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# Measuring Nursing Student's Performance, Attitude and Psychological Impact of Different Evaluation Approaches in Simulation Education at Arab American University- Palestine

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## Abstract

This study aimed to compare the competency and psychological impact of using the objective structured clinical examination (OSCE) to the traditional evaluation methods (TEM) in evaluating cardiology skills among nursing simulation students. Thirty-two students were initially assessed using TEM, and one week later using the OSCE. Scores of the student competency were compared using paired sample t-tests, while semi-structured interviews were used to expand on qualitative measures. Students' mean scores were significantly higher in using OSCE than in TEM ( $p < 0.001$ ). Students' attitudes and perceptions of both approaches showed favorable attitudes towards OSCE on most of the items. The qualitative data showed that students with lower GPAs and utilizing the OSCE approach experienced higher anxiety. The psychological impact of evaluation approaches requires additional investigation.

**Keywords:** TEM, OSCE, Nursing, Simulation, Psychological Impact.

## 1. Introduction

Nursing students' knowledge and abilities must be assessed appropriately for their professional development and future employment (Divya et al., 2019). Therefore, internal quality assurance is continuously needed to make teaching and learning of undergraduates with more constructive strategies. Thus, a system for assessing students' performance in simulation that

is both efficient and effective is a primary concern that fosters nursing students' development of clinical skills so that they can care for patients after graduation. In Palestine, nursing schools tend to employ a variety of assessment methods. The Arab American University- Palestine, for example, (AAUP) is currently using the TEM (Traditional Examination Method) to assess students' simulation performance. Case studies, physical examinations, and bedside examinations are all evaluated using this strategy. However, the traditional approach was criticized for its lack of objectivity, reliability and standardization, alongside examination bias, its focus on factual information and the inability to quantify a wide range of talents (Majumder et al., 2019). As a result, the OSCE approach (Objective Structured Clinical Examination) was found to be a viable alternative for assessing students' performance (Lawrence & Selvan, 2019). As part of the OSCE technique, students could cycle between stations where they accomplish clinical activities in isolated standardized scenarios. The integrated OSCE method might also promote students' comprehension of multiple systems such as cardiovascular, respiratory, nervous, and musculoskeletal systems in one station (Bani-issa et al., 2019). There were few studies comparing the usage of OSCE versus TEM in nursing curriculum, particularly simulation nursing. Several empirical investigations in the health disciplines, such as medicine, pharmacy, and physical therapy, backed the implementation of the OSCE, finding that students scored much higher on the OSCE and preferred it over the TEM (Jelly & Sharma, 2017). In Palestine, no studies have previously been conducted to measure the OSCE approach in evaluating students' performance, competency, attitude, and their psychological wellbeing during the evaluation period. Consequently, the purpose of this study was to compare advanced simulation nursing students' performance, attitudes and anxiety using the objective structured clinical examination (OSCE) and the traditional evaluation methods (TEM) as an alternative approach in evaluating cardiology skills.

## 2. Literature Review

Many studies were carried out in order to find appropriate evaluation methods for measuring the skills and information needed for practice. The following background examines several comparative studies in OSCE and TEM evaluation methods used in health education programs. Students consistently acknowledged that OSCE was fair, covered a broad variety of knowledge and skills, and allowed them to develop their skills in most areas (Selim et al., 2012; Siddaram & Anil, 2018). Students stressed that the OSCE provided them more time to think, implement procedures, and minimized evaluator bias (Jelly & Sharma, 2019). Research indicated that the OSCE was stressful (John et al., 2020; Khan et al., 2016; Rathi & Rathi, 2017) and more distressing for certain students than other assessments, while it was equally stressful for others (Brand and Shoonheim-Klein, 2009; Khan et al., 2016). Anxiety was a significant topic that emerged from student quotations in a qualitative assessment of OSCE in the UK. (Fidment, 2012). Despite the anxiety connected with OSCE, students preferred OSCE to the other alternative approaches for OSCE's countless benefits. It is worth highlighting that students' unfamiliarity with the OSCE method appeared to be a source of worry. That is, students who had previously been exposed to OSCE reported less anxiety than those who had never been exposed to it (Brand and Shoonheim-Klein, 2009; Fidment, 2012; Majumder et al., 2019). The cost of administering an OSCE is typically higher than that of a TEM. However, some people believe it is cost-effective. For example, students in a Saudi Arabian study of 117 sophomore medical students stated that despite the high cost of OSCE, it was worth the time and effort and measured a broader variety of cognitive and clinical skills than traditional approaches (Alsaid and Al-Sheikh, 2017). These feelings were also stated in a qualitative research of undergraduate nursing students' attitudes toward OSCE in Spain, where "test efficiency" was a key concept derived from student quotes. One participant put it this way: "A

