Assess the Knowledge Level on Objective Structured Clinical Examination (OSCE) among B.Sc Nursing Students at Selected Colleges, Puducherry

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Abstract:- A descriptive study is used to assess the knowledge level on objective structured clinical examination (OSCE) among B. Sc Nursing students at selected colleges, Puducherry. The aim is to assess the existing level of knowledge regarding OSCE among B. Sc Nursing students and to find the association with the knowledge level with selected demographic variables. The study was conducted among 100 B. Sc Nursing students (50 B. Sc Nursing III and IV-year students) and they were selected through Probability Sampling-Simple random sampling technique. After getting consent from the subjects, the data was collected by using Semi Structured Questionnaire to assess knowledge level on OSCE among B. Sc Nursing students. The study result showed that out of 100 students, 79 students (79%) had previous knowledge and experience on OSCE in that 92% of students possess moderate level of previous knowledge and experience, 5 % of students had adequate knowledge and 3 % had inadequate knowledge and experience on OSCE. The study concluded that majority of students had previous knowledge and experience on OSCE and it also reveals that there is no significant association between selected socio- demographic variables with knowledge level on OSCE among B.sc Nursing students.

Keywords: Knowledge, Objective Structured Clinical Examination (OSCE)

I. INTRODUCTION

Assessment is an integral part of the health care profession. Clinical examination skills are the bridge between the patient's history and the investigations required to make a diagnosis: an adjunct to careful, technology-led investigations. The objective structured clinical examination (OSCE) has become a standard method of assessment in both undergraduate and postgraduate students. The objective structured clinical examination (OSCE) is the gold standard and universal format to assess the clinical competence of medical students in a comprehensive, reliable and valid manner. OSCE is a practical test to assess specific clinical skills, a well-established method of assessing clinical competence. The clinical competence is assessed by a team of many examiners on various stations of the examination. Therefore, it is found to be a more complex, resource- and time-intensive assessment exercise compared to the traditional examinations.

The OSCE was first introduced in medical education in 1975 by Ronald Harden at the University of Dundee. The aim of the OSCE was to assess clinical skills performance. Currently, the OSCE assessments, the administration, logistics and practicalities of running an OSCE are more expensive than traditional examinations. However, this must be set against their reliability, which is far superior to the traditional short case, a versatile multipurpose evaluative tool that can be utilized to assess health care professionals in a clinical setting. It assesses competency, based on objective testing through direct observation.

The OSCE style of clinical assessment, given its obvious advantages, especially in terms of objectivity, uniformity and versatility of clinical scenarios that can be assessed, allows evaluation of clinical students at varying levels of training within a relatively short period, over a broad range of skills and issues. It is critical to improve faculty and preceptor's ability to facilitate and assess learning and to apply instructional design principles when creating learning and assessment tools, help faculty to more objectively assess student performance by implementing objective structured clinical examinations (OSCE) and validated knowledge assessments.

II. NEED FOR THE STUDY

In today's competitive world with the advancement of human economy, it is important to improve the basic skills of any profession to compete with the fast- growing and advancing world. Similarly, in Nursing profession, a new method for the evaluation came into existence to improve the clinical skills of nursing students. In recent years it was found that the nursing students are void of realistic experience before entering into the nursing profession. This method is known as OSCE (objective structured clinical examination) evaluate the nursing students' competency and skills in a nursing procedure. Due to covid-19 situation, the day today activities of human life have been affected to a greater extent and the living style of people has also been changed. The lockdown imposed by the government to prevent the spread of covid infection had made people to suffer a lot in all walks of life.

In the field of education, the educational institutions are also closed and the theoretical classes were changed to online mode of education for the students. The Same was imposed in nursing education too. Considering these issues INC and SNC recommended the online mode of theoretical education for nursing students. So, the nursing students possess lack of clinical exposure and inadequate knowledge regarding OSCE. Quantitative descriptive study was conducted among 99 undergraduate nursing students and revealed that OSCE is the reliable and valid assessment tool in fundamental nursing.

Descriptive study was conducted to as a perception of OSCE among nursing it revealed that OSCE to be better method than traditional method and majority of students provided positive feedback about the OSCE quality attributes and believed to be more accurate and not biased. OSCE felt to be less stressful than another exam. A comparative study was conducted to assess the effectiveness of OSCE among b. Sc Nursing in students in which 74.4% strongly agreed that OSCE is fairer in comparison to traditional method and it is statistically significant. A descriptive study to assess the perception of OSCE by nursing students, the student's perception and acceptance of the new method of assessment were positive. It is viewed as an accepted tool for clinical evaluation and effective method for assessing the knowledge and evaluation than traditional method. 65% of students perceived that OSCE has sufficient information from lecturers. A descriptive study to assess the effectiveness of OSCE and results revealed a positive feedback and good satisfaction on OSCE method of evaluation. The Union Territory of Puducherry, with 10 nursing colleges (government private and autonomous) conducted a Practical Examination through OSCE method in the Pandemic situation as per the guidelines of INC. The result revealed that this will be useful for improving the professional knowledge and positive perception regarding learning of nursing procedures which will reflect on the deliverance of quality nursing care. There is less amount of research is done regarding OSCE since the OSCE evaluation method was implemented in nursing colleges very recently. There are greater chances for researchers to conduct research on this technique in near future. As of now, very handful of researches were conducted on this OSCE evaluation technique.

➢ *Objectives:*
- To assess the existing level of knowledge regarding OSCE among B.sc Nursing students.
- To associate the knowledge level with selected demographic variables.

➢ *Operational Definition:*
A Descriptive study to assess the knowledge level on OSCE among B.sc Nursing students, MTPGRIHS, Puducherry.

➢ *Descriptive Study:*
A Descriptive study is one in which information is collected without changing the environment and also It describes characteristics of population or phenomenon being studied.

