A Study to Evaluate the Effect of Objective Structure Clinical Examination on Nursing Trainees under the Subject of Midwifery and Obstetrical Nursing

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Abstract

Aim: The aim of this study was to assess the impact of objective structured clinical examination (OSCE) on knowledge and perception among nursing students from selected colleges in metropolitan city.

Background: Clinical assessment is a basic component in the expert training program. It is critical to evaluate the understudy's competency in genuine practice. The fundamental reason for the clinical assessment is to evaluate quality and measures of clinical execution and to give them input to encourage accomplishment of goals.

Methods: The research design adopted for this study was experimental one group pre-test and post-test research design with qualitative and quantitative research approach. The source of data collection process was done using primary and secondary data from nursing students in selected colleges of Mumbai and New Mumbai region. 300 nursing students from 3rd and 4th year basic BSC nursing, 3rd year general nursing and midwifery, and 1st year post basic BSC nursing were recruited in the study using non-probability convenient sampling technique. Tool used consisted of demographic data, opinionative to assess the perception of nursing students about OSCE, suggestions by the respondents and rating of OSCE. ANOVA is included in the analysis of quantitative research, and interest for the discrepancy in performance.

Results: About 90% students said "Yes" in relation to awareness about OSCE whereas, 10% said "No." Furthermore, about 70% responded as "Yes" in relation to their experience of been through OSCE examination whereas, 30% responded as "No."

Conclusion: Study findings revealed that the pre-test knowledge of the participants was low, after imparting knowledge of OSCE, the post-test scores was found to improve significantly.

Keywords: Impact, knowledge, nursing students, objective structured clinical examination, perception

Introduction

The objective structured clinical examination (OSCE) is said to be a step in the "direction of competency based evaluation. The OSCE was designed with consideration, and it attained satisfactory reliability and validity for assessing the level of knowledge of students and for proper evaluation of their

learned and skill abilities in the examination. The OSCE, precertification tests, and monthly clinical reviews had shown major similarities within the former being higher than the latter. According to the research findings, a mixture of the OSCE, uniform board exams, and direct evaluation in the clinical environment has the ability to become the "gold standard" for assessing the competence of the students.[1]

The OSCE was approved by the majority of nursing students for their professional expertise, according to feedback from nursing students. OSCE was seen by the majority of students as a fair appraisal mechanism that included a broad spectrum of skills, reduced the risk of failure, and highlighted areas of vulnerability. The OSCE supported nursing students with

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important hands-on training. The input obtained on this appraisal method shows that OSCE is a valid and practical device for evaluating nursing student's clinical skills.[2]

Assessment of student's knowledge, clinical performance and satisfaction with OSCE resulted in a high post-test knowledge score compared to a poor pre-test score. According to the findings, OSCE has benefits in terms of assumptive and formative evaluation. The majority of students were pleased with the exam and thought it was reasonable and successful.[3] OSCE is also been used in other fields like the radiology department and they stated that, OSCE is a created, reliable as well as effective multi-station test for an objective and transparent evaluation of practical technical skills.[4]

Reviewing the nursing student's views toward OSCE test elaborated that OSCE was the most effective approach to evaluate clinical skills in nursing students. In regard to the satisfaction rate of family health students from the OSCE method results indicated that students' satisfaction with this method had a significant difference with the conventional method.[5] OSCE has been the evaluation of choice concluded that the OSCE clinical assessment design has clear benefits, particularly in terms of uniformity, objectivity as well as the flexibility of clinical scenarios that may be tested, and that it outperformed conventional clinical assessment. It allowed clinical students at various levels of training to be evaluated over a wide variety of skills and problems in a reasonably short period of time. The OSCE removed discrimination in student examinations and allowed all candidates to be tested using the same spectrum and standards.[6]

Evaluation of student's opinion about OSCE for graduate Nursing student also determined that the majority of the student's concluded that an OSCE is a stronger form of clinical assessment than a traditional test since bias can be reduced and it is less difficult as compared with the ordinary exam. They also decided that the OSCE could provide compensation in the event of poor results.[7] Evaluating an OSCE an also be adapted for social work that have a broad variety of ratings on OSCE ranges indicated that variations in student competencies. There was a similarity in OSCE ranges and field final assessments, according to correlation analyses. The study concluded that the OSCE form of measurement can be viewed with caution and that it needs to be replicated and adapted for the appraisal of social work educational results.[8]

The OSCE helps to evaluate the student's demonstrated clinical skills, and underpinning knowledge in simulated conditions. Students thought the OSCE was a worthy assessment, according to the study's findings.[9] An exploration of student midwife's experiences of the OSCE assessment process investigated the experiences of student midwives in a university environment with the OSCE evaluation procedure for obstetric emergencies. Student's scope of understanding was improved when utilizing OSCEs, with the measures taken in training for the OSCEs demonstrating to be a helpful learning aid. OSCEs are considered to be more successful than other types of testing in terms of training students for clinical practice.[10]

MATERIALS AND METHODS

Study design and setting

Their search design adopted for this study was experimental one group pre-test and post-test research design with qualitative and quantitative research approach. The source of data collection process was done using primary and secondary data from nursing students in selected colleges of Mumbai and New Mumbai region. Nursing students from 3rd to 4th years basic BSC nursing, 3rd year general nursing and midwifery, and 1st year post basic BSC nursing were recruited in the study.