substantial initial investment is required, but once initiated, it is not as expensive. In the long run, it is efficient" (Sola et al., 2017). OSCE was more valid and dependable than other approaches for numerous reasons. First of all, it covered a wide range of topics, allowing learners to make up for areas where they had lagged (John et al., 2020; Rathi & Rathi, 2017). Secondly, unlike other methodologies, OSCE was unaffected by social bias based on ethnicity, gender, religion, or socioeconomic status (Lawrence & Selvan, 2019; Majumder et al., 2019; John et al., 2020; Khan et al., 2016). Finally, all students were graded on the same tasks (Ameh et al., 2014). Moreover, much research has validated the OSCE method's validity and reliability (Graham et al., 2013; Awad et al., 2017; Rathi & Rathi, 2017). The predictive validity of the OSCE was established by its relationship to later clinical outcomes (Graham et al., 2013; Awad et al., 2017). OSCE was also proven to be a greater predictor of performance than students' grades, and it predicted written and case-based final examinations better than other exams (Alsaid et al., 2017). A study of 76 undergraduate nursing students at Alexandria University in Egypt discovered that the OSCE outcomes were more closely associated to final written exams and total marks than the oral exam and clinical evaluation. (Selim et al., 2012). Despite the OSCE method's widespread use in many health fields, numerous scholars doubted its purported superiority to other assessment methods (Awad et al., 2017). Testing specific skills at stations, according to some, may not accurately reflect the entire experiences of real patients. In addition, analyzing the entire patient not only entailed examining individual's parts, but it also necessitated adaptations for the sake of efficiency based on the concept of the least effort (Barman, 2005; Major, 2005; Lynga et al., 2019).

The availability of assessors, who are proportional to the number of stations, was one of the other difficulties brought up throughout OSCE implementations. There were also numerous stations that required extra time and necessitated the examiners' presence, which was not always possible. It was difficult to ensure that all assessors had the same training, which cast doubts on the objectivity of the OSCE. For students, switching examiners at various stations and locales could sometimes be a frustrating and draining experience (Ahmad et al., 2018).

In this research, we used an integrative OSCE method to test students' various competencies using a single simulated patient case study. The purpose of this study was to assess advanced nursing students' perspectives and attitudes of the use of OSCE and TEM in cardiology skills evaluation. In Palestine, no study comparing the use of OSCE against TEM in nursing schools was conducted. The conclusions of this study were tremendously valuable to academic decision-makers who are trying to figure out if OSCE or TEM may provide the most upward leverage in the academic wheel cycle

### **3. Methods**

#### **3.1 Research Design**

A comparative cross-sectional study design whereby students were assessed in terms of their knowledge and skills in adult cardiology using two types of evaluation (TEM and OSCE) which used mixed quantitative and qualitative methods. Over the course of two weeks, the same students had been tested twice. They were asked to complete a self-administered questionnaire at the end of the examination in addition to individual open-ended feedback.

#### **3.2 Setting**

The study was conducted at the Arab American University- Palestine (AAUP) simulation laboratory. The simulation lab houses high-fidelity mannequins and designed to mimic private hospital rooms.

#### **3.3 Sample**

The study addressed a convenience sample of 32 baccalaureate-nursing students enrolled in the nursing program during fall semester of 2019. The participants were recruited from the nursing college. The inclusion criteria included students involved in the advanced nursing courses.