➢ *Assess:*
To judge something with respect to its worth or significance.

➢ *Knowledge:*
The fact or condition of knowing something with familiarity gained through experience or association related to OSCE.

➢ *OSCE:*
Objective Structured Clinical Examination. It is an approach to the assessment of clinical competence in which the components are assessed in a planned or structured way with attention being to the objectivity of the examination.

➢ *Puducherry:*
Puducherry is a union territory of India, consisting of four small geographically unconnected districts.

III. METHODS AND MATERIALS

The Research methodology consists of the steps, procedures, and strategies for gathering and analyzing the data in a research investigation. This chapter deals with Research approach, Research Design, Research variables, setting of the study, Population, Sampling technique, Sample size, Sampling criteria, Development of the tool, Description of the tool, scoring technique, Scoring key, Content validity, Procedure for data collection and Plan for Data analysis. Research approach used for the present study was the quantitative research approach. Descriptive research design was used to explore the knowledge level on OSCE among B. Sc Nursing students. Research variable of this study is knowledge regarding OSCE. The study was conducted at college of nursing, MTPG&RIHS, Puducherry. In this study, population comprises of B.Sc. Nursing students of III year & IV yearat MTPG&RIHS, Puducherry. The sample for this study is B.Sc. Nursing students' III year & IV year, who are willing to participate in the study. Sample size is 100 B.sc Nursing students (50 from III year & 50 from IV year). Probability sampling - Simple random sampling technique is used for this study. the tool consist of 2 sections . Section A:This section includes Demographic profiles such as age, gender, year, source of information, previous knowledge etc., Section B:The investigator used self-structured Questionnaire that consists of 30 questions on knowledge, introduction about OSCE, purposes of OSCE, Criteria for OSCE, features of OSCE, advantages of OSCE, uses of OSCE, learning outcomes and competencies of OSCE. The data was collected over the period of one week from 11/05/2022 at college of nursing, MTPG&RIHS, Puducherry. After obtaining proper permission from concern authority, atool of 100 BSc Nursing students were selected for data collection after explaining the procedure in detail and also the investigator for the consent from each of the sample before data collection. A total period of 15 minute was required to complete the questionnaire for each sample. Data analysis enables the researcher to organize, summarize, evaluate, interpret and communicate numerical information

of the collected data. The data was analyzed by descriptive statistics and (frequency, percentage) inferential statistics. The research approach was quantitative, Descriptive Research design, conducted at College of Nursing, MTPG&RIHS, Puducherry with 100 B. Sc Nursing students, MTPG&RIHS, Puducherry through Simple Random Sampling Technique.

➢ *Sampling Criteria:*
• *Inclusion Criteria:*
  B. Sc Nursing students who are willing to participate in the study.

• *Exclusion Criteria:*
  II year & I year B.Sc. Nursing students.

➢ *Data Analysis And Interpretation:*
  The data was organized, analyzed and tabulated according to the objectives. The data findings are grouped under the following section.

• *Section A:*
  Frequency and percentage distribution of socio-demographic variables among B. Sc Nursing III and IV-year students.

Table 1 Frequency and Percentage Wise distribution of Socio-Demographic Variables among B. Sc Nursing Students (N=100)

SL.NO	SOCIO-DEMOGRAPHIC VARIABLES	FREQUENCY(N)	PERCENTAGE(%)
1	**Age (in year)**		
	1) 17 – 18	0	0
	2) 19 – 20	54	54
	3) 21 – 22	44	44
	4) 23 – 24	2	2
2	**Gender**		
	1) Male	7	7
	2) Female	93	93
3	**Year of study in B. Sc Nursing**		
	1) III year	55	55
	2) IV year	45	45
4	**Source of Information**		
	1) Friends	22	22
	2) Classroom	4	4
	3) Mass Media	21	21
	4) Conference	53	53
5	**Previous knowledge and experience on OSCE**		
	1) Yes	79	79
	2) No	21	21

Table 1 shows frequency and percentage wise distribution of socio-demographic variables among B. Sc Nursing III and IV-year students. Out of 100 B.Sc Nursing III and IV-year students who were interviewed. Majority 54 % (54) of the B. Sc Nursing students of the study population were in the age group between 19 – 20 years, most 93 % (93) of the B. Sc Nursing students were female, most 55 % (55) of the B. Sc Nursing students were from III-year, majority 53 % (53) of the B. Sc Nursing students gained the source of information regarding OSCE through conference, majority 79 % (79) of the B. Sc Nursing students had a previous knowledge and experience on OSCE.
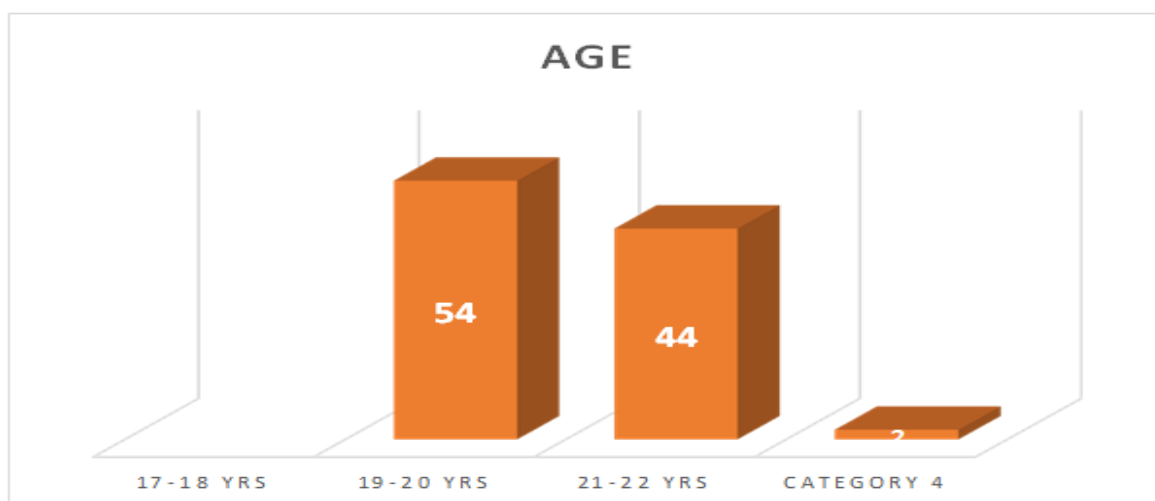