Sample size and sampling method

The study enrolled 3rd and 4th years Basic BSC nursing, 3rd year General Nursing and Midwifery and 1st year Post Basic Bsc nursing students in the study. Where, 10th of the main study sample, that is, 30 nursing students were recruited in the pilot study, whereas 300 nursing students were recruited for the main study. Non-Probability Convenient Sampling Technique was used for selection of sample for the study. The samples willing to give consent to participate in the study were included in the study. The source of data collection process was done using primary and secondary data from nursing students in selected colleges of Mumbai and New Mumbai region.

Data collection tool and technique

A tool is a mechanism that the investigator develops and utilizes to collect significant data during the study. The tool prepared by the researcher for the study consist of demographic data parameters, a structured questionnaire to assess knowledge-based on OSCE, an Opinionative regarding the OSCE method, Rating scale, and open suggestions. Demographic profile was segregated as General, Specific, Library, Clinical, Exam, OSCE. The Structured questionnaire was designed in a form to assess knowledge-based on OSCE, Opinionative regarding OSCE method, Rating Scale of OSCE and Open Suggestions.

In this type of research design, the researcher had administered OSCE based midwifery practical examination to the group of nursing students who had previously been exposed to routine midwifery clinical examination in midterm examination and also attended OSCE session as its knowledge-based pre- and post-test. Out of the other types of pre-experimental design, the researcher selected one group pre-test post-test design. In this experimental research design, the researcher selected a group of nursing students who have exposed to the routine clinical examination (RCE) of the same subject in regard to obtaining their rating about the RCE and OSCE. Knowledge about OSCE was assessed by pre-test as well as post-test. This analysis of pre-experimental research design has no control over extraneous variables. In this one group, pre-test post-test design was used.

Ethical consideration

The research plan would be authorized by the university's Ethical/DRC committee. Prior approval would be requested from the relevant authority. Each sample will be required to sign an informed written consent document.

RESULTS

Findings on the Basis of Quantitative data

According to demographic profile According to demographic

About 80% of the population were from age group 21 years, 10% of the total population from age group 22 years, 10% of the total population were from age group 23 years whereas, 0% of the population were from age group >23 years. About 70% population were females, 30% males whereas 0% were transgender. About 70% samples belong to Hindu religion, 5% belong to Muslim religion, 25% belong to Christian religion whereas 0% belong to other religion. About 20% belongs to primary education, 50% belong to secondary education, 10% belong to higher secondary education, another 10% belong to graduate education, and 5% belongs to post graduate education whereas 5% belongs to other category. About 5% belongs to primary education, 5% belong to secondary education, 20% belong to higher secondary education, another 60% belong to graduate education, and 10% belongs to post graduate education whereas 0% belongs to other category. About 0% population belongs to no income category, 5% belongs to <5000 category, 15% belongs 5000–10000 category, 40% belongs to 10000–15000 category, and 10% belongs to 15000–20000 category whereas 30% belongs to >20000 category.

Specific data

About 20% population belongs to 3rd year GNM, 20% belong to 3rd year BSC, and 60% belong to 4th year Basic BSc whereas 0% belong to 1st year PB BSC Nursing. About 35% were day scholar and 65% were hostilities. About 25% population belongs to regular and 75% belong to irregular in relation to study time. About 60% belongs to <1 h, 15% belong to 1 to 2 h, 15% belong to 2 to 3 h, and another 10% belong to >3 h in relation to their self-study time on daily basis.

Library

About 100% belongs to "Yes'' and 0% belong to "No" category in terms of availability of library facility. About 80% population belongs to <1 h, 10% belong to 1 to 2 h, and 5% belong to 2 to 3 h whereas 5% belong to >3 h spend in library. About 100% belongs to "Yes" and 0% belong to "No" based on availability of reading material.

