



ISSUES AND CHALLENGES FACED BY NURSE EXAMINERS DURING THE CONDUCT OF OBJECTIVE STRUCTURE CLINICAL/PRACTICAL EXAMINATION AT NURSING COLLEGES

Usama Siddique^{1*}, Bakhtyar Ali Shah²

^{1*} Assistant professor/ Principal, Amal College of Nursing, Peshawar, Pakistan. BSN, MSN

² Assistant professor, Institute of Nursing Sciences, Khyber Medical University, Peshawar, Pakistan, BSN, MPH, MSN, MHR, PhD (Scholar)

***Corresponding author:** Usama Siddique

*Assistant Professor/ Principal, Amal College of Nursing, Peshawar, Pakistan.

Email: usamasiddique65@gmail.com

Abstract

Introduction: The Objective Structured Clinical Examination (OSCE) as a method of assessment for psycho-motor and other domains, is frequently used in nursing education around the world, however is rarely used in Pakistan for undergraduate nursing programs. Nursing faculty faces challenges not in deciding if Objective Structured Clinical Examination (OSCE) is effective for assessing students' clinical competence, but in overcoming obstacles to actually using it.

Objectives: The aim of the study is to explore the Issues and Challenges Faced by Nurse Examiners during the Conduct of Objective Structure Clinical/Practical Examination at Nursing Colleges of KPK.

Methodology: A phenomenological research study was carried out in Khyber Pukhtankhwa. Overall, 16 participants were included in the study following data saturation. Data were collected from nursing educators who were enrolled in clinical examination and carried out OSCEs of the nursing students. Data were collected using an approved study guide. Purposive sampling technique was used and consents were taken from all the participants before collection of the data. Data were analyzed using thematic analysis.

Results: The majority (56.25%) age group belongs to 36 to 40 years. 62.5% of the participants were female and 68.75% had BSN/Post RN degrees. Overall, three themes were extracted from eleven categories. These themes were time constraints, lack of trained examiners and Technical and educational infrastructure. Conclusion: The findings of the study revealed that nursing educators experience various issues and challenges while conducting the OSCE. They experienced issues related to time, equipment, trained faculty, Technical and educational infrastructure and well-equipped nursing labs.

Keywords: Issues, Challenges, Objective Structured Clinical Examination, Nursing Examiners

1: Introduction

Nursing is both an art and a science; science needs observation and experimentation that are applied within the boundaries of nursing institutes in the form of disease processes, evidence-based practices, and theories.¹ Students of nursing are regarded competent when they demonstrate an ability to integrate their clinical knowledge, judgment, abilities, attitude, and beliefs in order to carry out particular practice settings in a variety of contexts. Additionally, competency indicates a holistic approach to nursing care. Inadequate nursing competence lowers both the quality of care and the level of patient satisfaction.² The Objective Structured Clinical Examination (OSCE) is a practical system for clinical skills and knowledge assessment in simulated environment and for over 40 years, it has been considered as a gold standard in this area of evaluation.³

The development of a novel technique like the Objective Structured Clinical Examination (OSCE) was required because it was found that the traditional clinical skills assessment methods, such as the long case exam, short case exam, viva, work place subjective appraisal by seniors, etc., had various drawbacks. His main goals were to standardize the exam, eliminate examiner subjectivity, reduce factors that could influence students' exam performance, and add objectivity to the evaluation of clinical abilities.⁴

In recent decades, educational institutions in a variety of countries, including the United States of America, China, Australia, Spain, Indonesia, and Singapore, have embraced the OSCE as a means of evaluating the cognitive, psycho-motor, and affective abilities of their student nurses.⁵ According to the published research, the OSCE is considered to be a method that is not only workable but also trustworthy and valid for evaluating clinical abilities in nursing. This method has proven to be effective when applied to the assessment of novice nursing students' competences in mental health, midwifery nursing education, pediatric nursing, and the principles of nursing practice within the context of undergraduate nursing education.⁶

