Original Research Article

Stress and Resilience of Nursing Students in Clinical Training During the COVID-19 Pandemic: Palestinian Perspective

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Abstract

Introduction: Stress reduces nursing students' capacity to think critically, impedes decision-making, and eventually lowers academic performance and limits success. The circumstances surrounding the COVID-19 outbreak drove students into new virtual learning settings, adding stress to their academic responsibilities.

Objectives: The purpose of this study was to assess the perceived stress and resilience among nursing students in clinical training during the COVID-19 pandemic.

Method: A cross-sectional study was conducted on 315 students studying nursing. Data collection utilized the Perceived Stress Scale and the Connor–Davidson Resilience Scale.

Results: The analysis revealed that the stress score mean was 75.2 ± 6.6 and the resilience score mean was 26.0 ± 3.4. Also, there was a weak negative association between nursing students' stress and their resilience ($p < 0.05$). Additionally, the results indicated statistically significant differences between stress and gender, study year level, and age ($p < 0.05$).

Conclusion: Stress was high and resilience was moderate during the COVID-19 pandemic among nursing students.

Keywords
stress, resilience, nursing student, COVID-19

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Introduction

Stress has a variety of causes and has an effect on a student's personal and academic lives. Nursing students had greater levels of stress than undergraduates in other programs (Bartlett et al., 2016, Toqan et al., 2022). Clinical placements, the demanding nature of the curriculum, managing one's personal life with courses of study, and exposure to difficult situations involving grief, death, critical illness, and ethical decisions during clinical practice are all factors that add to nursing students' stress (Mahfouz & Alsahli, 2016; McCarthy et al., 2018; Thomas & Asselin, 2018; Watson et al., 2019). Although there are many personal factors that might cause stress, the clinical setting is the primary external factor of stress for nursing students (McCarthy et al., 2018).

The highest sources of stress among first-year nursing students were the hospital environment and a lack of professional knowledge and skills. The majority of students' education was significantly disrupted by clinical hospital stresses (El-Ashry et al., 2022). Nursing students deal with a range of stressful events, involving interpersonal conflicts with patients and staff, lack of skill, working with patients in pain, working with dying patients, managing various infectious diseases, delivering intimate care to patients, and fear of doing errors in their clinical practice (Aghajari et al., 2018; Eaves & Payne, 2019; Smith & Yang, 2017). In addition, nursing students encounter a variety of individual stresses, including depression, worry, and absence of time to spend with family and friends (Pitt et al., 2014). Stress reduces nursing students' capacity to think critically, impedes decision-making, and eventually lowering the academic performance and limits success (McCarthy et al., 2018).

Nursing students are generally stressed. According to Thomas-Davis et al., stress has an influence on these

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students' relationships, physical health, academic achievement, and mental health (Thomas-Davis et al., 2020). Financial and duties, academic expectations, competing commitments, and clinical practicum are all possible sources of stress for students studying nursing (Stillwell et al., 2017). Furthermore, the mental and emotional health of undergraduate students is thought to have been impaired as a result of the harsh isolation methods applied in reaction to the COVID-19 pandemic (Cao et al., 2020). Resilience, on the other hand, is believed to defend the negative consequences of stress (Reyes et al., 2015).

Resilience is defined as the capability to overcome challenges and instability and develop more power in the face of adversity (McDonald et al., 2013; Smith & Yang, 2017). Resilience can also be defined as the ability of individuals in abnormal situations who have experienced an isolated and probably highly disruptive instance to promote and come back to more stable and healthy levels of physical and psychological functioning, as well as an ability to generate experiences and positive emotions (Herrman et al., 2011; Stephens, 2013). Resilience promotes adaptability and the development of effective coping skills to achieve success at work and in life (Hart et al., 2014; McDonald et al., 2013; Wang et al., 2019).

Since Palestinians already experience a number of stressors on a daily basis, including political and economic stressors and the difficulty of traveling freely between the Palestinian territories due to Israeli occupation restrictions and checkpoints between cities, it is expected that Palestinian students, as well as all Palestinians in general, will experience a number of mental health issues related to the stress of COVID-19. Students will be forced to delay clinical and pay extra as a result (Mahamid & Berte, 2020; Veronese et al., 2021). Therefore, the purpose of the study was to assess the perceived stress and resilience in clinical training among nursing students during the COVID-19 pandemic.