Clinical

About 100% belongs to "Yes" and 0% belong to "No" in relation to their demonstration and re demonstration before clinical exams. About 50% belongs to "Yes" and 50% belong to "No" in relation to their competency checklist before procedures. About 100% belongs to "Yes" and 0% belong to "No" category of student supervisor ratio 10:1. About 100% belongs to "Yes" and 0% belong to "No" for periodic revision. About 100% belongs to "Yes" and 0% belong to "No" in relation to their bedside teaching. About 100% population belongs to "Yes" and 0% belong to "No" in relation to their procedure viva. About 100% belongs to "Yes" and 0% belong

to "No" in relation to provision of specialty teacher during posting. 100% belongs to "Yes" and 0% belong to "No" in relation to their hands-on experience during clinical. About 100% belongs to "Yes" and 0% belong to "No" in relation to their availability of adequate resources for procedure. About 100% belongs to "Yes" and 0% belong to "No" relation to their availability of advanced models.

Exam

About 10% belongs to <20, 10% belongs to 20 to 30, 30% belongs to 30 to 40, and 50% belong to 40 to 50 marks in previous practical exam. About 35% belongs to "Yes" 65% belongs to "No" for systemic examination. About 40% population belongs to "Yes" and 60% belongs to "No" in relation to their opinion on the stress factor related to newer methods.

OSCE

About 90% belongs to "Yes" and 10% belongs to "No" in relation to awareness about OSCE [Table 1]. 70% belongs to "Yes" and 30% belongs to "No" in relation to their experience of been through OSCE examination [Table 2].

Profile of association between post insight score and selected demographic variables

Insight and age are not related [Table 3]. Insight is not correlated with gender, religion, mother's education, father's education, and family income related. Insight is synonymous with nursing program, mode of accommodation. Insight is correlated with self-study time and with self-study daily hours. Insight is not synonymous with library facility, hours spend in library, and hours spend in library. Insight is not correlated with adequacy of reading material. Insight is not correlated with the demonstration and redemonstrations [Table 4]. Insight is correlated with checklist for clinical procedures, bedside teaching and hands on experience during clinical, availability of models in lab, periodic revision, and checklist for clinical procedures [Table 5]. Insight is not correlated with provision of specialty teacher, adequacy of clinical resources, marks obtained in previous exams, marks obtained in previous exams, and previous experience of OSCE.

Findings on the basis of qualitative analysis

Opinionnaire

In this section analysis of information about opinion of nursing students regarding OSCE obtained.

Subject content of OSCE

70 (90%) strongly agree that such protocol is needed for increasing profile regarding OSCE upgrades cognitive, psychomotor and behavioral domains and the minimum samples 0 (0%) Neutral and strongly disagree [Table 6] 270 (90%) strongly agree that such protocol is needed for increasing to simplify lengthy viva topics of midwifery and 0 (0%) are neutral and strongly disagree 270 (90%) strongly agree that such protocol is not needed for increasing awareness. 0 (0%) Neutral and strongly disagree. 265 (85%) strongly agree that OSCE is needed as It allows for demonstration of

clinical skills and the minimum samples 0 (0%) were neutral. 270 (90%) strongly agree that OSCE is needed for OSCE helps to eliminate clinical errors and 0 (0%) neutral and strongly disagree 270 (90%) strongly agree that OSCE allows for recall and 0 (0%) neutral and strongly disagree.

Presentation of OSCE

265 (85%) strongly agree that OSCE is needed for OSCE helped to conduct practical examination in organized way and the 0 (0%) were neutral. 265 (85%) strongly Agree that OSCE is needed for simplified way of conducting practical examination and 0 (0%) were neutral. 265 (85%) strongly agree that OSCE is needed as It provides live observation and 0 (0%) were neutral. 265 (85%) strongly agree that OSCE is needed as It allows for demonstration of clinical skills and 0 (0%) were neutral. 265 (85%) strongly Agree that OSCE is needed as It reduces human errors whereas 0 (0%) were neutral. 265 (85%) strongly agree that OSCE is needed as It is one of the objective methods to reduce bias whereas 0 (0%) were neutral [Table 6].

Stations for conducting OSCE

270 (90%) strongly agree that OSCE is needed as it was very interesting to rotate under each station of OSCE., (0%) disagree 270 (90%) strongly agree that OSCE is needed as adequate details provided at each working station whereas 0 (0%) were neutral. 270 (90%) strongly agree that OSCE is needed as all stations were self-explanatory of OSCE whereas 0 (0%) were neutral 270 (90%) strongly agree that OSCE is needed as it includes uniform scenarios for all candidates of OSCE whereas 0 (0%) were neutral [Table 7].

