

Research Article



Assessment through Objective Structured Clinical Examination: How to Promote the Satisfaction of Physiotherapy Students

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ABSTRACT

Introduction: This study aimed to assess the satisfaction of physiotherapy students with the general structure of objective structured clinical examination (OSCE).

Materials and Methods: A researcher-made questionnaire consisting of eight items was distributed to 43 graduate and undergraduate physiotherapy students to evaluate the general structure of OSCE. Data analysis was done through SPSS software v. 20, considering a significance level of $P < 0.05$.

Results: Among 43 participants with a mean age of 23.7 ± 2.4 years old, the percentage of desirable attitude toward attractiveness of the OSCE was 46.6%, being fair was 21%, identifying strengths and weaknesses was 53.5%, the ability to assess knowledge and information was 11.7%, good assessment of practical skills was 30.3%, good assessment of clinical diagnosis skills was 34.9%, and appropriateness was 34.9%. In total, 88.4% of the participants believed that OSCE increases students' stress. The total satisfaction of all the participants with the OSCE was 2.7 ± 0.8 , with last year's students significantly less than graduate ones (2.6 ± 0.9 vs 2.9 ± 0.3).

Conclusion: The findings showed that the satisfaction of physiotherapy students regarding the general structure of the OSCE was not desirable, and OSCE was considered stressful. Therefore, due to the importance of OSCE in assessing clinical skills, it is better to improve the quality of holding the OSCE by fixing existent shortcomings, including shortness of time at each OSCE station and establishing training sessions.

Keywords:

Clinical examination; Objective structured clinical examination (OSCE); Physiotherapy student

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1. Introduction

The evaluation of students at universities plays an important role in primary education. Evaluation as the guiding factor of learning is a known phrase of George Miller, which shows the fundamental role of evaluation in training [1, 2]. Miller recommended a pattern in 1990 that is known as the Miller pyramid. He believes that clinical competency contains several levels, including “knows”, “knows how”, “shows”, and “does.” Assessment tools to examine various levels of Miller’s clinical competency are diverse. For example, multiple-choice questions are a useful tool to assess the “knows” and “knows how” levels, while there are limitations to assessing “shows” and “does” levels. In this regard, objective structured clinical examination (OSCE) is more appropriate [2]. The OSCE is one of the most valid and effective methods of evaluation of the clinical skills of students in various fields of medical sciences and was presented for the first time by Harden et al. in 1975 [3, 4]. In this method, there are several stations with a definite schedule in which students demonstrate their clinical skills. The OSCE assesses three fundamental skills of students of cognitive, psycho-motor, and affective dimensions.

The OSCE is used to assess the clinical skills of students of various faculties of medical sciences worldwide, including medicine, dentistry, pharmacy, nursing, and physiotherapy [3, 5]. Skills training is an important component of the physiotherapy curriculum; therefore, evaluating the essential skills of physiotherapy students is important [3]. Cacho et al. reported reliability of 0.89 for the OSCE as a useful method to assess the professional skills of physiotherapy students [6]. In the study by Davies et al., the professional behavior of Canadian physiotherapy students was assessed by OSCE. In their study, by interviewing examiners, 31 items of professional behavior in physiotherapy students were identified [7]. The study by Silva et al. in Brazil assessed students’ skills in performing chest physiotherapy techniques using OSCE, and they reported it as a more useful tool than the traditional method to assess various skills of chest physiotherapy among physiotherapy students [8]. Studies conducted in Iran and other countries regarding the use of OSCE in the students of various fields of medical sciences showed that most students are satisfied with the evaluation via OSCE and consider it an effective method [5, 9-13]. There are limited studies on the use of OSCE in physiotherapy [3, 6-8]. In Iran, no study has been reported on the use of this assessment tool in physiotherapy.

Because of the value of OSCE in evaluating clinical skills, the Physiotherapy Department of Babol University of Medical Sciences has been using the OSCE to assess the clinical skills of physiotherapy students in the internship course since 2013. As feedback from students helps correct defects or weaknesses of the OSCE process, we aimed to evaluate the opinion of physiotherapy students about OSCE.

2. Materials and Methods

This descriptive-analytical cross-sectional study was performed on a population of bachelor physiotherapy students in the final (fourth) year of their course as well as graduated ones in their student period. OSCE examination was conducted at the end of each internship course in the Physiotherapy Department of Babol University of Medical Sciences by the faculty members of this department who had sufficient knowledge and experience regarding holding OSCE.