### 3.4 Research Instruments

The study included quantitative and qualitative tools. Four instruments were used:

1. The TEM exam: a competency checklist that included professionalism, communication skills, QSEN practice, and general assessment. It was a team effort that was exerted to accommodate all scenarios and had a total score of 100.
2. The OSCE exam: trained workers assessed a checklist of numerous competences related to adult cardiac patients. With a total score of 100, the evaluators had to determine whether the students did the skill sufficiently, insufficiently, or not at all. The assessed the skills that included professionalism, communication skills, QSEN practice, history of chest pain, identification of risk factors, physical examination, and diagnostic procedures.
3. Assessing students' opinions was implemented using questions from earlier investigations (Jelly et al., 2016). Nursing students were asked to judge the value of OSCE and TEM on a binary (agree, disagree) scale. The scale's interrater reliability in the study was ( $r = 1$ ). Students compared TEM to OSCE on 10 items: freedom to perform the procedure, time to think, testing actual knowledge, susceptibility to evaluator bias, the requirement of resources, objectivity, ability to test performance, easiness, anxiety, and interest.
4. Individual and focus group interviews included open-ended semi-structured questionnaires to assess students' perceptions of TEM and OSCE. This qualitative part of the study promoted a richer and more nuanced understanding of the students' experiences. Results of the qualitative part were used to expound on the quantitative findings.

### 3.5 Data Collection

The Acute Coronary Syndrome (ACS) chest pain evaluation material was adapted from a standard OSCE guidebook (Al-Wahedi et al, 2016) and authorized by the nursing faculty. Students received information regarding chest pain assessment through flipped classrooms via e-mails and on the day of examination. The topic was then discussed with 100 students divided into four groups. To practice TEM, 32 students were chosen from each of the four sections (8 from each). After four days, the same students were supplied the chest pain materials for re-evaluation utilizing OSCE procedures. They were assessed for the OSCE two weeks later. As a result, both methods were evaluated and a comparison criterion was established. The assessment included an examination of the patient's complaints of significant chest pain. Communication skills, disease history, physical examination, and diagnostic procedures were among the four stations and competencies that the students had to master. Each station took seven to ten minutes to accomplish.

### 3.6 Data Analysis

Research data was entered into the Statistical Package for the Social Sciences (SPSS) version 23.0 (IBM Corporation, Armonk, NY, USA). Frequencies and percentages were calculated for age, gender and GPA. Paired T-test analyses were also used to compare the students' scores on the TEM with that on the OSCE. Repeated measures ANOVA was used to explore variations by GPA and gender. McNemars test was further used to compare students' perception towards TEM and OSCE in categorical outcomes. Qualitative data was analyzed by identifying themes and subthemes and constructing an overall storyline.

## 4. Results

#### 4.1 Study context and participant demographics

Table 1 shows that 32 nursing students participated in this research. Males made up 56.3% of the sample, while females 43.8%. Students' participation by GPA was around thirty-seven percent lower than 2.5, (59.4%) between 2.5 and 3.5, and (3.5%) above 3.5. Most students were 21-23 years of age (81.3%); few were in the 18-20 age group (6.3%) who finished high school at an early age and were involved in nursing program and finally few were in the 24-26 age group (12.5%).

**Table 1: Sample's demographic information.**

	Gender		GPA			Age		
	Male	Female	1.50 – 2.49	2.50 – 3.49	3.50 – 4.00	18 - 20	21 - 23	24 - 26
N	18	14	10	19	3	2	26	4
%	56.3	43.80	37.1	59.4	3.5	6.3	81.3	12.5

The overall mean of the sample was higher on the OSCE scores than TEM (88.88 vs. 72.63, respectively). 16.244 was the difference between the two methods, which was highly statistically significant;  $p < 0.001$ , as shown in Table 2.

**Table 2: Comparisons of Mean scores between OSCE and TEM by gender and GPA**

Gender	Grade Point Average	Mean score of TEM	Std. Deviation	Mean Score of OSCE	Std. Deviation	N
male	1.50- 2.49	68.91	7.86	87.25	7.344	8
	2.50- 3.49	72.59	6.632	87.67	6.69	9
	3.50- 4.00	79.2	.	90	.	1
	Average	71.32	7.305	87.61	6.608	18
female	1.50- 2.49	75.9	0	88	11.314	2
	2.50- 3.49	73.97	7.088	90.9	3.414	10
	3.50- 4.00	74.45	2.051	91	2.828	2
	Average	74.31	5.965	90.5	4.433	14
Total	1.50- 2.49	70.31	7.532	87.4	7.501	10
	2.50- 3.49	73.32	6.721	89.37	5.336	19
	3.50- 4.00	76.03	3.102	90.67	2.082	3
	Average on both Gender	72.63	6.816	88.88	5.857	32

The results of repeated measures ANOVA (see Table 2) indicated that females scored higher than males on TEM (74.31 vs. 71.32 respectively). However, the difference was not statistically significant. Similarly, females scored higher on the OSCE than males (90.50 vs 87.61, respectively). The overall TEM score by GPA increased in the expected direction from 70.31 for students with low GPA students to 73.32 for medium GPA students to 76.03 for high GPA students. The overall OSCE score increased in the same direction as TEM, but the OSCE scores were more than TEM at all GPA levels.