For a very long period, lengthy and short case examination served as the benchmark for evaluation. The examination was subjective, which was this method's main flaw. By evaluating a student's performance on a few instances that did not cover the majority of the themes in the specialty being evaluated, teachers held the authority to pass or fail a student. Due to the low inter rater reliability of this evaluation approach, students were always left with the impression that they were at the whim of unreliable examiners.⁷

The objective of OSCE is to assess the student's performance without any bias of examiners and assess the student's knowledge, skills, attitude and applications of knowledge. It ensures the evaluation of set of predetermined clinical competencies. The method is more objective because each clinical competency is divided into different segments and the marks are allotted.⁸

According to the evidences that are now available, the OSCE is, in general, a viable assessment format that is extremely dependable, objective, and more powerful than other traditional assessment forms like short or lengthy case exams, viva, etc.⁹ The increasing acceptability of the Open-Book Computer Exam (OSCE) can be seen in the faculty's evaluation of it as a superior assessment instrument to its traditional assessment equivalent. According to one survey, students may have the impression that OSCE reduces the stress associated with taking exams.¹⁰

According to studies, factors such as a lack of skill labs, excessive costs, a shortage of trained faculty, an unfair selection of tasks across the competency, increased stress, inconsistent tools, a lack of standardized patients, an absence of assessor training, assessors' intimidation, time shortages on stations, and the difficulty of setting standards have all had an impact on the implementation of OSCE, primarily in schools located in developing countries.¹¹⁻¹²

As OSCE/OSPE was conducted for the first time in nursing colleges of KPK, there must be some issue and challenges faced by the examiners during the process of its conduction and implementation. The aim of the study was to reveals the issues and challenges faced by nurses examiners.

2: Methodology

2.1 Study design, setting and duration:

The current study was a phenomenological study aimed to explore the challenges and issues face's by nursing examiners while conducting the OSCE. Basically, the challenges, issues, and experiences are best explored through phenomenological study approach.¹³ Therefore, phenomenological study design was used for the current study to explore the issues and challenges of nursing examiners towards OSCE. Participants were recruited in the study both from public and private sector nursing colleges of Khyber Pukhtankhwa, Pakistan. All these colleges were registered with Pakistan nursing council.

This study was conducted for the duration of six months (November 2022-April 2023).

2.2 Sample size and technique:

The study's sample size was entirely determined by the saturation of the data. After collection of data from 16 participants, data saturation was achieved. Consequently, 16 people in total were involved in the investigation. The purposive sampling and maximum variation was done to recruit study participants based on meeting the eligibility criteria to get rich data.

2.3 Inclusion and exclusion criteria:

The inclusion criteria for the study was: nurse examiners who were External Examiners for the whole exam during the conduct of OSCE exam and conveners who supervised the whole exam at examination center. All those Nurse Examiners were excluded from the study who were external examiner for one or two subjects during the conduct of OSCE Exam, and who were not willing to participate were excluded from the study.

2.4 Data collection procedure

The data were gathered following approval from the Graduate Study Committee (GSC), Academic Studies & Research Board (AS&RB), and Ethical Review Following that, formal approval to conduct the study and collect the data was requested from the director/principal nursing college. The study's objective was explained to participants who met the criteria for selection. Written informed consent was acquired by the participants.

The approximate time for each interview was 45 to 60 minutes. The interview conducted preferably in English language but if the participants have difficulty in conversation then Urdu language was used as per their convenience. During each question further probing questions were asked for explanations and clarifications. The data were gathered through interviews while following to a semi structured study guide. Interviews were conducted in the conference room of the college or as per mutual agreement of the participant. One pilot interview was conducted to evaluate effectiveness of questions, duration of interview and gain confidence.

2.5 Data Analysis

The data were analyzed along with data collection so that data gaps can be identified and probed in subsequent interviews by using Braun and Clarke (2006) method. For demographic variables, Excel software latest version was used. In the first step of the analysis, the data were transcribed verbatim. The words and statements used by participants in Urdu language were translated into English language. To ensure that the meaning has not changed in translation process, English language expert's help was sought. Notes taken during interviews were jot down. Recording of the interviews were listened several times to ensure that the audio exactly match with the text. Six steps process was used to analyze the data:

Transcription: Interviews were converted into transcript through verbatim.

