

Compare the Effectiveness of Objective Structured Clinical Evaluation (OSCE) versus Checklist in Demonstration of Antenatal Abdominal Examination among Final Year G.N.M. students.

Ms. Ritika Janet Singh

PhD Scholar

Shri Venkateshwara University, Gajraula, Uttar Pradesh, India

ritikanavrozsingh@gmail.com

Abstract: *The OSCE is an approach to the assessment of clinical competence in which the components of competence are assessed in a planned or structured way with attention being paid to the objectivity of the evaluation” Harden, 1988 .The Objective Structured Clinical Exam (OSCE) is a performance- based exam. During the exam, trainees are observed and evaluated as theygo through a series of stations where they interview, examine and treat standardized patients presenting with some type of problem. An OSCE is:*

- *Objectivity, because examiners use a checklist for evaluating the trainees.*
- *Structured, because every trainee sees the same problem and performs same tasks in the same time frame.*
- *Clinical based, because the tasks are representative of those faced in real clinical situations*
- *An evaluation method*

II – Materials and Methods

Comparative research design was used with group I & group II to assess the effectiveness of objective structured clinical evaluation (OSCE) versus checklist in demonstration of antenatal abdominal examination among final year G.N.M students. The study conducted on 30 samples in each group. Data was collected using Objective Structured Clinical Evaluation and checklist for assessing performance of G.N.M final year students on abdominal examination.

III – Results

The overall mean and S.D. of OSCE was 11.03 with a percentage mean of 91.39% and 16.59 whereas the overall mean and S.D. of Checklist was 55.73 with a percentage mean of 79.62% and 11.24. The calculated ‘t’ value was higher than the table value ($t_{58} = , P < 0.01$). Hence, the null hypothesis was rejected and research hypothesis was accepted and it was inferred that in the present study there was significant difference between the effectiveness of demonstration on antenatal abdominal examination during pregnancy assessed by Objective Structured Clinical Evaluation (OSCE) & checklist among G.N.M final year students.

Comparing the mean percentage of OSCE and Checklist 91.39% and 79.62%, it is inferred that the mean percentage of OSCE i.e. 91.39% is higher than the mean percentage of Checklist i.e. 79.62%. Therefore, it can be concluded that the OSCE is more effective than the checklist for evaluating the demonstration of abdominal examination during pregnancy.

IV – Conclusion

This study concluded that in comparison to, OSCE was found to be a more effective assessment tool than traditional method checklist. Use of OSCE as formative tool will help in modifying teaching- learning strategies so that both, the teachers as well as the students can derive maximum benefit..

Keywords: Objective structured clinical evaluation (OSCE), Check list, antenatal abdominal examination, Final year G.N.M students.

I. INTRODUCTION

Objective structured clinical evaluation (OSCE) was designed and implemented for the first time by Professor Harden et al. as an instrument for teaching and evaluating medical practice in 1970s. One of the goals of education is that, learners develop under the necessary trainings and can afford the professional duties which community has entrusted to them. The OSCE is an approach to the assessment of clinical competence in which the components of competence are assessed in a planned or structured way with attention being paid to the objectivity of the evaluation” Harden, 1988 .The Objective Structured Clinical Exam (OSCE) is a performance- based exam. During the exam, trainees are observed and evaluated as they go through a series of stations where they interview, examine and treat standardized patients presenting with some type of problem. An OSCE is:

Objectivity, because examiners use a checklist for evaluating the trainees.

Structured, because every trainee sees the same problem and performs same tasks in the same time frame.

Clinical based, because the tasks are representative of those faced in real clinical situations

An evaluation method

II. OBJECTIVES OF STUDY

- To assess the demonstration of antenatal abdominal examination during pregnancy by Objective Structured Clinical Evaluation (OSCE) among G.N.M 3rd Year students (Group-1)
- To assess the demonstration of antenatal abdominal examination during pregnancy by checklist among G.N.M 3rd year students (Group-2).
- To compare the effectiveness of Objective Structured Clinical Evaluation (OSCE) Vs checklist among both the experimental groups of G.N.M 3rd year students.

III. MATERIALS AND METHODS

Comparative research design was used with group I & group II to assess the effectiveness of objective structured clinical evaluation (OSCE) versus checklist in evaluating the demonstration of antenatal abdominal examination among final year G.N.M students. The study conducted on 30 samples in each group. Data was collected using Objective Structured Clinical Evaluation and checklist for assessing performance of G.N.M final year students on abdominal examination.

Data was collected with following structured tool –

Section- A : Sociodemographic Performa

This section contains 5 items on background data of students like age, gender, religion, educational qualification and whether they have attended any workshop or conference regarding Objective Structured Clinical Evaluation or not.

