analytical methods included Pearson correlation and linear regression analysis. Results showed that gender and grade point average (GPA) were weakly correlated with students' academic resilience and positive mental health. Notably, these factors were significant predictors of academic resilience and mental well-being in this cohort. The research highlights gender and GPA as critical factors influencing nursing students' ability to cope with academic challenges, potentially extending beyond the pandemic period. This study contributes to a deeper understanding of the dynamics that shape nursing students' academic and psychological resilience during unprecedented times.

1. Introduction

Resilience is the process and consequence of adjusting effectively to stressful or difficult personal experiences, mainly through psychological, affective, and psychosocial flexibility and adaptation to overt and covert needs (Wu et al., 2013). In addition, resilience is the capacity to recover quickly from change, difficult circumstances, mental illness, or stress. It entails a sense of adaptability and the ability to quickly return to one's initial state after being devastated or overwhelmed. It is a personal characteristic that enables one to resolve and adjust effectively to unfavorable situations. The ability to maintain one's healthy development and cope with difficult situations are all part of it, even though it can be defined as both mastery and mental durability (Yıldırım et al., 2021). Academic resilience refers to a student's ability to perform well despite a disadvantaged background (Berdida and Grande, 2022b). Although most studies utilizing large-scale

international assessment (ILSA) data defined academic resilience based on two criteria, academic profile, and accomplishment, their theories, models, and explanations varied significantly (Ye et al., 2021; Yildirim et al., 2013).

When people are in positive mental health, they have a high degree of self-confidence and can play an essential role in their communities. Those who are emotionally stable are less likely to suffer clinical depression or other physical ailments. Improving one's overall mental health is the most effective method for mitigating anxiety (Grande et al., 2021b; Gruppen et al., 2012).

The regular nursing program (RNP) and the bridging nursing program are the two nursing programs offered in Saudi Arabia (BNP). Since the program's inception, four years of academic study have been followed by a year of internship. The scientific track is the focus of the first two semesters of the RNP. English language proficiency, general science, and communication and learning skills are all provided to students. A nursing bachelor's degree requires the completion of these courses. General nursing science courses are introduced in the second and third years, while specialized nursing courses like critical and emergency nursing care and geriatric nursing care are taught in the fourth year (Aljohani, 2020). The academic resilience of nursing students was tested during the COVID-19 pandemic,

as their ability to overcome problems and adversity amid the pandemic and the lockdowns implemented all added to the burden (Berdida et al., 2023). During the pandemic, the mode of instruction shifted from face-to-face to virtual online. This has caused confusion and difficulties among students, particularly those who lack stable internet connectivity, technical resources such as computers or laptops, and the burden of recalling the online mode learning process (Grande et al., 2021a).

2. Background

People who can overcome challenges amidst encountering them exhibit a mental trait known as resilience. The ability to persevere in adversity is a valuable trait, and resilience manifests this quality. In this light, the concept of academic resilience is helpful because it puts the resilience construct in the context of a student's greater likelihood of academic success in the face of obstacles (Cassidy, 2016). Burnout among academic researchers is expected to last for a while, according to experts in the field of higher education, as universities continue to deal with the financial consequences of repeated closures and students struggle to continue their studies in the face of the pandemic (Gewin, 2021). Resilience is universally regarded as a strength or asset, a desirable and advantageous quality, trait, or process likely to influence an individual's performance positively, success, and wellness (Cassidy, 2016).

An approach to sustaining academic resilience is intrinsically asset-oriented, intense, and purposeful in its approach to students' responses to academic challenges. The benefits of academic resilience are demonstrated by studies that identify resilience as a significant predictor of coping at university or college (Cassidy, 2016). Teixeira et al. (2022) argued that students with excellent positive mental health knowledge were more psychologically vulnerable. In addition, knowledge of mental health can be demonstrated by identifying factors that influence mental health and the prevalence of problems. This recognition may have led to the perception that students are fragile and susceptible to mental health issues.