The results of the two-way mixed repeated measures ANOVA showed that when adjusting gender and GPA, students scored significantly higher on OSCE than on TEM ( $F(1,26) = 44.99$ ,  $p < 0.000$ ). The partial Eta squared of 0.634 indicated a larger effect size between the OSCE and TEM. The Levene's Test of equality of error variances was 0.252 for the TEM and 0.231 for the OSCE, indicating that the assumption of homoscedasticity was not violated.

#### 4.2 Student's Attitudes and Perceptions of OSCE and TEM

Students' attitudes and perceptions were significantly higher in favor of OSCE on most items

on the scale (Table 3). The p-values were based on McNemar test of differences between the two paired samples. Students experienced the same location and same human resources in TEM and OSCE evaluation exams. OSCE stations were integrative. OSCE was perceived to give more freedom to perform the procedures, providing more time to think, better at testing actual knowledge, more objective, and less prone to evaluator bias. Also, students' perceptions of TEM vs. OSCE did not differ on test anxiety and resources requirement.

**Table 3: Attitudes of nursing students towards OSCE and TEM, (n=32)**

No.	Item	TEM	OSCE		P value
			Agree	Disagree	
1-	It gives more freedom to perform procedure	Agree	11		
		Disagree	21		
2-	It gives enough time to think	Agree	12	1	0.0001
		Disagree	19	0	
3-	It tests actual knowledge	Agree	8	2	0.0001
		Disagree	21	1	
4-	It gives less chance for evaluator's bias	Agree	6	0	0.0001
		Disagree	20	6	
5-	It requires minimal use of resources (personnel and space)	Agree	8	5	0.064*
		Disagree	14	5	
6-	It is an objective type evaluation	Agree	9	2	0.000
		Disagree	20	1	
7-	It tests over all ability of Performance	Agree	8	2	0.000
		Disagree	21	1	
8-	It is easy to complete the task in time	Agree	5	4	0.001
		Disagree	21	2	
9-	It increases anxiety	Agree	4	8	0.383*
		Disagree	13	7	
10-	It improves interest to proceed through examination.	Agree	10	3	0.003
		Disagree	17	2	

\*No significance at  $p < 0.05$ .

### 4.3 Results on the perception of students in TEM and OSCE according to students' GPA

Although the results in Table 3 indicated that the students were in favor in OSCE, the students with a low GPA (below 2.5) tended to prefer TEM over OSCE, as shown in Table 4. These results were also reflected in qualitative individual and focus group interviews with more explanations that justified their perceptions. This could be attributed to the higher GPA students, who were motivated to try new experiences, but this issue needs more investigation. This result was not reflected in previous research.

### 4.4 Open-Ended Interviews and Focus Groups

Qualitative data collected was analyzed and categorized into four themes. The main themes were: better evaluation and assessment, knowledge and Education, psychological impact and practice.

**Better evaluation and assessment:** Most students thought OSCE was a better evaluation tool than TEM for several reasons, which the researchers categorized into subthemes; 1) Justice and fairness, 2) Application to other specialties, 3) Precision & accuracy, and 4) Depth, breadth and detail.

**Justice & fairness:** Students thought that OSCE was more just and fair because it evaluated students individually and not in groups. When students were evaluated in groups, some students might depend on others and might not contribute as much, but receive the same grade as those who contributed tremendously. Example of students' quotations: "TEM evaluate group, in

which weak participants depend on the well-prepared students, but group get the same score". (80%).

