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Article

# Anxiety and Acceptance of the Objective Structured Clinical Examination (OSCE) in Nursing Students: A Cross-Sectional Study

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## Abstract

The Objective Structured Clinical Examination (OSCE) is a widely implemented tool in healthcare education that provides a structured way to assess clinical and theoretical competencies through simulated scenarios. Although its effectiveness in improving performance and confidence is acknowledged, its non-traditional format compared to conventional exams can generate significant anxiety among students due to unfamiliarity and perceived difficulty. **Background/Objectives:** To evaluate anxiety and acceptance of the OSCE among nursing students. **Methods:** A descriptive-correlational, cross-sectional study was carried out with undergraduate nursing students (n = 105) from the University of Almería. Data were collected using an online questionnaire including sociodemographic variables, the Three-Factor Anxiety Inventory (TFAI) to measure cognitive, physiological, and regulatory anxiety, and a 14-item scale assessing perceptions and acceptance of the OSCE. Data analysis was conducted using SPSS version 29, with statistical significance established at  $p < 0.05$ . The study followed the STROBE guidelines. **Results:** Female students reported significantly higher levels of cognitive and physiological anxiety, primarily associated with fear of mistakes and failure, compared to male students. Male participants expressed greater confidence in their ability to perform tasks, especially in the regulatory anxiety dimension. Third-year students experienced stronger physical symptoms of anxiety but evaluated the OSCE more positively than fourth-year students, who showed less favorable perceptions. **Conclusions:** The OSCE is perceived as a valuable and realistic assessment tool in nursing education but is also associated with substantial anxiety. Gender and academic year differences highlight the importance of implementing targeted interventions to reduce anxiety and provide support during OSCE processes.

**Keywords:** anxiety; OSCE; nursing; students; perceptions

## 1. Introduction

The Objective Structured Clinical Examination (OSCE) is defined as an assessment in which students demonstrate their competence across a range of simulated clinical scenarios [1]. This tool is specifically designed to evaluate targeted clinical skills and is typically organized as a circuit of multiple stations. At each station, participants are required to display a particular skill set or combination of competencies, alongside the relevant theoretical knowledge [2].

Beyond technical abilities, the OSCE also assesses students' confidence, preparedness, clinical skills, and psychosocial competencies, encompassing both motor and interpersonal abilities. Monitoring these domains is essential for tracking professional development. Notably, this evaluation method has been shown to enhance student performance and confidence, while also increasing engagement among clinical educators [3]. Originally developed in the United Kingdom, the OSCE was rapidly adopted by medical schools throughout Western countries. By the 1990s, its use was widespread in North America, Canada, Australia, and other regions, with Canada instituting it as a requirement for national licensure examinations. Over time, its application has expanded to additional health professions, including radiology, physiotherapy, and nursing [4].

Given that nurses' clinical competence has a direct impact on patient outcomes and the overall quality of healthcare, accurate assessment of nursing students' clinical abilities during training is imperative [5]. Miller's framework for clinical competence (1990) outlines four progressive levels of assessment: the initial two focus on cognitive aspects, evaluating theoretical knowledge ("knows") and its application ("knows how"), while the latter two assess performance—first in controlled settings ("shows how"), and ultimately in real clinical environments ("does") [6].

The OSCE offers several advantages as an assessment tool in nursing education. It enables the evaluation of essential skills such as communication, clinical assessment, information processing, documentation, clinical reasoning and judgment, and decision-making [2]. Furthermore, it has been formally recognized as a standard method of evaluation by most faculties of nursing and midwifery [3]. The OSCE also contributes to bridging the gap between theoretical instruction and clinical practice, with evidence indicating strong support for its inclusion in nursing curricula from both students and educators [7]. In the biomedical sciences, including nursing, simulation-based education is increasingly utilized as a means of both teaching and assessment. This approach allows students to practice and refine their skills within a safe, controlled environment that closely mirrors real-life clinical situations [8].

