

Evaluation of Objective Structured Clinical Examination in Nursing Education: Feedback from Faculty Staff and Students

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ABSTRACT

Introduction: Tools to accurately assess clinical skills are required to ensure nursing students meet minimum standards and to ensure nursing graduates can safely undertake their professional roles. Objective Structured Clinical Examinations (OSCEs) are frequently used to undertake such assessment.

Objective: This study aimed to evaluate the OSCE from the viewpoint of key stakeholders; including nursing faculty staff and students.

Methods: This study used a cross sectional quantitative descriptive (survey) design. It was conducted on a convenience sample composed of two groups. Group One included a sample of 55 undergraduate nursing students and Group Two included 12 nursing faculty staff from Tabriz University of Medical Sciences. It applied two previously validated surveys.

Results: The findings showed nursing students had a positive attitude towards the OSCE and evaluated its existence in the nursing curriculum as useful. Faculty staff also had a positive attitude towards the inclusion of this exam in the curriculum and emphasized its importance and necessity. Staff, however, emphasized the necessity of careful implementation of this exam and associated preparation of students for this mode of assessment.

Conclusion: This study supports the use of OSCE as a method of competence assessment of undergraduate nursing students that meets the needs of key stakeholders including faculty staff and students.

Introduction

Clinical nursing is considered the heart of professional practice of nursing [1]. Assessing the clinical competence of nursing students is central to evaluating their capacity to undertake professional nursing practice. It ensures that nursing students enter the various environments of the health system with the skills, knowledge, values and attitudes to provide efficient, effective and safe nursing care [2,3]. A challenge for nursing educators is to ensure that their education, learning, and evaluation strategies are appropriate to ensure the development and application of quality nursing care by graduates [4,5]. Therefore, it is important for nursing educators to ensure that the methods used in student assessment accurately reflect the clinical competence of students [6]. Objective Structured Clinical Examinations (OSCEs) have been described as a valuable strategy for assessing clinical skills and readiness for practice in many clinical programs [7]. OSCE have been recognized as an appropriate assessment strategy for medical education since their development in the 1970s and are increasingly used in nursing education [8]. One of the major benefits of OSCE is that it can assess a wide range of knowledge, skills and abilities [8]. In OSCEs, candidates typically cycle through a number of stations, with each station designed to focus on evaluating one or more competencies [8]. This comprehensive form of assessment enhances the value of OSCEs. Despite widespread international application of OSCEs, they are only recently becoming a recognized component of nursing education in Iran. The translation and application of such tools to accurately assess clinical skills are required to ensure nursing students meet minimum standards and to ensure nursing graduates can safely undertake their professional roles is an essential part of nursing programs. This study was conducted with the aim of evaluation of OSCEs from the perspective of nursing professors and students at Tabriz University of Medical Sciences.

Material and Methods

This study is part of an action research study entitled 'promoting process of holding OSCE-based final exam for undergraduate nursing students. The project was undertaken as part of a PhD project by the lead author. These OSCEs included nine competencies addressed in eight 10-minute stations. After holding the exam, this study was designed with the aim of evaluating OSCE to evaluate the effectiveness of the activities taken as an action research study.

Ethical Consideration

The present study was approved by the Ethics Committee of the Tabriz University of Medical Sciences, as part of a PhD, with the ethical approval code of IR.TBZMED.REC.1398.1079. Faculty staff and students were informed about the aim of the study and informed

written consent was obtained from them prior to participation in this study. They were also assured that the anonymity and confidentiality of the information would be fully respected and that they had the right to refuse to participate in the study.

Design

This study uses a cross sectional descriptive (survey) design.

Setting

The study was carried out at Faculty of Nursing, Tabriz University of Medical Sciences, and country of Iran.

Sample

The study was conducted on a convenience sample composed of two groups. Group one included 55 fourth year undergraduate nursing students. Group Two includes the 12 nursing faculty staff of Tabriz University of Medical Sciences during the academic year 2020-2021.

Survey Development

A cross-sectional survey was provided to staff and students at the end of the OSCEs. Students and faculty were asked to evaluate the OSCE, including providing their views on the usefulness of the OSCE as an assessment instrument. Questionnaires developed by Pierre, et al. [9] and Elbilgahy et al. [10] were used to elucidate these data. The original Pierre et al. (2004) questionnaire presented to students consisted of 32 items grouped into 4 sections [9]. Students were asked to evaluate the OSCE in terms of content, structure and organization, quality of performance and objectivity, and to express their opinion about the usefulness of this exam [9]. For the purpose of this study, only 25/32 items of Pierre et al. questionnaire were used, and few items were slightly modified to better align with the context. The second questionnaire used to establish perceived views was drawn from the study of Elbilgahy, et al. [10]. This questionnaire consists of 28 items that measure faculty' perceptions of the OSCE [10]. No changes were made to this validated survey.

