

NURSING STUDENTS' CLINICAL EVALUATION: OBJECTIVE STRUCTURED CLINICAL EVALUATION VERSUS OBSERVATIONAL CHECKLIST

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Abstract:

Clinical nursing education is the heart of a nurse's professional practice. Effective and exact clinical evaluation should be the first aim for all nursing faculties and clinical instructors. Objective Structured Clinical Evaluation is one form of objective evaluation method that includes both summative and formative evaluation components. Therefore the application of objective structured clinical evaluation in nursing students' clinical evaluation increase their competencies. **Aim of the Study:** To compare between objective structured clinical evaluation versus observational checklist in nursing students' clinical evaluation. **Methodology:** A quasi-experiment design was utilized. A convenience sample of fifty students from third year, Faculty of Nursing, Neelain University, Sudan, **Tools;** divided into two parts; first part includes Scio-demographic characters and student's clinical evaluation score by both methods and second part included the Student's Opinion regarding advantages of both clinical evaluation methods. **Results:** Mean of Student's Clinical Evaluation score by Objective Structured Clinical Evaluation was (24.42%), while by Observational Checklist was (20.72). The more than half participant students (66.0%) preferred Objective Structured Clinical Evaluation than traditional observational checklist in clinical evaluation. There was a statistical significance between the Student's Opinion regarding Clinical Evaluation by Objective Structured Clinical Evaluation and Observational checklist in many questions. **Conclusion:** The findings of the present study concluded that clinical evaluation by Objective Structured Clinical Evaluation more objective method of assessment than the traditional method. **Recommendation:** Recommendation: Objective Structured Clinical Evaluation should be incorporated with other methods for evaluating undergraduate nursing students in all studying years.

Keywords: Objective Structured Clinical Examination, Traditional observation checklist, Clinical Examination.

Introduction:

Clinical skills and practice play the main roles in training different groups; the success of trainees of these fields depends on what they memorize to some extent. Effective and accurate clinical evaluation should be of concern to all nursing faculties and clinical instructors [1]. There is a reasonable expectation for evaluation to be objective, fair, specific, and

documented. In addition, students need to know, very clearly delineated, the specific objectives by which they are being evaluated. One type of assessment which meets these criteria is a performance based assessment. An example of a performance-based assessment is the Objective Structured Clinical Evaluation (OSCE) [1&2].

The Objective Structured Clinical Examination (OSCE) is a kind of multi-station examination for clinical subjects, it has gained acceptance as a benchmark for clinical skills assessment since its development in the 1970s. OSCE first described in 1975 by Harden and Gleeson [3&4]. Since its foundation, the OSCE has been increasingly used to provide formative and summative assessment in various medical disciplines worldwide, including non-clinical disciplines [1], OSCE is one form of objective evaluation method that is gaining more importance and is being adopted by educators of various disciplines especially when the advantages of OSCE outweigh the disadvantages and motivates student learning [5].

The traditional evaluation method in clinical evaluation as observational checklist has poor reliability and validity in terms of practicality. On the other hand, OSCE has been found to better assess clinical and cognitive skills of undergraduate nursing students [6]. With the increase in number of students joined into nursing faculties might increase the chances of malpractice that compromise patient's conditions, in addition to limited resources from clinical locations that might delay the opportunity of student to practice on patient. Traditional clinical nursing examinations are not standardized to assess clinical competency, and clinical reasoning skills [1].

Attainment of critical thinking and problem solving skills among nursing students are hard to manage with large groups of students. Moreover, in traditional assessment method, teachers carrying out the assessment of student performance tend to give summative scores. OSCE may well be a key element to the training of better-prepared healthcare professionals [7&8].

So, it is challenging to have such an objective assessment tool to

comprehensively assess students' clinical competencies especially with increased students' number. OSCEs are a valuable strategy to assess 'fitness to practice' at the students' expected level of clinical practice within a nursing context where the importance of accurate patient assessment is paramount.

Significance of the Study

Clinical nursing education is the heart of a nurse's professional practice and therefore the evaluation of nursing student's clinical competencies is critical to their education. OSCE is one form of objective evaluation method. The assessment of student performance giving summative scores in traditional assessment method. While in OSCE simulation, the students find learning such skills are more beneficial because there is an immediate formative feedback following an event. Simulation-based training is superior to problem based learning for the acquisition of critical assessment and management skills [2]. Additionally, **Bartfay, et al., (2004)** [9] concluded that OSCEs can be used most effectively in nurse undergraduate curricula to assess safe practice in terms of performance of psychomotor skills, as well as the declarative and schematic knowledge associated with their application.

