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OBJECTIVELY STRUCTURED CLINICAL EVALUATION (OSCE) VERSUS CONVENTIONAL EXAMINATION METHOD USED FOR DENTAL POSTGRADUATE STUDENT IN PRACTICAL

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ABSTRACT

Assessment is crucial in the learning process of student .Process of assessment at taking a sample of students group, making inferences from it and then estimates of its worth in terms of marks orders. OSCE uses series of tests station to test clinical competencies. The aim of the study was to investigate the effectiveness of an implementation strategy by measuring the attitude of students towards the OSCE a new form of clinical assessment in a dental school as compare to conventional descriptive type.

Material and Methods: 200 students enrolled in Sharad pawar dental college sawangi, Wardha deemed university. Students progress and prospectus were investigated. OSCE questionnare fomat given and advised opinion whether to continuous with OSCE or conventional one.Quasi experimental design was adopted.

Results: The results indicated there was high statistical significant differences between OSCE and the conventional method. The highest rate of satisfaction belong to OSCE method of evaluation as student reported that OSCE measured course objective in a better way, enhances teaching level evaluation, relation of theory to practical in better way, increased decision making ability, made exam well finished by unbiased means.

Conclusions: OSCE can be used as a appropriate method in evaluating students orthodontic clinical skill because of various advantages such as improving students clinical performance, preparing highly qualified and competent graduate.(1,2,3,4)

KEYWORDS: Evaluation OSCE, Conventional Method, Student Performance

INTRODUCTION

OSCE is an acronym for objective structured clinical examination ,an assesment method that is based on objective testing and direct observation of students performance during planned clinical encounter (also called interactions or test stations)

Originally described by Harden(1975),the OSCE includes several "stations" in which examinees are expected to perform specific clinical tasks witin a specified time period(5 to 30 mins).To complete examinations student rotate through a series of stations (as few as to 2-20).

The student is observed at station about his performance taking history performing physical examination or diagnostic procedures ,teaching counselling ,advising patient . A rating form or standardised checklist clearly specified the evaluation criteria and the scoring system to be used for each station. The more items marked as done on the checklist, the higher the score. Morever stations are those spots where the student has to answer the activities performed.

Morever, students perceived OSCE scores as a true measure for essential clinica lskills being evaluated, standardised, and not effected by students personality or social relations (Pierre et al.,2004).From this it can be suggested that OSCE provide an integrated way of measuring learning outcomes in skills based learnings.The OSCE sessions not only help students determining there own weakness but also enable examiners to realise what the current students are.If required additional teaching sessions can be organised to address skills that cause problems to the students during OSCE.The use of such sessions may well be a key element to the training of better prepared health care professionals (Alinier,2009).(1,2,3,4)

Aim of the Study

compare the effectiveness of OSCE verses conventional students practical achievement scores at dental college.

2. Subject & methods

Hypothesis dental post graduate students who evaluated by OSCE will have higher clinical achievement scores than those who evaluated by conventional method.

Research Design Quasi experimental research design was adopted to accomplish the stated aim.

Sample Total sample of 200 students enrolled in dental faculty of SPDC college were selected . these students were evaluated by both OSCE and conventional methods. Data collection was done during the academic year 2014-2015.To reduce the bias and to get the average properly data collection was done twice.First through assessment of 100 students during academic year2014.as first MDS basic medical subjects study in first semester as a first trial .The same students during theacadamicyear 2015just before final university exam called as prelium exam in second semester as a second trial. (8,9,10)

Tools of Data Collection after reviewing related literature to fulfill the aim of the study ,m 3 tools were developed by the researchers and revised by the consultants. validity of the developed tools was achieved by 5 panel of experts in the field of dental college and the needed modification were carried out, this is called as ethical committee which approves the research.(11,12,13)

The tools were: student's assessment and evaluation domains to give an accurate judgment on students adequacy regarding the specific course knowledge skills attitudes; checklist developed by HWD and states satisfactory , unsatisfactory and not observed.(15,16,17)

Procedure

- The data collection procedure has been done through three process:
- Planning of OSCE scheme and putting clinical scenario phase
- Implementation phase
- Evaluation phase.(5,6)

Planning Phase

OSCE was performed as follows; after determining the number and kind of station based on the trained techniques and available facilities, were implemented. The student's instructions and checklist competence. All the students

did the techniques equally at the same time and were assessed by the researcher on the basis of the immediate formative feedback was given at the end of exam.