Furthermore, a lower psychological vulnerability is associated with a greater awareness of resources to mobilize when addressing mental health. Therefore, university students with a deeper understanding of mental health are better equipped to navigate life-cycle transitions, making them less psychologically vulnerable (Teixeira et al., 2015; Teixeira et al., 2022). Positivity in one's mental health (psychological well-being) is a valuable asset and fundamental to overall wellness. Additionally, it contributes to one's health and ability to perform daily tasks. Positive mental health focuses on the importance of the individual's mental resources (e.g., the ability to overcome adversities), opportunities to influence their own life, optimism and a sense of control over their own life, satisfying social relationships, and a positive self-image and positive attitude to their personal development. Students in the nursing field often find that strengthening their mental health and academic resilience is the most critical factor in their overall academic success (Alshammari and Alboliteeh, 2022).

Hence, this study aims to determine the relationship between the demographic profile of nursing students and their responses to the academic resilience scale and positive mental health scale. In addition, we examined the variables that predicted their academic resilience and positive mental health.

2.1. Theoretical underpinning

We grounded our research in the theory of resilience developed by Polk (1997). Polk (1997) is the first nurse theorist to attempt to include resilience in a nursing conceptual model and theory. Notably, Polk's theory of resilience provides answers about a specific nursing phenomenon but does not encompass the entire discipline and is classified as a middle-range theory. Polk's theory of resilience is not limited to a single phenomenon but serves as a framework for simplifying complex nursing scenarios (Polk, 1997).

According to Polk (1997), resilience is "the capacity to transform adversity into a learning opportunity and continue." Nurses can build the resilience necessary to cope with stress and adversity through exposure to and participation in meaningful life experiences (Polk, 1997). Polk's (1997) theory recognized four fundamental types of resiliency: behavioral, interpersonal, environmental, and theoretical (Polk, 1997). The attributional pattern includes resilience's physical and psychosocial components. Emotional well-being, mental clarity, and robust physical health are fundamental types of resilience. Due to its emphasis on relationships, the interpersonal pattern can be considered a pattern of interpersonal interaction. The situational pattern reevaluates the concept of resilience from the perspective of the circumstance and the person's ability to cope with it (Polk, 1997).

3. Methods

3.1. Research design

This study utilized a descriptive cross-sectional design of the relationship between nursing students' academic resilience and positive mental health. We also identified nursing students' positive mental health and academic resilience predictors. STROBE guidelines were followed in reporting this study.

3.2. Study setting

Our study was conducted in Saudi Arabia with a nursing program in four state universities with baccalaureate nursing programs. University 1 was established in 2005, and the nursing college in 2010.

The university is located in the north-central region. University 2 was established in 2006 in northwestern Saudi Arabia near the Jordanian border. Its nursing department was established in 2009 under the College of Applied Sciences. University 3 is a public university in Al Ahsa, Saudi Arabia. It was founded in 1975 in the city of Hofuf. University 4 in southwestern Saudi Arabia is close to the Yemeni border. In 2006, the government elevated the institution from a community college to a university.

3.3. Sampling and participants

Total enumeration sampling, also known as census, was used for this study's sample selection. From March 10, 2022, to August 3, 2022, data collection occurred during the second semester of the academic year 2021-2022 and the first semester of the academic year 2022-2023. A total of 1700 Google online survey forms were distributed, of which 1550 were returned (response rate: 91%). Following a thorough evaluation for errors and completeness, 1413 of the online forms received were complete, error-free, and thus eligible for statistical analysis. Participants were selected based on the inclusion criteria that they were enrolled in any of the four study settings during the academic years 2021-2022 and 2022-2023 and belonged to any year level from the second to fourth year. Both genders were included. Students who were in their fifth or internship year were omitted.