Despite these strengths, the practical implementation of OSCEs within nursing curricula is often insufficiently addressed [9]. Studies have identified that unfamiliarity with the OSCE format and structure is a significant contributor to heightened anxiety and stress among nursing students. Key academic stressors include exam preparation, the examination process itself, and anxiety related to assessment. Excessive or unnecessary stress can disrupt essential cognitive processes, ultimately impairing student performance [10]. Although nursing students recognize the importance of the clinical experience gained through OSCEs, they frequently report feelings of anxiety, lack of control, and pressure during the examination [3]. In light of these considerations, the present study aims to examine both anxiety levels and acceptance of the OSCE among nursing students.

## 2. Materials and Methods

### 2.1. Study Design

A cross-sectional, descriptive observational study was conducted in accordance with the STROBE reporting guidelines [11].

### 2.2. Setting and Participants

The study took place at the University of Almería (Spain) between October 2024 and May 2025. Eligible participants were undergraduate nursing students enrolled at the University of Almería. A convenience sample was recruited based on the following inclusion criteria: enrollment in the nursing program at the University of Almería, current or previous completion of the Emergency Care course, and provision of informed consent via the attached form. Students were excluded if they were international students (due to potential language barriers) or had a prior diagnosis of an anxiety disorder.

### 2.3. Variables and Instruments

Sociodemographic variables collected included age, sex, year of study, prior experience with the OSCE, and the year in which the student first completed an OSCE during their nursing studies.

The primary variables of interest were anxiety and students' perceptions and acceptance of the OSCE as an assessment tool. Data were collected using two instruments:

- The Three-Factor Anxiety Inventory (TFAI) [12], a 25-item scale measuring anxiety across three dimensions: cognitive anxiety (worry and self-focus), physiological anxiety (autonomic hyperactivity and somatic tension), and the regulatory dimension of anxiety (perceived control). Responses were recorded on a five-point Likert scale (1 = strongly disagree to 5 = strongly agree). Cronbach's alpha coefficients were 0.86 for cognitive anxiety, 0.75 for physiological anxiety, and 0.85 for the regulatory dimension.
- The OSCE Perceptions and Acceptance Questionnaire [13], adapted from a validated instrument [14], comprises 14 items assessing students' perceptions of the OSCE as an evaluation method, divided into two sections: the first addresses students' experiences with the OSCE, and the second assesses content evaluation. Responses were also recorded on a five-point Likert scale (1 = strongly disagree to 5 = strongly agree). The Cronbach's alpha for this instrument was 0.81.

#### 2.4. Procedure

Data collection was conducted via an online, self-administered questionnaire created using Google Forms, with an estimated completion time of 10–15 minutes. The questionnaire consisted of four sections: informed consent, sociodemographic variables, the TFAI scale, and the OSCE Perceptions and Acceptance Questionnaire.

To recruit participants, faculty members teaching the Emergency Care course were contacted and provided students with a QR code to access the questionnaire after the theoretical exam. Additionally, class representatives for third-year students and fourth-year nursing students were approached to distribute the questionnaire through online student groups. Responses were stored in a secure cloud database, accessible only to the research team.

#### 2.5. Ethical Considerations

This study was reviewed and approved by the Institutional Review Board (Registration No. EFM 388.25). All participants were fully informed about the purpose of the study, the confidential and anonymous handling of their data, and provided written informed consent prior to participation. All participants in the study signed informed consent. The study was carried out in accordance with the Declaration of Helsinki of the World Medical Association.

#### 2.6. Data Analysis

Data were analyzed using SPSS version 29. Descriptive statistics were calculated for demographic variables: measures of central tendency and dispersion for quantitative variables, and frequencies and percentages for qualitative variables. Non-parametric tests (Mann-Whitney U test for group comparisons and Spearman's correlation) were used to analyze the data. A 95% confidence interval was established, and p-values less than 0.05 were considered statistically significant.

