

The Impact of the Objective Structured Clinical Examination Approach for Clinical Evaluation Skills on the Student's Performance in Nursing College

^{1,2}Eman Ali Moselhi Mate, ³Elsayeda Ibrahim Ahmed,
⁴Amel Ahmed ElSayed, ⁵Mona Ahmed El Shaikh and ⁶Mastoura Khames Farag

¹Pediatric Nursing Department, Nursing Faculty, Cairo University, Cairo, Egypt

²Pediatric Nursing, Nursing Faculty,

Princess Nora Bint Abdul Rahman University, Riyadh, Kingdom of Saudi Arabia

³Nursing Administration, Nursing Faculty,

Princess Nora Bint Abdul Rahman University, Riyadh, Kingdom of Saudi Arabia

⁴Community Health Nursing, Nursing Faculty,

Princess Nora Bint Abdul Rahman University, Riyadh, Kingdom of Saudi Arabia

⁵Maternity Health Nursing, Nursing Faculty,

Princess Nora Bint Abdul Rahman University, Riyadh, Kingdom of Saudi Arabia

⁶Medical Surgical Nursing, Nursing Faculty,

Princess Nora Bint Abdul Rahman University, Riyadh, Kingdom of Saudi Arabia

Abstract: The objective structured clinical examination has been considered a modern type of examination for assessment of clinical skills within nursing education. The aim of the study was to compare between the performance of students regarding to their scores and grads by using objective structured clinical examination (OSCE) and traditional clinical examination (TCE) and to investigate student's perception about OSCE. A quasi-experimental study was used 100 student's scores and grads firstly as a control group (TCE) then as a study group(OSCE) at nursing college in Princess Nora Bint Abdul Rahman University then the OSCE feedback questionnaire was completed by the student immediately after OSCE exam. The results of the study indicate that there were statistically significant differences between two groups for the practical examination score with accepted normal distribution curve for the student's grads. OSCE was considered as a fair examination method by 65% students and 69%of them felt it provides a true measure of essential clinical skills. Students preferred OSCE a method of assessing clinical competences and considered it a more valid and reliable method of examination. The study recommended that OSCE as a tool should be applied to evaluate clinical competence among nursing students.

Key words: Perceptions • Score • Traditional Clinical Examination (TCE) And Competences

INTRODUCTION

Clinical competence assessment is an important issue in clinical health education: assessing clinical practice is long-standing and receives substantial attention in health care education [1]. The Objective Structured Clinical Examination (OSCE) is considered as a useful method of

teaching because it is a safe practice to help students gain more confidence when confronted by technical instruments present in the hospital environment [2].

OSCE is as an examination where students demonstrate their competence under a variety of simulated conditions. The competencies include patient care, medical knowledge, interpersonal and

Corresponding Author: Eman Ali Moselhi Mater, Nursing department, College of nursing,
Princess Nora Bint Abdul Rahman University, Riyadh, Kingdom of Saudi Arabia.

communication skills, professionalism, practice-based learning and improvement throughout the course curriculum [3,4]. Also OSCE includes multiple clinical situations (termed stations) involving case-based scenarios and interaction with trained standardized patients, structured objective checklists; written summary of clinical history, physical examination findings, therapeutic management and performance review [5].

The OSCE is being regarded as one of the most valid, reliable and effective examination for assessment of clinical. It allows examiners to evaluate different aspects of learning according to Bloom's Taxonomy and provides an opportunity to assess clinical judgment away from the practice setting [6, 7]. During recent years, it has been used in nursing education and other health care professions. It has currently become a popular tool for assessing clinical competence in nursing, data on student's perception about examination yielded important information that was helpful for improving the organization of the OSCE [8].

The aim of this article is to compare between the performance of students regarding to their scores and grads by using objective structured clinical examination (OSCE) and traditional clinical examination (TCE) and to investigate student's perception about OSCE.

MATERIALS AND METHODS

Design: Quasi- experimental design was utilized to achieve the purpose of the study. It fits the nature of the study under investigation because it is used to study the effect of a variable on another variable on the way not rely on strict control of internal and external variables.

Setting: The study was conducted at nursing college, Princess Nora Bint Abdul Rahman University, Riyadh, Kingdom Saudi Arabia.

Sample: The study included third and fourth year nursing students enrolled in adult nursing courses and pediatric nursing course, 100 students used firstly as a control group (TCE) then as a study group (OSCE), after that they completed structured perception questionnaire immediately after OSCE exam.