Implementation Phase

a total of 100 students at high risk area which constitute three weeks for each students enrolled the clinical area by rotation during each semester. First week was considered for orientation about the area competency, aim, methods of evaluation, student activities, caring for the patient without stress and under supervision of clinical instructors, in addition to small lecture about OSCE system evaluation

in the first day . The students were evaluated by both OSCE methods in one day and by traditional methods in another day.

Evaluation Phase

after the conduction of the exam , students perspective tools was distributed to be fulfilled at their own pace and oral feedback was obtained through conducting a focus group of the students.

Statistical Analysis

collected data were coded and tabulated using personal computer. Statistical package for the social science (SPSS) version 18 was used. Regarding descriptive statistics, data was summarized using :

- The arithmetic mean as an average
- The standard deviation as a measure of dispersion of results around the mean;
- The frequency and percentage.

Furthermore, inferential statistics included the students't-test for comparison of means of 2 independent groups. Statistical significance was considered at p-value <0.05 (18)

RESULTS

A- Students Achievements

Regarding the effectiveness of OSCE,the current study indicated thedental post graduation students obtained higher mean scores in OSCE exams I MDS Basic subjects (27.003+_2.89), as compared to there mean scores with traditional methods (24.16+_5.33)with a highly statistically significant differences (p<0.00)(table,1) in the first trial. Also the comparision between OSCE versus traditional method of evaluation revealed higher mean OSCE scores with high statistical significant difference in second trail (p<0.00) (table1).(21,22,23)

Table 1: Comparison of Students' OSCE versus Traditional Evaluation System Mean Scores in First & Second Trail (N=200)

Item	OSCE Evaluation	Conventional Evaluation	T	P
	Mean + SD			
1st trail	27.004 ± 2.98	24.99 ± 6.03	3.702	0.00
2nd trail	26.99 ± 2.28	24.92 ± 2.22	4.68	0.00
Total mean scores	26.99 ± 4.21	23.69 ± 4.44	6.23	0.00

B Students Perspectives

Table 2 shows the students opinion regarding advantages of OSCE compared to the conventional method of evaluation. The highest rate of satisfaction belonged to OSCE methods of evaluation as the students reported that OSCE measure course objectives (71.9%),enhancing teaching level (71.6%),relate theory to practice (7o.6%),increase decision making ability (70.5%),enhance method of evaluation (70%),require analytical questions (66.3) makes exams well develop (72%) than the traditional method.The mean score for students opinion was (28.1+_9.6).

In relation to student's perspectives regarding OSCE preparation , table (3) revealed that preparation to OSCE was ranked as very satisfactory to satisfactory by more than one third of the students. The same rank was given to obvious preparation of OSCE by approximately half of the student's (46.3%),time tables were available and known to students (78.5) with a mean of 4.8+_2.03.As regards OSCE's laboratories, more than half of the students indicated that they were suitable,lighted and ventilated,clean,calm,with availability of the needed equipments and simulators.(19,20,21)

Table 2: Frequency Distribution of Students' Perspectives Regarding the OSCE System

Item	Very Satisfactory		Satisfactory		Unsatisfactory	
	No.	%	No.	%	No.	%
1-Measuresthe course objectives.	88	44	28	14	64	32
2- Is credible	96	48	34	17	56	28
3- Is consistent/reliable	84	42	52	26	57	28.5
4- Requires analytical questions	98	49	36	18	63	31.5
5- Relates theory to practice	102	51	44	22	54	27
6- Lead to increased decision making ability	98	49	34	17	58	29
7- Increased knowledge and understanding	90	47.4	45	22.5	56	28
8- Enhances teaching level	103	55	49	24.5	54	27
9- Enhances methods of evaluation	97	51.05	45	22.5	57	28.5
10- Markes exams well developed	79	39.5	49	24.5	53	26.5
11- Markes exams/questions clear	97	48.5	45	27.5	60	30
12- Markes exams/questions suitable for different students levels	98	49	39	19.5	66	33
13-Marks exams/question to cover most of course contents	82	41	38	19	76	38
Mean + SD 28.1 + 9.6						

Table 3: Frequency Distribution of Student's Perspectives Regarding Preparation to OSCE and OSCE