### 3. Results

#### 3.1. Sample Sociodemographic Characteristics

A total of 105 nursing students participated in the study. The majority were female (n = 85, 81%), most were in their third year of the nursing program (n = 81, 77.1%), and nearly all reported previous experience with the OSCE (n = 98, 93.3%). For almost half of the students, their first OSCE took place during the first year of their studies (n = 50, 47.6%). The mean age of participants was 23.75 years (SD = 6.49), with ages ranging from 19 to 56 years. Detailed characteristics of the sample are presented in Table 1.

**Table 1.** Sociodemographic characteristics.

| Variables                       | M (SD) / n (%) |
|---------------------------------|----------------|
| <b>Sex</b>                      |                |
| Male                            | 20 (19)        |
| Female                          | 85 (81)        |
| <b>Academic Year</b>            |                |
| 3rd                             | 81 (77.1)      |
| 4th                             | 24(22.9)       |
| <b>Previous OSCE experience</b> |                |
| Yes                             | 98 (93.3)      |
| No                              | 7 (6.7)        |
| <b>Age</b>                      | 23,75 (6.49)   |
| <b>Year of first OSCE taken</b> |                |
| 1st                             | 50 (47.6)      |
| 2nd                             | 39 (37.1)      |
| 3rd                             | 14 (13.3)      |
| 4th                             | 2 (1.9)        |

Notes: SD (standard deviation); OSCE (objective structured clinical examination); M (mean).

### 3.2. Evaluation of Students' Perceptions and Acceptance of the OSCE

Table 2 presents the mean scores for the 15 items comprising the questionnaire assessing students' perceptions and acceptance of the OSCE. The item with the highest mean score was related to the perception of the OSCE as an intimidating evaluation method (mean = 4.02; SD = 1.06). Conversely, the item indicating that the OSCE was considered less stressful than other types of examinations received the lowest mean score (mean = 1.85; SD = 1.10).

**Table 2.** Evaluation of students' perceptions and acceptance of the OSCE.

| Students' perceptions and acceptance of the OSCE                   | M (SD)      |
|--|-------------|
| OSCE is/was: Well structured.                                      | 3.40 (1.06) |
| OSCE is/was: Less stressful than other other examination types     | 1.85 (1.10) |
| OSCE is/was: An intimidating assessment method                     | 4.02 (1.06) |
| OSCE is/was: A practical and useful experience                     | 3.62 (1.09) |
| The OSCE setting was authentic                                     | 3.02 (1.20) |
| The time at each station was too long                              | 2.17 (.96)  |
| The time at each station was too short                             | 3.29 (1.08) |
| Instructions at each station were clear                            | 3.42 (1.18) |
| Tasks asked to perform were fair                                   | 3.36 (1.11) |
| The OSCE provided an opportunity to learn from real life scenarios | 3.76 (1.12) |
| The OSCE challenged me to think critically                         | 3.69 (1.13) |
| The OSCE cases were realistic                                      | 3.90 (1.04) |
| The OSCE highlighted areas of weakness in skills and knowledge     | 3.92 (0.96) |
| Tasks reflected skills I have learned in pharmacy school           | 4.00 (0.98) |
| I feel competent to provide the type of care seen in the OSCE      | 3.69 (1.08) |

Notes: SD (standard deviation); OSCE (objective structured clinical examination); M (mean).

No significant differences were found when comparing perceptions and acceptance of the OSCE by sex ( $p > 0.05$ ). However, differences emerged between students according to academic year for 4

out of the 15 questionnaire items. Specifically, third-year students rated the OSCE as a more practical and useful experience ( $U = 648.50$ ,  $p = .01$ ,  $Z = -2.57$ ), found the instructions clearer ( $U = 661.50$ ,  $p = .01$ ,  $Z = -2.45$ ), perceived greater opportunities to learn from real-life scenarios ( $U = 608.00$ ,  $p < 0.05$ ,  $Z = -2.89$ ), and felt more challenged to think critically ( $U = 699.50$ ,  $p = .03$ ,  $Z = -2.16$ ). Examination of mean scores indicated that third-year students had a more positive perception of the OSCE compared to fourth-year students, as detailed in Table 3.