**Table 4: Students perception in TEM and OSCE according to GPA**

Item in the questionnaire	Evaluation method	GPA	
		Lower than 2.5	2.5 or above
It gives more freedom to perform procedure	TEM	70.0 %	18.2 %
	OSCE	100 %	100 %
It gives enough time to think	TEM	60.0 %	31.8 %
	OSCE	100 %	95.4 %
It tests actual knowledge	TEM	50.0 %	22.7 %
	OSCE	90.0 %	90.1 %
It gives less chance for evaluator's bias	TEM	20.0 %	18.2 %
	OSCE	80.0 %	81.8 %
It requires minimal use of resources (personnel and space)	TEM	40.0 %	40.9 %
	OSCE	70.0 %	68.2 %
It is an objective type Evaluation	TEM	50.0 %	27.3 %
	OSCE	90.0 %	90.9 %
It tests over all ability of Performance	TEM	40.0 %	27.3 %
	OSCE	90.0 %	90.9 %
It is easy to complete the task in time	TEM	50.0 %	18.2 %
	OSCE	60.0 %	90.9 %
It increases anxiety	TEM	60.0 %	27.3 %
	OSCE	40.0 %	60.1 %
It improves interest to proceed through examination.	TEM	60.0 %	31.8 %
	OSCE	90.0 %	81.8 %

**Application to other specialties:** most students preferred to apply OSCE in other specialties in nursing college like adult, advance, maternity and pediatric courses. Example of students' quotations: "I prefer OSCE as a tool of evaluation for the other specialties because it gives more skills, qualifications and more confidence". (90%)

**Precision and accuracy:** Many students stated that OSCE helped students evaluate their weaknesses and strengths while practicing the procedure. It also assessed playing all roles needed for case scenarios like nurse, family member, doctor.... All students agreed that the OSCE approach was more accurate and precise in measuring a particular clinical competency than TEM using pre-determined checklist. This advantage made students to be more skillful, self-determinant and promoted their autonomy. Example of students' quotations:

"OSCE helps me to evaluate and identify my own weaknesses and strengths while practicing the procedure". (75%)

**Depth, breadth, and detail:** Most students found OSCE could measure a broader range of their knowledge and skills and in greater detail and depth. However, very few students preferred to have a companion in the OSCE evaluation room to prevent stress, pressure, and embarrassment. Weaker Students with GPA ranged 1.5-2.5 mostly preferred this methodology. Example of students' quotations:

"OSCE measures specific details, basic and wide information related to disease not included in TEM". (75%). "I prefer to have at least two students for OSCE evaluation to prevent embarrassment (GPA=1.5)". (10%)

**Knowledge and Education:** this item reflected the learning abilities of the students. Responses of students were categorized into subthemes; cognitive impact and learning outcomes. The majority of students practiced more cognitive abilities in critical thinking and clinical judgment

in OSCE compared to TEM. Furthermore, students had the freedom for holistic assessment and better chance to express their clinical skills. Example of students' quotations: "OSCE increases my ability to concentrate and allows me to express my clinical skills learned". (90%)

Moreover, many students stated that OSCE was richer in information when compared to TEM for better learning outcome. OSCE approach was comprehensive and assessed a wide range of skills, knowledge, well organized and coherent nursing care process. Example of students' quotations: "OSCE is more organized and well-structured and has a wider range of information that is needed for development". (90%)

**Psychological impact (independence and self-confidence):** Most students stated that components in OSCE promoted more self-confidence and satisfaction than TEM as a motivation for proper work completion. The OSCE approach depended on a clear, coherent and well-organized structure. The student followed the procedure in sequence and practice tasks in a comfortable manner, enhancing their satisfaction and self-confidence. Example of students' quotations: "OSCE promotes me more confidence in clinical judgment and decision making because it depends more on a clear, organized and well-structured process". (80%)

**Practice:** This reflected students' perception and attitudes of implementing nursing procedures using TEM vs. OSCE. Most students stated that OSCE allowed them more time to express their clinical skills in individual basis, and this indeed promoted independence that enhanced their clinical experience. Few students were in favor of TEM with respect to group cooperation within members. Students with low GPA preferred the last direction. Examples of students' quotations: "Better, more chance to practice clinical procedures". (10%)

The story-line shown in Figure 1 illustrates the interrelationships among the themes and subthemes. Better assessment in terms of objectivity, validity, and fairness results in better knowledge and cognitive skills which in turn lead to self-confidence and better practice.