Feasibility of OSCE

285 (95%) strongly agree that OSCE is needed as OSCE is student friendly method of examination whereas 0 (0%) agreed and disagreed. 285 (95%) strongly agree that OSCE is needed as I liked and enjoyed OSCE based practical examination whereas 0 (0%) Agreed and Disagreed. 285 (95%) strongly agree that OSCE is needed as OSCE successfully reduced exam related stress. whereas 0 (0%) agreed and disagreed. 285 (95%) strongly agree that OSCE is needed as OSCE improved confidence level whereas 0 (0%) agreed and disagreed. 285 (95%) strongly agree that OSCE is needed as It includes no danger to injury to patient whereas 0 (0%) agreed and disagreed. 285 (95%) strongly agree that OSCE is needed as It includes no risk of litigation 285 (95%) strongly agree that It is more money, whereas 0 (0%) agreed and disagreed. Manpower and material consuming process 6 (2%) people are having neutral opinion, 0 (0%) disagree that such it is needed It is more money, manpower and material consuming process and 15 (5%) strongly agree [Tables 8 and 9].

Time management while conducting OSCE

240 (80%) strongly agree that adequate time slot provided at each station whereas 0 (0%) Disagree 240 (80%) strongly agree that I was successfully able to complete task in provided time period whereas 0 (0%) disagree [Table 10].

Creativity of OSCE

240 (80%) strongly agree that OSCE is a novel term in practical examination whereas 0 (0%) disagree 240 (80%) strongly agree that OSCE It was very interesting and creative whereas 0 (0%) disagree 240 (80%) strongly agree that OSCE It promotes innovation whereas 0 (0%) disagree 240 (80%) strongly agree OSCE included brain storming sessions whereas 0 (0%) disagree [Table 11].

Futuristic implications of OSCE

285 (95%) strongly agree that It can be very well implemented for other specialty subjects whereas 0 (0%) 285 (95%) strongly agree that I would like to undergo OSCE based practical examination again whereas 0 (0%) disagree [Tables 12 and 13].

Distribution of samples according to suggestions given by the respondents regarding OSCE and RCE

In OSCE, positive feedback commonly included objectivity, novelty, interesting, scoring, reducing fear and boosting confidence level whereas negative feedback included its limitations, non-acceptance by college or university, time consuming and planning [Table 14]. In OSCE 80% of the population that is 240 students mentioned strengths of OSCE as they have felt that it is feasible, specific and easy to understand whereas 20% of the population that is 60 students mentioned its weakness, in OSCE as they felt that its time consuming, different than routine and non-familiar. In RCE, 40 % of the population that is 120 students mentioned strengths of RCE because they felt that traditional methods of examination are feasible; however, 60% of the population that is 180 students mentioned its weakness as its vast to study [Tables 15 and 16]. In OSCE, 80% of the population that is 240 students have positive approach towards steps to improve of OSCE as they have felt that it is good but only for small groups 20% of the population that is 60 students have negative approach as in OSCE as they felt that its time consuming, 40% of the population have positive approach towards RCE because they felt that if bias can be controlled then it can be improved, 60% of the population that is 180 students have negative approach toward RCE as they feel they need to improve on syllabus and should make it more specific [Tables 17-19].

Distribution of samples in relation to their awareness about OSCE

Table 1 depicts the allocation of the samples according to their opinion on their awareness about OSCE. The data reveals that 90% of the population that accounts for 270 samples were aware of the OSCE whereas 10% of the population that accounts for 30 samples were not aware of OSCE.

Interpretation: According to the above table maximum of sample 270 i.e. 90% sample was aware of the OSCE. Whereas the minimum of sample 30, that is, 10% were not aware of OSCE. This may be due to the ability of the individual sample.

PROFILE OF EXPERIENCE OF BEEN EXAMINE THROUGH OSCE EXAMINATION

Table 2 depicts the distribution of the samples in relation to their opinion on their experience of being through OSCE. The data reveals that 70% of the population which accounts for 210 samples were examined previously whereas 30% of the population which accounts for 90 samples were not examined previously. This shows that the maximum population has experience and knowledge of OSCE.

Interpretation: According to the above table maximum of sample 210, that is, 70% sample has the experience of being through the OSCE examination. Whereas the minimum of sample 90, that is, 30% sample do not have the experience of being through OSCE examination. This may be due to the ability of the individual sample.

DISTRIBUTION OF SAMPLES REGARDING THEIR INSIGHT ON OSCE ACCORDING TO PRETEST AND POSTTEST SCORE

Table 3 illustrates that in the pre-test 60% of the population that is 180 samples have considered "OSCE to be the correct answer", whereas 20% of the population, that is, 60 samples opted for "Ongoing Structured Clinical Examination." Around 10% of the population, that is, 30 samples selected "Open-minded Structured Clinical Examination" and another 10% of the population, that is, 30 samples considered "Overview Structured Clinical Examination" Whereas in post-test 90% of the population that is 270 samples have considered "OSCE" as the correct answer which indicates that maximum population considered the correct answer.