Fig 1 Frequency and Percentage distribution of Age Wise with Knowledge Level among B. Sc Nursing III and IV-Year Students

Figure 1 shows frequency and percentage of age distribution among B. Sc Nursing students, Majority 54 % (54) of the B. Sc Nursing students of the study population were in the age group between 19 – 20 years.
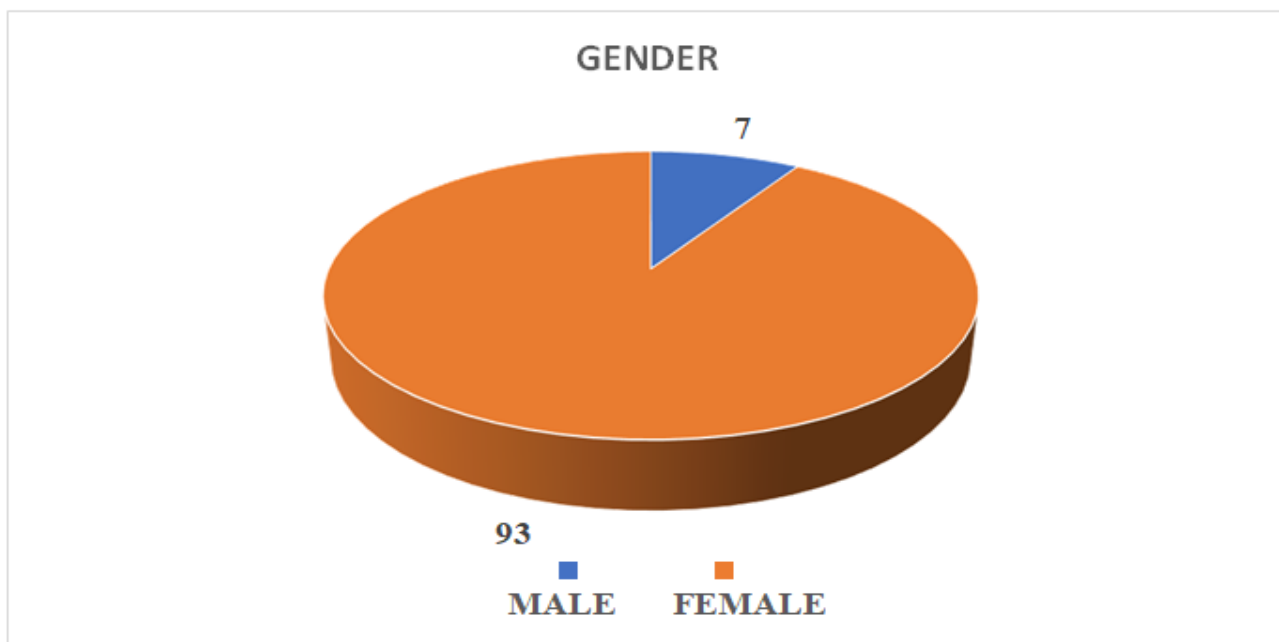

Fig 2 Frequency and Percentage distribution of Gender Wise with Knowledge Level among B. Sc Nursing III and IV-Year Students

Figure 2 shows frequency and percentage of gender distribution among B. Sc Nursing students, most 93 % (93) of the B. Sc Nursing students were female.
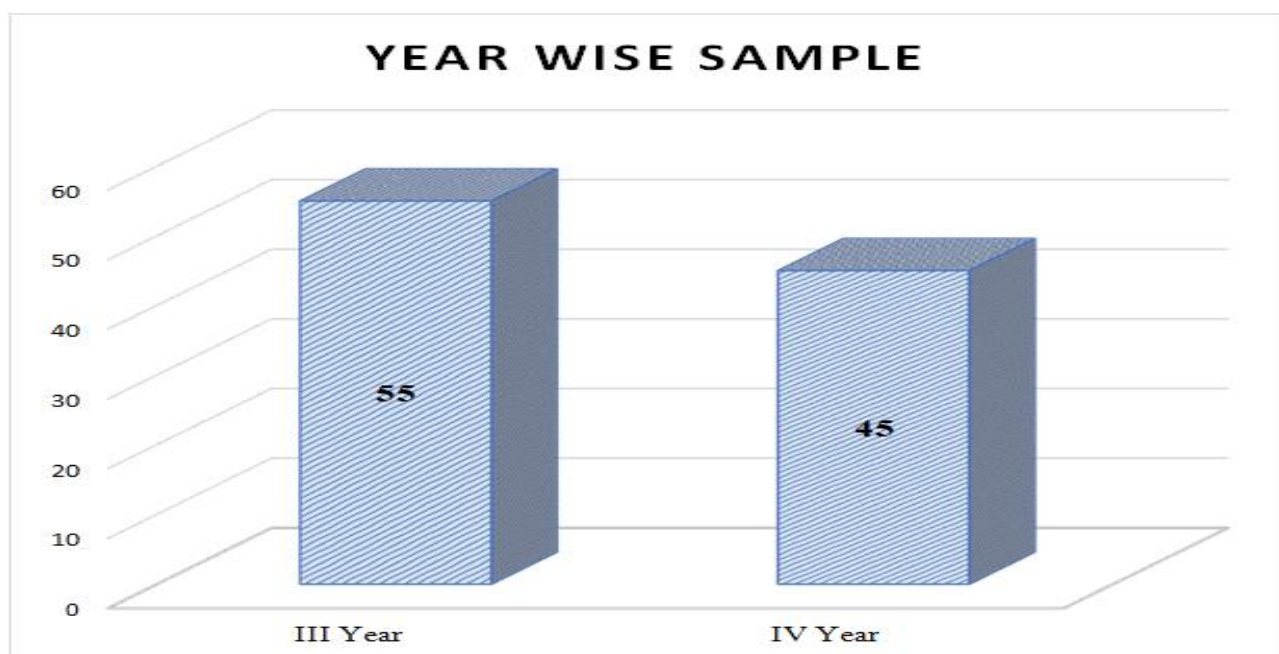