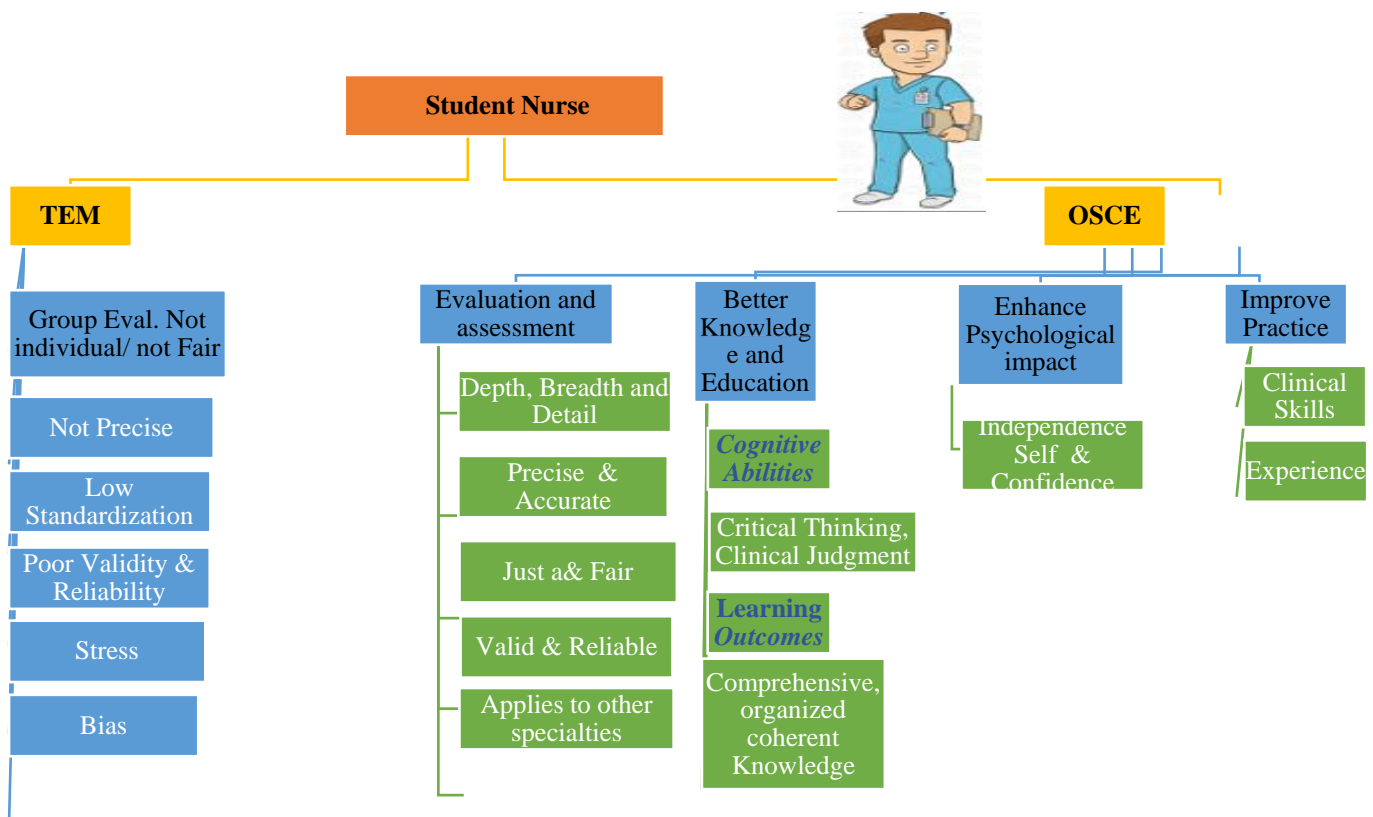


Figure 1: Story-line of OSCE and TEM evaluation Methods

## 5. Discussion

This study aimed at exploring attitudes and performance on TEM versus OSCE assessments through a sample of nursing students registered in an advanced nursing course at AAUP. In congruence with Majumder (2019), the findings showed that the greater precision, fairness, validity and reliability of the OSCE led to improving cognitive abilities and understanding of the learning topics by the students. This improved knowledge that enhanced the psychological impact such as higher confidence and independence, which was also consistent with Siddaram (2018). Both quantitative and qualitative measurements showed similar findings regarding enhancing knowledge, confidence and independence. Both methods improved practical and clinical skills such as better communication, history taking, patient's assessment, clinical performance of procedures and better clinical decisions that ultimately resulted in benefiting the patients. A similar conclusion was reached by several previous studies. That is, the majority of our students agreed that OSCE was fair and more objective than TEM (Ameh, 2014; Jelly & Sharma, 2019; Awad, 2017). Students also believed that the OSCE worked better in assessing their actual knowledge and skills than TEM (Awad, 2017; Hammad, 2013; Alsaid and Al-Sheikh, 2017). Despite the fact that OSCE needed extra resources to set up the stations and prepare the scenarios, the majority of students believed that it was worth it. This result came in congruent with Jelly & Sharma study (2019), whereby students stated that OSCE gave them more time to think and more freedom to perform the procedures compared to TEM. Also, OSCE allowed them to improve their interest, knowledge and skills, making it worth the extra effort. Compared to TEM, the higher scores achieved in OSCE were consistent with other studies (Ameh, 2014; Jelly & Sharma, 2019; Hammad, 2013). This could be because OSCE tested a wider variety of skills than TEM and students could compensate for their weaknesses. Conversely, although students found OSCE was stressful in previous studies (Al Nazzawi, 2018; Eftekhari, 2012; Siddaram & Anil, 2018), there was no significant difference in the stressfulness induced by OSCE versus TEM in our quantitative section. However, in the qualitative section, students reported anxiety while performing OSCE exam. These results also went in line with a qualitative study conducted by Fidment (2012). As far as students and faculty are more accustomed to OSCE, the advantages would probably become more prominent and concerns about its stressfulness would dissipate. In contrast to previous studies (Jelly & Sharma, 2019), our study showed no significance in using extra human resources. The same human resources were used because of the integrative method. The essence of student-centered and self-directed in measuring the innovation in evaluation cast benefits in nursing education and improves the healthcare services provided to patients. As a result, the findings made it more urgent to accelerate the rollout of the OSCE approach as a tool for assessing nursing faculty competency, particularly at the AAUP.