Table 1: Distribution of samples in relation to their awareness about OSCE, *n*=300

Awareness about OSCE	Group	
	Frequency (f)	Percentage
Yes	270	90
No	30	10

OSCE: Objective structure clinical examination

Table 2: Distribution of Samples in Relation to Their Experience of Been Through OSCE Examination, *n*=300

Experience of OSCE	Group	
	Frequency (f)	Percentage
Yes	210	70
No	90	30

OSCE: Objective structure clinical examination

Interpretation: According to the above table in pre-test OSCE is been answered by 60% sample compared to post-test, that is, 90%. The reason behind it can be due to gained knowledge after the health education training program.

Table 4 shows that in pre-test 15% of the population, that is, 45 subjects opted the options Dr Pearson and another 15% of the population selected Dr Wilson 35 % of the population that is 105 samples have considered Dr Harden to be the correct answer yet another 35% of the population, that is, 105 samples selected Dr Abraham as the correct answer. Whereas in post-test 95 % of the population that is 285 samples have considered Dr Harden as the correct option. The percentage in the table shows that maximum samples selected the correct option, that is, Dr Harden as the correct answer.

Interpretation: According to the above table in a pre-test, Dr Harden and Dr Abraham is been answered by 35% sample compared to post-test, that is, 95%. The reason behind it can be due to gained knowledge after the health education training program.

Table 5 describes that in the pretest, 20% of the population (60 samples) have considered option D to be the correct answer. Whereas in post-test 90% of the population (270 samples) have considered option D to be the correct answer.

Interpretation: According to the above table in the pre-test same student is been answered by 20% sample compared to post-test, that is, 90%. The reason behind it can be due to gained knowledge after the health education training program.

Table 6 reflects that in the pre-test 20% of the population (60 samples) have considered option C to be the correct answer. In post-test, 90% of the population (270 samples) have considered option C to be the correct answer.

Interpretation: According to the above table in pre-test 1975 is been answered by 20% sample compared to post-test, that is, 90%. The reason behind it can be due to gained knowledge after the health education training program.

Table 7 shows that 20% of the population that is 60 samples have considered option A to be the correct answer in pre-test and 90% of the population that is 270 samples have considered option A to be the correct answer in post-test.

Interpretation: According to the above table in pre-test, Careful planning is been answered by 20% sample compared

Table 3: Pre-test and Post-test Score for OSCE Abbreviation, *n*=300

OSCE is _____?	PRETEST		POSTTEST	
	Frequency	Percentage	Frequency	Percentage
A) OSCE	180	60	270	90
B) Ongoing Structured Clinical Examination	60	20	15	5
C) Open minded Structured Clinical Examination	30	10	15	5
D) Overview Structured Clinical Examination	30	10	0	0

OSCE: Objective structure clinical examination

to post-test, that is, 90%. The reason behind it can be due to gained knowledge after the health education training program.

Table 8 explains that in the 15% of the population that is 45 samples have considered option C to be the correct answer and 92% of the population that is 276 samples have considered option C to be the correct answer in pre-test and post-test, respectively.

Interpretation: According to the above table in pre-test stations is been answered by 15% sample compared to

post-test, that is, 92%. The reason behind it can be due to gained knowledge after the health education training program.

Table 9 illustrates that in the pre-test 30 % that is 90 samples have considered option D to be the correct answer. In post-test, 94% that is 282 samples have considered option D to be the correct answer.

Interpretation: According to the above table in pre-test cognitive, behavioral, and psychomotor is been answered by 30% sample compared to post-test, that is, 94%. The reason behind it can be due to gained knowledge after the health education training program.

Table 10 describes that 63% of the population that is 189 samples and 91% of the population that is 273 samples have considered option C to be the correct answer in pre-test and post-test, respectively. The percentage in the table shows that maximum samples selected the correct option, that is, fixed as the correct answer.

Interpretation: According to the above table in pre-test Fixed is been answered by 63% sample compared to post-test, that

Table 4: Pre-test and Post Test Score for OSCE, *n* = 300

OSCE was developed by___	Pretest		Posttest	
	Frequency (f)	Percentage	Frequency (f)	Percentage
A) Dr. Pearson	45	15	3	1
B) Dr. Wilson	45	15	6	2
C) Dr. Harden	105	35	285	95
D) Dr. Abraham	105	35	6	2

OSCE: Objective structure clinical examination

Table 5: Pre-test and Post-test Score for Structured meaning, *n*=300

In OSCE Structured means all Except	Pretest		Posttest	
	Frequency (f)	Percentage	Frequency (f)	Percentage
A) Same problem	105	35	0	0
B) Same tasks	75	25	15	5
C) Same time frame	60	20	15	5
D) Same student	60	20	270	90