Fig 3 Frequency and Percentage distribution of Year Wise with Knowledge Level among B. Sc Nursing III and IV-Year Students

Figure 3 shows frequency and percentage of year of study in B. Sc Nursing, Most 55 % (55) of the B. Sc Nursing students were from III year.
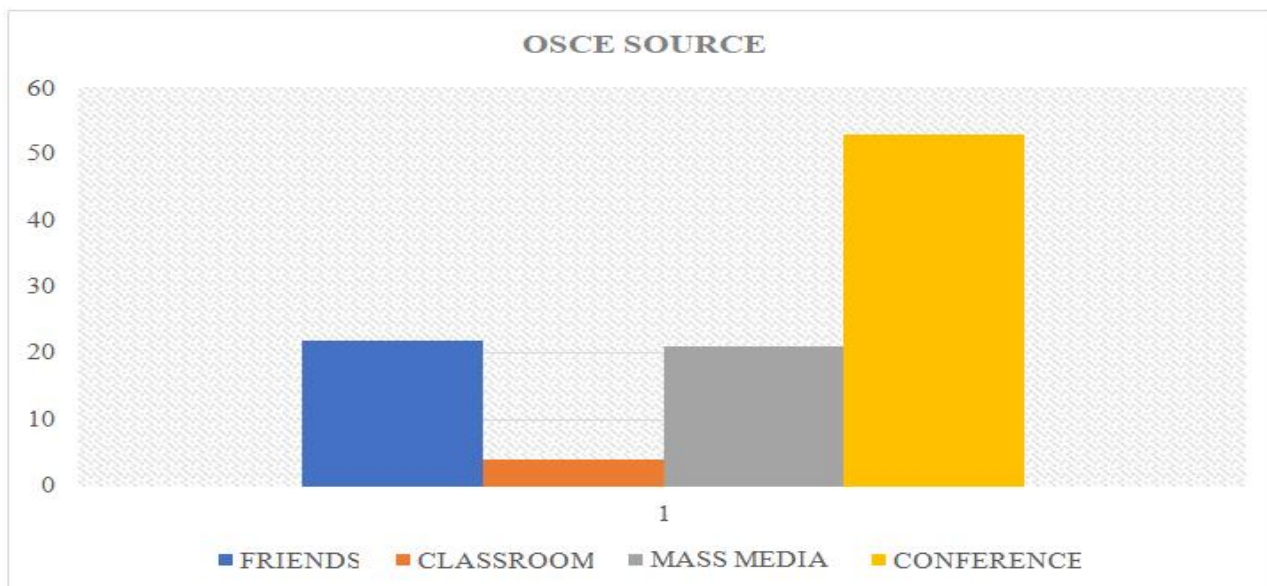
Fig 4 Frequency and Percentage distribution of Source of Information with Knowledge Level among B. Sc Nursing III and IV-Year Students

Figure 4 shows frequency and percentage of source of Information regarding OSCE among B. Sc Nursing students, Majority 53 % (53) of the B. Sc Nursing students gained the source of information regarding OSCE through conference.
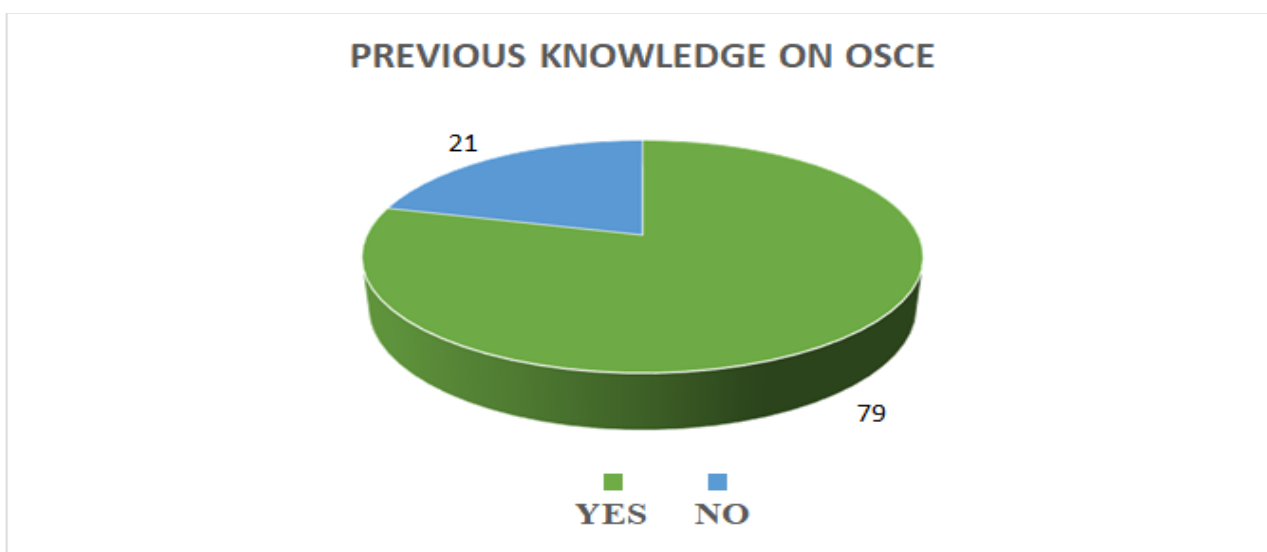

Fig 5 Frequency and Percentage distribution of Previous Knowledge with Knowledge Level among B. Sc Nursing III and IV-Year Students

Figure 5 shows frequency and percentage of pervious knowledge and experience on OSCE among B. Sc Nursing students, Majority 79 % (79) of the B. Sc Nursing students had a previous knowledge and experience on OSCE.

