

**Perceived Stress and Associated Factors During Objective Structured
Clinical and Practical Examinations among First Year Nursing Students: A
Cross-Sectional Study**

Asghar Khan

BSN Graduate, Eagle College of Health Sciences/College of Nursing Swat
asghar21058@gmail.com

Gulshan Iqbal*

BSN, MSN, Vice Principal, Eagle College of Health Sciences/College of Nursing Swat
gulshaniqbal777@gmail.com

Suleman khan

(BSN, MSN) Assistant Professor, Royal College of Nursing, Swat,
sulemankhan911@gmail.com

Mr. Mazhar

BSN, Lecturer, Eagle College of Health Sciences, College of Nursing, Swat

Ubaidullah

BSN Graduate, Eagle College of Health Sciences, College of Nursing Swat

M Akmal khan

BSN Graduate, Eagle College of Health Sciences, College of Nursing Swat

Osama Umar

BSN Graduate, Eagle College of Health Sciences, College of Nursing Swat

Waheedullah

BSN Graduate, Eagle College of Health Sciences, College of Nursing

Amirullah Mashal khan

BSN Graduate, Eagle College of Health Sciences, College of Nursing

Luqman khan

BSN Graduate, Eagle College of Health Sciences, College of Nursing

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Corresponding E-mails & Authors*:

Gulshan Iqbal
gulshaniqbal777@gmail.com

Abstract

Background: Objective Structured Clinical Examination (OSCE) and Objective Structured Practical Examination (OSPE) are widely used assessment methods in nursing education to evaluate clinical competence in a standardized and objective manner. Despite their effectiveness in assessing practical skills, these examinations are frequently associated with psychological stress among nursing students.

Objective: This study aimed to assess the level of perceived stress and identify factors associated with stress among first-

year nursing students during OSCE/OSPE examinations.

Methods: A cross-sectional descriptive study was conducted among 152 first-year nursing students. Data were collected using a structured questionnaire consisting of demographic variables, perceived stress scores, and factors contributing to stress during OSCE/OSPE examinations. Descriptive statistics, including frequencies, percentages, means, and standard deviations, were used to summarize the data. Chi-square tests were applied to examine associations between perceived stress levels and selected demographic variables.

Results: Participants' ages ranged from 18 to 24 years (Mean = 20.84, SD = 1.612). Most participants were male (80.3%), single (93.4%), and residing off campus (63.2%). The perceived stress score ranged from 1 to 38 (Mean = 18.49, SD = 9.588). Moderate stress was reported by 59.9% of students, and 16.4% reported high stress, while 23.7% experienced low stress. Major stressors included limited time to complete examination

stations, anxiety while waiting for examination turns, and performing clinical skills under observation. A statistically significant association was found between perceived stress and gender ($\chi^2 = 7.21$, $p = 0.027$), with female students reporting higher stress levels. No significant association was observed between stress level and place of residence ($p = 0.816$).

Conclusion: OSCE/OSPE examinations are associated with moderate levels of perceived stress among nursing students. Time pressure, anticipatory anxiety, and social evaluation were identified as major contributors to stress. Structured preparation programs, simulation training, and stress-management interventions may help reduce examination-related stress and improve students' clinical performance.

INTRODUCTION

Objective Structured Clinical Examination (OSCE) and Objective Structured Practical Examination (OSPE) have become essential methods for evaluating clinical competence in nursing and medical education(1). These structured assessment techniques involve a series of stations where students perform specific clinical tasks within a limited time under the supervision of trained evaluators. The primary purpose of OSCE and OSPE is to provide a standardized and objective approach to assessing clinical skills, communication abilities, and problem-solving competencies (2).

Compared with traditional examination methods, OSCE and OSPE offer several advantages, including greater objectivity, reliability, and the ability to assess multiple competencies simultaneously. These assessment methods also promote active learning and encourage students to integrate theoretical knowledge with practical clinical skills(3)(4).