**Table 3.** Average scores by academic year.

| Items   | Academic Year |                 |
|---|---------------|-----------------|
|   | 3rd           | 4 <sup>th</sup> |
| <b>Evaluation of students' perceptions and acceptance of the OSCE</b> |               |                 |
| OSCE is/was: A practical and useful experience                        | 3.78 (1.01)   | 3.8 (1.21)      |
| Instructions at each station were clear                               | 3.59 (1.07)   | 2.83 (1.37)     |
| The OSCE provided an opportunity to learn from real life scenarios    | 3.95 (1.01)   | 3.12 (1.26)     |
| The OSCE challenged me to think critically                            | 3.81 (1.09)   | 3.25 (1.18)     |

Notes: SD (standard deviation); OSCE (objective structured clinical examination); M (mean).

### 3.2. Three-Factor Anxiety Inventory (TFAI)

Table 4 displays the mean scores for each item and for the dimensions comprising the TFAI scale. The cognitive anxiety dimension recorded the highest mean score, with an average of 4.06 (SD = 0.60). The item with the highest individual score also belonged to the cognitive anxiety dimension: "I worry about making mistakes," which had a mean of 4.51 (SD = 0.73). The item with the lowest mean score was "I stop to think about how I might fail to impress important people," with a mean of 3.22 (SD = 1.31).

**Table 4.** Scores of the Three-Factor Anxiety Inventory (TFAI).

| TFAI Scale  | M (SD)      |
|---|-------------|
| <i>Cognitive Anxiety</i>  | 4.06 (0.60) |
| I am worried that I may not perform as well as I can.                 | 4.46 (0.76) |
| I am worried about making mistakes.                                   | 4.51 (0.73) |
| I am worried about the uncertainty of what may happen.                | 4.41 (0.85) |
| I am worried about the consequences of failure.                       | 4.26 (0.98) |
| I tend to dwell on shortcomings in my performance.                    | 3.93 (0.91) |
| I find myself evaluating myself more critically than usual.           | 4.24 (0.93) |
| I am very conscious of every movement I make.                         | 3.61 (0.97) |
| I am conscious that others will judge my performance.                 | 4.19 (0.90) |
| I am conscious that people might disapprove of my performance.        | 4.11 (1.00) |
| I dwell on how I might fail to impress important others.              | 3.22 (1.31) |
| I am very aware of the possibility of disappointing important others. | 3.75 (1.20) |
| <i>Physiological anxiety</i>  | 3.96 (0.82) |
| My heart is racing.   | 4.46 (0.82) |
| My hands are clammy.  | 3.87 (1.21) |
| My mouth feels dry.   | 3.44 (1.38) |
| I feel the need to go to the toilet more often than usual.            | 3.91 (1.37) |
| I have a slight tension headache.                                     | 3.49 (1.38) |
| I feel easily tired.  | 3.74 (1.31) |
| My body feels tense.  | 4.42 (0.92) |
| I feel restless.  | 4.43 (0.89) |
| <i>Regulatory dimension of anxiety</i>                                | 3.77 (0.73) |
| I am confident that I can stay focused during my performance.         | 3.61 (0.97) |

|   |             |
|---|-------------|
| I believe in my ability to perform.                         | 3.77 (0.86) |
| I feel ready for my performance.                            | 3.65 (0.89) |
| I believe that I have the resources to meet this challenge. | 3.78 (0.95) |
| I believe my performance goal is achievable.                | 4.00 (0.78) |
| I feel confident about my upcoming performance.             | 3.85 (0.90) |

Notes: SD (standard deviation); M (mean).