Familiarization: Interview transcripts were read word by word for several times.

Coding: Process of labeling important information.

Categories: All open codes were grouped in different categories through axial coding strategy

Themes: Several categories having the same idea were grouped under one theme.
Final report: Themes were supported through narration and representative quotes.

2.6 Trustworthiness

The use of qualitative and quantitative research methodologies as well as a variety of data sources enhances the reliability of the study's conclusions by balancing each other's advantages and disadvantages and offering a more full and in-depth understanding of the topic under inquiry.

Credibility:

When analyzing the data in which the research study was carried out, credibility may be associated with honesty. A suitable sample strategy, sampling methodology, and inclusion and exclusion criteria were used to choose the study participants. Audio recordings were used during the data collection process. The data were thoroughly reviewed for defects or errors. The supervisor ensured reliable results by consistently collecting data.

Transferability

The capacity to use the findings in a related situation is known as Transferability. The findings are generally applicable to nursing examiners who participate in the OSCE exam given to nursing students.

Dependability

All of the study's steps were carried out. Regularly, the supervisors were consulted for their opinions. All study procedures were completed after consultation with experts. An expert was consulted about the study's findings to ensure the accuracy of the conclusions. Regular feedback was given by the qualitative research expert and subject matter specialists.

Conformability

Conformability highlights the impartiality of the study's findings. Each participant was contacted during the data collection process to verify the accuracy of the information that had been gathered. The names of the participants were added to the audio recording during the data collection procedure to avoid any mistakes or shortcomings.

2.7 Ethical consideration

Conducting a qualitative study on OSCE (Objective Structured Clinical Examination) issues and challenges in nursing colleges in Khyber Pakhtunkhwa (KPK), Pakistan, involves several ethical considerations. Ensuring the well-being and rights of the participants, maintaining confidentiality, and upholding the integrity of the research process are crucial. The participants were assured that there is no harm for the respondents, while their integrity, privacy and confidentiality will be maintained, and informed consent was taken from each participants.

3: Results

3.1 Socioeconomic status of the participants

The basic aim of the study was to explore Issues and Challenges Faced by Nurse Examiners during the Conduct of Objective Structure Clinical/Practical Examination at Nursing Colleges of KPK. Majority (56.25%) of the participants were from the age group of 36 to 40 years, while 25% of the participants were from the age group of more than 40 years and 18.75% were less than 35 years old. Most (62.5%) of the participants were female and 68.75% were holding BSN/Post RN degrees, while 31.25% of the participants were enrolled in master degrees in Nursing (Table 1).

Table 1: Socio-Demographic profile of the participants, n=16

	Frequency	Percentage
Age of the participants		
25-35 Years	3	18.75
36 to 40 Years	9	56.25
More than 40 Years	4	25
Gender of the Participants		
Male	6	37.5
Female	10	62.5
Education status of the participants		
BSN/Post RN	11	68.75
MSN	5	31.25
PHD	0	0
Role during OSCE examination		
Convener	0	0
External Examiner	16	100

3.2 Thematic Analysis

Overall, three themes were extracted from eleven categories. These themes were time constrains, lack of trained examiners and Technical and educational infrastructure (Figure 1).