Tools: Student's test scores and grades was collected from adult and pediatric courses that included checklist for different stations (procedures, nursing care plan, physical examination and interpretation and health education). OSCE feedback questionnaire was adapted from A Pierre *et al.*[9] that consisted of 32 items. For the

purpose of the study, only 20 items of Pierre *et al.*, modification was done to be suitable for nurse education assessment formats. Questionnaire were used for asking the students to describe their perception, preparation and the validity and reliability of OSCE. The questionnaire was given to the students directly after the exam. also the(test retest) for the tool was done. Staff members and students were prepared through workshops and lectures.

A pilot study was conducted on a group of 10 students in December 2013 to develop and test OSCE stations and to ensure the applicability and feasibility of the tools. Data were fed and analyzed by using SPSS.

Ethical Approval: Was obtained from Faculty of Nursing Ethics Committee in order to conduct the study. Nursing college enhanced the application of OSCE as a new method for clinical evaluation.

RESULTS

Table 1 donates that there was a highly statistically significant difference between the mean of Traditional Clinical Exam (TCE) score (16.08±2.1) and the mean of Objective Structured Clinical Exam (OSCE) score (14.45±2.5) ($p < 0.0000$), also the maximum scoring was 20 in OSCE in comparison to 19.75 in TCE.

Figure (1) illustrates the norm distribution curve that represents 52% of the students who had very good in Traditional Clinical Exam (TCE) decreased into 21% in Objective Structured Clinical Exam (OSCE), also 11% of them who had good in TCE increased to 29% in OSCE. There wasn't statistically significant difference between them but it reflected the normal accepting distribution curve of the student's grads.

Figure (2) shows the student's perception of OSCE, two third of students (65%) indicated that the OSCE is a fair examination and around half of them (55%) felt that it is a stressful exam and maximize the chance of excellence (49%).

Figure (3) denotes that student's feedback about the preparation of OSCE, around half of them considered that OSCE was well structured exam (58%) with clear instruction (57%), realistic scenario (57%) and suitable time for each station (41%).

Table (2) shows the student's feedback about validity and reliability of OSCE, most of student (70%) believed that the score was standardized and reflected actual measures of essential clinical skills (69%), it was a practical experience (63%), reflected those taught (74%), provided opportunities to learn (76%) and eliminated any chance of bias (79 %).