Section- B : Objective Structured Clinical Evaluation

This section consists of 12 steps to be assessed when performing abdominal examination during pregnancy covering following content areas:

1. Keeping the necessary items arranged for abdominal examination.
2. Hand washing and maintaining communication with the women.
3. Position of student while performing the abdominal examination.
4. Observing the abdomen for any scar, size and shape, contour.
5. Measuring the fundal height
6. Palpation of the abdomen- fundal grip
7. Lateral grip
8. Pelvic grip
9. Locating correct position for auscultating fetal heart sound on the women’s abdomen
10. Counting the fetal heart rate for one minute
11. Explaining the findings to the mother
12. Recording the findings

Each step consist 1 mark for correct performance and 0 for the incorrect or missed step. Total score is 12 marks out of which 10 and >10 is declared as passed which is 83% of the total score.

Section – C : Checklist For Assessing Abdominal Examination During Pregnancy

This section consists of 35 steps to be practiced during performing abdominal examination during pregnancy covering the following content areas:

1. Preliminaries of performing abdominal examination
2. Observing the abdomen for size, shape contour, level of umbilicus etc.
3. Measuring abdominal girth and fundal height
4. Palpation process: fundal palpation, lateral palpation, pelvic palpation.
5. Auscultation of Fetal heart sound
6. Explaining findings to mother and documentation

Scoring Criteria-

Every perfect step consist 2 marks and 1 mark for wrong step and 0 for missed step. Add the total marks and further categorize into following:

1. 35-42 marks: Needs demonstration
2. 43-50 marks: Needs to improve Technique
3. 51-60 marks: Satisfactory technique
4. 61-70 marks: Excellent technique

To ensure the content validity of the tool, it has been submitted to 7 experts, in the field of Obstetrics and Gynaecological Nursing. Along with the tool a request letter, statement of problem, objectives and criteria for rating scale was made. Based on the experts suggestion, necessary modification were made. Hence, the tool was found to be valid for the purpose of the study. The reliability co-efficient for the Objective structured clinical evaluation was 1.0 and for checklist was 0.99. Hence, both the tools were fully reliable.

Final study was conducted on 60 samples. The sample for the study comprised of G.N.M final year students who met the designated criteria were selected through Simple random sampling technique. Objectives of study was discussed and obtained consent for participation in study. Based on the objective and the hypothesis the data was analysed by using various statistical tests i.e. percentage, mean, unpaired t test.

Statistical methods

The data collected from the participants was planned to be analysed on the basis of the objectives of the study using descriptive and inferential statistics. Data was organized data in a master data sheet.

Data analysis is the systematic organization of research data and the testing of research hypothesis using that data. The plan of data analysis was as follows

- Demographic variables would be analysed in terms of frequency and percentage.
- To assess the demonstration on abdominal examination during pregnancy of Group I using OSCE by Mean, SD, Frequency & percentage
- To assess the demonstration on abdominal examination during pregnancy of Group II using checklist by Mean, SD, Frequency & percentage
- To compare between OSCE and checklist on assessment of abdominal examination during pregnancy in both groups by Unpaired “t” - Test

IV. RESULTS

Section I: Findings of demographic characteristics of the subjects

Frequency and Percentage distribution of subjects of OSCE in terms of selected characteristics

Table - I N = 30

S.No.	Sample Characteristics	Frequency	Percentage(%)
1.	Age in Years		
	15-20years	02	6.67%
	21-25years	28	93.33%

	>25years	0	0%
2.	Gender		
	Female	30	100%
	Male	0	0%
3.	Religion		
	Hindu	18	60%
	Christian	12	40%
	Muslim	0	00
	Others	0	00
4.	Educational Qualification		
	12 th passed	30	100%
	Graduation passed	0	00
	Workshop/conference attended		
	Yes	0	00
	No	30	100%

- The data presented in table-I depicts that in relation to Age in year, the maximum number of students in Group-1 (OSCE) (93.33%) were in the age group of 22-25 years, whereas the minimum students (6.67%) belonged to 15-21 years, 0% belonged to age group above than 25 years.
- In terms of Sex it depicts that all the students were female only, no student was male.
- In terms of Religion it depicts that maximum students 60% were Hindu and 40% students were Christian, no students were belonging to Muslim or other religion.
- In relation to the Educational Qualification of students all the students were belonging to 12th passed standard and no student were graduation passed.
- The data also depicts that no students attended previously any workshop/conference regarding OSCE.

Frequency and Percentage distribution of subjects of Checklist in terms of selected characteristics

Table - II

N = 30

S. No.	Sample Characteristics	Frequency	Percentage(%)
1.	Age in Years		
	15-20years	04	13.33%
	21-25years	26	86.67%
	>25years	0	0
2.	Gender		
	Female	28	93.33%
	Male	02	6.67%
3.	Religion		
	Hindu	20	66.70%
	Christian	10	33.33%
	Muslim	0	00
	Others	0	00
4.	Educational Qualification		
	12 th passed	30	100%
	Graduation passed	0	00
	Workshop/conference attended		
	Yes	0	00
	No	30	100%

The data presented in table-II depicts that in relation to Age in year, the maximum number of students in experimental group-2 (Checklist) (86.67%) were in the age group of 22-25 years, whereas the minimum students (13.33%) belonged to 15-21 years, 0% belonged to age group above than 25 years.