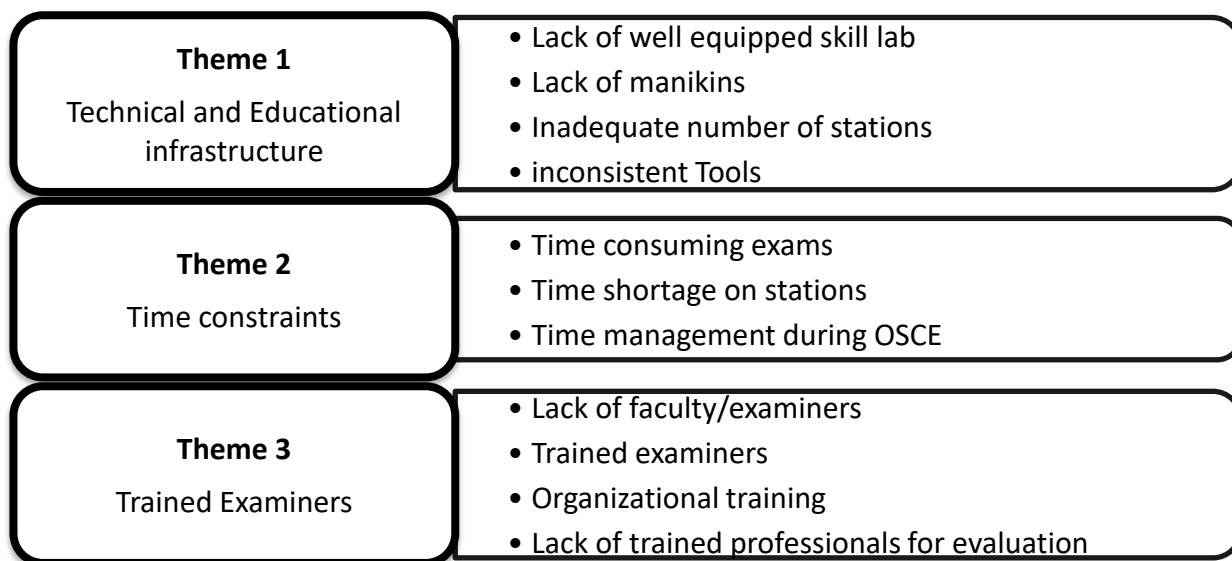


Figure 1: depicting themes for challenges and issues face by nursing examiners while conducting the OSCE

3.2.1 Theme 1: Technical and educational infrastructure

The first extracted theme in this study which highlights the issues and challenges faced by the nursing examiners while conducting the OSCEs was Technical and educational infrastructure. This theme was extracted from four categories such as Lack of manikins, inadequate number of stations, Inconsistent tools and lack of Well-equipped skill lab.

Lack of well-equipped skill lab

As we know that we need different equipment's in skills lab to carry out a successful OSCE exam. "Almost every college is facing issues in nursing skill lab where there is standard equipment's and which provide the opportunities to the students to do practice and perform the OSCE" (N=15)

“For OSCEs there is need of skill labs. In KPK most of the colleges are running without functional skill labs” (N=13)

“Lack of skill lab is one of the major issues and challenges in conducting the OSCE” (N=1, 2, 7)

Lack of manikins

“OSCE is a practical exam and the students perform on patients. Here it is difficult to perform on patients but they can do it in Manikins. For a standard OSCE there is needed Manikins with different functions” (N=3)

“In 2nd semester we thought NG tube insertion, catheter insertion and other many invasive procedures. For that we need dummies of different types on which students perform all these skills. Unfortunately, we don’t have that advance dummies” (N=10)

“We mostly skip the procedure because we don’t have enough dummies for the students. We mostly have one dummy in the skill lab and in OSCE students are performing on four stations” (N=11, 6)

Inadequate number of stations

“Space is one of the major issues of skill labs, standard OSCE need enough time and enough stations. We conduct the OSCE with 2 or 1 stations” (N=5)

“The teachers need proper training and they need to follow the standard of OSCE and should provide exposure of the students to more and more skills. But unfortunately, we don’t have enough space to arrange many stations for OSCE” (N=9)

Inconsistent tools

“Nursing is a very huge course with hundreds of skills and procedures. It very difficult for a college to manage large amount of equipment’s” (N=7)

“As far as the issues and challenges in OSCE are concern, so one of the major issue is lack of equipment’s for nursing procedures” (N=16, 11, 12)

“Most of the students cannot perform well in OSCEs because they didn’t practice. Time and limited equipment’s are one of the challenges in OSCEs. Also, in the OSCE the students perform skills of only available equipment’s” (N=4).

3.2.2 Theme 2: Times constrain

The second extracted theme of the study was “Time Constrains”. This theme was extracted from four categories such as time shortage on stations, time consuming exam, duration of the OSCE and inadequate student’s preparation time (Figure 3).