Item	Very Satisfactory		Satisfactory		Unsatisfactory	
	No.	**%**	**No.**	**%**	**No.**	**%**
Preparation for the OSCE Was obvious before establishing OSCE	58	29	36	49.1	104	55
2- Time tables were available and known to students	38	19	118	62.2	42	22
3- Satisfaction of number of exam	31	15.5	132	70	28	14
	Mean 4.8 + 2.03					
The OSCE labs. 1- Suitable for learning	48	42.2	46	24.2	88	46.5
2- Lighted and ventilated	49	23.7	55	28.9	90	47.4
3- Clean Set up	47	23.7	43	22.6	102	53.7
4- Calm	41	22.6	43	22.6	104	54.7
5- The needed equipments and simulators are available	40	22.1	44	23.2	105	55.3
6-Suitable for student' number	43	23.2	48	25.3	97	51
Mean + SD	**10.2 + 4.2**					

DISCUSSIONS

The acquisition of clinical skills is paramount to the development of a safe and competent practitioner (Brookes, 2007). OSCE as a performance-based assessment is a well established student's assessment tool for many reasons: competency-based, valid, practical and wise effective mean of assessing clinical skills that are fundamental to the practice of nursing and other health care professions (Alinier,2003).(5,6,7)

Regarding the effectiveness of OSCE, the current study pointed out that, the comparison between OSCE versus traditional method of evaluation revealed higher mean OSCE scores with a high statistical significant difference in first trail.This finding is congruent with Smith et al., (2012) who compared different methods of assesing midwifery students' clinical skills,the results indicated that none of the assesment methods of clinical skills can provide complete information about the students' skills but OSCE method can be used as avery valuable method for assesing clinical competency of students because of appropriate reliability in comparison to methods such as worksheet,clinical observance,and etc.As well, the mean scores of students who undergone OSCE in the second trial were high as compared to the group who undergone traditional method of evaluation with high statistical significant difference ($p<0.000$).This is in the same line with Huang et al (2007), who studied medical students' satisfaction with OSCE method. The result showed that the majority of students were satisfied and expressed that its effect on improving clinical skills was pleasing. Also, Brosnan et al.(2006) studied the effect of using OSCE on the self-confidence of nursing students and their point of view toward clinical practice. The results showed that the students whose higher scores in OSCE assesment method had more self-confidence for doing clinical practice. Also students mentioned that OSCE was a meaningful and the fairest method of assessing clinical skills.

In relation to the students' opinion regarding advantages of OSCE compared with the traditional methods of evaluation, they indicated that, OSCE measure course objectives, enhancing teaching level, relate theory to practice, makes exam well developed, increased decision making ability and enhanced method f evaluation,than the conventional one. The students opinion about the OSCE system was ranked as very satisfactory to satisfactory by more than two thirds of the students .This feedback can suggest that OSCE is an objective tool for evaluating clinical skills. These findings are in agreement with a study conducted by El Nemer& Kandeel,(2009)who reported that most students viewed OSCE as a fair assessment tool which covered a broad area of knowledge,allowed them to compensate in some areas and minimisedtheir chances of failing.Moreover,(2011) studied 58 cases of dental students opinions that were assessed by OSCE .The researchershad wanted the students to express his knowledge.

As well ,in a study conducted by Turner& Dankoski,(2008) to assess the validity, reliability and fesibility of OSCE team, the majority of students felt thatthey had been marked fairly.Most students providedthe sequence of OSCEstations ,the reflction of the tasks taught and the time at each station .These findings are consistent with Pierre et al.(2004) who indicated that most students viewed OSCE as comprehensive,covered a wide range of knowledge and clinical competencies and a useful practical experience.(11,12,13)

CONCLUSIONS

Based on the findings of the results of present study and reviewing the related studies ,it can concluded that with better planning in performing OSCE through practice during the term,stressors could be decreased .OSCE can be used as an appropriate method in evaluation dental clinical skills because of various advantages such as improving students

clinical performance,preparing highly qualified and competent graduates,increasing decision making abilities and enhance teaching level. Therefore improving the qualityof evaluation as OSCE is a valid and reliable technique uniquely capable of assessing many fundamental clinical skills that are not being assessed in arigorous way in mst undergraduate. (5,6,7)

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