Aim of the Study: To compare between objective structured clinical evaluation versus observational checklist in nursing students' clinical evaluation.

1.1. Research Hypothesis

1. Student's Clinical Evaluation score by OSCE higher than observational checklist score.
2. Most of student preferred OSCE than observational checklist.

2. METHODOLOGY

: Study design: Quasi experimental research design was adopted to accomplish the stated aim.

: Study Setting: The study was conducted at Al Neelain University – faculty of nursing sciences.

2.3. Duration of research: Data collected throughout a period from January and February 2018.

2.4. Study population: the study was included 50 nursing student at level three, all students were Sudanese they descend from different ethnic groups, and they were belonged to vary socioeconomic status. And they all exposed to the two types (OSCE and assessment by using checklist) examination.

: Inclusion criteria:

- Students who were exposing to the two types of examination.
- Students at level three.

: Exclusion criteria:

- Students who were not exposing to the two types of examination.
- Students refused to be part of the study.

Study variables:

- Socio-demographic variables.
- Student satisfaction regarding both types of clinical assessment.
- Students' score by OSCE and by Standardized Checklist.

Pilot Study: A pilot study was carried out before starting data collection on 10% of the sample, to evaluate the tentative developed tools for clarity and applicability, as well to estimate the time needed for data collection. The sample of pilot study was excluded from the total sample to assure the

Needed modifications were carried out.

1.7. Ethical consideration: ethical approval obtained from dean of academic secretary of nursing college and verbal consents from the students.

Data collection methods: data was collected by:

- ❖ Interview.
- ❖ Observation.

Data collection tools: by

- ❖ Pre designed Questionnaire. the questionnaire include two parts, **part one** included information regarding the Socio-demographic characteristics of the students and students' score by the two assessment tools, **part two** include students opinion regarding the two methods in term of (time allowed, assessor fairness , anxiety associated with the exam ,objectivity of the exam, eligibility of the tool for accurate assessment of performance and tool interesting during exam)
- ❖ Designed checklist for assessing OCSE and checklist.
- ❖ Standardized Observational Checklists.
- ❖ All students assessed by the using of the two tools for their ability to perform health education provided for newly adopter family planning woman.
- ❖ After revising related literature to accomplish the aim of the study, the tools were developed by the researchers and reviewed by the consultants. Validity of the developed tools was achieved by 5 experts in the field of medical-surgical, pediatric and community nursing and the needed modifications were carried out. These tools were: students 'assessment and evaluation (Achievements) tool which covered the three domains to give an accurate judgment on student adequacy regarding the specified course knowledge, skills and attitudes; checklist (checklists mostly developed from the checklists introduced by (7) and rated as agree taken one degree and disagree taken zero; in Student's Opinion regarding Clinical

Evaluation Advantages by OSCE and Observational checklist.

Process

The data collection process has been done through three phases: 1) preparatory Phase 2) Operation phase; and 3) Evaluation phase.

1) Preparatory Phase

Objective Structured Clinical Evaluation (OSCE) versus Traditional observational checklists were performed as follows; after determining the number and kind of station based on the trained techniques and available third year students, Objective Structured Clinical Evaluation (OSCE) versus Traditional method in clinical evaluation at some nursing procedures from the current course included the clinical evaluation. The student's instructions and checklist of each station were provided. Each station (15-minute each) aimed to test a particular clinical competence. All the students did the techniques equally at the same time and were assessed by the researchers on the basis of the checklist.

2) Operation Phase

A total of 50 third year students at examination area which constitute three weeks for each student 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 their clinical instructors, in addition to a 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. Immediate formative feedback was given at the termination of clinical exam.

3) Evaluation Phase

After the conduction of the exam, student's opinion regarding clinical evaluation advantages by OSCE and Observational checklist was distributed to

be fulfilled at their own pace and oral feedback was obtained through conducting a focus group for the students.

Statistical Analysis

The data collected were tabulated & analyzed by SPSS (statistical package for the social science software) statistical package version 20 on IBM compatible computer.

Two types of statistics were done:

- 1) **Descriptive statistics:** were expressed as mean and standard deviation ($X+SD$) for quantitative data or number and percentage (No & %) for qualitative data.
- 2) **Analytic statistics:**
 - 1- Pearson Chi-square test (χ^2): It is the test of significance used to study association between two qualitative variables.
 - 2- Student t- test: is a test of significance used for comparison between two independent groups of normally distributed quantitative variables.
 - 3- Mann-Whitney test (non-parametric test): is a test of significance used for comparison between two groups of not normally distributed quantitative variables.
 - 4- Kruskal-Wallis test (non-parametric test): is a test of significance used for comparison between three independent groups of not normally distributed quantitative variables.