OSCE: Objective structure clinical examination

Table 6: Pre-test and Post Test Score for OSCE development year, *n*=300

OSCE developed in the year____	Pretest		posttest	
	Frequency (f)	Percentage	Frequency (f)	Percentage
A) 1965	60	20	6	2
B) 1970	60	20	18	6
C) 1975	60	20	270	90
D) 1980	120	40	6	2

OSCE: Objective structure clinical examination

Table 7: Pre-test and Post-Test Score for a key to successful OSCE conduction, *n*=300

The key to successful OSCE conduction is _____	Pre-test		Post-test	
	Frequency (f)	Percentage	Frequency (f)	Percentage
A) Careful planning	60	20	270	90
B) Careful diagnosis	60	20	12	4
C) Careful implementing	75	25	9	3
D) Careful evaluating	105	35	9	3

OSCE: Objective structure clinical examination

Table 8: Pre-test and Post-Test Score for naming subdivided parts of OSCE, *n*=300

OSCE is subdivided into various parts termed as	Pre-test		Post-test	
	Frequency (f)	Percentage	Frequency (f)	Percentage
A) Parts	90	30	9	3
B) Sessions	45	15	9	3
C) Stations	45	15	276	92
D) Compartments	120	40	6	2

OSCE: Objective structure clinical examination

is, 91%. The reason behind it can be due to gained knowledge after the health education training program.

Table 11 indicates that option B be the right answer has been considered by 53% of the population with 159 samples in a pre-test. Where 94% of the population, which comprises 282 samples, regarded option B as the right one in the post-test. The percentage in the table shows that maximum samples selected the correct option, that is, time consuming as the correct answer.

Interpretation: According to the above table in pre-test time consumption is been answered by 53% sample compared to post-test, that is, 94%. The reason behind it can be due to gained knowledge after the health education training program.

Table 12 depicts that, pre-test findings of 20% of the population (60 samples) and post-test findings of 96% of the population (288 samples) have considered option C to be the correct answer. The percentage in the table shows that maximum samples selected the correct option, that is, standardization as the correct answer.

Interpretation: According to the above table in pre-test standardization is been answered by 20% sample compared to post-test, that is, 96%. The reason behind it can be due to gained knowledge after the health education training program.

Table 13 shows that in the pre-test 20 % (60 samples) and in the post-test 92% (276 samples) have considered option D to be the correct answer. The percentage in the table shows that maximum samples selected the correct option, that is, Both A and C as the correct answer.

Interpretation: According to the above table in pre-test Both A and C is been answered by 20% sample compared to post-test, that is, 92%. The reason behind it can be due to gained knowledge after the health education training program.

Table 14 illustrates that in the pre-test, 26% of the population that is 78 samples have considered option C to be the correct answer. Whereas in post-test 94 % of the population that is 282 samples have considered option C to be the correct answer. The percentage in the table shows that maximum samples

Table 9: Pre-test and Post-test Score for OSCE domains, n = 300

OSCE determines the following domain of learner	Pre-test		Post-test	
	Frequency (f)	Percentage	Frequency (f)	Percentage
A) Cognitive	60	20	3	1
B) Cognitive, behavioral	75	25	6	2
C) Behavioral, psychomotor	75	25	9	3
D) Cognitive, behavioral, and psychomotor	90	30	282	94

OSCE: Objective structure clinical examination

Table 10: Post-test and pre-test Score for OSCE duration of each subpart, *n*=300

In OSCE duration of each sub part is _____	Pre-test		Post-test	
	Frequency (f)	Percentage	Frequency (f)	Percentage
A) Flexible	30	10	9	3
B) Variable	60	20	6	2
C) Fixed	189	63	273	91
D) Minimal	21	07	12	4

OSCE: Objective structure clinical examination

Table 11: Post-test and pre-test Score for Advantages of OSCE, *n*=300

All are advantages of OSCE EXCEPT	PRE-TEST		POST-TEST	
	Frequency (f)	Percentage	Frequency (f)	Percentage
A) Non bias	45	15	6	2
B) Time consuming	159	53	282	94
C) Less complexities	51	17	6	2
D) Can be used for a large number of students	45	15	6	2

OSCE: Objective structure clinical examination

Table 12: Post and pre-test Score for OSCE requirement, *n*=300

OSCE requires _____	PRE-TEST		POST-TEST	
	Frequency (f)	Percentage	Frequency (f)	Percentage
A) Change	60	20	3	1
B) Randomization	60	20	3	1
C) Standardization	60	20	288	96
D) Non-Reliability	120	40	6	2

OSCE: Objective structure clinical examination

selected the correct option, that is, practical as the correct answer.