### 3.2.1. Cognitive Anxiety Dimension

Significant differences were observed by sex ( $p < 0.05$ ), as shown in Table 5. Female students reported greater concern than males about making mistakes ( $M = 4.61$ ;  $SD = 0.73$ ) and the consequences of failure ( $M = 4.26$ ;  $SD = 0.98$ ). They were also more aware of the possibility of disappointing important people compared to their male counterparts ( $M = 3.75$ ;  $SD = 1.20$ ).

**Table 5.** Cognitive Anxiety Dimension Mean Scores according to sex.

| Items  | Sex         |             | M (SD) |
|--|-------------|-------------|--------|
|  | Male        | Female      |        |
| I am worried about making mistakes.                                  | 4.10 (0.96) | 4.61 (0.73) |        |
| I am worried about the consequences of failure.                      | 3.90 (1.07) | 4.26 (0.98) |        |
| I am very aware of the possibility of disappointing important other: | 3.10 (1.25) | 3.75 (1.20) |        |

Notes: SD (standard deviation); M (mean).

### 3.2.2. Physiological Anxiety Dimension

Significant differences were also found by sex ( $U = 583.50$ ,  $p = .02$ ,  $Z = -2.26$ ), with female students more likely to feel easily fatigued ( $M = 3.88$ ;  $SD = 1.26$ ) than males ( $M = 3.15$ ;  $SD = 1.38$ ). Regarding academic year ( $U = 698.50$ ,  $p = .03$ ,  $Z = -2.14$ ), third-year students reported greater mouth dryness when facing the OSCE ( $M = 3.60$ ;  $SD = 1.31$ ) compared to fourth-year students ( $M = 2.88$ ;  $SD = 1.51$ ).

### 3.2.3. Anxiety Regulatory Dimension

No significant differences were found regarding academic year, prior OSCE experience, age, or the year in which students first completed an OSCE. However, significant differences were observed by sex ( $U = 591.00$ ;  $p = .02$ ,  $Z = -2.24$ ), with male students expressing greater confidence in their ability to perform ( $M = 4.15$ ;  $SD = 0.87$ ) compared to female students ( $M = 3.68$ ;  $SD = 0.84$ ).

### 3.3. Correlations

The results of the Spearman correlation analyses between perceptions and acceptance of the OSCE and anxiety levels measured by the TFAI scale revealed significant associations, as shown in Table 6. The perception of the OSCE as less stressful than other exams showed a positive and significant correlation with the regulatory dimension of anxiety ( $\rho = .215$ ,  $p = .028$ ). Likewise, considering the OSCE as an intimidating method was significantly associated with higher levels of physiological anxiety ( $\rho = .313$ ,  $p = .001$ ). On the other hand, positive and significant correlations were observed between the perception of realism in the presented cases and anxiety regulation ( $\rho = .248$ ,  $p = .011$ ), as well as with the perception that the OSCE helped identify areas for improvement ( $\rho = .284$ ,  $p = .003$ ). Moreover, even stronger correlations were found with the perception that the tasks reflected acquired competencies ( $\rho = .345$ ,  $p < .001$ ) and with the feeling of competence in performing practiced skills ( $\rho = .474$ ,  $p < .001$ ), both with the regulatory dimension of anxiety. These findings suggest that a more positive and realistic perception of the OSCE is related to students' improved ability to regulate their anxiety.