Review of Literature

In academic nursing education, resilience is a key aspect in students' academic accomplishment and success (Beauvais et al., 2014). Instructors can better prepare students for challenges in a learning setting and eventually for nursing practice by incorporating resilience training in the clinical setting (Thomas & Asselin, 2018). Also, resilience paly vital role of as a mediator of holistic health in nursing students (Aryuwat et al., 2023).

Resilience is a dynamic method affected by intrinsic and extrinsic factors, the environment, and consequences; yet, an unpleasant or traumatic event is essential for the progress of resilience (Herrman et al., 2011). First, this occurrence could compromise a person's ability to manage and overcome stress. Second, when a traumatic situation present, it must be understood as either psychological or physical harm. Finally, depending on how they respond to these stresses, people may acquire protective factors that reduce the consequences and unfavorable reactions to risk, resulting in resilience (Rutter, 1987).

The coronavirus infection (COVID-19) was transmitted rapidly over the world, impacting thousands of individuals and causing the deaths of a large number of them. Thus, COVID-19 has been stated a pandemic disease by the World Health Organization (Cucinotta & Vanelli, 2020). Precautions to prevent infection are the best way to protect vulnerable people. The coronavirus poses a substantial risk of mortality due to its rapid spread (Ahorsu et al., 2020; Rezaeetalab et al., 2020).

As a result, schools in Palestine unexpectedly switched from a conventional face-to-face model to a virtual format. The circumstances surrounding the COVID-19 outbreak drove students into new virtual learning settings, adding stress to their academic responsibilities. This switch to a virtual structure has a significant influence on nursing education, specifically on material delivery techniques and the inability to reinforce theoretical information with clinical practice.

Method

A cross-sectional study was conducted in Arab American University University in Palestine. The study used a convenience sample of nursing students currently registered in the nursing program.

Sample and Sampling Method

There are approximately 1500 nursing students at Arab American University. The sample size was calculated using the RaoSoft tool with a 95% confidence level, a 5% margin of error, and a 50% response rate. This study required a convenience sample of 306 students. To account for attrition, 30 more students were recruited, bringing the total sample size to 336.

Inclusion and Exclusion Criteria

All nursing students nurses enrolled in the BSN program were included. Second, third and fourth year were included. Exclusion those who were enrolled in first year as the nursing students started clinical training in the second year.

Research Question

1. What are the stress and resilience levels among nursing students during the COVID-19 pandemic?
2. Is there a correlation between stress and resilience among nursing students?
3. Are there differences in the stress and resilience levels of nursing students based on their demographic characteristics?

Instruments

A questionnaire composed of the following parts:

- Part One: Demographic characteristics includes age, gender, and academic year level of education.
- Part Two: The Perceived Stress Scale (PSS), developed by Sheu et al. (1997) consisted of 29 items on a "Likert-type five-point scale," set into six domains, including "stress of teachers and staff (6 items), stress of patient care (8 items), stress of peer and daily life (4 items), stress of assignments and workload (5 items), stress from the environment (3 items), and stress of lack of professional knowledge and skills (3 items)." The total score ranged from 0 to 116, the lower number indicating a lower amount of stress. Sheu et al. stated a good internal consistency reliability of 0.89, whereas the test-retest reliability one-week stability coefficient was $r = 0.60$. "The content validity index (CVI) was 0.94, which indicated high levels" (Sheu et al., 1997; Sheu et al., 2002).
- Part three: the Connor–Davidson Resilience Scale (CD-RISC), initiated to assess resilience in clinical practice (Connor & Davidson, 2003). The CD-RISC-10 version displays the ability to cope with private problems, changes, pressure, illness, failure, and uncomfortable feelings. "The scale applies a five-point Likert scale ranging from 0 to 4: not true at all (0), rarely true (1), sometimes true (2), often true (3), and true nearly all of the time (4)." Summing the responses yields a total score (0–40), with higher values indicating stronger resilience. The reliability ranged from 0.85 to 0.95 (Connor & Davidson, 2003).

The Data Collection Process

Following approval from the Arab American University, the researcher contacted the nursing school's dean, met with the instructors of the practical training, and explained the goal of the study to them. During practical training between October 2020 and November 2020, the questionnaires were delivered face-to-face to all nursing students. The questionnaires were filled out anonymously. Identifying personal information was not obtained in order to maintain anonymity and confidentiality. When completing the questionnaires, participants wore masks to control for COVID-19.