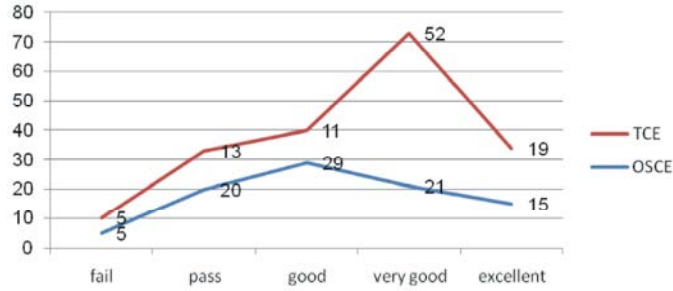


Fig. 1: Distribution curve of the student's grads between TCE and OSCE

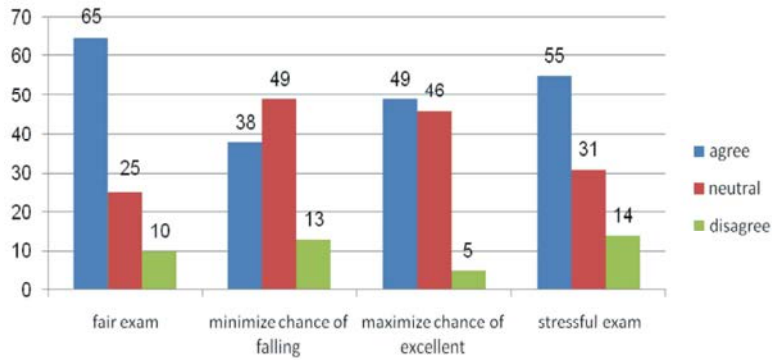


Fig. 2: The student's perception about OSCE

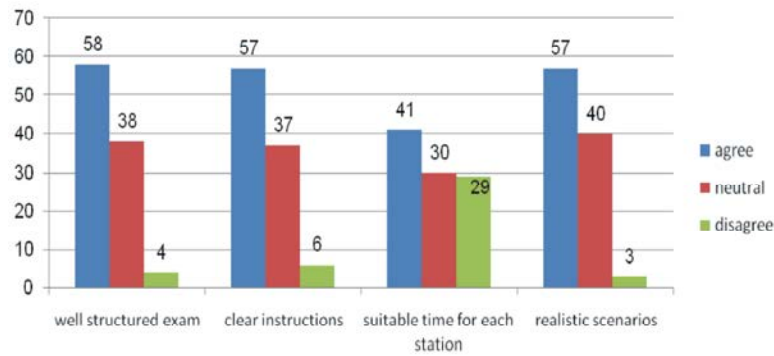


Fig. 3: Student's feedback about preparation of OSCE

Table 1: Clinical Exam(TCE) and Objective Structured Clinical Exam (OSCE) score

Items	TCE	OSCE	T. test	p. value
mean±SD	16.08±2.1	14.45±2.5	5.490	0.0000
Median	16.55	14.125		
Minimum	10.5	9.95		
Maximum	19.75	20.00		
Variance	4.492	6.301		

Table 2: Student's feedback about validity and reliability of OSCE

Items	Agree	Neutral	Disagree
OSCE was standardized	70%	20%	10%
OSCE measure the essential clinical skills	69%	20%	3%
OSCE reflected those taught	74%	21%	5%
OSCE provided opportunities to learn	76%	14%	10%
OSCE is practical experience	63%	33%	4%
OSCE eliminated any chance of bias	79%	11%	10%

DISCUSSION

OSCE is gradually being recognized and accepted by nursing faculties all over the world. Dissatisfaction from previous method of clinical assessment by both teachers and students lead to a search for a more appropriate method and create the OSCE.

The finding of the study revealed there was a highly statistically significant difference between the mean of Traditional Clinical Exam (TCE) score and the mean of Objective Structured Clinical Exam (OSCE) score and accepted normal distribution curve of the student's grads. This findings are convenience with Mondal *et al.* [10] who found that the comparison of the two examination styles showed that students fared better in objective structured clinical examination than in conventional examination with respect to mean total score ($p < 0.001$) as well as mean percentage score.

Kurz *et al.* [11] studied the comparison between Objective Structured Clinical Examination (OSCE) and Advanced Practice Nursing Students or Standardized Patient (SP) stated that there were statistically significant differences between two groups for the final practical examination grades and OSCE scores were higher than SP. Also, Eftkhar *et al.* [12] added that there was no significant difference in the student's GPA.

In relation to student's perception of the OSCE, two third of students indicated that the OSCE is a fair examination and around half of them felt that it is a stressful exam and maximize the chance of excellence. This result is consistent with Abdel Nasser *et al.* [12, 13] who said that the majority of students 75.9% perceived OSCE as a fair and improved their overall final grade. Also, these result was in agreement with Delavar *et al.* [14] who reported that around half of students expressed their opinion that the OSCE test was stressful assessment.

Regarding to the student's view about preparation of OSCE, around half of them considered that OSCE was well structured exam with clear instruction and realistic scenario. In agreement with Selim *et al.* [15] who mentioned that the majority of the students consistently appraised the OSCE and reported that it was well structured and instructions were clear and unambiguous (89.8%), time for each station was adequate (74%) and the sequence of the station was logic and appropriate (84.6%).

According to the view of students toward the validity and reliability of OSCE Around two third of student believed that the score was standardized and reflected

actual measure of essential clinical skills. These results in agreement with Raheel and Naeem [16] they found that over half (56%) of student believed that OSCE was standardized and 41% of the student agreed that their performance on the examination was a true reflection of their clinical skills.

The present study revealed that around three quarter of students viewed that OSCE reflected those taught and opportunities to learn. This result were convenience with Jawad *et al.* [17] who reported that the majority of students (72.5%) expressed that OSCE was recognized as a useful learning experience by 77% participants and highlighting that the examination provided them with an opportunity to learn.

At the end. The finding of the study revealed that the OSCE has been considered as an acceptable method for assessment for clinical skills in nursing in agreement with El Nemer and Kandeel [18] who studied the using OSCE as an assessment tool for clinical skills. Also this finding was supported by other research finding [18-20].

ACKNOWLEDGMENTS

We would like to express my sincere thanks to all the nursing staff and students who participated in this study and princes Nora Bint Abdul Rahman University that provided research funding for this study.