**Table 6.** Cognitive Anxiety Dimension Mean Scores according to sex.

| Students' perceptions and acceptance of the OSCE                   | TFAI Rho Spearman ( <i>p</i> ) |                       |                                 |
|--|--------------------------------|-----------------------|---------------------------------|
|  | Cognitive Anxiety              | Physiological Anxiety | Regulatory dimension of Anxiety |
| OSCE is/was: Well structured.                                      | -.013 (.898)                   | -.064 (.516)          | .099 (.315)                     |
| OSCE is/was: Less stressful than other examination types           | -.131 (.181)                   | -.168 (.086)          | <b>.215* (.028)</b>             |
| OSCE is/was: An intimidating assessment method                     | .097 (.325)                    | <b>.313** (.001)</b>  | -.183 (.062)                    |
| OSCE is/was: A practical and useful experience                     | .031 (.751)                    | -.060 (.544)          | .137 (.163)                     |
| The OSCE setting was authentic                                     | .007 (.944)                    | -.103 (.296)          | .122 (.214)                     |
| The time at each station was too long                              | .016 (.871)                    | .055 (.579)           | -.102 (.303)                    |
| The time at each station was too short                             | .109 (.269)                    | .006 (.955)           | .186 (.057)                     |
| Instructions at each station were clear                            | .173 (.077)                    | -.027 (.787)          | .138 (.159)                     |
| Tasks asked to perform were fair                                   | .076 (.438)                    | -.032 (.748)          | .143 (.145)                     |
| The OSCE provided an opportunity to learn from real life scenarios | .084 (.391)                    | -.073 (.462)          | .124 (.209)                     |
| The OSCE challenged me to think critically                         | .128 (.193)                    | -.087 (.379)          | .093 (.345)                     |
| The OSCE cases were realistic                                      | .139 (.157)                    | -.135 (.171)          | <b>.248* (.011)</b>             |
| The OSCE highlighted areas of weakness in skills and knowledge     | .129 (.191)                    | -.080 (.414)          | <b>.284** (.003)</b>            |
| Tasks reflected skills I have learned in pharmacy school           | .138 (.159)                    | -.102 (.300)          | <b>.345** (&lt; .001)</b>       |

Notes:  $p < 0.05$  in the Spearman correlation test.

#### 4. Discussion

The aim of this study was to assess anxiety and acceptance of the Objective Structured Clinical Examination (OSCE) among nursing students. The findings revealed significant differences in anxiety levels as measured by the TFAI scale. In the cognitive anxiety dimension, female students reported greater concern than males regarding making mistakes and the consequences of failure, as well as heightened awareness of the possibility of disappointing important individuals. In the physiological anxiety dimension, women were more likely to report feeling easily fatigued compared to men. Regarding academic year, third-year students experienced greater mouth dryness when facing the OSCE than fourth-year students. In contrast, for the anxiety regulatory dimension, male students expressed greater confidence in their ability to perform compared to female students. Additionally, third-year students evaluated the OSCE more positively than fourth-year students in terms of perceptions and acceptance.

These results are consistent with previous research indicating that anxiety is a common experience for nursing students facing the OSCE, with gender differences frequently observed. Various studies using different anxiety measurement tools have reported similar trends: for example, the Test Anxiety Inventory (TAI) found significant differences in emotionality subscales between women and men, and the State-Trait Anxiety Inventory (STAI) also showed higher state anxiety in women [15]. However, some studies have reported higher anxiety levels among male students [16]. Moderate to high anxiety scores are common, and many students perceive the OSCE as a stressful and anxiety-inducing assessment, often due to time constraints, lack of preparation time, and the pressure of being observed by examiners [17].

Physiological symptoms, such as fatigue and increased heart rate, have also been documented in the context of OSCEs and other high-stakes exams, highlighting the physiological impact of exam-related stress [18]. Confidence has been shown to have a calming effect and is associated with

improved self-perceived performance, which aligns with the finding that male students reported greater self-efficacy in this study [19].

Given the prevalence of anxiety associated with the OSCE, several studies have explored interventions to mitigate its impact. Techniques such as relaxation training, deep breathing exercises, and coaching workshops have been found to be beneficial in reducing pre-exam anxiety and improving students' preparation and confidence, even if not always resulting in statistically significant reductions in anxiety scores [20,21].

#### 4.1. Limitations and Future Directions

The main limitations of this study include the relatively small and predominantly third-year sample, which may affect the generalizability of the findings. Expanding the sample to include students from other universities and academic years would provide a broader perspective. Additionally, external variables such as social support, baseline emotional state, and individual coping styles were not controlled and may influence anxiety levels.