Table 1. Demographic Characteristics of the Participants ($N = 315$).

Characteristic		*N* (%)	M (SD)
Age			21.5 (1.5)
Gender	Male	135 (42.9)	
	Female	180 (57.1)	
Academic year level	Second year	103 (32.7)	
	Third year	111 (35.2)	
	Fourth year	101 (32.1)	

M = mean; SD = standard deviation.

Ethical Considerations

Ethical approval was taken from the Arab American University. Before completing the questionnaire, a signed informed consent was obtained. The concept of voluntary participation was addressed. It was stated that data would be saved secret and utilized solely for research purposes. Each participant was given a detailed explanation of the study's objectives and methodology, as well as a chance to ask questions.

Data Analysis

Data was statistically analyzed using SPSS version 23. Data were provided as a mean, standard deviation, percentage, and frequency. The Pearson correlation, an independent *t* test, and ANOVA test were used to assess the relationship and differences between the variables.

Results

Sample Description

Three hundred and fifteen students out of 336 nursing students completed the study, with a response rate of 93.8%. The analysis indicated the mean age of the participants was 21.5 ± 1.5 years. The analysis also indicated that more than half of the students, 180 (57.1%), were female. Regarding the academic year level, 111 (35.2%) of them enrolled in the third year level, as seen in Table 1.

The analysis indicated that the stress score mean was 75.2 ± 6.6 (ranging from 0 to 116), which is high. Also, the analysis indicated that the "Stress from assignments and workload" subscale of stress had the highest mean score of 3.1 ± 0.4 and "Stress from a lack of professional knowledge and skills" had the lowest mean score of 2.3 ± 0.4.

Table 2. Stress and Resilience Mean Scores ($N = 315$).

Variable	M (SD)	Range
Stress (29 items)	75.2 (6.6)	0–116
"Stress from taking care of patients"	2.4 (0.4)	0–4
"Stress from assignments and workload"	3.1 (0.4)	0–4
"Stress from lack of professional knowledge and skills"	2.3 (0.6)	0–4
"Stress from the environment"	2.7 (0.5)	0–4
"Stress from peers and daily life"	2.5 (0.4)	0–4
"Stress from teachers and nursing staff"	2.7 (0.4)	0–4
Resilience	26.0 (3.4)	0–40

M = mean; SD = standard deviation.

According to the resilience mean scores, it was 26.0 ± 3.4 (ranging from 0 to 40), which is moderate, as seen in Table 2.

The analysis reported that there was a weak negative correlation between nursing students' stress and their resilience ($p < 0.05$). Also, stress from the environment subscale reported similar results, as seen in Table 3.

The results indicated that there were statistically significant differences between the stress score mean and both gender and academic year level ($p < 0.05$). The results of the Scheffe post hoc test indicated that the second and fourth years were statistically significantly more stressed than the third year ($p > 0.001$). Also, there was a weak negative correlation between the age and stress ($p < 0.05$), as seen in Table 4.

Discussion

Nursing students have faced challenges as a result of the rapid shift in the learning platform, the difficulty of completing clinical experience, and other obstacles caused by the COVID-19 pandemic. Patients expect skilled, confident, and caring nurses to care for them. However, when current and future nurses are fatigued, they are less likely to give compassionate care. The purpose of this study was to examine nursing students' perceived stress and resilience in clinical training during the COVID-19 pandemic.

The current study found that nursing students' perceived stress was high and their resilience was moderate during the COVID-19 pandemic. This finding is consistent with other research that found students to be more stressed as a result of the COVID-19 pandemic (Cao et al., 2020; Medina Fernández et al., 2021; Son et al., 2020). Previous studies additionally indicate that nursing students are more stressed than other students (Jordan et al., 2020; Leroy et al., 2021).

According to resilience, the mean of resilience in this study was similar to the mean of resilience in 194 Indian students, which was 26.31 ± 6.28 (Mathad et al., 2017). At the same time, the current study's findings were higher than those of Turkish nursing students (Bahadir-Yilmaz et al., 2015). However, in comparison to previous studies, resilience in this study was regarded as poor (Beauvais et al., 2014; Chamberlain et al., 2016; Janatolmakan et al., 2021). As a result, the outcomes of this study may be attributed to the stressful academic and clinical setting in Palestine, especially because the data was obtained during the COVID-19 epidemic. As a protective factor, high levels of resilience can help students cope with academic issues and stresses (Darban et al., 2016; Hojat et al., 2015).