Validity and Reliability of Surveys

Consent to use the surveys was obtained via email from both primary authors. Validity of Elbilgahy, et al. [10] questionnaire was established by experts and had established reliable at 0.85. Face and content validity of Pierre et al. [9] questionnaire was established by review and consensus by a core group of senior pediatricians. These were then adapted using method proposed by Wild, et al. [11] to translate and culturally align the questionnaires [11]. In the forward translation stage, the questionnaires were translated from English to Persian by two people independently, and further

refined in a meeting with the researchers. Necessary corrections were made by comparing the two translations, and then in the back translation stage, the re-translated version was returned to English. The English version was compared with the original version of the questionnaire and was discussed in terms of conceptual similarity during two sessions with translators and researchers. Finally, in a cognitive debriefing stage, to ensure understanding of the target concepts, the surveys were given to 10 pre-trial participants and their input was used to undertake small corrections to obtain the final questionnaires.

To enhance face validation of the surveys used, the translated questionnaires were given to 10 other staff members from Tabriz Faculty of Nursing and Midwifery. Staff confirmed that the questionnaires were culturally and religiously compatible. The reliability of the translated tools was also confirmed by retesting on 20 pre-trial and calculating internal consistency through Cronbach's alpha. Then the questionnaires were presented to faculty staff and students. Due to the coronavirus pandemic, online questionnaires were used to collect data.

Data Analysis

Data were analyzed using the Statistical Package for Social

Science (SPSS version 27). Descriptive analysis was conducted in this study including frequencies and percentage.

Results

Demographic characteristics of participants are presented in Table 1. Table 2 includes the evaluative responses of nursing students around the attributes of the OSCEs they were asked to undertake. Table 3 shows the evaluation of nursing students about Quality of OSCE Performance. Table 4 shows the evaluation of nursing students about validity and reliability of OSCE. Table 5 includes the survey responses from faculty staff regarding their perceptions of the OSCE.

Table 1: Demographic characteristics of participants.

Demographic characteristics	Faculty Members (N=12)	Students (N=55)
Age Range (Mean)	32-52 (38)	20-25 (23)
Gender	9 females, 3 males	34 females, 21 males
Staff years of service range (mean)	6-22 (15)	-
Academic Rank (for faculty members)	7 Instructors	-
	5 Assistant Professors	

Table 2: Students' Responses to Survey Queries about the OSCEs.

Question Number	Statements	OSCE evaluation			
		Total No. 55 (100%)			
		Agree	Neutral	Disagree	No response
1	Exam was fair	53	1	0	1
		96.40%	1.80%	0%	1.80%
2	Wide knowledge area covered	45	2	5	3
		81.80%	3.70%	9.10%	5.40%
3	Needed more time at stations	4	3	47	1
		7.30%	5.40%	85.50%	1.80%
4	Exams well administered	50	2	0	3
		90.90%	3.70%	0%	5.40%
5	Exams very stressful	23	3	26	3
		41.90%	5.40%	47.30%	5.40%
6	Exams well structured & sequenced	52	1	2	0
		94.50%	1.80%	3.70%	0%
7	Exam minimized chance of failing	0	0	50	5
		0%	0%	90.90%	9.10%
8	OSCE less stressful than other exams	6	1	8	40
		10.90%	1.80%	14.60%	72.70%
9	Allowed student to compensate in some areas	40	2	12	1
		72.70%	3.70%	21.80%	1.80%
10	Highlighted areas of weakness	46	0	4	5
		83.60%	0%	7.30%	9.10%

11	Exam intimidating	0	0	55	0
		0%	0%	100%	0%
12	Student aware of level of information needed	50	2	3	0
		90.90%	3.70%	5.40%	0%
13	Wide range of clinical skills covered	47	2	5	1
		85.40%	3.70%	9.10%	1.80%

Table 3: Students' Evaluation of the Efficacy of OSCEs to Assess Clinical skills and Performance.