Future research should investigate pedagogical and psychological strategies—such as preparatory simulations, mindfulness practices, and coping skills training—to reduce OSCE-related anxiety. Developing standardized protocols for the implementation of OSCEs at the university level could help establish consistent structures, better preparing students and potentially reducing anxiety during these assessments.

## 5. Conclusions

Students generally value the OSCE as a useful, realistic, and representative tool for assessing acquired competencies. However, it is also perceived as an intimidating and stressful evaluation method, with significant differences observed according to sex, academic year, and anxiety dimensions. These findings highlight the importance of implementing targeted support strategies to help mitigate student anxiety and promote a more positive assessment experience ensuring the educational effectiveness of the OSCE.

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## References

1. Watson, R., Stimpson, A., Topping, A., Porock, D. Clinical competence assessment in nursing: a systematic review of the literature. *JAN* **2002**, 39(5), 421–431. <https://doi.org/10.1046/j.1365-2648.2002.02307.x>
2. Alizadeh, S.; Zamanzadeh, V.; Ostovar, S.; Ghaffari, R.; Moonaghi, H.K.; Johnston, A.; Valizadeh, L. The development and validation of a standardised eight-station OSCE for registration of undergraduate nursing students: A Delphi study. *Nurse Educ Pract* **2023**, 73, 103817. <https://doi.org/10.1016/j.nepr.2023.103817>
3. Mojarraf, S.; Bazrafkan, L.; Jaber, A. The effect of a stress and anxiety coping program on objective structured clinical examination performance among nursing students in Shiraz, Iran. *BMC Med Educ* **2020**, 20, 301. <https://doi.org/10.1186/s12909-020-02228-9>
4. Rushforth, H.E. Objective structured clinical examination (OSCE): Review of literature and implications for nursing education. *Nurse Educ Today* **2007**, 27, 481–490. <https://doi.org/10.1016/j.nedt.2006.08.009>
5. Vincent, S.C.; Arulappan, J.; Amirtharaj, A.; Matua, G.A.; Al Hashmi, I. Objective structured clinical examination vs traditional clinical examination to evaluate students' clinical competence: A systematic review of nursing faculty and students' perceptions and experiences. *Nurse Educ Today* **2022**, 108, 105170. <https://doi.org/10.1016/j.nedt.2021.105170>
6. Mårtensson, G.; Löfmark, A. Implementation and student evaluation of clinical final examination in nursing education. *Nurse Educ Today* **2013**, 33, 1563–1568. <https://doi.org/10.1016/j.nedt.2013.01.003>
7. Muldoon, K.; Biesty, L.; Smith, V. 'I found the OSCE very stressful': Student midwives' attitudes towards an objective structured clinical examination (OSCE). *Nurse Educ Today* **2014**, 34, 468–473. <https://doi.org/10.1016/j.nedt.2013.04.022>
8. Conde, P.S.; Clemente-Suárez, V.J. Differences between students and professors in difficulty, stress and performance in a nursing Objective Structured Clinical Examination (OSCE). *Physiol Behav* **2021**, 239, 113502. <https://doi.org/10.1016/j.physbeh.2021.113502>
9. Henderson, A.; Nulty, D.D.; Mitchell, M.L.; Jeffrey, C.A.; Kelly, M.; Groves, M.; Glover, P.; Knight, S. An implementation framework for using OSCEs in nursing curricula. *Nurse Educ Today* **2013**, 33, 1459–1461. <https://doi.org/10.1016/j.nedt.2013.04.008>
10. Emebigwine, D.L.A.; Linda, N.S.B.; Martin, P. Objective structured clinical examination: Do first-year nursing students perceive it to be stressful? *Curationis* **2023**, 46, 2339. <https://doi.org/10.4102/CURATIONIS.V46I1.2339>
11. von Elm, E.; Altman, D.G.; Egger, M.; Pocock, S.J.; Gøtzsche, P.C.; Vandenbroucke, J.P. The Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) statement: guidelines for reporting observational studies. *The Lancet* **2007**, 370, 1453–1457. [https://doi.org/10.1016/S0140-6736\(07\)61602-X](https://doi.org/10.1016/S0140-6736(07)61602-X)
12. Cheng, W.N.K.; Hardy, L.; Markland, D. Toward a three-dimensional conceptualization of performance anxiety: Rationale and initial measurement development. *Psychol Sport Exerc* **2009**, 10, 271–278. <https://doi.org/10.1016/j.psychsport.2008.08.001>
13. Urteaga, E.M.; Attridge, R.L.; Tovar, J.M.; Witte, A.P. Evaluation of Clinical and Communication Skills of Pharmacy Students and Pharmacists with an Objective Structured Clinical Examination. *Am J Pharm Educ* **2015**, 79, 122. <https://doi.org/10.5688/AJPE798122>