- *Ojective 1:*
  To assess the existing level of knowledge regarding OSCE among B.sc Nursingstudents.

Table 2 Frequency and Percentage distribution of Age Wise with Knowledge Level among B. Sc Nursing III and IV-Year Students (N = 100)

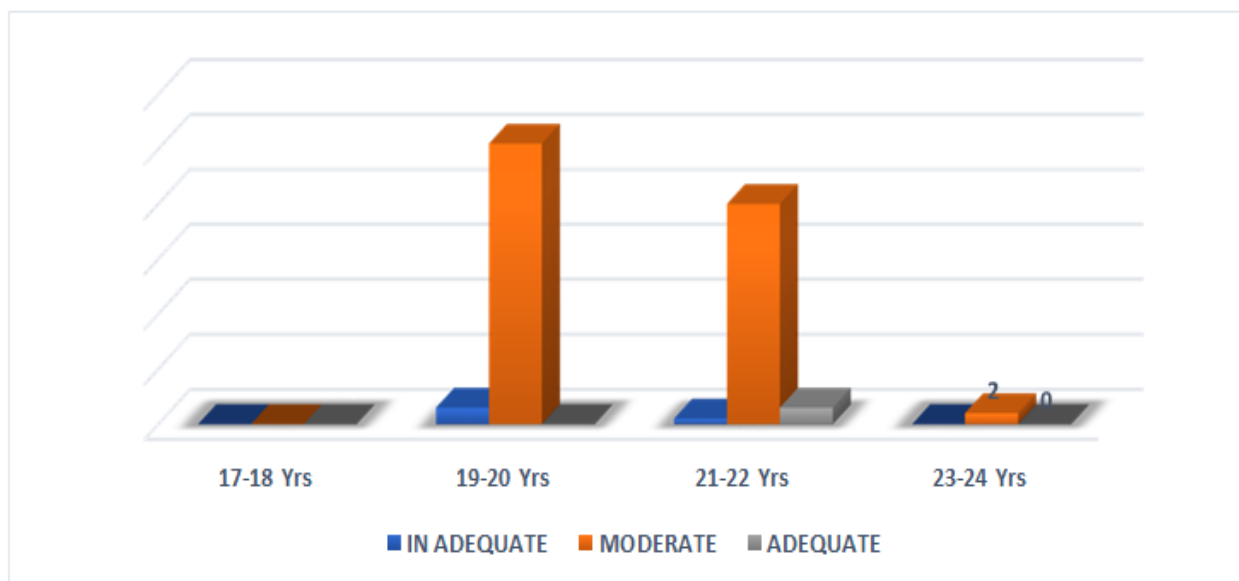| KNOWLEDGE	17 -18 Year		19 – 20 Year		21 – 22 Year		23 – 24 Year	
	N	%	N	%	N	%	N	%
INADEQUATE	0	0	3	5.5	1	2.3	0	0
MODERATE	0	0	51	94.5	40	90.9	2	100
ADEQUATE	0	0	0	0	3	6.8	0	0

Fig 6 Age Wise Knowledge Distribution

Table 2 and Figure 6 reveals age-wise knowledge level of B. Sc Nursing students onOSCE, majority of students belong to 23 – 24 had moderate knowledge (100%), 94.5% of moderate knowledge is possessed by 19 – 20 years and 90.9% of moderate knowledge is possessed by 21 – 22 years, 6.8% of students had adequate knowledge belongs to 21 – 22 years and 5.5% of inadequate knowledge possessed by 19 – 20 years.

Table 3 Frequency and Percentage distribution of Gender Wise with Knowledge Level among B. Sc Nursing III and IV-Year Students