3.4. Instruments

Our study utilized two psychometrically validated scales. The first instrument is the Academic Resilience Scale (ARS-30), created by Cassidy (2016). The objective of the ARS-30 was to assess academic resilience based on student responses to academic adversity. Scale components thus provide a sample of cognitive-affective and behavioral reactions to adversity that are expressed both positively and negatively and are derived from literature on self-efficacy, self-regulated learning, and personal psychological resilience. Participants responded to the 30 scale items on a 5-point Likert scale ranging from likely (1) to unlikely (5). Exploratory factor analysis was used to examine the factor structure of the ARS-30, and three factors were found (Cassidy, 2016). The first and most significant characteristic is persistence, contemplation, and adaptive help-seeking. The emerging components, which also represent self-regulation and self-efficacy and are comparable to those previously described in resilience assessment studies, accounted for 42.4% of the variance in academic resilience scores. Perseverance was the most critical component, accounting for 27% of the variance. Negative affect and emotional response accounted for 5.5% of the variance, followed by reflecting and adaptive help-seeking, which accounted for 9.1% of the variance. The instrument supported the internal consistency with a Cronbach's alpha of 0.90, above thresholds typically regarded as acceptable (Cassidy, 2016). In this study, the instrument's alpha was 0.93.

The second instrument, the positive mental health questionnaire (PHMQ), was developed by Roldán-Merino et al. (2017). It consists of 39 items distributed across six factors. Factor 1 personal satisfaction, with eight items. Factor 2 is the prosocial attitude with five items. Factor 3 is self-control with five items. Factor 4, autonomy with five items. Factor 5 is problem-solving and self-actualization, with nine items. Factor 6 is interpersonal relationship skills, with seven items. The Cronbach's alpha coefficient for four of the six subscales or dimensions was good (>0.70) and varied from 0.54 to 0.79. while the overall PMHQ's internal consistency got an alpha of 0.89, indicating excellent internal consistency for the 39-item PMHQ (Roldán-Merino et al., 2017). For this study, Cronbach's alpha was 0.92.

Pilot testing was conducted among 30 nursing students. The participants were excluded from the final participants. Two language experts subjected the original instruments to forward-backward translation (English to Arabic, then Arabic to English). They were validated by three native Arab speakers who were faculty members at one of the colleges in the study setting. ARS-30 and PMHQ yielded Cronbach's alpha of 0.93 and 0.92. Thus, indicating high reliability.

3.5. Data analysis

Data was encoded using MS Excel, and the statistical analyses were conducted using STATA ver. 16.0 software. Descriptive statistics were used to summarize the demographic profiles of the respondents and their responses in ARS-30 and PMHQ. For categorical variables, frequency and proportion were used, while mean and standard deviation were utilized for continuous variables. Pearson correlation was used to determine the correlation of the demographic profile variables with ARS-30 and PMHQ. In contrast, linear regression analysis was used in the multivariable data analysis to determine predictors of ARS-30 and PMHQ. The level of significance was set at 0.05.

4. Results

A total of 1,413 participants were included in the study. Table 1 presents the distribution of participants according to demographic profiles. Almost two-thirds (68.01%) of the participants are females, and almost one-third (31.99%) are males. There were 396 (28.03%) second years, 523 (37.01%) third years, and 494 (34.96%) fourth years. As for their grade point average (GPA), nearly 20% and 30% of the participants received D+/D and C+/C-, respectively, nearly half of the participants (47.84%) received B+/B-, and the remaining participants received A+/A-. Lastly, three-fourths of

the participants are currently enrolled in 100% of the units for their program, 17.41% are enrolled in more than 40% of their units, and 8.63% are enrolled in less than 40% of the units.

Table 1: Demographic profile of participants (n = 1,413)

Variable	Frequency	Percentage
Gender		
Male	452	31.99
Female	961	68.01
Year level		
Second year	396	28.03
Third year	523	37.01
Fourth-year	494	34.96
Grade point average		
D+/D-	268	18.97
C+/C-	408	28.87
B+/B-	676	47.84
A+/A-	61	4.32
Units enrolled in the current semester		
Less than 50% of offered units	122	8.63
More than 50% of offered units	246	17.41
100% of offered units	1,045	73.96

The mean score obtained by the respondents in the ARS-30 was 3.23 with a standard deviation of 0.44, while their mean score in the PMHQ was 3.25 with a standard deviation of 0.43 (Table 2). The correlation between the different demographic variables with the respondents' ARS-30 and PMHQ mean scores is shown in Table 3. The nursing students' gender was weakly correlated with ARS-30 (r = 0.1253, p-value = <0.0001). Similarly, the nursing students' gender was also weakly correlated with PMHQ (r = 0.1228, p-value = <0.0001). Also, GPA was weakly correlated with both ARS-30 (r = -0.1763, p-value = <0.0001) and PMHQ (r = -0.1932, p-value = <0.0001).