Number	Statements	The Quality of OSCE Performance		
		Total No. 55 (100%)		
		Not at all	Neutral	To great extent
1	Fully aware of nature of exam	3	4	48
		5.40%	7.30%	87.30%
2	Tasks reflected those taught	1	3	51
		1.80%	5.40%	92.80%
3	Time at each station was adequate	4	5	46
		7.30%	9.10%	83.60%
4	Setting and context at each station felt authentic	6	7	42
		10.90%	12.70%	76.40%
5	Instructions were clear and unambiguous	3	2	50
		5.40%	3.70%	90.90%
6	Tasks asked to perform were fair	0	0	55
		0%	7.30%	100%
7	Sequence of stations logical and appropriate	1	4	50
		1.80%	7.30%	90.90%
8	Exam provided opportunities to learn	2	3	50
		3.70%	5.40%	90.90%

Table 4: Students' Perceptions of the validity and reliability of OSCEs.

Number	Statements	Student perception of validity and reliability		
		Total No. 55 (100%)		
		Not at all	Neutral	To great extent
1	OSCE exam scores provide true measure of essential clinical skills	6	6	43
		10.90%	10.90%	78.20%
2	OSCE scores are standardized	1	2	52
		1.80%	3.70%	94.50%
3	OSCE practical and useful experience	2	3	50
		3.70%	5.40%	90.90%
4	Personality, ethnicity and gender will not affect OSCE scores	1	1	53
		1.80%	1.80%	96.40%

Table 5: Faculty Staff Perceptions of the Efficacy of OSCEs.

Items	Total No.= 12 (100%)				
	Strongly Agree	Agree	uncertain	Disagree	Strongly Disagree
1. The OSCE is a helpful to be a part in Nursing curriculum	11	1	0	0	0
	91.70%	8.30%	0%	0%	0%

2. It is the exact method of assessment of knowledge	1	5	1	4	1
	8.30%	41.70%	8.30%	33.40%	8.30%
3. OSCE assist students to get more knowledge	8	4	0	0	0
	66.60%	33.40%	0%	0%	0%
4. It is the exact method for assessment of students' psycho-motor skills	10	2	0	0	0
	83.30%	16.70%	0%	0%	0%
5. OSCE helps students develop their psycho-motor skills	11	1	0	0	0
	91.70%	8.30%	0%	0%	0%
6. OSCE helps students acquire confidence while practicing learned skills in the clinical settings	9	3	0	0	0
	75%	25%	0%	0%	0%
7. It helps the students to be ready for challenges of working as staff nurse	9	3	0	0	0
	75%	25%	0%	0%	0%
8. OSCE helps faculty staff to evaluate their level of knowledge	2	6	3	1	0
	16.70%	50%	25%	8.30%	0%
9. OSCE enables faculty members to assess their own psycho-motor skills	2	8	2	0	0
	16.70%	66.60%	16.70%	0%	0%
10. OSCE allow faculty members to acquire more skills in different specialties	1	6	0	5	0
	8.30%	50%	0%	41.70%	0%
11. OSCE is clear and bias free	3	3	3	3	0
	25%	25%	25%	25%	0%
12. OSCE is fair to all students	10	2	0	0	0
	83.30%	16.70%	0%	0%	0%
13. OSCE evaluate all the students objectively	6	3	3	0	0
	50%	25%	25%	0%	0%
14. The OSCE questions are relevant to the course	10	2	0	0	0
	83.30%	16.70%	0%	0%	0%
15. OSCE should be summative evaluation	0	8	4	0	0
	0%	66.60%	33.40%	0%	0%
16. It should be summative and formative	12	0	0	0	0
	100%	0%	0%	0%	0%
17. Take long time in preparing scenario compared to traditional method	7	4	0	1	0
	58.30%	33.40%	0%	8.30%	0%
18. I can able to prepare and use the OSCE	10	2	0	0	0
	83.30%	16.70%	0%	0%	0%
19. OSCE is interesting	10	2	0	0	0
	83.30%	16.70%	0%	0%	0%
20. Covered wide of knowledge	8	2	0	2	0
	66.60%	16.70%	0%	16.70%	0%
21. Easy to pass	1	2	6	3	0
	8.30%	16.70%	50%	25%	0%
22. Less stressful	0	0	9	3	0
	0%	0%	75%	25%	0%
23. Exhausting and Lengthy	0	0	0	8	4
	0%	0%	0%	66.60%	33.40%
24. Suitable for all level of students	11	1	0	0	0
	91.70%	8.30%	0%	0%	0%