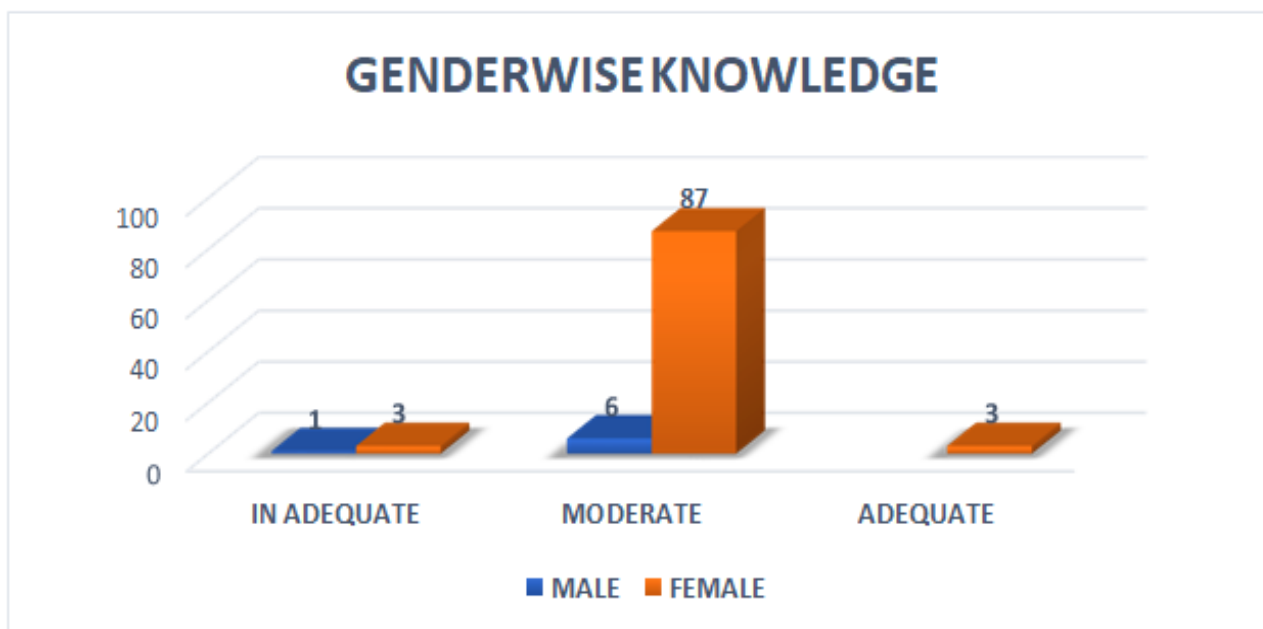|	MALE		FEMALE	
KNOWLEDGE	N	%	N	%
INADEQUATE	1	14.3	3	3.2
MODERATE	6	85.7	87	93.5
ADEQUATE	0	0	3	3.2

Fig 7 Frequency and Percentage distribution of Gender Wise with Knowledge Level among B. Sc Nursing III and IV-Year Students

Table 3 and Figure 7 shows gender-wise knowledge level on OSCE among B. Sc Nursing students, majority of students with moderate knowledge on OSCE are female (93.5%) and male (85.7), 14.3% of male students possess inadequate knowledge, 3.2% offemale students possess inadequate knowledge and 3.2% of female students had adequateknowledge on OSCE.

Table 4 Frequency and Percentage distribution of Year Wise with Knowledge Level among B. Sc Nursing III and IV-Year Students (N = 100)

KNOWLEDGE	III Year		IV Year	
	N	%	N	%
INADEQUATE	1	1.8	3	6.7
MODERATE	52	94.5	41	91.1
ADEQUATE	2	3.6	1	2.2

Table 4 displays year of study wise knowledge on OSCE, majority of III-year students had moderate level of knowledge 94.5%, 91.1% of students had moderate knowledge belongs to IV year, 6.7% of III-year students had inadequate level of knowledge, 3.6% of adequate knowledge possessed by III-year students and 2.2% of adequate knowledge possessed by IV-year students of B. Sc Nursing.

Table 5 Frequency and Percentage distribution of Source of Information with Knowledge Level among B. Sc Nursing III and IV-Year Students (N=100)

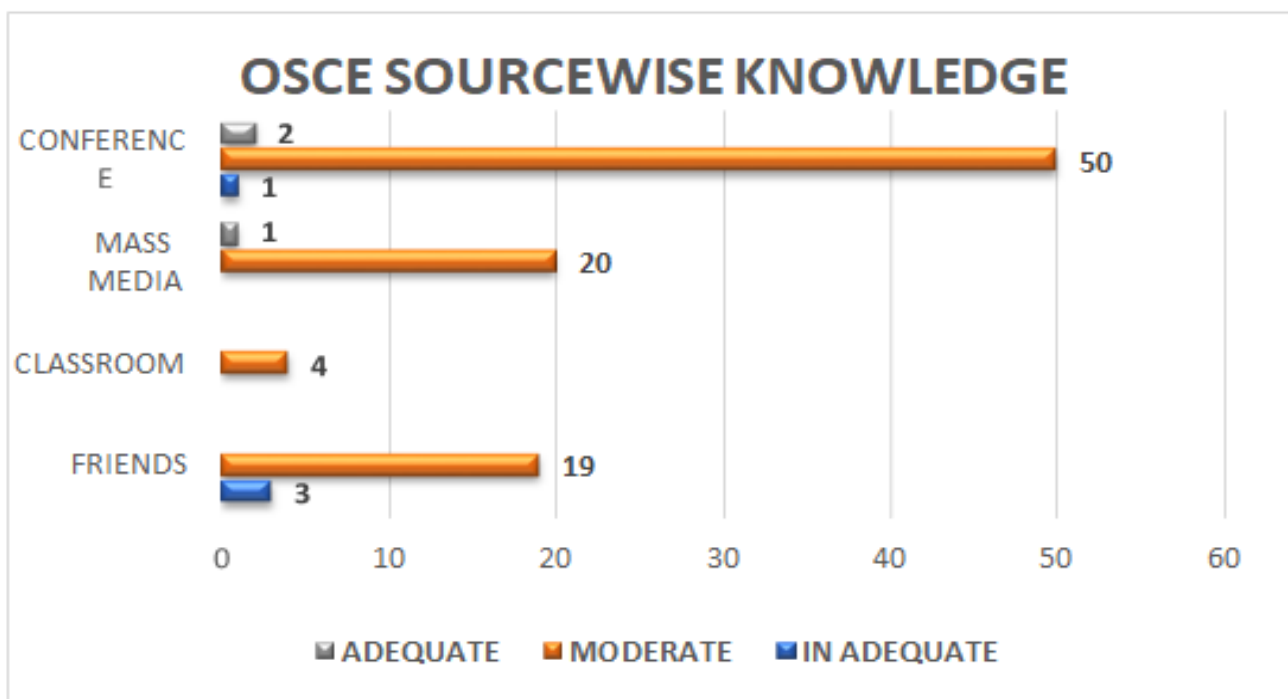| KNOWLEDGE	Friends		Classroom		Mass Media		Conference	
	N	%	N	%	N	%	N	%
INADEQUATE	3	13.6	0	0	0	0	1	1.9
MODERATE	19	86.4	4	100	20	95.2	50	94.3
ADEQUATE	0	0	0	0	1	4.8	2	3.8

Fig 8 Frequency and Percentage distribution of Source of Information with Knowledge Level among B. Sc Nursing III and IV-Year Students

Table 5 and Figure 8 Manifest source wise knowledge on OSCE among B. Sc Nuringstudents, majority of students had gained moderate level of knowledge 100% from classroom, 95.2% from mass media, 94.3% from conference, 3.6% of inadequate knowledge is obtained from friends, 4.8% of adequate knowledge is grained from mass media and 3.8% from conference.