Despite these benefits, OSCE and OSPE examinations are often associated with significant psychological stress among students(5). The structured nature of the examination, strict time limits, unfamiliar clinical scenarios, and the presence of examiners may create anxiety and pressure. Excessive stress can negatively affect students' concentration, decision-making ability, and overall clinical performance.(6)(7).

Previous studies have shown that nursing and medical as well as nursing students frequently report moderate to high levels of stress during OSCE examinations. Commonly reported stressors include time constraints, fear of making mistakes, unfamiliar equipment, and performing clinical tasks in front of peers and examiners(7)(8). Additionally, anticipatory anxiety while waiting for examination stations has been identified as an important contributor to stress.(9)(10).

Understanding the factors associated with examination-related stress is important because excessive stress may negatively influence students' learning outcomes and clinical competence. Educational institutions should therefore identify strategies to minimize stress while maintaining the integrity and effectiveness of clinical assessments.(10)(11).

Although several international studies have investigated OSCE-related stress among healthcare students, limited research has examined OSCE-related stress among nursing students in Pakistan, particularly in Khyber Pakhtunkhwa. Therefore, this study aimed to assess the level of perceived stress and identify factors associated with stress among first-year nursing students undergoing OSCE/OSPE examinations.

Material and Method Used

Study Design

A cross-sectional descriptive study design was used to assess perceived stress levels and associated factors among nursing students during OSCE/OSPE examinations.

Study Setting and Participants

The study was conducted among first-year nursing students who participated in OSCE/OSPE examinations. A total of 152 students participated in the study. Participants were selected using a convenience sampling technique

Population & Sampling

Raosoft (Sample size calculator) was used for determining the sample size, keeping the confidence level at 90% and (1-alpha) which was 152 with 95% confidence level and 5% margin of error, while the total Population was 250 nursing students of first year.

Inclusion and Exclusion Criteria

Inclusion Criteria

First year Nursing students who were currently enrolled in different nursing colleges of district Swat, studying in 2nd semester who have appeared once for OSPE/OSCE exam.

Exclusion Criteria

Students who have appeared for OSPE/OSCE multiple time during previous exams and failed to promote due to NP status.

Students who decline to provide informed consent or withdraw partway through the study.

Data Collection Procedure

Ethical approval was obtained from Institute's ethical committee, adhering to human rights and ensuring informed consent. All data was handled confidentially, with responses

coded and stored securely to protect participants' privacy. Before filling out the questionnaire, informed consent was obtained from each participant and was ensure their anonymity, confidentiality and right to withdraw from the study. Data for the study were collected after obtaining approval of the research proposal from the ECHSCN Undergraduate Committee. A formal letter for data collection was secured from the parent institution, and administrative approval was obtained from the nursing colleges selected through the convenient sampling method. Informed consent was obtained both verbally and in writing from participants who met the inclusion criteria, after which data were collected using an adapted questionnaire. Each participant was provided with the questionnaire along with a cover letter explaining the study's objectives and purpose. To assess the perceived stress levels of participants, the responses were categorized into three levels: low stress (0–13), moderate stress (14–26), and high stress (27–40) based on the scoring criteria

Data Analysis

Data were analyzed using SPSS software version 27.0, which was also utilized for the representation of data. Descriptive statistics, including mean, median, and mode along with standard deviation, were calculated for categorical variables. For highlighting Factors associated with stress frequency and percentages were identified.

Data Collection Instrument

Data were collected using a structured self-administered questionnaire consisting of three sections:

1. Demographic Characteristics

This section included variables such as age, gender, marital status, and place of residence.

2. Perceived Stress Score

Participants reported their perceived stress related to OSCE/OSPE examinations. The total stress score ranged from 1 to 38.