25. Help to assess future performance	2	3	3	3	1
	16.70%	25%	25%	25%	8.30%
26. Enhances teaching level	9	3	0	0	0
	75%	25%	0%	0%	0%
27. Enhances evaluation method	10	2	0	0	0
	83.30%	16.70%	0%	0%	0%
28. OSCE offers new educational experience for both lecturers and students	10	2	0	0	0
	83.30%	16.70%	0%	0%	0%

Discussion and Conclusion

In general, the feedback of faculty staff and nursing students toward OSCE was positive. The results of this study showed that in the event of implementation, OSCEs are an effective and acceptable tool for evaluating nursing students. While this finding has also been described elsewhere [12], this is the first evidence of the applicability and value of the OSCE format in this geographical context. This is critical to implementation of the OSCE process to countries where they are not currently in widespread use. As shown in Table 2, the majority of students agreed that exam was fair, well administered, well-structured and sequenced, that students were aware of level of information needed, wide range of knowledge and clinical skills covered. They also mostly agreed that it highlighted areas of clinical weakness. Students raised concerns about how familiarity with the OSCE processes impacted their capacity to perform well. Although preparation workshops were held to enable students to prepare and practice for the exam and the students had visited the location of the exam, 41.9% of students suggested that the exams were very stressful. To reduce the stress of students, it is recommended that middle-term exams are also held in the form of OSCE. 'Being stressful' has also been identified in other studies [6,12].

The majority of students said they were aware of the nature of the exam and that the requested tasks were in accordance with the content that was taught, the time of the stations was appropriate, setting and context at each station was authentic, instructions were clear and unambiguous, tasks asked to perform were fair, sequence of stations was logical and appropriate, and exam provided opportunities to learn (Table 3). The majority of students confirmed that they felt that the OSCE was a valid and reliable assessment tool. The fact that OSCE on the condition of proper implementation is a valid and reliable exam, shown in various studies [13]. The majority of faculty staff strongly agreed that the OSCE is a helpful part of the nursing curriculum. OSCE preparation and engagement seemed to assist students with knowledge acquisition, development and practice of their psycho-motor skills. OSCEs were also considered to help students acquire confidence while practicing learned skills in clinical settings. Participant indicated that they help students

be ready for challenges of working as staff nurse. There was a strong sense that OSCEs are fair to all students and that the OSCE questions were relevant to the course. Ideally OSCEs would be used as summative and formative assessment. Limitations to this might include the extended duration in preparing OSCE scenarios compared to other teaching and assessment methods. OSCE is interesting, covered wide of knowledge, Suitable for all level of students, enhances teaching level and evaluation method and OSCE offers new educational experience for both lecturers and students. However, 50% of the faculty staff observed that OSCEs help enable objective assessment of students. Use of the strict OSCE scenarios and assessment processes enabled staff to recognize previous bias in assessment of students. This issue has been explored in more depth in other studies [14].

Furthermore, OSCE was not less stressful for staff to develop and deliver. Faculty staff also identified that OSCEs are stressful for students. Studies have shown that stress may affect the examiner's performance, preventing assessment of some examinee competences. Also, how nursing faculties help students in coping with stress is also challenging [15]. In general, the results of this study showed that the exam largely satisfied the requirements of faculty staff and students. Responses to specific survey questions suggested that some of the areas that should be strengthened in the future include accurate time keeping and determination of time required for stations, more preparation and familiarity with OSCEs including some OSCE experience during the middle-term exam to learn more with this method of evaluating to reduce students stress, preparing more faculty staff to increase the accuracy and objectivity of the exam.

Conclusion

The implementation of OSCEs at Faculty of Nursing, Tabriz University of Medical Sciences was a useful experience for students. Implementation of OSCEs into the Tabriz Nursing Faculty required energy and time. However, the positive feedback from faculty and students about the OSCEs provided motivation for further use and develop of this exam/assessment format. It strengthens the argument for inclusion of OSCEs into nursing programs internationally.

Limitations

Given that this was the first time that this exam was performed in a structured and planned manner in Tabriz, there are still challenges around implementation and so, comprehensive data collection. Identifying these challenges provides an opportunity to address them and improve the exam as a valuable tool for assessing nursing students' clinical competence. While the relatively small sample size might limit the generalizability of the findings, with all of the faculty staff and students participating it is a very representative from the site.

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Declaration of Interest

The authors declare that there is no conflict of interest in this study.

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