

# An Evaluative Study to Assess the Knowledge and Skills of Osce (Objective Structured Clinical Examination) Based Procedures among Nursing Students

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## Abstract

**Introduction:** The OSCE is the accepted method of evaluating competency, clinical skills, and counselling sessions in the United States, Canada, the United Kingdom, and in fact the majority of respectable medical schools. It successfully supplements cognitive knowledge testing in essay writing and objective examination. **Objective:** To assess the knowledge of OSCE based procedures among nursing students, to assess the skills of OSCE based procedures among nursing students, to find the association between knowledge and skills of nursing students with their selected demographic variables. **Method:** A Quantitative research approach and Pre-experimental Research Design (one group pre-test post-test) was used in research. Researcher selected 131 nursing students from selected nursing college thought convenience sampling techniques. Self-Structured Knowledge Questionnaire on OSCE based procedures and Checklist based on Handwashing and PPE Procedures used as a tool. **Result:** finding the study that revealed that 54(41.2%) of students had very good knowledge, whereas 49(37.4%) of students had good knowledge 21(16.0%) of students had average knowledge and only 7(5.3%) students had poor knowledge of OSCE. In the skill 126(95%) students having good skill, 5(5%) having average skill and 0(0%) having a poor skill in OSCE based procedure among nursing students. In the study provide insights in to the relationship between demographic variables and pre-test score among nursing student. Also provides insights into the relationship between pre-test skill score and selected demographic variables among nursing students, highlighting areas where additional research or interventions may be warranted. **Conclusion:** OSCE is strongly suggested as a reliable and valid means of evaluating nursing student's clinical skills.

**Keywords:** Knowledge, Skill, OSCE, Nursing student

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## 1. Introduction

Objective structured clinical examinations, or OSCEs, were first used by Haden and Gleeson<sup>1</sup> in 1975 as a way for medical students to be assessed. Since then, both undergraduate and graduate students have routinely undergone OSCEs. The OSCE examination has evolved significantly over time to accommodate unique situations. Originally defined as "a timed examination in which medical students interact with a series of simulated patients in stations that may involve history-taking, physical examination, counselling, or patient management," it now encompasses much more. The OSCE is the accepted method of evaluating competency, clinical skills, and counselling sessions in the United States, Canada, the United Kingdom, and in fact the majority of respectable medical schools. It successfully supplements cognitive knowledge testing in essay writing and objective examination.

A flexible and multifunctional assessment instrument, the OSCE can be used to assess medical professionals in a clinical context. It evaluates competency through direct observation and objective testing. It consists of multiple "stations" where examinees must complete a range of clinical tasks in a predetermined amount of time in accordance with standards developed for the clinical skill, proving competency in abilities and/or attitudes. The

ability of health care professionals to gather and interpret data, solve problems, instruct, communicate, and deal with unpredictable patient behaviour are just a few of the skills that the OSCE has been used to assess. These skills cannot be assessed in a traditional clinical examination. Any attempt to simulate practical performance by evaluating these crucial areas in the traditional clinical case assessment will appear to be evaluating theory.<sup>1</sup>

## 2. Material and Method

A Quantitative research approach and Pre-experimental Research Design (one group pre-test post-test) was implied to conduct this study. study was conducted at Parul institute of nursing Parul University, limda, Vadodara. Nursing students are the sample of the study and sample size was 131. Convenience Sampling Techniques was used for sample selection. Criteria for the sample, inclusion criteria include Participants those who are studying in BSc and GNM nursing programme & those who are available during the data collection and exclusion criteria include Participants who all are not available at the time of data collection & those who are studying in 3<sup>rd</sup> year and 4<sup>th</sup> year B.Sc. nursing students. Tool used in this study was Self-Structured Knowledge Questionnaire on OSCE based procedures and Checklist based on Handwashing and PPE Procedures. The data collection tool was sent to 5 experts out of whom 5 received back with their valuable suggestions and comments on the study tool. 20 sample were taken for the pilot study. The reability for knowledge and checklist was calculated using the split-half method. Reliability for knowledge calculated  $r=0.85$  and for Checklist calculated  $r=0.85$  which is significant.

## 3. Result

### SECTION 1. Frequency and percentage distribution of demographic variable of the nursing students.

**In Age** Majority of students (77.1%) are aged between 17-18 years. A smaller proportion falls in the age range of 19-20 years (18.3%). Only a few students are aged 21-22 years (4.6%), and none are above 22 years old. **In Gender** Most students identify as female (84%). A smaller percentage identify as male (16%), while none identify as transgender. **In Student's Year of Study** The distribution across different years of study is fairly even B.Sc. Nursing 1st year / GNM 1st year: 48.1%. B.Sc. Nursing 2nd year / GNM 2nd year: 49.6% B.Sc. Nursing 3rd year / GNM 3rd year: 2.3%, No students are in the 4th year of B.Sc. Nursing. **In Religion** The majority of students belong to the Hindu religion (90.1%). A smaller percentage are Muslim (6.9%), and even fewer are Christian (3.1%). **In Types of Residential Area** The distribution between rural and urban areas is almost equal: Rural: 49.6%, Urban: 50.4% **In Types of Family** The majority of students come from joint families (54.2%). A significant portion are from nuclear families (36.6%). There are also students from single parent families (8.4%) and adaptive families (0.8%). **In Family Income per Month** Income distribution among families is varied :Below Rs. 5,000: 15.3%, Rs. 5,001 - 10,000: 12.2% , Rs. 10,001 - 20,000: 35.1% ,Rs. 20,001 & above: 37.4%

### SECTION 2. Frequency and percentage distribution of pre-test and post-test level of knowledge of OSCE among nursing students.