In all OSCE examinations, the clinical skills of physiotherapy students were assessed in three fields of cognitive, psycho-motor, and affective aspects. In the cognitive aspect, the capability of physiotherapy students to integrate their knowledge and memorized information to get appropriate clinical decision-making was assessed. In the psycho-motor field, students’ skills in performing physiotherapy techniques and the true method of handling, physical examination, and the ability to use various therapeutic devices were measured. Finally, in the affective field, communication skills were assessed.

OSCE consisted of five stations. At each station, one clinical issue was raised on the evaluation, examination, or treatment of an assumptive patient. The participants had three minutes to respond to the requested questions. Before holding the OSCE, general explanations regarding the duration and way of the exam were provided to the students.

To assess students’ comments regarding the general structure of OSCE, one researcher-made questionnaire including eight items was designed. This questionnaire was regulated based on common questions about the general structure of OSCE, which was presented in similar studies in other fields of medical sciences [4, 5, 9].

To score the opinions in this questionnaire, a 5-point Likert scale was used from “absolutely disagree”, “disagree”, “having no opinion”, “agree”, and “absolutely agree”, with scores of 1 to 5, respectively. The final part of the questionnaire consists of the demographic char-

acteristics of the participants, including their name, age, gender, semester, and grade point average. They were assured of the confidentiality of the questionnaire's information.

To determine the content validity of the questionnaire, consultation with 11 faculty members and experts in the fields of physiotherapy or medical education was accomplished to apply the required modifications. The content validity range of the questionnaire was achieved in the range of 0.75 to 1 with a content validity index of 0.94. The reliability of the questionnaire was also determined by computing the Cronbach alpha coefficient of 0.72.

After making the necessary changes in the questionnaire and adjusting it, the final approved questionnaire was designed electronically, and its link was identified. Then, this link was sent to the study participants through WhatsApp. After filling out the questionnaire, participants selected the submission option at the end of the electronic questionnaire to send to the researchers. This study was conducted with the presence of all physiotherapy students of the internship course (fourth year) in the 2017-2018 academic year and several previous years' graduates who were available.

Data were analyzed through the SPSS software version 20 by considering a significance level of 0.05. An Independent t test was performed to compare the satisfaction of graduate and undergraduate physiotherapy students with the general structure of OSCE.

3. Results

This cross-sectional study was conducted on 43 graduate and undergraduate physiotherapy students with a mean age of 23.7±2.4 years who took part in the OSCE at least once (Table 1). After considering response options on a 5-point Likert scale, the average of all responses to each question was in the range of 1 to 5. The total mean response of all questions was also described

in the range of 1 to 5 based on a 5-point Likert scale. If participants choose the agreeing options in response to the questions (4 and 5 on the Likert scale), they have maximum satisfaction with the OSCE. The average response to all questions was considered the overall satisfaction.

Data analysis showed that the mean and standard deviation of the total satisfaction of all the participants with OSCE was 2.7±0.8. the mean and standard deviation for final-year students was 2.6±0.9 and 2.9±0.3 for graduates. There was a statistically significant difference between the mean scores of final-year students and graduated ones (P=0.02)

In data analysis, the responses of "absolutely agree" and "agree" were considered positive interpretations, and responses of "absolutely disagree" and "disagree" were considered negative interpretations.

According to Table 2, the lowest mean and standard deviation were related to question number 4 (1.7±1.1). This result indicates that 88.4% of students believe that OSCE increases their stress. The highest mean of satisfaction was related to question number 3, which states that students conceive their strengths and limitations with OSCE. The frequency and percentage of responses of all participants regarding each question are presented in Table 2.

4. Discussion

The average response of all questions for overall satisfaction was 2.7±0.8 in the range of 1 to 5 Likert scale. There was a statistically significant difference between the mean satisfaction scores of final-year students and graduated ones (2.6±0.9 vs 2.9±0.3, respectively). Considering the responses of "agree" and "completely agree", 30.3% of participants were satisfied with the general structure of assessment through OSCE. The positive attitude of participants in each question was as

Table 1. Demographic and baseline variables of the study participants (N=43)

Variables		Mean±SD/No. (%)
Age (y)		23.7±2.4
Grade Point Average		16.2±1.4
Gender	Male	11(25.6)
	Female	32(74.4)
Academic year	Last year	33(76.7)
	Graduated	10(23.3)

Table 2. Results of the OSCE survey questionnaire among the study participants (N=43)