Time Consuming exam

“OSCE is very important exam but it is very time consuming. It took almost 2 days to complete the exam of 1 session” (N=16)

“In the last exam we started the OSCE at 9 AM and it took almost 8 hours to complete the OSCE. It took a lot of time “(N=11)

Time shortage on stations

“Some of the skills took long time such as bed bathing and bed making. We mostly gave 5 min for each skill. This time is very limited for a study to do the skill” (N=9)

“Basically, the exam took a lot of time. Giving 20 minutes to the students as they pass through each and every station took a lot of time” (N=13)

“Most of the students left the station without completing the skill due to the shortage of time and due to lengthy skills” (N=1)

I think the time for the students are very less and they do the skills in hurry but it’s very difficult to complete the task” (N=7)

Time management during OSCE

“We usually gave 5 minutes for each station but it’s very difficult to manage the time as some of the students were shuffling the stations and new students were joining the station for OSCE” (N=4)

“The time of the OSCE always exceed due to the poor management in the lab. Some of the time the lack of equipment’s and malfunction of equipment’s waste the time” (N=1)

“Mismanagement of time during OSCE is one of the challenges for the examiner and the students” (N=8)

3.2.3 Theme 3: Trained examiners

Similarly, the last extracted theme was trained examiners. This theme was extracted from four categories such as Absence of a trained professional for evaluation, lack of faculty, organizational training and nursing faculty training (Figure 4).

Lack of Faculty/examiners

“OSCE need almost five to six faculties at a time to manage the OSCE and examine the skills and procedures. Shortage of nursing faculty is everywhere, that’s why lack of nursing staff is one of the issues to OSCE” (N=1)

“Just like hospitals, there is shortage of nursing faculty in the nursing colleges. That’s why most of the time viva is considered instead of OSCE (N=11)

Trained examiners

“To be very honest, most of the faculty doesn’t know the exact guidelines of OSCE. They are not trained and they need proper training of OSCE because the OSCE is new addition in Nursing in Pakistan” (N=6)

“For OSCE there is separate trained teachers who only engage in the skills and labs with the students, they know the protocol and procedure of OSCE but unfortunately our system is lacking of OSCE-trained faculty” (N=14, 16, 2)

Organizational training

“The role of nursing organizations is very important. There should be training sessions for the nursing faculty regarding OSCE. Lack of organizational trainings are one of the issue which the faculty face in nursing institutes” (N=5, 8).

“There is no trained OSCE Faculty. Both faculty and students face problems in OSCE and the main reason is no interest of the institutions. There is no proper training of OSCEs in nursing colleges” (N=14, 7)

“These challenges may be addressed with proper arrangement of workshops and training by the affiliated university and colleges. Almost all colleges are facing these challenges and issues” (N=4, 12)

Lack of trained professional for evaluation

“It is not possible for every teacher to examine the OSCE and other nursing skills. These needed trained faculty. Basically, there is lacking of trained OSCE professionals in nursing to assess the OSCE of the students” (N=11, 15)

“I am teaching FON from at least three years but still I am facing problems conducting the skills and evaluating the nursing students. There should be a system to arrange trained evaluators of OSCE from different colleges who conduct the OSCE, but we don’t have enough trained evaluators” (N=3)

4 Discussion

The basic aim of the study was to explore Issues and Challenges Faced by Nurse Examiners during the conduct of Objective Structured Clinical/Practical Examination (OSCE) at Nursing Colleges of KPK. In this study different issues and challenges were identified. These challenges were Technical and educational infrastructure, time constrains and lack of trained examiners.

In the same context, the findings of the current study were supported by a qualitative study, the study suggested that time constrain was the basic challenge experienced by the OSCE examiner and suggested that there should be enough time for each station. Besides that, they also emphasized on the up gradation of the setup of OSCE and arrangement of simulated patients.¹⁴

It has been widely acknowledged that there were management weaknesses and these revelations provided more evidence that the success of OSCEs is contingent upon meticulous preparation and efficient administration. The standard frameworks that are applied to nursing evaluation items can

potentially be breached if there are any deficiencies in the aforementioned organizational variables.¹⁵ Infrastructure of the institute is very important to provide each and every facility to the students who perform OSCE. Similar to the current study, a study reported that nursing examiners experience issues due to the unavailability of the equipment's for nursing skills during OSCE.¹⁶ In this study, few issues such as lack of manikins, inadequate number of stations, inconsistent tools and lack of well-equipped skill lab was highlighted.