Here's a summary of the level of knowledge among the participants based on the pre-test and post-test scores: **In Poor Knowledge Score (0-5 Score):** Pre-test: 26 participants (19.8%) Post-test: 7 participants (5.3%) **In Average Knowledge Score (6-10 Score):** Pre-test: 59 participants (45.0%) Post-test: 21 participants (16.0%) **In Good Knowledge Score (11-15 Score):** Pre-test: 35 participants (26.7%) Post-test: 49 participants (37.4%) **In Very Good Knowledge Score (16-20 Score):** Pre-test: 11 participants (8.4%) Post-test: 54 participants (41.2%).

### SECTION 3. Frequency and percentage distribution of pre-test and post-test level of Skill of OSCE among nursing students.

Here's a detailed interpretation of bar graph , which displays the frequency and percentage distribution of pre-test and post-test levels of skill in OSCE (Objective Structured Clinical Examination) among nursing students: In Level of Skill: Poor Skill (24 or Below Score), Pre-test: 0 participants (0%), Post-test: 0 participants (0%) In Average Skill (25-48 Score): Pre-test: 72 participants (55%) Post-test: 5 participants (5%) In Good Skill (49-72 Score): Pre-test: 59 participants (45%) Post-test: 126 participants (95%).

### SECTION 4: Association between pre-test knowledge score with selected demographic variables.

**In Age:** There appears to be no significant association between age groups and pre-test knowledge score, as indicated by the non-significant p-value ( $p = 0.132$ ). **In Gender:** Similarly, there is no significant association between gender and pre-test knowledge score, as the p-value is greater than 0.05 ( $p = 0.617$ ). **In Student's Year of Study:** The association between the year of study and pre-test knowledge score is not statistically significant, with a p-value of 0.379. **In Religion:** There seems to be no significant association between religious affiliation

and pre-test knowledge score, as the p-value exceeds the significance threshold ( $p = 0.240$ ). **In Types of Residential Area:** The type of residential area (rural or urban) does not show a significant association with pre-test knowledge score, with a p-value of 0.916. **In Types of Family:** The association between the type of family and pre-test knowledge score is not statistically significant, as the p-value is greater than 0.05 ( $p = 0.138$ ). **In Family Income per Month:** There appears to be no significant association between family income per month and pre-test knowledge score, with a p-value of 0.332.

#### SECTION 5: Association between pre-test Skill score with selected demographic variables.

**In Age:** There is no statistically significant association between age groups and pre-test skill score, as indicated by the p-value of 0.149, which exceeds the significance threshold of 0.05. **In Gender :** Similarly, gender does not show a significant association with pre-test skill score, with a p-value of 0.826. **In Student's Year of Study:** The year of study demonstrates a statistically significant association with pre-test skill score ( $p < 0.001$ ). Specifically, students in the B.Sc. Nursing 1st year / GNM 1st year category exhibit different skill levels compared to those in the other year categories. **In Religion :** Religious affiliation does not show a significant association with pre-test skill score, as the p-value is greater than 0.05 ( $p = 0.755$ ). **In Types of Residential Area:** The type of residential area (rural or urban) does not demonstrate a significant association with pre-test skill score, as indicated by the p-value of 0.923. **In Types of Family:** There is no statistically significant association between the type of family and pre-test skill score, with a p-value of 0.135. **In Family Income per Month:** Family income per month does not show a significant association with pre-test skill score, with a p-value of 0.081. However, it is slightly above the significance threshold of 0.05, suggesting a potential trend that warrants further investigation.

#### 4. Discussion

The similar study conducted by **Lamia A. Awad<sup>1</sup>, At all(2017)** conducted study on Perception of Undergraduate Nursing Students towards Objective Structured Clinical Examination (OSCE) in that Analysis of the respondents towards their perception shows the majority of students (95.4%) agree that the examination was well organized, well-structured and appropriately sequenced. According to the majority of students, the main results also shows that the nursing students agree that OSCE was fair in testing knowledge and skills and minimized their chance of failure in the exam as compared to other test formats. **2. Hala M. M. Bayoumy, At all(2012)** conducted study on Objective Structured Clinical Examination (OSCE) – Based Assessment in Nursing: Students' and Clinical Instructors' Perception in that study showed overwhelming acceptance of the OSCE with respect to the way of administration (58.9%), structure (63%), minimizing chance of failing (60.3%), chance of compensation for additional marks (64.4%), awareness of information needed (64.4%), awareness of exam nature (80.8%). Majority of students also agreed that tasks reflected skills learnt (65.8%), sequence of stations was logical and appropriate (60.3%) and that OSCE provided opportunity to learn real life scenarios (63%). **3. Eman Ali Moselhi Mate, Elsayeda Ibrahim Ahmed, 1,(2014)** conducted study on The Impact of the Objective Structured Clinical Examination Approach for Clinical Evaluation Skills on the Student's Performance in Nursing College in that 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. **4.**

#### ETHICAL CONSIDRATION

Ethical consideration was taken from the Parul University Ethical Committee, Parul University. Ethical Committee for Human Research (**PUIECHR/PIMSR/00/081734/6105**), Limda, Vadodara and expert of the committee approved the study.

#### 5. Conclusion

This study provides insights into the relationship between demographic variables and pre-test knowledge scores among nursing students, highlighting areas where further investigation or interventions may be needed to improve knowledge levels and also provides insights into the relationship between pre-test skill score and selected demographic variables among nursing students, highlighting areas where additional research or interventions may be warranted.

#### CONFLICT OF INTEREST

Nil specify.

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