3. Factors Associated with Stress

This section assessed common stressors experienced during OSCE examinations, including:

- Time constraints during examination stations
- Waiting time before the examination
- Anxiety while waiting for examination turns
- Familiarity with simulation mannequins
- Performance anxiety in front of peers
- Performance anxiety in front of examiners
- Perceived preparedness for the examination

Responses were recorded using a Likert-scale ranging from Never to Very Often.

Ethical Considerations

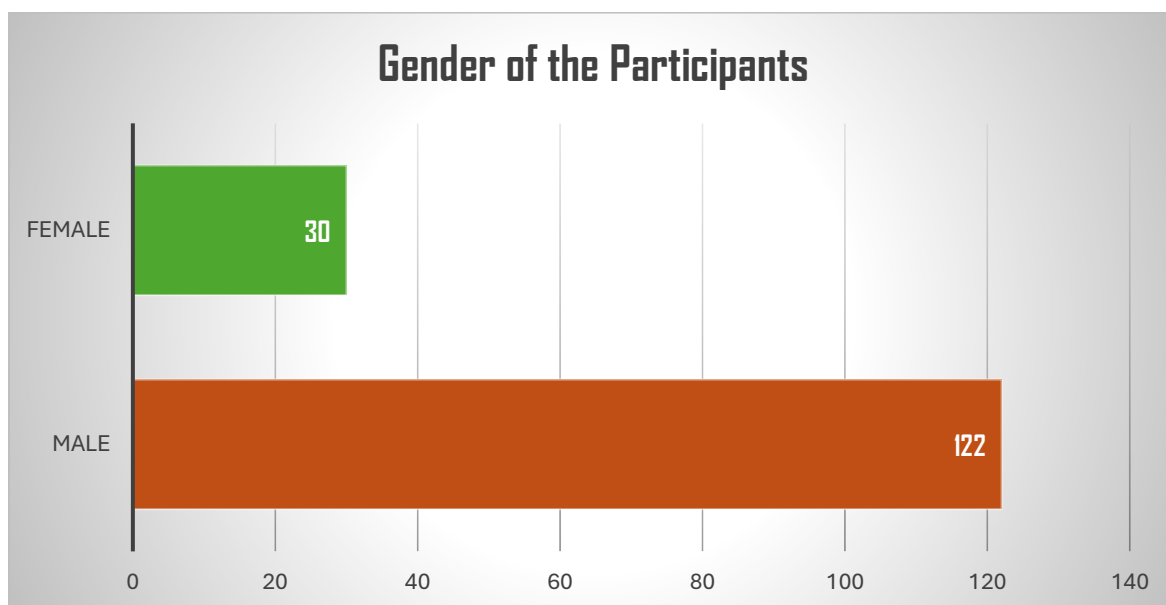
Participation in the study was voluntary. Participants were informed about the purpose of the study, and the confidentiality of the collected information was ensured.

Results

Demographic Characteristics

A total of 152 nursing students participated in the study. The ages of the participants ranged from 18 to 24 years, with a mean age of 20.84 years (SD = 1.612), indicating that most students were young adults in early academic training.

In terms of gender distribution, the majority of participants were male (80.3%), while females constituted 19.7% of the sample. Most students were single (93.4%), and only a small proportion were married (6.6%).



Regarding place of residence, 63.2% of students resided off campus, while 36.8% lived on campus.

Additionally, most participants (84.2%) reported previous exposure to OSCE assessment, whereas 15.8% indicated that they had not previously been assessed using the OSCE method.