In the past, people mentioned that managing the OSCE requires deploying resources like staff, equipment, facilities, space, and time.^{17, 18} This has given rise to issues regarding the management of the costs associated with such examinations.¹⁹ Supporting the findings of the current study, a study reported that inadequate OSCE evaluation tools and papers, as well as a lack of and improper distribution of resources including physical space, acceptable fidelity manikins, and appropriately educated examiners, were found to be the source of the reported shortcomings.²⁰

Various studies emphasized on the advance equipment's and manikins in nursing skill labs. The findings revealed that, a manikin can provide trainees with a genuine experience of what it is like to behave as a nurse if the manikin is viewed as a patient and treated as such. As a direct result of this, students are provided with the opportunity to practice and develop their relational, communicative, and collaborative nursing abilities. The use of a manikin can be helpful in assisting students in the process of developing their professional identities.²¹⁻²³

Furthermore, human patient simulation although manikins are utilized frequently in the education of health professionals, it is quite obvious that manikins are useful in teaching clinical reasoning skills to undergraduate nursing students. The nursing examiners in the OSCE have to confront with a number of obstacles, one of which is the lack of availability of manikins.²⁴

In addition, another qualitative study also highlighted some challenges regarding OSCE. These challenges were related to administrative and technical supports, the use of clinical instructors during evaluation, faculty OSCE education, the limitation of validation to the required skills essential for professional practice, and collaboration among all course faculty members.¹²

Time constrains, lack of trained examiners and improper management were some of the issues highlighted in this study. It was revealed in a study conducted that in order to properly implement OSCEs, significant resources, time, materials, and staff were necessary. Because there were only a certain number of examiners and standard patients available, meticulous management and organization were essential in order to keep the exam's validity and reliability intact.²⁵ Similar to the current findings, a study carried out also reported that lack of trained examiners negatively influence the OSCE among the nursing students.²⁶

Our findings were confirmed by another study that looked into the challenges of incorporating the OSCE.²⁵ These researchers also mentioned a lack of suitable space, financial resources, equipment, and people resources as the primary problems. According to the findings of our research, potential flaws in the OSCE's educational infrastructure include poor coordination in educational fields, insufficient competence of examiners.

Our research, which is in line with other previously published works, highlights the fact that the integrity of OSCE can be compromised by a lack of proper trained faculty, time, equipment's and well organized labs, inadequate planning and organization and improper simulation.²⁷ These are extremely important concerns regarding the academic achievement of students. In point of fact, poor performance of students in the OSCEs has been frequently observed to be related to inadequate preparation, exhaustion, stress and anxiety, as well as negative views about the OSCE.^{17, 28}

Lack of trained examiners and absence of trained professionals for examinations were also some of the issues face's by the examiners while conducting the OSCE. Similarly, inadequate training and, as a result, competency on the part of examiners were other hurdles. This manifested itself in a variety of ways, including unpreparedness, unsuitable attitudes and behaviors, a lack of experience, and ineffective communication.²⁹ These are essential for maintaining faith in the reliability of evaluations. The study limitation were that most of the faculties were working in different nursing college, that's why it is possible that they hide some of the challenges which impact the dignity of their institute.

Conclusion

The findings of the study demonstrate numerous major challenges that are linked with planning and executing OSCEs. As a result, the study gives a unique insight into the development of strategies for implementing and promoting OSCEs in nursing education. The findings of this study revealed that shortage of time during OSCE and giving enough time may lead to issues which impact the OSCE. Similarly, lack of proper trained examiners is one of the challenges experienced by the examiners while conducting the OSEE. Technical and educational infrastructure play an importance role in OSCE and lack of proper equipment's, Lack of manikins, inadequate number of stations, inconsistent tools and lack of well-equipped skill lab are also the challenges face by nursing examiners while conducting the OSCE.