Row	Question	Mean±SD	No. (%)				
			Absolutely Disagree	Disagree	No Idea	Agree	Absolutely Agree
1	OSCE is an attractive assessment method	3.1±1.3	6(14.0)	11(25.6)	6(14.1)	14(32.6)	6(14.0)
2	OSCE is a fair assessment method	2.4±1.1	8(18.6)	22(51.2)	4(9.3)	7(16.3)	2(4.7)
3	In OSCE, the student discovers her/his strengths and limitations	3.2±1.1	3(7.0)	10(23.3)	7(16.3)	20(46.5)	3(7.0)
4	OSCE decreases the stress of the student	1.7±1.1	23(53.5)	15(34.9)	1(2.3)	1(2.3)	3(7.0)
5	OSCE is properly able to assess the knowledge and information of the student.	2.2±1.0	8(18.6)	24(55.8)	6(14.0)	3(7.0)	2(4.7)
6	OSCE assesses the practical skills of the student properly.	2.7±1.1	3(7.0)	19(44.2)	8(18.6)	11(25.6)	2(4.7)
7	OSCE assesses the clinical diagnosis skills of the student properly.	2.9±1.2	3(7.0)	17(39.5)	8(18.6)	11(25.6)	4(9.3)
8	OSCE is an appropriate method to assess students in general.	2.9±1.8	7(16.3)	14(32.6)	6(14.0)	14(32.6)	1(2.3)

OSCE: Objective structured clinical examination.

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follows: the attractiveness of the OSCE 46.6%, being fair 21%, identifying his/her strength and weaknesses 53.5%, ability to assess knowledge and information 11.7%, good assessment of practical skills 30.3%, good assessment of clinical diagnosis skills 34.9%, and appropriateness 34.9%. Increased stress with OSCE in 88.4% of the participants was observed.

In the study by NikBakhsh and Mouodi investigating medical students' opinions regarding OSCE over 4 years, the medical students had generally positive attitudes toward various aspects of OSCE [5]. In the study by Dhinakaran et al. [3] regarding opinions of physiotherapy students on OSCE, more than 80% of students reported OSCE as an effective tool for assessment. In their study, participants had 5 minutes of response time in each station for each question, while our study had just 3 minutes for each station. It seems that one of the main reasons for the lower satisfaction rate of students regarding the general structure of OSCE compared to the findings of other studies was the shorter response time in each station.

In our study, 88.4% of students believed that OSCE increases students' stress, while in the study by Dhinakaran et al. [3], as well as John et al. [14], most phys

iotherapy students reported that OSCE had less stress. Some studies conducted on medical students show that OSCE increases students' stress, as 62.3% of medical students of Babol [5], 67% of medical students in Zahedan [15], 51% of medical students in Pakistan [16], and 48% of medical students in Arabia [17] consider OSCE as stressful. In our view, the stressfulness of the OSCE can be attributed to the lack of proper and sufficient introduction to the students and quality of holding OSCE, lack of identical management method in each station by faculty members, and shortness of the duration of each station.

In this study, 21% of participants considered OSCE a fair assessment method, while the previous study reported 70.8% [14]. The differences in these two studies may be due to how the OSCE is conducted in different studies.

In our study, only 11.7% of students believe that this examination can evaluate the information and knowledge of the students. In addition, 30.3% of students reported that OSCE could assess the practical skills of physiotherapy students. The previous studies identified OSCE as a useful method to assess the professional skills of physiotherapy students [6, 7, 14].

The findings showed that OSCE satisfaction of graduates in physiotherapy was significantly higher than that of last year's students, which might be due to the lack of a defensive mode against performing the exam in graduates.

According to the findings of the current study and comparing it with the other studies, it seems that the lack of proper and correct OSCE introduction to students and the allocation of sufficient duration in each station for responding to the questions are two fundamental factors from the viewpoint of students regarding general satisfaction of OSCE. In addition, it is necessary to promote the quality of the designation of OSCE questions. Accordingly, it is recommended to use real files of patients referring to the physiotherapy clinics previously encountered by students during their internship instead of presenting a simulated patient.

Ethical Considerations

Compliance with ethical guidelines

This research had no ethical code but was approved by the Vice Chancellor for Research and Technology of Babol University of Medical Sciences.

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Authors' contributions

Conceptualization and supervision: Maryam Abbaszadeh-Amirdehi; Ghadamali Talebi; Methodology: Maryam Abbaszadeh-Amirdehi; Zeinab Gholamnia-Shirvani; Data collection: Maryam Abbaszadeh-Amirdehi; Data analysis: Maryam Abbaszadeh-Amirdehi; Zeinab Gholamnia-Shirvani; Investigation, writing-original draft, and writing- review & editing: All authors; Critical revision of the article: Maryam Abbaszadeh-Amirdehi; Ghadamali Talebi.

Conflict of interest

The authors declared no conflict of interest.

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