REFERENCES

1. Alsenany, S. and A. Al Saif, 2012. Developing skills in managing Objective Structured Clinical Examination (OSCE). *Life Science Journal*, 9: 597-602.
2. Alinier, G., 2003. Nursing students' and lecturers' perspectives of Objective Structured Clinical Examination incorporating simulation. *Nursing Education Today*, 23: 419-426.
3. Watson, R., A. Stimpson, A. Topping and D. Porock, 2002. Clinical competence assessment in nursing: a systematic review of the literature. *Journal of Advanced Nursing*, 39: 421-431.
4. Baid, H., 2011. The Objective Structured Clinical Examination within intensive care nursing education. *Nursing in critical care*, British Association of critical care nurses, 16: 99-105.
5. Casey, P.M., AR. Goepfert and Espey, 2009. The Objective Structured Clinical Examination. *Obstetric Gynecol*, 200: 25-34.

6. Yap, K., M. Bearman, N. Thomas and M. Hay, 2012. Clinical Psychology Students' Experiences of a pilot Objective Structured Clinical Examination. *Australian Psychologist*, 47: 165-173.
7. Bartfay, W.J., R. Rombough, E. Howse and R. LeBlanc, 2004. The OSCE approach in nursing education: Objective structured clinical examinations can be effective vehicles for nursing education and practice by promoting the mastery of clinical skills and decision-making in controlled and safe learning environments. *The Canadian Nurse*, 100: 18-25.
8. Walsh, M., P.H. Bailey and I. Koren, 2009. Objective structured clinical evaluation of clinical competence: an integrative review. *Journal of Advanced Nursing*, 65: 1584-1595.
9. Pierre, R., A. Wierenga and M. Barton, 2004. Student evaluation of an OSCE in pediatric at the University of the west Indies, Jamaica, *BMC Medical Education*, 4: 1-7.
10. Mondal, R., S. Sarak, M. Nandi and A. Hazara, 2012. Comparative analysis between Objective Structured Clinical Examination (OSCE) and Conventional Examination (CE) as a formative tool in pediatrics in Semester Examination for final MBBS students. *Kathmandu University Medical Journal*, 10: 62-65.
11. Kurz, J., K. Mahoney, L. Plank and M. Lidicker, 2009. Objective Structured Clinical Examination (OSCE) and Advanced Practice Nursing Students. *Journal of Professional Nursing*, 25: 186-191.
12. Eftekhari, H., A. Labaf, P. Anvari, A. Jamali and S. Moghaddam, 2012. Association of the pre-internship Objective Structured Clinical Examination in final year medical students with comprehensive written examinations. *Med education online*, 17: 1-7.
13. Abdel Nasser, A., A. Mehdi and A. Abdel Kader, 2012. Objective Structured Clinical Examination (OSCE) as an Assessment Tool for Clinical Skills in Sohag University: Nursing Students' perspective. *Journal of Environment Studies*, 8: 59-69.
14. Delavar, M., H. Salmalian, M. Faramarzi, H. Pasha, M. Nikpour and F. Ledari, 2013. Using Objective Structured Clinical Examinations in undergraduate midwifery students. *Journal of Medicine and Life*, 6: 76-79.
15. Selim, A., F. Ramadan, M. El Geneidy and M. Gaafer, 2012. Using Objective Structured Clinical Examination (OSCE) in undergraduate Psychiatric nursing education: is it reliable and valid. *Nursing education today Journal*, 32: 283-288.
16. Raheel, H. and N. Naeem, 2013. Assessing the Objective Structured Clinical Examination: Saudi family medicine undergraduate medical students' perceptions of the tool. *JPMA*, 36: 281-283.
17. Jawaid, M., Z. Masood and F. Jaleel, 2013. Student's perception of surgical Objective Structured Clinical Examination (OSCE) at Dow University of health sciences. *JPMI Journal*, 28: 19-23.
18. ElNemer, A. and N. Kandeel, 2009. Using OSCE as an Assessment Tool for Clinical Skills: Nursing Students' feedback. *Australian Journal of Basic and Applied Sciences*, 3: 2465-2472.
19. Valkenier, B. and H. Marshall, 2014. Student Perceptions of a modified OSCE evaluation tool to assess their Clinical Lab Competence. *Clinical Simulation in Nursing*, 5: 129.
20. Sharma, M., P. Chandra and Chaturvedi, 2013. Objective Structured Clinical Examination. Impact on Clinical and interpersonal Skills: Follow up study *Indian Journal Psychological Medicine*, 35: 299-301.