Interpretation: According to the above table in pre-test Practical is been answered by 26% sample compared to post-test, that is, 94%. The reason behind it can be due to gained knowledge after the health education training program.

Table 15 illustrates that in the pre-test, 40 % of the population that is 120 samples have considered option A to be the correct answer. Whereas in post-test 98 % of the population that is 294 samples have considered option C to be the correct answer. The percentage in the table shows that maximum samples selected the correct option, that is, on-clinical area as the correct answer.

Interpretation: According to the above table in pre-test Non-clinical area is been answered by 20% sample compared to post-test, that is, 98%. The reason behind it can be due to gained knowledge after the health education training program.

Table 16 demonstrates that option B was regarded as the acceptable option in 20% of the population of 60 samples in the pre-test. Where 94% of the population, which comprises 282 samples, regarded option B as the right one. The percentage in the table shows that maximum samples selected the correct option. Clinical skills as the correct answer.

Interpretation: According to the above table in pre-test Clinical skills is been answered by 20% sample compared to post-test i.e. 94%. The reason behind it can be due to gained knowledge after the health education training program.

Table 17 indicates that option B be the right answer has been considered by 25% of the population with 75 samples in a pre-test. Where 92% of the population, which comprises 276 samples, regarded option B as the right one in the posttest. The percentage in the table shows that maximum samples selected the correct option, that is, same as the correct answer.

Interpretation: According to the above table in pre-test same is been answered by 25% of sample compared to post-test, that is, 92%. The reason behind it can be due to gained knowledge after the health education training program.

Table 13: Post- and pre-test Score for OSCE utilization, $n=300$

OSCE utilizes _____	Pre-test		Post-test	
	Frequency (f)	Percentage	Frequency (f)	Percentage
A) Stimulated patients	60	20	9	3
B) Real patients	60	20	9	3
C) Objects	120	40	6	2
D) Both A and C	60	20	276	92

OSCE: Objective structure clinical examination

Table 14: Post and pre-test Score for "*P*" in OSPE, $n = 300$

In OSPE – "*P*" stands for _____	Pretest		Posttest	
	Frequency (f)	Percentage	Frequency (f)	Percentage
A) Psychomotor	72	24	3	1
B) Performing	60	20	9	3
C) Practical	78	26	282	94
D) Procedure	90	30	6	2

OSCE: Objective structure clinical examination

Table 15: Pre-test and Post Test Score for OSCE conduction area, $n=300$

OSPE can be done for _____	Pretest		Posttest	
	Frequency (f)	Percentage	Frequency (f)	Percentage
A) In patient area	120	40	0	0
B) Day care area	60	20	3	1
C) Non clinical area	60	20	294	98
D) Emergency setting	60	20	3	1

OSCE: Objective structure clinical examination

Table 16: Pre-test and Post Test Score for OSPE measurements, $n=300$

OSPE does not measures is _____	Pretest		Posttest	
	Frequency (f)	Percentage	Frequency (f)	Percentage
A) Non clinical skills	120	30	6	2
B) Clinical skills	60	20	282	94
C) Personal skills	75	25	3	1
D) Professional skills	75	25	9	3

OSCE: Objective structure clinical examination

Table 17: Pre-test and Post Test Score for effective OSCE Supervisor, *n*=300

For conducting effective OSCE, supervisors at each subdivision should be	Pretest		Posttest	
	Frequency (f)	Percentage	Frequency (f)	Percentage
A) Any one	75	25	9	3
B) Same	75	25	276	92
C) Different	90	30	6	2
D) Any one of the above	60	20	9	3

OSCE: Objective structure clinical examination

Table 18: Post- and pre-test Score for OSCE scoring, *n*=300

Scoring in OSCE is _____	Pre-test		Post-test	
	Frequency (f)	Percentage	Frequency (f)	Percentage
A) Content based	30	10	9	3
B) Standardized content based	30	10	12	4
C) Pre decided Standardized content based	30	10	264	88
D) Both A and B	210	70	15	5

OSCE: Objective structure clinical examination

Table 19: Profile regarding Objective Structured Clinical Examination (OSCE) upgrades cognitive, psychomotor, and behavioural domains, *n* = 300

OSCE upgrades cognitive, psychomotor, and behavioral domains.	Group	
	Frequency (f)	Percentage
Strongly agree	270	90
Agree	15	5
Neutral	0	0
Disagree	15	5
Strongly disagree	0	0

OSCE: Objective structure clinical examination

Table 18 describes that in the pre-test, 10% of the population that is 30 samples have considered option C to be the correct answer. Whereas in post-test 88 % of the population that is 264 samples have considered option C to be the correct answer. The percentage in the table shows that maximum samples selected the correct option, that is, pre decided Standardized content-based as the correct answer.