Table 3. Correlation of Stress and Resilience ($N = 315$).

Variable	Resilience Pearson's correlation (r)	p value
Stress	−0.113*	0.045
"Stress from taking care of patients"	−0.036	.529
"Stress from assignments and workload"	0.052	.357
"Stress from lack of professional knowledge and skills"	−0.095	.094
"Stress from the environment"	−0.205**	0.001
"Stress from peers and daily life"	−0.006	.918
"Stress from teachers and nursing staff"	−0.102	.071

**Correlation is significant at the 0.01 level (2-tailed).
*Correlation is significant at the 0.05 level (2-tailed).

Also, the current study found that stress is negatively weakly correlated with resilience. This study indicated that stress had a negative influence on nursing students' resilience, which implies that when they were confronted with a stressful circumstance that resulted in a higher degree of perceived stress, the amount of resilience may have decreased. Previous studies have demonstrated that stress, such as changing learning modes, contributes to psychological discomfort (Jordan et al., 2020; Kumar et al., 2021). Consequently, educators and practice instructors must consider how to improve students' coping methods within nursing curriculum and should promote resilience among students to overcome adversities, viewing these challenges as opportunities to learn from, develop power, and proceed on with their life or professional activities (Amsrud et al., 2019; Cleary et al., 2018; Morse et al., 2021). The current study's findings revealed statistically significant variations between stress and gender, academic year level, and age. This conclusion is consistent with a study done among Nigerian medical students during the Coronavirus outbreak, which showed that females had greater stress levels than male students (Idowu et al., 2022). This finding is consistent with a study conducted among African university students by Rakhmanov and Dane, which discovered that girls are more likely than boys to feel psychological distress (Rakhmanov & Dane, 2020).

Additionally, the current study identified no variations in resilience among nursing students based on age, gender, or academic year level. A study conducted in Lebanon indicated gender to be one of the most important variables associated with resilience (Alameddine et al., 2021). Resilience is highly personalized, shown in a variety of ways, and develops in reaction to a stressor, challenge, or adversity (Thomas & Asselin, 2018). Because the change to a full virtual learning environment for nursing students was unexpected and new, students demonstrated comparable resilience.

Limitations of the Study

Given the study's important findings, there are a few limitations to consider. Because the study is cross-sectional, it does not take into consideration the direct influence of stress on resilience. Furthermore, data were collected through a self-

Table 4. Relationship and Differences Between Nurse's Demographic Characteristics and Both Stress and Resilience ($N = 315$).

Socio-demographic characteristic	*N*	Stress			Resilience		
		M (SD)	Test	p value	M (SD)	Test	p value
Gender							
Male	135	74.2(6.7)	t = 2.5	0.013	26.2(3.5)	t = 1.1	.280
Female	180	76.0(6.4)			25.8(3.4)		
Academic year level							
Second year	103	78.9 (3.7)	*F* = 60.1	0.001	25.8(3.5)	*F* = 1.4	0.246
Third year	111	70.7 (6.8)			26.4(3.4)		
Fourth year	101	76.5 (5.8)			25.8(3.1)		
Age			*r* = −.162	0.004		0.065	.253

The mean difference is significant at the 0.05 level.

reported questionnaire based on nursing students' impressions and opinions.

Recommendations and Implications for Clinical Practice

It is vital to keep the stress levels of nursing students under control. Controlling nursing students' stress levels and recognizing potential stress factors associated with the COVID-19 pandemic are thus critical to ensuring students' psychological and physical well-being. It is also critical to preserve patient safety and increase care quality. As a result, successful interventions for nursing students are essential for improving their resilience. More studies are needed to identify the factors influencing the resilience of nursing students.

Conclusion

This study confirmed that nursing students' stress was high and their resilience was moderate during the COVID-19 pandemic. Also, the study confirmed that stress from assignments and workload had the major stress sources of nursing students. Furthermore, resilience indicated negatively weakly correlated with stress. To enhance nursing education, nursing educators, nursing preceptors, and policymakers are encouraged to include the concept of resilience in the nursing curriculum. Before they start their clinical education, particular programs relating to nursing students' intrapersonal characteristics to strengthen resilience should be made available as brief training sessions.

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Declaration of Conflicting Interests

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