Table 6 Frequency and Percentage distribution of Previous Knowledge with Knowledge Level among B. Sc Nursing III and IV-Year Students. (N=100)

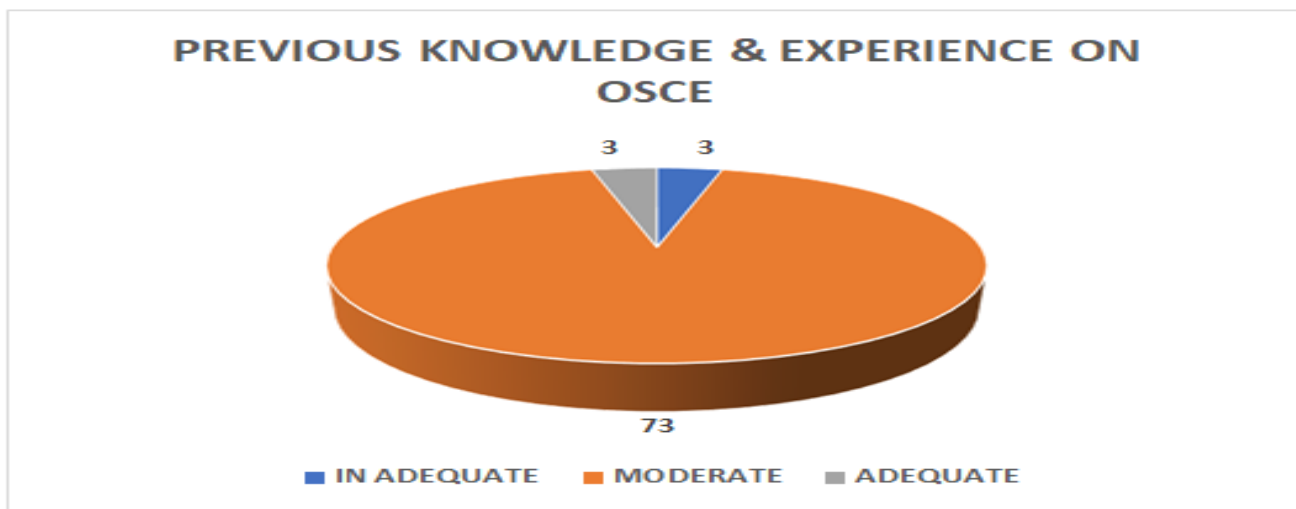| KNOWLEDGE	Yes		No	
	N	%	N	%
INADEQUATE	3	3.8	1	4.8
MODERATE	73	92.4	20	95.2
ADEQUATE	3	3.8	0	0

Fig 9 Frequency and Percentage distribution of Previous Knowledge with Knowledge Level among B. Sc Nursing III and IV-Year Students

Table 6 and Figure 9 displays previous knowledge and experience on OSCE, most of the students 95.2% had no previous knowledge and experience on OSCE, 92.4% had moderate level of previous knowledge, 4.8% possess inadequate knowledge and 3.8% had adequate level of previous knowledge and experience on OSCE.

Findings: According to Age, 6.8% of students had adequate knowledge on OSCE belongs to age group of 21-22 years. According to Gender, 3.2% of female students had adequate knowledge on OSCE. According to year of study, 3.6% of III-year students had adequate knowledge on OSCE. According to source of information, 4.8% of students had adequate knowledge from mass media and 3.8% from conference. According to previous knowledge and experience, 3.8% had adequate level of previous knowledge and experience on OSCE

Table 7 Association between Level of Knowledge towards OSCE among B. Sc Nursing III and IV-Year Students with their Selected Demographic Variables

SL.NO	DEMOGRAPHIC VARIABLES	LEVEL OF KNOWLEDGE						Chi- square x^2 and p-value
		INADEQUATE		MODERATE		ADEQUATE		
		N	%	N	%	N	%	
1	Age (in year)							x^2=4.678 p = 0.586NS df = 6
	17 – 18	0	0	0	0	0	0	
	19 – 20	3	5.5	51	94.5	0	0	
	21 – 22	1	2.3	40	90.9	3	6.8	
	23 – 24	0	0	2	100	0	0	
2	Gender							x^2= 2.260 p = 0.323NS df = 2
	Male	1	14.3	6	85.7	0	0	
	Female	3	3.2	87	93.5	3	3.2	
3	Year of study in B. Sc Nursing							x^2= 1.651 p = 0.438NS df = 2
	III year	1	1.8	52	94.5	2	3.6	
	IV year	3	6.7	41	91.1	1	2.2	
4	Source of Information							x^2= 7.949 p = 0.242NS df = 6
	Friends	3	13.6	19	86.4	0	0	
	Classroom	0	0	4	100	0	0	
	Mass Media	0	0	20	95.2	1	4.8	
	Conference	1	1.9	50	94.3	2	3.8	
5	Previous knowledge and experience on OSCE							x^2= 0.850 p = 0.654NS df = 2
	Yes	3	3.8	73	92.4	3	3.8	
	No	1	4.8	20	95.2	0	0	

*NS- Non significant, p < 0.05 significant

Table 7 Depicts that there is no significant association (p > 0.05) between knowledge level with the demographical variables of age, gender, year of study, source of information and previous knowledge and experience on OSCE among B. Sc nursing students.