Interpretation: According to the above table in pre-test Pre decided Standardized content-based is been answered by 10% sample compared to post-test, that is, 88%. The reason behind it can be due to gained knowledge after the health education training program.

DISTRIBUTION OF SAMPLES ACCORDING TO THEIR OPINNIONAIRE

Subject Content of OSCE

Table 19 depicts the distribution of samples to show whether Profile regarding OSCE upgrades cognitive, psychomotor, and behavioral domains. The data shows that out of the total samples, maximum samples 270 (90%) strongly agree that such protocol is needed for increasing Profile regarding OSCE upgrades cognitive, psychomotor, and behavioural domains and the minimum samples 15 (5%) Disagree that such protocol is needed for increasing awareness and 0 (0%) Strongly disagree that such protocol is needed for increasing awareness.

Interpretation: According to the above table maximum of sample 270, that is, 90% sample has strongly agreed that OSCE upgrades cognitive, psychomotor, and behavioral domains. This helps all the students have got the opportunity to clear their doubts and get better training and knowledge of all the concepts with their supervisor.

DISCUSSION

The objectives of the study were:

1. Assess the knowledge and perception of subjects before the intervention
2. Develop OSCE under the subjects of midwifery and obstetrical nursing
3. Implement the demonstration of OSCE under the subjects of midwifery and obstetrical nursing
4. Determine the impact of OSCE after the intervention
5. Compare the OSCE based midwifery and obstetrical nursing practical examination score with pre-existing RCE score
6. Associate the effectiveness of OSCE with selected socio-demographic variable.

The objectives of the study were supported by Marzieh (2012) in her article titled, "The OSCE: A study on satisfaction of students, faculty members, and tutors" resulted that the plurality of students and examiners favor OSCE to traditional approaches. The equipment received the highest level of

satisfaction in both groups, while the time allotted to each test section received the lowest level of satisfaction. According to the results, utilizing the OSCE approach rather than the standard method to test end-of-semester preparation is preferred.[11]

The objectives of the study were supported by Smith and Muldoon (2012) in their article titled "The OSCE as a strategy for assessing clinical competence in midwifery education" assessed the competence of midwives in education. To test midwifery students' professional skills, many evaluation methods are used, including observed experience, clinical interviews, portfolios of contemplation, the OSCE, and written review reports. The usage of the OSCE for evaluating midwifery students' expertise in lactation, as well as child feeding procedures, is a study that has been used to determine competence in a variety of fields such as obstetric crises and pharmacology/drug administration. The study concluded that although no one evaluation approach may include all of the information needed to evaluate anything as complicated as clinical performance, the OSCE, when used in conjunction with other types of evaluation and in relation to the subject under consideration, can be a useful approach for improving the evaluation of students' clinical abilities and the acceptance of diversity in the midwifery field.[12]

The objectives of the study were supported by Angela (2012) in their article titled "Effectiveness of an Educational Programme in perineal repair for midwives" evaluated a pre–post-intervention of quasi-experimental case survey incorporating a non-equivalent reference group and assessment action trial framework of 145 samples was used to determine the efficacy of a work-based module and in-service instructional program in perineal repair. Following an educational initiative, slightly more midwives have been willing to practice perineal repair at a higher rate of competency in five intervention Trusts ($P < 0.006$). Furthermore, a midwifery training program expanded the number of senior student midwives who were willing to comfortably engage in perineal repair under the active guidance of their instructor because they believed their adviser was knowledgeable and capable of performing the operation.[13]

The objectives of the study were supported by Folque *et al*. in their article titled, are the OSCE a feasible tool to assess competencies in undergraduate medical education? Confronted that the use of OSCE produced reliable findings. The research also proposed that the OSCE's intrinsic versatility in terms of the number of students that may be tested, the number of examiners concerned, the variety of patients served, and the structure of the assessment itself, such as the number, the duration of the test and duration of stations.[14]

The objectives of the study were supported by Afaf and Khalid (2014) in their article titled, "The OSCE: A Qualitative Study evaluating Nursing Students" Experience evaluated students' clinical competencies as well as decisions when they reached the clinical environment. The OSCE format is well-liked by the majority of students. The research emphasized that there is more essential for Student's orientation period about OSCE and training sessions on OSCE procedure. Students found the

introduction of OSCE at Faculty to be a beneficial experience, and it was deemed useful and worth further enhancement.[15]

Conclusion

The study findings revealed that the pre-test knowledge of the participants was low, after imparting knowledge of OSCE, the post-test scores were found to improve significantly.

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Conflict of Interest

None

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