Table 4 shows the regression model to examine the predictive role of the research variables (year, gender, GPA, and units enrolled in the current semester) with the ARS-30 and PMHQ. The resulting linear regression models could explain 4.23% of the variability in the ARS-30 (R^2= 0.0423) and 4.76% for the PMHQ (R^2= 0.0476). Among the variables, gender and GPA were significant predictors of ARS-30 (p-value = <0.0001). Similarly, gender and GPA were also significant predictors of PMHQ (p-value = <0.0001).

5. Discussion

Our research investigated the academic resilience of nursing students in Saudi Arabia and the relationship between their positive mental health and academic resilience. The majority of participants in our study are female, indicating that nursing is a female-dominated profession (Mao et al., 2021). While this may not be a problem in most cases, our research demonstrates that third-year students are significantly more involved in research studies than students in other year levels (Fooladi et al., 2022; Song et al., 2014). Nearly half of the participants received a grade of B or B+, the highest grade obtained by most participants. This indicated that most participants are considered academically exceptional, which has implications for their academic resilience and the importance of positive mental health in their studies. A student's ability to effectively employ effective coping and disposition in life and academic performance can be inferred from the grade he or she receives (Berdida, 2023; Doggrell, 2020).

Table 2: Mean and standard deviation of nursing students' academic resilience scale (ARS-30) and positive mental health questionnaire (PMHQ)

	Mean±SD	Max	Min
Academic Resilience Scale (ARS-30)	3.23±0.44	4	2.5
Positive Mental Health Questionnaire (PMHQ)	3.25±0.43	4	2.56

Table 3: Correlation of the different variables with nursing students' academic resilience scale (ARS-30) and positive mental health questionnaire (PMHQ)

Variables	ARS-30		PMHQ	
	r	p-value	r	p-value
Gender	0.1253	<0.0001*	0.1228	<0.0001*
Year level	-0.0298	0.2626	-0.0302	0.2570
Grade point average	-0.1763	<0.0001*	-0.1932	<0.0001*
Units enrolled in the current semester	-0.0108	0.6843	-0.0104	0.6970

*: Significant: <0.05, Not significant: >0.05

Table 4: Predictors of academic resilience scale (ARS-30) and positive mental health questionnaire (PMHQ)

	Variables	Unstandardized β	Standardized β	p-value	95% Confidence interval for β		Adjusted R^2	R^2
					Lower limit	Upper limit		
ARS-30	Gender	0.097	0.103	<0.0001*	0.048	0.145		
	Year level	-0.015	-0.027	0.306	-0.043	0.014	0.0396	0.0423
	Grade point average	-0.084	-0.161	<0.0001*	-0.111	-0.057		
	Units enrolled in the current semester	-0.012	-0.017	0.506	-0.048	0.023		
PMHQ	Gender	0.090	0.098	<0.0001*	0.043	0.138		
	Year level	-0.014	-0.027	0.307	-0.042	0.013	0.0449	0.0476
	Grade point average	-0.092	-0.179	<0.0001*	-0.118	-0.065		
	Units enrolled in the current semester	-0.011	-0.017	0.517	-0.046	0.023		

Linear regression analysis; *: Significant: <0.05, Not significant: >0.05

The mean score obtained by the respondents in the ARS-30 was 3.23 with a standard deviation of 0.44, while their mean score in the PMHQ was 3.25 with a standard deviation of 0.43. There are numerous causes for the high academic resilience score achieved. The participant's commitment to their studies and effective use of university resources plays a role. In addition to academics, other aspects of their lives, such as family and social interaction with friends outside of school, contribute to their happiness (Berdida and Grande, 2022b). There is also a meaningful relationship between behavioral intentions and happiness and well-being. For instance, goals related to self-improvement and advancement are positively associated with several metrics of well-being, adaptation, and overall satisfaction.

