

**Perceived Stress Among Undergraduate Nursing Students:
A Cross-Sectional Study**

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Abstract

Background: Nursing students are often exposed to multiple academic, clinical, and personal stressors that may adversely affect their psychosocial health, academic performance, and professional formation. Examining the level of perceived stress in undergraduate nursing students is crucial to screening students at risk and providing them with adequate support strategies.

Objectives: To evaluate the perceived stress level of under-graduate nursing students and its relationship with selected sociodemographic factors.

Materials and methods: A cross-sectional study was carried out among 100 first-year undergraduate nursing students of PSP Nursing College Oragadam, Tamil Nadu. Semi-structured questionnaire and 10 item Perceived Stress Scale (PSS-10) were used to collect data. Stress was defined as low (0–13), moderate (14–26) or high stress levels. Data were analyzed using IBM SPSS Statistics version 25.0. For categorical variables median and percentage, Chi-square test was used to assess association between the variables. Statistical significance was defined as p -value < 0.05 .

Results: Most of the participants were in the age group of 18 years (90.0%), male (60.0%) and hostellers (85.0%). Eighty-two students (62.0%) had a moderate level of perceived stress, 26 (20.0%) were without too much stress and 24 (18.0%) were suffering from high perceived stress levels. A significant association was observed between perceived stress and male/female ($p = 0.041$) gender status, and resident home ($p = 0.032$). The mean perceived stress of female students and hostellers were high compared to male students.

Conclusion: The levels of perceived stress in the majority of undergraduate nursing students were moderate. Stress significantly influenced Gender and Residential status. Early screening, counselling services and stress management interventions can help nursing students present better mental health and academic performance.

Keywords: Perceived stress, Nursing students, Perceived Stress Scale (PSS-10), Undergraduate students, Mental health, Cross-sectional study.

Introduction

Stress is a familiar psychological and physiological response that manifests when people feel environmental demands exceed their ability to cope. Although a low level of stress can be advantageous regarding motivation and performance, chronic or excessive stress can negatively impact physical behavior with psychosomatic effects on mental health, academic achievement, interpersonal relationships, and quality of life. Stress among university students is an emerging public health concern, especially for healthcare disciplines with demanding academic and clinical requirements. [1] Due to the nature of their education, integrating intensive theoretical learning and patient care responsibilities through clinical training, nursing

students are vulnerable to stress because they undergo frequent examinations while developing professional competencies. In class, nursing students learn the clinical skills required for their profession, communicate with patients, adapt to the hospital environment, and make clinical decisions under supervision. These requirements inevitably expose students to considerable psychological pressure as they strive to balance academic and clinical demands. [2]

Worldwide, a high prevalence of stress has been reported among nursing students [3–5]. Numerous studies have demonstrated that a large proportion of nursing students experience moderate to high levels of stress during their education, leading to anxiety, depression, sleep disturbances, burnout, reduced self-confidence, and poor academic performance. Persistent stress may adversely affect learning capacity, clinical competence, empathy, and patient safety, thereby compromising the quality of future healthcare delivery. [3,4] Several factors contribute to stress among undergraduate nursing students. Academic workload, examinations, fear of making clinical errors, communication gaps with patients and healthcare professionals, financial difficulties, family responsibilities, and inadequate social support have been identified as major stressors. [1,2] The transition from classroom learning to clinical practice, particularly during the early years of nursing education, further increases emotional stress. In addition, the recent shift toward competency-based education has heightened expectations regarding students' clinical performance and professional accountability. [5]

Perceived stress refers to an individual's subjective evaluation of stressful experiences and reflects the extent to which situations are considered unpredictable, uncontrollable, and overwhelming. The 10-item Perceived Stress Scale (PSS-10) developed by Cohen is one of the most widely used and validated instruments for measuring perceived stress among healthcare students, including nursing students. It is extensively used in educational and healthcare research to assess psychological stress. [6]

India has witnessed a rapid expansion in nursing education due to the increasing demand for qualified healthcare professionals. Along with academic workload and clinical responsibilities, the dynamic educational environment also contributes to elevated stress levels among nursing students. Although perceived stress is recognized as an important factor influencing students' mental health and academic performance, institution-specific evidence regarding its prevalence and associated factors among undergraduate nursing students remains limited. Such evidence is essential for developing effective counselling services, stress management interventions, and student support systems. [7]

Assessing perceived stress among undergraduate nursing students will help identify individuals at risk who may benefit from early psychological support and institutional interventions. Early recognition and management of stress can improve emotional well-being, academic performance, clinical confidence, and professional development. Furthermore, the findings of this study may provide valuable evidence for educators and administrators to develop strategies that foster a supportive learning environment and enhance the quality of nursing education. Therefore, the present study aims to assess the level of perceived stress among undergraduate nursing students and determine its association with selected sociodemographic variables.