14. Awaisu, A.; Mohamed, M.H.N.; Al-efan, Q.A.M. Perception of pharmacy students in Malaysia on the use of objective structured clinical examinations to evaluate competence. *Am J Pharm Educ* **2007**, *71*, 118. <https://doi.org/10.5688/aj7106118>
15. Zhang, N.; Henderson, C.N.R. Test anxiety and academic performance in chiropractic students. *J Chiropr Educ* **2014**, *28*, 2. <https://doi.org/10.7899/JCE-13-20>
16. Rizwan Arain, F.; Farzana Rizwan Arain, P. Does test anxiety and gender have an impact on OSCE Performance among medical students? *World Fam. Med.* **2021**, *19*, 101–107. <https://doi.org/10.5742/MEWFM.2021.94165>
17. Cidoncha, G.; Muñoz-Corcuera, M.; Sánchez, V.; Pardo Monedero, M.J.; Antoranz, A.; Saiz Rodríguez, A. Perceptions of students, professors, and simulated patients with a periodontology OSCE station in dentistry. *Educ. Médica* **2025**, *26*, 101047. <https://doi.org/10.1016/J.EDUMED.2025.101047>
18. Alhawari, H.; Alshelleh, S.; Alzoubi, O.; Khanfar, A.; Akiely, R.; Abdallah, B.; Hajjaj, N.; Alkhalaileh, S.; Khader, Y. Comparison of Baseline and Test Day Cardiovascular Parameters, Anxiety Scores and Coffee Consumption Among Medical Students Undergoing Objective Structured Clinical Examinations in Jordan. *Int J Gen Med* **2023**, *16*, 4249–4256. <https://doi.org/10.2147/IJGM.S432157>
19. Ferreira, É.D.M.R.; Pinto, R.Z.; Arantes, P.M.M.H., Vieira, É.L.M.; Teixeira, A.L.; Ferreira, F.R.; Vaz, D.V. Stress, anxiety, self-efficacy, and the meanings that physical therapy students attribute to their experience with an objective structured clinical examination. *BMC Med Educ* **2020**, *20*, 1–9. <https://doi.org/10.1186/S12909-020-02202-5/FIGURES/2>
20. Dunne, K.; Moffett, J.; Loughran, S.T.; Duggan, V.; Campion, D.P. Evaluation of a coaching workshop for the management of veterinary nursing students' OSCE-associated test anxiety. *Ir Vet J* **2018**, *71*, 15. <https://doi.org/10.1186/S13620-018-0127-Z>
21. Author 1, A.; Author 2, B. Title of the chapter. In *Book Title*, 2nd ed.; Editor 1, A., Editor 2, B., Eds.; Publisher: Publisher Location, Country, 2007; Volume 3, pp. 154–196.
22. Ariga, R.A. Decrease anxiety among students who will do the objective structured clinical examination with deep breathing relaxation technique. *Open Access Maced J Med Sci* **2019**, *7*, 2619–2622. <https://doi.org/10.3889/OAMJMS.2019.409>

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