In contrast, deterrence tendencies are associated with various stressors (Hwang and Kim, 2022). As Travers et al. (2013) asserted, affluent adolescents, tend to learn more about the role of goal orientation in mediating the relationship between school motivational climate and adolescent adjustment. They have discovered the effective interaction between these two factors in understanding the significance of resilience in overcoming the challenges of schooling (Travers et al., 2013).

Positive mental health enables the individual to take delight in all desired activities. Students participate in various academic and extracurricular activities, which they might benefit from if they have a healthy mental state (Berdida et al., 2023). Despite the challenges of academic life, students with optimum mental health can overcome the difficulty. McDermott et al. (2021) argued that depression and anxiety are similarly seen as characteristics that adversely affect college students' achievement. Depression, belonging, and happiness were examined as potential mediators of the correlations between resilience and academic distress factors and positive thinking using conditional process modeling. In addition, assessments of the campus milieu were considered possible modifiers of these mediation effects. The results suggested that decreases mainly explained the educational benefits of resilience to positive thinking among nursing students with depression but that this effect was most significant for nursing students with poor campus climate milieu and harmful environmental factors (Mcdermott et al., 2020).

The emergence of the COVID-19 pandemic created an environment more challenging for nursing students and their learning processes. Among the mental health issues nursing students experienced during the pandemic, such as PTSD, depression, and anxiety, it was revealed that academics and educators never anticipated their prevalence. Correspondingly, resilience is a protective factor that mediates between COVID-19 anxiety, academic stress, and the quality of life of nursing students (Berdida and Grande, 2022a). Therefore, online mental health counseling was never implemented (Gao et al., 2021). Based on the responses to the instruments employed, our findings indicate a considerable increase in the incidences of stress and anxiety among Saudi nursing students; however, it remained under control and had moderate or no impact on the students. The positive approaches of nurse educators in Saudi Arabia nursing schools, the availability of counseling sessions and centers on university campuses, and the health ministry's readiness for both the physical and psychological impact of the pandemic on students and non-students can all play a role (Alshammari and Alboliteeh, 2022).

5.1. Limitations

Although our study had many participants and was multidimensional, it would still have limitations. Comparing the responses to those of other health allied workers is a limitation. It would have been preferable if other students in the health and medicine program had participated. Second, rather than relying solely on correlation and regression analysis, the design would have employed a modeling approach to determine further a hypothesized relationship between resilience and positive mental health among participants. And lastly, the impediment of the pandemic, especially in the data collection. If face-to-face data collection had been permitted for the whole data collection period, we could have offered a more precise explanation of the study protocol procedures.

5.2. Recommendations

Our study recommends implementing new approaches for assessing nursing students' mental health while facing academic and related challenges. This would ensure that adequate management could be applied significantly earlier to avoid the circumstances from worsening. Nursing school is one of the most challenging programs of study in higher education. Students require support to enhance their positive mental health and their ability to respond adaptively to these academic obstacles. The same research might be carried out in different universities in the Kingdom of Saudi Arabia, the Middle East, and other parts of the world, not just with nursing students but with students from all disciplines, notwithstanding the number of participants in our study.

6. Conclusion

The psychological influence of COVID-19 on nursing students is unprecedented. The global impact is overwhelming, especially for students who must adjust to a new academic environment brought about by the abrupt shift to online learning, which is far removed from the traditional classroom setting. Gender and grade point average (GPA) are determinants of nursing students' academic resilience and mental health. The academic

resilience of nursing students is affected in different ways, regardless of whether they are male or female. Conversely, the GPA is a crucial component of positive thinking and resiliency. These two characteristics are demonstrated in the nursing student's capacity to overcome academic obstacles during and maybe after the pandemic.

Compliance with ethical standards

Ethical considerations

After obtaining the necessary documentation and Arabic translations, the University of Ha'il ethics committee approved this study (Approval No./date: H-2020-257/December 29, 2020). The consent form is contained in the first section of the online survey. It is clearly stated in the form the title, purpose, benefits, and risks associated with the study. In addition, the consent form specified that participants are not required to participate and need not return the form if they choose not to. If they complete the online form and return it to the sender, this signifies their implied consent to participate.

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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