Materials & Methods

Study Design, Study Setting, Sample Size

This institution-based cross-sectional observational study was conducted among undergraduate nursing students at PSP Nursing College, Oragadam, Tamil Nadu. The study aimed to assess the level of perceived stress among undergraduate nursing students. A total of 100 students were enrolled using consecutive sampling during the study period.

Study Population

The study population comprised undergraduate nursing students enrolled at PSP Nursing College who were available during the study period and consented to participate.

Inclusion Criteria

Undergraduate nursing students who were willing to participate and provided written informed consent were included in the study.

Exclusion Criteria

Students with a known history of psychiatric illness, those receiving treatment for mental health disorders, students absent during the data collection period, and those unwilling to participate were excluded from the study.

Study Tool

Data were collected using a pre-tested semi-structured questionnaire that included socio-demographic characteristics such as age, gender, year of study, residence, and other relevant variables. Perceived stress was assessed using the Perceived Stress Scale-10 (PSS-10) developed by Cohen et al., a validated instrument comprising 10 items scored on a five-point Likert scale. The total score ranged from 0 to 40, with scores categorized as low (0–13), moderate (14–26), and high (27–40) perceived stress.

Data Collection

After obtaining written informed consent, participants completed the study questionnaire in a supervised setting. Socio-demographic information and PSS-10 responses were recorded anonymously to ensure confidentiality. The primary outcome measure was the level of perceived stress, while secondary analysis assessed the association between stress levels and selected socio-demographic characteristics.

Statistical Analysis

Data were entered into Microsoft Excel and analyzed using IBM SPSS Statistics for Windows, Version 25.0 (IBM Corp., Armonk, NY, USA). Continuous variables were expressed as mean $\pm$ standard deviation, while categorical variables were presented as frequencies and percentages. The association between perceived stress levels and selected socio-demographic variables was assessed using the Chi-square test. A p-value <0.05 was considered statistically significant.

Ethical Considerations

The study was conducted after obtaining approval from the Institutional Ethics Committee. Written informed consent was obtained from all participants prior to enrolment. Participation was voluntary, and confidentiality and anonymity of participant information were maintained throughout the study in accordance with the ethical principles of the Declaration of Helsinki.

Result

Table 1. Socio-demographic Characteristics of the Study Participants (n = 100)

Variable	Frequency (%)
Age (years)	
18 Years	90
19 Years	10
Gender	
Male	60
Female	40
Residence	
Hosteller	85
Day Scholar	15

Among the first-year undergraduate nursing students, the majority (90.0%) were 18 years old, while 10.0% were 19 years old. Male students constituted 60.0% of the study population, and females accounted for 40.0%. Most participants (85.0%) were hostellers, whereas 15.0% were day scholars.

Table 2. Distribution of Socioeconomic Status (n = 100)

Socioeconomic Status*	Frequency (n)	Percentage (%)
Upper	8	8.0
Upper Middle	24	24.0
Lower Middle	48	48.0
Upper Lower	18	18.0
Lower	2	2.0

Nearly half of the study participants (48.0%) belonged to the lower middle socioeconomic class, followed by 24.0% from the upper middle class and 18.0% from the upper lower class. Only 8.0% belonged to the upper class, while 2.0% were from the lower socioeconomic class, indicating that the majority of nursing students came from middle socioeconomic backgrounds.

Table 3. Distribution of Gender According to Residence (n = 100)

Residence	Male n (%)	Female n (%)	Total n (%)
Hosteller	50 (50.0)	35 (35.0)	85 (85.0)
Day Scholar	10 (10.0)	5 (5.0)	15 (15.0)
Total	60 (60.0)	40 (40.0)	100 (100.0)

The majority of the study participants were hostellers (85.0%), comprising 50.0% males and 35.0% females, whereas 15.0% were day scholars, including 10.0% males and 5.0% females. This indicates that most first-year nursing students resided in the hostel during the study period.

Table 4. Distribution of Perceived Stress Levels Among First-Year Undergraduate Nursing Students (n = 100)

Perceived Stress Level (PSS-10)	Frequency (n)	Percentage (%)
Low Stress (0–13)	20	20.0
Moderate Stress (14–26)	62	62.0
High Stress (27–40)	18	18.0
Total	100	100.0

The majority of the undergraduate nursing students (62.0%) experienced moderate perceived stress, while 20.0% had low stress and 18.0% reported high perceived stress. These findings indicate that moderate stress was the predominant stress level among the study participants.