The present study had a limitation represented by including a small sample size. However, conducting this study with one homogenous sampling with a single cardiology course limit variation and confounders effect that helped in better understanding of the clinical evaluation tools in depth.

## 6. Conclusion

The superiority of OSCE over TEM in many elements of student assessment was supported by findings from multiple previous studies. This study has shown concurrent results that OSCE approach is more fair, objective, and valid in assessing students' knowledge and skills in comparison to the traditional approach. Students also declared that OSCE could be the greatest tool in evaluating their clinical performance and competencies. Based on the findings of the study, OSCE approach is highly recommended to be additionally investigated and tested in simulation education as well as didactic pedagogy in nursing education. Future research with

a larger sample size, including different levels of nursing students from different nursing colleges, is also recommended to investigate the use of OSCE in nursing education for its potential positive impact on students' performance. Assessing the psychological factors and students' anxiety with different evaluation approaches is quite important despite its minor effects on this study.

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**Declaration of competing interest:** The authors state that there are no conflicts of interest of any sort.

**Ethical Consideration:** The Faculty of Nursing at AAUP provided ethical approval. Students were told what the study was about, what activities they should expect, and that all of the information they submitted and the scores they received would be kept private. Participation was entirely voluntary, and students were free to drop out at any moment.

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## قياس أداء طلاب التمريض وموقفهم وتأثيرهم النفسي لوسائل التقييم المختلفة في تعليم المحاكاة في الجامعة العربية الأمريكية- فلسطين

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### الملخص

هدفت هذه الدراسة إلى مقارنة الكفاءة والأثر النفسي لاستخدام الفحص السريري الموضوعي المنظم (OSCE) مع طرق التقييم التقليدية (TEM) في تقييم مهارات تقصي صحة القلب لدى طلاب محاكاة التمريض. وتمّ تقويم 32 طالباً في البداية باستخدام TEM، وبعد أسبوع واحد باستخدام OSCE. تمت مقارنة درجات كفاءة الطلاب باستخدام اختبارات t للعينتين المزدوجة، بينما تم استخدام المقابلات شبه المنظمة للتوسع في المقاييس النوعية. وكان متوسط درجات الطلاب أعلى بشكل ملحوظ في استخدام OSCE مما كانت عليه في TEM ( $P < 0.001$ ) أظهرت مواقف الطلاب وتصوراتهم لكلا النهجين مواقف إيجابية تجاه OSCE في معظم البنود. وأظهرت البيانات النوعية أنّ الطلاب ذوي المعدل التراكمي المنخفض والذين يستخدمون نهج OSCE يعانون من قلق أعلى. يتطلب التأثير النفسي لمقاربات التقييم، تحقيقاً إضافياً.

**الكلمات المفتاحية:** طرق التقييم التقليدية (TEM)، التقييم الإكلينيكي الموضوعي المنظم (OSCE)، التمريض، المحاكاة، التأثير النفسي.