In terms of Sex it depicts that 28 students (98.3%) were female, 2 students (6.67%) were male.

In terms of Religion it depicts that maximum students 66.6% were hindu and 33.3% students were Christian, no students were belonging to muslim or other religion.

In relation to the Educational Qualification of students all the students were belonging to 12th passed standard and no student were graduation passed.

The data also depicts that no students attended previously any workshop/conference regarding OSCE.

Section-II : Findings related to assessment of demonstration on abdominal examination during pregnancy of Group I using OSCE

Evaluation of demonstration of abdominal examination during pregnancy by OSCE

Table No. III N = 30

S. No	Level of Performance	Frequency	Percentage
1	Pass	28	93.33%
2	Fail	02	6.67%

The data presented in table-III depicts that maximum number of students that is 28 students (93.33%) passed attaining 83% scores in OSCE whereas, 2 students (6.67%) not able to pass in OSCE in demonstration of abdominal examination during pregnancy.

Analysis of OSCE scores –

Analysis	Mean	Mean % score	Standard Deviation	CV(%variation)
OSCE	11.03	91.39	16.59	18.15

The data reveal that the high mean percentage of OSCE is 91.39%, also the S.D. is 16.59 and C.V.% variation is 18.15.

Section-III : Findings related to assessment of demonstration on abdominal examination during pregnancy of Group II using checklist

Evaluation of demonstration of abdominal examination during pregnancy by checklist

Table No. IV N=30

S.No.	Level of Performance	Frequency	Percentage
1.	Needs demonstration and Practice	4	13.33%
2.	Needs to improve technique	4	13.33%
3.	Satisfactory Technique	14	46.67%
4.	Excellent technique	8	26.67%

The data presented in table-IV depicts that maximum number of students that is 14 students (46.67%) performed satisfactory technique attaining scores between 51- 60 marks. 8 students (26.67%) performed excellent technique attaining scores between 61-70 marks, 4 students (13.33%) needed to improve their technique attaining scores (43-50 marks) and rest 4 students needed to demonstrate and practice the technique again attaining scores between (35-42 marks) in checklist in demonstration of abdominal examination during pregnancy.

Analysis of CHECKLIST scores

Analysis	Mean	Mean%score	StandardDeviation	CV(%variation)
CHECKLIST	55.73	79.62%	11.24	14.12

The data reveal that the high mean percentage of CHECKLIST is 79.62%, also the S.D. is 11.24 and C.V. % variation is 14.12.

Section-III: Evaluation and comparison related to level of significance between OSCE and checklist on assessment of abdominal examination during pregnancy in both experimental groups
Comparison of scores assessed by OSCE as well as Checklist in evaluating demonstration of abdominal examination during pregnancy to find out the effectiveness

Table No. V N1 = 30 & N2 = 30

Analysis	Mean	Mean% score	SD	CV(% variation)	D.F.	Unpaired 't' value	Significance
OSCE	11.03	91.39	16.59	18.15	58	3.22	P<0.01 HS
Checklist	55.73	79.62	11.24	14.12			

Data presented in table-V shows the Mean, Mean% score, Standard deviation and unpaired 't' value of scores. The overall mean and S.D. of OSCE was 11.03 with a percentage mean of 91.39% and 16.59 whereas the overall mean and S.D. of Checklist was 55.73 with a percentage mean of 79.62% and 11.24. The calculated 't' value was higher than the table value (t58 = , P< 0.01). Hence, the null hypothesis was rejected and research hypothesis was accepted and it was inferred that in the present study there was significant difference between the effectiveness of demonstration on antenatal abdominal examination during pregnancy assessed by Objective Structured Clinical Evaluation (OSCE) & checklist among G.N.M final year students. Comparing the mean percentage of OSCE and Checklist 91.39% and 79.62%, it is inferred that the mean percentage of OSCE i.e. 91.39% is higher than the mean percentage of Checklist i.e. 79.62%. Therefore, it can be concluded that the OSCE is more effective than the checklist for evaluating the demonstration of abdominal examination during pregnancy

V. CONCLUSION

This study concluded that in comparison to OSCE & Checklist. Both students and faculties were having a positive approach towards OSCE, Moreover the students were assessed with the same set of questions, thus eliminating any bias in the difficulty level. Thus, OSCE was found to be a more effective assessment tool than traditional method Checklist. Use of OSCE as formative tool will help in modifying teaching- learning strategies so that both, the teachers as well as the students can derive maximum benefit.

Implications

- **Nursing Administration:** Nurse administrators can make effort to conduct in-service education program based on clinical skills of student nurses. Nurse administrators are in key position to prepare different methods of examination to evaluate knowledge of their nurses.
- **Nursing Education:** All nursing students can be taught about OSCE and Traditional method skills. In nursing curriculum these methods must be involved for examination.
- **Nursing Research:** Present study generate specific literature for students to check the effectiveness of OSCE vs Traditional method in terms of knowledge regarding antenatal examination

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