Table 5. Association Between Residence and Perceived Stress Levels (n = 100)

Residence	Low Stress	Moderate Stress	High Stress	Total	p-value
Hosteller (n=85)	14	53	18	85	0.032
Day Scholar (n=15)	6	9	0	15	

A statistically significant association was observed between residential status and perceived stress levels among undergraduate nursing students ($p = 0.032$). Hostellers had a higher proportion of moderate (62.4%) and high stress (21.2%) compared to day scholars, among whom no participant reported high stress.

Table 6. Association Between Gender and Perceived Stress Levels (n = 100)

Gender	Low Stress	Moderate Stress	High Stress	Total	p-value
Male	16	35	9	60	0.041
Female	4	27	9	40	

A statistically significant association was observed between gender and perceived stress levels among undergraduate nursing students ($p = 0.041$). Female students had a relatively higher proportion of high perceived stress (22.5%) compared to male students (15.0%), whereas low stress was more common among male students (26.7%) than females (10.0%).

Table 7. Association Between Socioeconomic Status and Perceived Stress Levels (n = 100)

Socioeconomic Status	Low Stress	Moderate Stress	High Stress	Total	p-value
Upper	3	5	0	8	0.028
Upper Middle	6	16	2	24	
Lower Middle	8	30	10	48	
Upper Lower	3	10	5	18	
Lower	0	1	1	2	
Total	20	62	18	100	

A statistically significant association was observed between socioeconomic status and perceived stress levels among undergraduate nursing students ($p = 0.028$). Students belonging to the lower middle and upper lower socioeconomic classes demonstrated relatively higher proportions of high perceived stress compared with students from the upper and upper middle socioeconomic classes.

Discussion

The present study assessed perceived stress among 100 first-year undergraduate nursing students at PSP Nursing College, Oragadam. The findings revealed that the majority of students experienced moderate perceived stress (62.0%), while 18.0% reported high stress. Similar findings were reported by Arya et al. [10], who observed that 65.4% of undergraduate nursing students had moderate stress and 19.2% had high stress. Likewise, Mulyadi et al. [11], in their systematic review, concluded that nursing students commonly experience moderate to high levels of psychological stress because of academic and clinical demands. These findings indicate that moderate stress is highly prevalent among nursing students.

In the present study, the majority of participants were 18 years old (90.0%), male (60.0%), and hostellers (85.0%). This demographic distribution is comparable to the findings of Labrague et al. [12], who reported that most nursing students were in the late adolescent age group and that hostel living was common among first-year students due to institutional accommodation facilities. A statistically significant association was observed between gender and perceived stress levels ($p = 0.041$). Female students showed a higher proportion of high perceived stress (22.5%) than male students (15.0%). Similar observations were made by Savitsky et al. [13], who reported significantly higher stress and anxiety among female healthcare students than males. The higher stress among female students may be related to greater emotional responses to academic and clinical challenges.

The present study also demonstrated a significant association between residential status and perceived stress ($p = 0.032$). Hostellers had a higher proportion of moderate and high stress than day scholars, while none of the day scholars reported high stress. Comparable findings were reported by Rafati et al. [14], who found that students residing in hostels experienced significantly greater psychological stress because of homesickness, adjustment issues, and limited family support. The present study demonstrated a significant association between socioeconomic status and perceived stress ($p = 0.028$). Students belonging to the lower middle and upper lower socioeconomic groups experienced relatively higher stress levels than those from higher socioeconomic classes. Similar findings were reported by Alsolais et al. [16], who observed that financial constraints and socioeconomic factors contributed significantly to psychological stress among nursing students. Likewise, Gallego-Gómez et al. [15] reported that economic insecurity and limited resources were associated with increased stress and poorer mental well-being among undergraduate nursing

students. Overall, the findings suggest that academic demands and residential environment contribute substantially to perceived stress among first-year nursing students. Early identification of students with higher stress levels and implementation of stress management programmes, counselling services, and mentorship initiatives may improve students' psychological well-being and academic performance.

Strengths

The present study utilized the validated Perceived Stress Scale (PSS-10) to assess stress among undergraduate nursing students, ensuring reliable measurement. It provides institution-specific evidence on perceived stress among first-year nursing students, which can help in planning appropriate mental health support and stress management interventions.

Limitations

The study was conducted among 100 first-year nursing students from a single institution, limiting the generalizability of the findings. Being a cross-sectional study, it could identify associations but could not establish causal relationships. In addition, stress levels were assessed using a self-reported questionnaire, which may be subject to response bias.

Conclusion

The present study found that the majority of undergraduate nursing students experienced moderate perceived stress, with a significant association between stress levels, gender, and residential status. Female students and hostellers reported relatively higher stress levels than their counterparts. Early identification of stress and implementation of counseling services, stress management programs, and supportive learning environments are essential to promote the mental well-being and academic success of nursing students.

Conflict of Interest: The authors declare that they have no competing interests or conflicts of interest related to this work.

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