References

1. Sultan, A., Sabiha Khanum, Najma Naz, Khan, S., Sardar Ali, & Shakirullah. (2023). The caring competencies of nursing students: Comparing the four and two-year Bachelor of Nursing Programme. *Journal of the Pakistan Medical Association*, 74(1), 123–125. <https://doi.org/10.47391/JPMA.8346>.
2. Chen S-H, Chen S-C, Lai Y-P, Chen P-H, Yeh K-Y. The objective structured clinical examination as an assessment strategy for clinical competence in novice nursing practitioners in Taiwan. *BMC Nurs* [Internet]. 2021;20(1):91–8. Available from: <https://doi.org/10.1186/s12912-021-00608-0>
3. Khan KZ, Ramachandran S, Gaunt K, Pushkar P. The Objective Structured Clinical Examination (OSCE): AMEE Guide No. 81. Part I: an historical and theoretical perspective. *Med Teach*. 2019 Sep;35(9):e1437-46.
4. Harden RM, Stevenson M, Downie WW, Wilson GM. Assessment of clinical competence using objective structured examination. *Br Med J*. 2018;1(5955):447–51.
5. Shen L, Zeng H, Jin X, Yang J, Shang S, Zhang Y. An Innovative Evaluation in Fundamental Nursing Curriculum for Novice Nursing Students: An Observational Research. *J Prof Nurs* [Internet]. 2018;34(5):412–6. Available from: <https://www.sciencedirect.com/science/article/pii/S8755722317302764>
6. Solà-Pola M, Morin-Fraile V, Fabrellas-Adrés N, Raurell-Torreda M, Guanter-Peris L, Guix-Comellas E, et al. The usefulness and acceptance of the OSCE in nursing schools. *Nurse Educ Pract* [Internet]. 2020;43:36–43. Available from: <https://www.sciencedirect.com/science/article/pii/S1471595318303287>
7. Chan SCC, Choa G, Kelly J, Maru D, Rashid MA. Implementation of virtual OSCE in health professions education: A systematic review. *Med Educ*. 2023;
8. García-Mayor S, Quemada-González C, León-Campos Á, Kaknani-Uttumchandani S, Gutiérrez-Rodríguez L, del Mar Carmona-Segovia A, et al. Nursing students' perceptions on the use of clinical simulation in psychiatric and mental health nursing by means of objective structured clinical examination (OSCE). *Nurse Educ Today*. 2021;100:104866.
9. Alsaid AH, Al-Sheikh M. Student and Faculty Perception of Objective Structured Clinical Examination: A Teaching Hospital Experience. *Saudi J Med Med Sci* [Internet]. 2016/11/16. 2017;5(1):49–55. Available from: <https://pubmed.ncbi.nlm.nih.gov/30787752>.