IV. DISCUSSION AND SUMMARY

This chapter deals with the discussion of the study finding, implications, recommendations, conclusions and compares with appropriate review of literature. The aim of the study was to assess the existing knowledge towards OSCE among B. Sc Nursing III and IV-year students, MTPG&RIHS. The knowledge was analysed using descriptive statistical (frequency and percentage distribution was used to analyse the data). The sample size was 100. The data was analysed and discussed based on the objectives of the study.Around 100 students were selected from B. Sc Nursing for this study Major findings of this study are discussed as follows

- Based on the age, out of 100 students, 54 students were under the age group of 19-20 years, 44 students belong to 21 – 22 years and 2 students belongs to 23 – 24 years.
- Regarding gender of the students, out of 100 students, 93 students are female and 7 students are male.
- With regard to year of studying in B. Sc Nursing, out of 100 students 55 students are studying III year and 45 students are studying IV year.
- As per the source of information gained, out of 100 students, 53 students gained knowledge towards OSCE from conference, 22 students gained knowledge from friends, 21 students gained knowledge from mass media and 4 students gained knowledge from classroom.
- On the contest of previous knowledge and experience on OSCE, out of 100 students 79 students had previous knowledge and experience regarding OSCE technique and 21 students had no knowledge and experience regarding OSCE technique.

The findings of the present study revealed, among 100 students, 79 students had previous knowledge and experience on OSCE in that 92.4% of students possess moderate knowledge, 3.8% of students had adequate knowledge and 3.8% had inadequate level of previous knowledge and experience on OSCE. The study findings were supported with, Oranye NO, Ahmad C, Ahmad N, Balcan RA, conducted an observational study on assessing nursing skills competence through OSCE for open distance learning students in Malaysia. The results revealed that 14% of nurses had entire competence. However, 12% failed the OSCE even though they had 10 years' experience in nursing comparable we conducted a descriptive analytical study to Asus the existing level of knowledge regarding OSCE among 100 BSc nursing 3rd year and 4th year students in MTPG & RIHS. The analysis findings revealed that 79% of students had previous knowledge and experience on OSCE and 21% of students had unavailing previous knowledge and experience on OSCE.

Vincent Sc, Arulappan J, Amirtharaj A, Matua GA, AI Hashmi et al. The evaluation research study was conducted on objective structured clinical examination versus traditional clinical examination to evaluate students' clinical competence. A systemic review of nursing faculty and students' perception and experience among 14 members at electronic databases including scopus midline from January 1, 2010 and December 31, 2020. The result revealed students and faculty members perception and experience of OSCE. It Concluded as OSCE is more credible assessment format to evaluate the clinical competence of undergraduatenursing students compared to thetraditional method.

Gonzalez - Pascual JL, Loper - Martin, Saiz - NavarroEM, Oliva - FernandezO et al 2021. A cross sectional study was conducted on using a station within an objective structured clinical examination to assess inter professional competence performance among 63 second year undergraduate nursing students at spain from 2021. The result revealed 92.1% of students reached good level in communication competence 88.9 % in roles and responsibility competence 55.6 % in teamwork competence. It concluded as most students have demonstratedinter professional confidence performance at a good level.

Chen SH, Chen SC, Lai YP, Chen PH, Yeh KY, 2021. A Quasi-experimental study was conducted on the objective structured clinical examination as an assessment strategy for clinical competence in novice nursing practitioner among 55 novice nursing practitioners at Taiwan from June 7, 2021. The result revealed that the participants showed statistically significant increase in their clinical competency, confidence in their professional competence, satisfaction with the clinical practice, and decrease work stress afterOSCE. It concluded as OSCE process had a positive educational effect in providing a meaningful and accurate assessment of the competence of novice nursing practitioners.

> *To find the Association with the Knowledge Level with Selected Socio-DemographicVariables*

The findings of the study shown, that according to age of the students, out of 100 students, 3 students possess 6.8% of adequate knowledge towards OSCE belongs to 21 – 22 years. According to gender of the students, out of 100 students, 3.2% of adequate knowledge was possessed by female students. According to year of studying in B. Sc Nursing, 5.8% of students had adequate knowledge in that 3.6% belongs to III-year students and 2.2% belongs to IV-year students. according to source of information gained, 8.6% had gained adequate knowledge in that 4.8% of adequate knowledge was gained from mass media and 3.8% of adequate knowledge gained from conference. According to previous level of knowledge and experience on OSCE 79 students had previoulevel of knowledge and experience on OSCE in that 3.8% had adequate previous knowledge and experience on OSCE.

The study findings were supported with, Vasli, Shahsavari A, Estebsari F, Asadi parvar, Masouleh H et.al 2021. A script analytical study was conducted on the predictors of nursing student's clinical competency pre internship OSCE among 102, third year nursing students at Iran. The result revealed no significant was observed between exam anxiety and clinical competency. In fairly we conducted a descriptive analytical study to access the existing level of knowledge regarding OSCE 100, BSc

nursing 3rd year and 4th year students in MTPG & RIHS. Analysis findings revealed that there is no significance between socio-demographic variablesand level of knowledge towards OSCE.

V. CONCLUSION

The study concluded that a greater number of students had previous knowledge and experience on OSCE, out of 100 students, 79 had previous knowledge and experience on OSCE, and it also reveals that there is no significant association between the socio- demographic variables and level of knowledge towards OSCE among B. Sc Nursing students.

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