P-value at 0.05 was used to determine significance regarding:

- P-value > 0.05 to be statistically insignificant.
- P-value ≤ 0.05 to be statistically significant.
- P-value ≤ 0.001 to be highly statistically significant.

Results

Table (1): Socio-demographic characteristics of the studied group:

Socio-demographic characteristics	Study Group (n=50)	
	No.	%
Age (years):		
18-20	10	20.0
21-23	20	40.0
More than 23	20	40.0
Gender:		
Male	11	22.0
Female	39	78.0
Studying year level:		
Third year level	50	100.0
I prefer the evaluation of clinical procedure by:		
Observational checklist	8	16.0
OSCE	33	66.0
Both	9	18.0

Table (1): This table illustrated that, distribution of socio demographic characteristics of the studied group, which documented that, about 40.0% from sample were aged 21-23 years old; and the same percentage they aged more than 23 years old, concerning to student's gender most of studied sample 78% were female and it was observed that around 66% from

all sample preferred OSCE as an evaluation method in clinical practice.

Figure (1): The Student's Clinical Evaluation score by OSCE versus by Observational checklist:

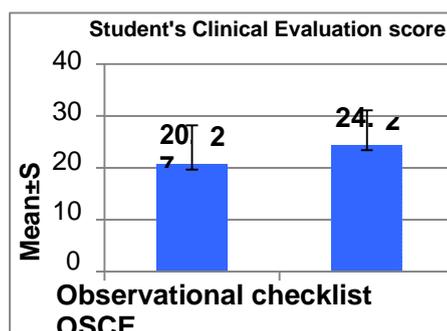


Figure (1): This figure showed that, student's clinical evaluation score by OSCE versus by Observational checklist, which clarified that; the mean of student's clinical evaluation score by OSCE was higher than Observational checklist among the studied sample.

Table (2): The Student's Opinion regarding Clinical Evaluation Advantages by OSCE and Observational checklist (comparison):

No.	Opinion item	Observational checklist		OSCE		X ²	P value
		Agree N (%)	Disagree N (%)	Agree N (%)	Disagree N (%)		
1	The tool gives me more freedom to perform the procedure effectively	21 (42%)	29 (58%)	47 (94%)	3 (6%)	31.06	≤0.001 HS
2	The tool gives me adequate time to think	26 (52%)	24 (48%)	32 (64%)	18 (36%)	1.47	0.22 NS
3	The tool checks my actual knowledge	17 (34%)	33 (66%)	27 (54%)	23 (46%)	4.05	0.04 S
4	The tool gives less chance of errors	23 (46%)	27 (54%)	35 (70%)	15 (30%)	5.91	0.01 S
5	The tool gives less chance of evaluator unfairness	14 (28%)	36 (72%)	29 (58%)	21 (42%)	9.18	0.002 S
6	The tool is objective in evaluation	19 (38%)	31 (62%)	36 (72%)	14 (28%)	11.67	0.001 HS
7	The tool increase stress related to exam.	36 (72%)	14 (28%)	29 (58%)	21 (42%)	2.15	0.14 NS
8	The tool is easy method to complete the exam in required time.	5 (10%)	45 (90%)	48 (96%)	2 (4%)	74.22	≤0.001 HS
9	The tool requires less equipment and place.	34 (68%)	16 (32%)	29 (58%)	21 (42%)	1.07	0.30 NS
10	The best tool used for the assessment of psychomotor skills.	5 (10%)	45 (90%)	37 (74%)	13 (26%)	42.03	≤0.001 HS
11	The tool improves the interest during the evaluation by it.	25 (50%)	25 (50%)	42 (84%)	8 (16%)	13.07	≤0.001 HS

Table (2): This table showed that, the Student's Opinion regarding Clinical Evaluation Advantages by OSCE and Observational checklist, it documented that, OSCE had many advantages than traditional observational checklist regarding questions of (1,3, 4, 5, 6, 8, 10, and 11), they indicate that, OSCE gives student the freedom during performing of procedure, it assess their actual knowledge, so

less errors, it gives the evaluators become more fairness during evaluation, it is an objective tool in clinical evaluation and best tool for assessment of psychomotor skills among other methods, it gives student the chance to complete the clinical exam in required time, and it improves the student's interest during the clinical evaluation the best tool for assessment of psychomotor skills.