10. Wilby KJ, Diab M. Key challenges for implementing a Canadian-based objective structured clinical examination (OSCE) in a Middle Eastern context. *Can Med Educ J*. 2016;7(3):e4.
11. Braier-Lorimer DA, Warren-Miell H. A peer-led mock OSCE improves student confidence for summative OSCE assessments in a traditional medical course. *Med Teach*. 2022;44(5):535–40.
12. Obizoba C. Mitigating the Challenges of Objective Structured Clinical Examination (OSCE) in Nursing Education: A Phenomenological Research Study. *Nurse Educ Today* [Internet]. 2018;68:71–4. Available from: <https://www.sciencedirect.com/science/article/pii/S0260691718302326>.
13. Fidment S. The Objective Structured Clinical Exam (OSCE): A Qualitative Study Exploring the Healthcare Student’s Experience. *Student Engagem Exp J*. 2017;1(1):1–11.
14. Bani-issa W, Al Tamimi M, Fakhry R, Tawil H Al. Experiences of nursing students and examiners with the Objective Structured Clinical Examination method in physical assessment education: A mixed methods study. *Nurse Educ Pract* [Internet]. 2019;35:83–9. Available from: <https://www.sciencedirect.com/science/article/pii/S1471595318300246>
15. Busetto L, Wick W, Gumbinger C. How to use and assess qualitative research methods. *Neurol Res Pract* [Internet]. 2020;2(1):14. Available from: <https://doi.org/10.1186/s42466-020-00059-z>
16. Zamanzadeh V, Ghaffari R, Valizadeh L, Karimi-Moonaghi H, Johnston ANB, Alizadeh S. Challenges of objective structured clinical examination in undergraduate nursing curriculum: Experiences of faculties and students. *Nurse Educ Today* [Internet]. 2021;103:104960. Available from: <https://www.sciencedirect.com/science/article/pii/S0260691721002173>
17. Johnston ANB, Weeks B, Shuker M-A, Coyne E, Niall H, Mitchell M, et al. Nursing Students’ Perceptions of the Objective Structured Clinical Examination: An Integrative Review. *Clin Simul Nurs* [Internet]. 2017;13(3):127–42. Available from: <https://www.sciencedirect.com/science/article/pii/S1876139916300925>
18. Mitchell ML, Henderson A, Groves M, Dalton M, Nulty D. The objective structured clinical examination (OSCE): optimising its value in the undergraduate nursing curriculum. *Nurse Educ Today*. 2019 May;29(4):398–404.
19. Majumder MAA, Kumar A, Krishnamurthy K, Ojeh N, Adams OP, Sa B. An evaluative study of objective structured clinical examination (OSCE): students and examiners perspectives. *Adv Med Educ Pract*. 2019;387–97.
20. Nyangeni T, van Rooyen DRM, ten Ham-Baloyi W. Quality Management of Objective Structured Clinical Examinations at a Multicampus Nursing College: A Pilot Study. *J Nurs Educ*. 2023;62(3):155–61.
21. Handeland JA, Prinz A, Ekra EMR, Fossum M. The role of manikins in nursing students’ learning: A systematic review and thematic metasynthesis. *Nurse Educ Today* [Internet]. 2021;98:104661. Available from: <https://www.sciencedirect.com/science/article/pii/S0260691720315112>
22. Mahasneh D, Shoqirat N, Alsarairh A, Singh C, Thorpe L. From Learning on Mannequins to Practicing on Patients: Nursing Students’ First-Time Experience of Clinical Placement in Jordan. *SAGE open Nurs*. 2021;7:23779608211004296.
23. Meerdink M, Khan J. Comparison of the use of manikins and simulated patients in a multidisciplinary in situ medical simulation program for healthcare professionals in the United Kingdom. *J Educ Eval Health Prof*. 2021;18:8.
24. Lapkin S, Levett-Jones T, Bellchambers H, Fernandez R. Effectiveness of Patient Simulation Manikins in Teaching Clinical Reasoning Skills to Undergraduate Nursing Students: A Systematic Review. *Clin Simul Nurs* [Internet]. 2019;6(6):e207–22. Available from: <https://www.sciencedirect.com/science/article/pii/S1876139910001325>
25. Chiou-Rong H, Ue-Lin C. Objective structured clinical examinations have become a challenge for nursing education in Taiwan. *Ann Nurs Pr*. 2018;2(2):1025.

26. Chong L, Taylor S, Haywood M, Adelstein B-A, Shulruf B. The sights and insights of examiners in objective structured clinical examinations. *J Educ Eval Health Prof.* 2018;14:34.
27. AbdAlla A, Mohammed K. The Objective Structured Clinical Exam (OSCE): A Qualitative Study evaluating Nursing Student” s Experience. *Int J Sci Res ISSN.* 2016;5(3):399–402.
28. Taylor I, Bing-Jonsson PC, Johansen E, Levy-Malmberg R, Fagerström L. The Objective Structured Clinical Examination in evolving nurse practitioner education: A study of students’ and examiners’ experiences. *Nurse Educ Pract.* 2019;37:115–23.
29. Elbilgahy AA, Eltaib FA, Mohamed RK. Implementation of objective structured clinical examination (OSCE): Perceiving nursing students and teachers attitude & satisfaction. *Am J Nurs.* 2020;8(2):220–6.