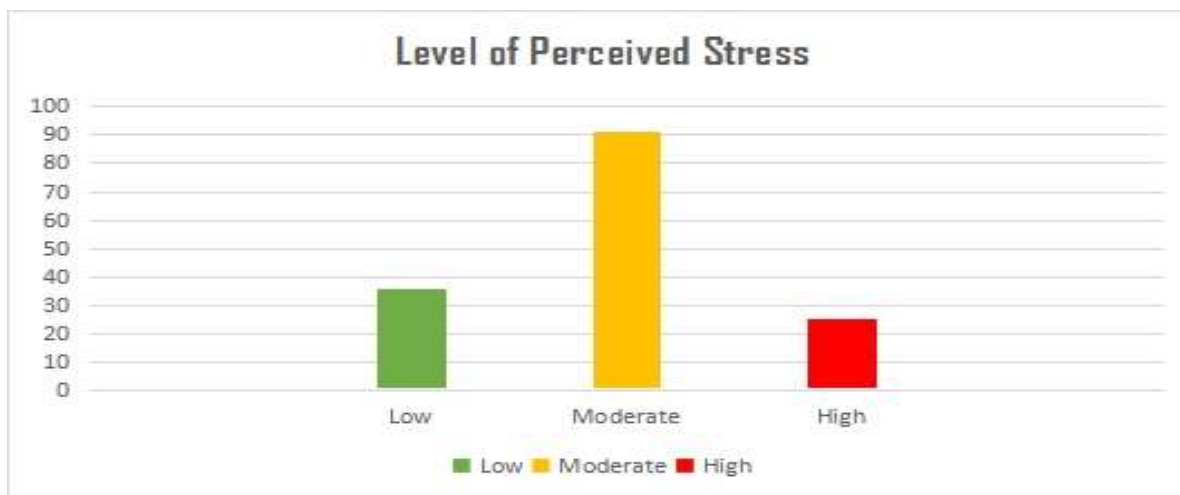
Perceived Stress Levels

The perceived stress scores among participants ranged from 1 to 38, with a mean score of 18.49 (SD = 9.588). These findings indicate considerable variability in stress experiences among nursing students during OSCE/OSPE examinations.

Perceived Stress Score					
	N	Minimum	Maximum	Mean	Std. Deviation
Perceived Stress	152	1	38	18.49	9.588
Valid N (listwise)	152				

The majority of participants reported moderate stress (59.9%), while 23.7% experienced low stress and 16.4% reported high levels of stress.

These results suggest that although most students experience manageable levels of stress, a considerable proportion still report high stress levels during clinical examinations.



Factors Associated with Stress

No.	Factors Causing Stress During OSCE	Never	Almost Never	Sometimes	Fairly Often	Very Often
1	Have you found that there was not enough time to complete your OSCE?	12	20	50	50	20

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2	Have you found the OSCE waiting time in the corridor was too long and stressful?	10	18	55	45	24
3	Have you felt anxious while waiting for your OSCE?	8	15	40	60	29
4	Have you felt that you were well familiar with the simulation manikin used for the OSCE?	20	40	50	30	12
5	Have you felt shy performing in front of the other students during practical sessions?	15	30	50	35	22
6	Have you felt shy performing in front of an evaluator during the OSCE?	10	20	50	40	32
7	Have you found the OSCE environment stressful?	8	12	45	55	32
8	Have you found yourself making mistakes during OSCE that would not normally happen?	5	10	40	60	37
9	Have you had an OSCE practice before the actual OSCE?	40	50	35	20	7
10	Have you felt well prepared before the OSCE?	12	30	50	40	20

Several factors contributing to OSCE-related stress were identified. Time constraints were frequently reported as a major stressor, with many students indicating that the time allocated for each examination station was insufficient to complete clinical tasks effectively.

Students also reported experiencing anxiety while waiting for their turn in the examination corridor. Anticipatory anxiety before entering the examination station appeared to contribute significantly to stress levels.

Performance anxiety was another important factor. Many students reported feeling uncomfortable performing clinical tasks in front of peers and evaluators. The examination environment itself was also perceived as stressful by several participants.

In contrast, familiarity with simulation mannequins and prior OSCE experience were reported to contribute less to stress compared with other factors.

Association Between Stress Level and Gender

The distribution of perceived stress levels differed between male and female students. Female students reported higher proportions of high stress compared with male students.