Table (3): Relation between socio-demographic characteristics of the studied group & student's clinical evaluation score:

Socio-demographic characteristics	NO	OSCE	Observational checklist
		Mean± SD	Mean± SD
Age (years):			
18-20	10	21.30±7.37	19.80±6.82
21-23	20	25.20±4.89	20.25±5.35
More than 23	20	25.20±9.36	21.65±7.96
Kruskal Wallis test		1.46	0.26
P value		0.22 NS	0.60 NS
Gender:			
Male	11	25.73±4.96	22.09±4.80
Female	39	24.05±8.04	20.33±7.14
Mann whitney		0.36	0.53
P value		0.71 NS	0.59 NS
I prefer the evaluation of clinical procedure by:			
Observational checklist	8	16.75±6.88	18.88±7.58
OSCE	33	26.0±6.31	19.91±5.58
Both	9	25.44±8.39	25.33±8.35
Kruskal Wallis test		10.92	7.94
P value		0.004 S	0.01 S

Table (8): This table illustrated that, the relation between socio-demographic characteristics of the studied group and student's clinical evaluation score for both methods, it revealed that, there was no statistically significant between students' age and gender and their clinical evaluation score by both evaluation methods. But there was statistically significant between students' clinical evaluation score by both evaluation methods and their preference of evaluation tool.

4. DISCUSSION

The OSCE has become a well-established method of assessment in nursing and allied health curricula. The acquisition of clinical skills is paramount to the development of a

safe and competent practitioner. 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 related professions. The current study aimed to compare between objective structured clinical evaluation and observational checklist regarding nursing student's clinical evaluation.

Regarding the effectiveness of OSCE in clinical evaluation

The existing study reported that, the comparison between OSCE versus traditional method of evaluation revealed higher mean OSCE scores with a high

statistical significant difference in clinical evaluation, these results supported by **Smith et al., (2012) [10]**, who compared different methods of assessing midwifery students, clinical skills, the results indicated that the mean scores of students who undergone OSCE in the second trial were high as compared to the group who undergone traditional method. This result was supported by hypothesis 1.

In relation to students' preference of clinical evaluation methods

The current study approved that, most of studied sample 66% preferred OSCE in clinical evaluation than traditional observational checklist because it had many advantages, with a statistical significance difference between **students' preference of OSCE** and traditional method, this result in the same line with **Nkeiruka Ameh, et al., (2014) [11]**, they documented that, the majority of the 5th and 6th year students (95.5% and 100%, respectively) preferred OSCE for assessment. This result was supported by hypothesis 2.

Comparison between Students' Opinions related to Clinical Evaluation by OSCE and traditional method.

Assessment of psychomotor skills and knowledge

The present study documented that, the majority from studied sample 96% stated that, OSCE is the best method for assessment of psychomotor skills, this result in line with **Bartfay , et al., (2004) [9]**, they reported that, OSCEs are best used for the assessment of psychomotor skills for undergraduate level in nursing faculties. As the present study documented that more than half studied sample stated that, while **Khattab and Rawlings (2001) [12]**, they reported that, using a two-component OSCE for student nurses: one for tasks (skills assessment) and one for questions (knowledge assessment).

Students' Opinions related to

Advantages of OSCE

The present study stated that, the majority from students agreed that OSCE had many advantages in clinical competence and evaluation as its objectivity, gives them more freedom to perform the procedure effectively, checks their actual knowledge, less chance of errors by adequate time to think so it is an easy method to complete the exam in required time with evaluator fairness, finally it improves the students interest during the evaluation. These results were supported by **Nkeiruka Ameh, et al., (2014) [11]** and **Prasuna Jelly and Rakesh Sharma (2017) [6]**; they stated that, the opinion of students revealed that there was 100% agreement toward the usefulness of OSCE as an evaluation method due to its advantages. Furthermore presence of a statistical significant difference regards students' opinions related to advantages of OSCE and traditional method.

As regards relation between socio-demographic characteristics of the studied group & student's clinical evaluation score

The existing study showed that, there was no a statistical significant difference regards between socio-demographic characteristics of the studied group as age and gender and students' clinical evaluation methods except students preference, these results agreed with **Salwa Alaidarous, et al., (2016) [13]**, they reported that there was no relation between age or gender and methods of evaluation.

5. CONCLUSION

The findings of the present study concluded that clinical evaluation by Objective Structured Clinical Evaluation more objective method of assessment than the traditional method.

6. RECOMMENDATION

Objective Structured Clinical Evaluation should be incorporated with other methods

for evaluating undergraduate nursing students in all studying years.

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