Test	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	7.21	2	0.027
Likelihood Ratio	6.89	2	0.032
N of Valid Cases	152		

Statistical analysis using the Chi-square test revealed a significant association between gender and perceived stress level ($\chi^2 = 7.21$, $df = 2$, $p = 0.027$). This indicates that female students were more likely to experience higher levels of OSCE-related stress.

Association Between Stress Level and Residence

The distribution of stress levels among students residing on campus and off campus was relatively similar. Moderate stress was the most commonly reported level in both groups.

Stress Level	On-Campus n (%)	Off-Campus n (%)	Total n (%)
Low	16 (17.6)	14 (23.0)	30 (19.7)
Moderate	41 (45.1)	25 (41.0)	66 (43.4)
High	34 (37.3)	22 (36.0)	56 (36.8)
Total	91 (100)	61 (100)	152 (100)

The Chi-square test showed no statistically significant association between perceived stress level and place of residence ($\chi^2 = 0.41$, $p = 0.816$), suggesting that living arrangements did not significantly influence stress levels during OSCE examinations.

Discussion

The findings of this study indicate that nursing students commonly experience moderate levels of stress during OSCE/OSPE examinations. These results are consistent with previous studies that have reported moderate to high stress levels among healthcare students during clinical assessments(2)(7).

The demographic characteristics of participants showed that most students were young adults between 18 and 24 years of age. This finding aligns with previous research indicating that undergraduate healthcare students typically fall within this age range(12). Moderate stress was the most frequently reported level among participants in this study. Similar findings were reported by Emebigwine et al., who observed that a substantial proportion of nursing students experienced moderate stress during OSCE examinations. Moderate stress levels may be expected in high-stakes assessments, as students strive to perform well and demonstrate their clinical competencies(2).

Time pressure emerged as one of the most significant stressors identified in this study. Many students reported difficulty completing clinical tasks within the allocated time for

each station. Previous research has also identified time constraints as a key contributor to stress during OSCE examinations, as students must demonstrate multiple skills within a limited timeframe(8)(9).

Another important stressor was anticipatory anxiety while waiting for examination stations. Students often experience psychological tension before entering the examination environment, which may negatively influence concentration and performance(10).

Performance anxiety related to being observed by peers and evaluators was also frequently reported. The presence of examiners and other students can create a sense of social evaluation, which may increase stress levels and reduce confidence during clinical performance(1)(13).

The study also found a statistically significant association between gender and perceived stress levels, with female students reporting higher stress compared to male students. This finding is consistent with previous research indicating that female students may experience higher levels of academic and examination-related stress(14)(15).

However, no significant association was found between stress levels and place of residence. This suggests that living on or off campus may not significantly influence examination-related stress among nursing students(10)(16).

Overall, the findings highlight the need for educational institutions to implement strategies aimed at reducing examination-related stress while maintaining the effectiveness of clinical assessments.

Conclusion

This study assessed perceived stress levels and associated factors among first-year nursing students undergoing OSCE/OSPE examinations. The findings indicate that most students experienced moderate levels of stress during these clinical assessments.

Time pressure, anticipatory anxiety, and performance evaluation were identified as the primary contributors to stress. Female students reported significantly higher stress levels compared to male students, whereas place of residence was not significantly associated with stress levels.

These findings emphasize the importance of implementing supportive educational strategies to help students manage stress during clinical examinations.

Recommendations

Based on the findings of this study, several recommendations can be proposed:

1. Educational institutions should provide structured orientation sessions before OSCE/OSPE examinations to familiarize students with examination procedures.
2. Mock OSCE practice sessions should be incorporated into the curriculum to enhance students' confidence and preparedness.
3. Simulation laboratories should be utilized to provide repeated exposure to clinical equipment and examination environments.
4. Workshops on stress management and coping strategies should be conducted for nursing students.
5. Counselling services should be made available to support students experiencing high levels of examination-related stress.

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