

Effectiveness of Lecture cum Demonstration Regarding Neurological Examination In Order To Improve Knowledge and Practice among Nursing Students of Sumandeep Nursing College at Piparia, Vadodara

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Abstract: “Effectiveness of lecture cum demonstration regarding neurological examination in order to improve knowledge and practice among nursing students of Sumandeep nursing college at Piparia, Vadodara.”

Aims & Objectives: (1) Assess pre-test knowledge and practice regarding neurological examination among nursing students. (2) Evaluate effectiveness of lecture cum demonstration on knowledge and practice regarding neurological examination among nursing. (3) Find out association between pre-test knowledge and practice score with selected demographic data.

Material And Method: One group pre-test, post-test research design, which belongs to pre-experimental design.

Results: As “t” value of knowledge and practice (30.61& 29.32) is highly significant at 0.05 level. Hence researcher found association between pretest and post test practice score regarding neurological examination on nursing student. The findings indicate variable such as Age ($X^2=5.48, 15.98$), Gender ($X^2=0.064, 1.17$), Year of the study ($X^2=35.3, 32.4$), Previous knowledge related to neurological examination ($X^2=8.08, 5.71$) showed significance at 0.05 level of significance. Thus it can be interpreted that there is significance association between pre-test level of knowledge and practice score. H_2 is partially accepted.

Conclusion: Post day was conducted 8th day after implementation of lecture cum demonstration programme using the self-structured knowledge questionnaires and observational checklist to find out the effectiveness. The ‘t’ test was computed between pre-test and post-test score indicate that there was improvement the level of knowledge and practice among nursing students. Hence it indicates that lecture cum demonstration program was effective.

Keywords: Neurological examination, Lecture cum demonstration program, Nursing students, Practice, Knowledge, Pre-test.

1. INTRODUCTION

The neurological assessment is a key compound in the care of the neurological patient. It can help to detect the presence of neurological disease or injury and monitor its progress to determine the type of care and gauge the patients response to intervention. Nurses come across various casualties in their everyday work and their main goal is to save life. In these critical situations nurse need to be vigilant and take prompt action in meeting the need of patients with altered sensorium and seriously ill.¹

A neurological examination is the assessment of sensory neuron and motor responses, especially reflexes, to determine whether the nervous system is impaired. This typically includes a physical examination and a review of the patient's medical history, but not deeper investigation such as neuroimaging. The neurological examination is one of the core-nursing data base for identifying nursing intervention. The accuracy of the initial assessment and to identify the change, interpret its significance using critical thinking skill and take appropriate action from foundation of neuroscience nursing practice.²

OBJECTIVES OF THE STUDY:

1. To assess the pre-test on knowledge and practice regarding neurological examination among nursing students of Sumandeep nursing college at Piparia, Vadodara.
2. To evaluate effectiveness of lecture cum demonstration on knowledge and practice regarding neurological examination among nursing students of Sumandeep nursing college at Piparia, Vadodara.
3. To find out association between pre-test knowledge and practice score with selected demographic data.

RESEARCH HYPOTHESIS:

1. **H₁:** There will be significant increase in the post test knowledge scores as compared to pretest knowledge scores regarding neurological examination among nursing students at Sumandeep Nursing College, Piparia, Vadodara.
2. **H₂:** There will be significant improvement in post test practice scores as compared to pretest practice scores regarding neurological examination among nursing students at Sumandeep Nursing College, Piparia, Vadodara.
3. **H₃:** There will be significant association in pretest knowledge scores with selected demographic variables regarding neurological examination.
4. **H₄:** There will be significant association in pretest practice scores with selected demographic variables regarding neurological examination.

2. MATERIALS AND METHODS

Research approach: Experimental evaluative approach was considered appropriate for the present study.

Research design: One group pre-test, post-test research design, which belongs to pre-experimental design.

Independent variables: The independent variable is lecture cum demonstration programme regarding neurological examination

Dependent variable: The independent variable is lecture cum demonstration programme regarding neurological examination

Target population: all nursing students of 3rd year GNM and 4th year B.Sc. nursing students.

Accessible population: Accessible population are 3rd year GNM and 4th year B.Sc. nursing students those who are studying at Sumandeep Nursing College.

Sample size: The sample size constitutes 60 nursing students

Sampling technique: Non-probability purposive sampling technique

CRITERIA FOR THE SELECTION OF THE SAMPLE:

Inclusion:

- Nursing students who are willing to participate in the study.
- Present during the period of data collection.

Exclusion:

- Students those who were absent at the time of data collection.

SELECTION AND THE DEVELOPMENT OF THE TOOLS:

“Data collection tools are the procedures or instruments used by the researcher to observe or measure the key variables in the researcher to observe or measure the key variables in the research study.”

Tools were prepared on the basis of objectives of the study, through review of literature, reference of tool used for the previous study and by consultation and guidance of experts and guide. A structured knowledge questionnaire and observational checklist was selected to assess the knowledge and practice of nursing students regarding neurological examination. It was considered to be the most appropriate instrument to elicit the response from subjects who are able to understand.

THE FOLLOWING STEPS CARRIED OUT IN PREPARING THE TOOLS ARE:

- Review of literature provided adequate content for the tool preparation.
- Consultation with experts.
- Discussion with the peer groups.
- Preparation of blue print.
- Reliability.

PREPARATION OF THE BLUE PRINT:

A blue print of the items was prepared and giving appropriate weightage to each section and attached in annexure.

Description of the tool

The tool consisted of three sections.

➤ **Section A: Socio-demographic variable data**

Section A consists of selected demographic variable such as Age, Sex, Year of the study, previous knowledge.

➤ **Section B: Self Structured knowledge questionnaire on neurological examination.**

Section B consists of self structured knowledge questionnaire to assess the knowledge on neurological examination among nursing students.

➤ **Section C: Observational check list on neurological examination.**

Section C consists of observational check list to assess practice on neurological examination among nursing students.

SCORING PROCEDURE:

There are total of 30 questionnaires.

Score “1” is given for correct response.

Score “0” is given for incorrect response.

The score range from minimum of “score 0” and maximum of “score 30”.

SCORING INTERPRETATION:

The knowledge level is arbitrarily divided into 3 categories based on knowledge questionnaires and accordingly the scores were allotted.

Poor knowledge- 1-10

Average knowledge – 11-20

Good knowledge – 21-30

The practice level is arbitrarily divided into 3 categories based on observational checklist and accordingly the scores were allotted.

Poor – 0-11

Average – 11-23

Good – 23-32.

3. RESULTS AND DISCUSSION

SECTION I: Frequency & percentage distribution of socio-demographic variables.

In this section the socio-demographic variables of the respondents has been displayed to show the frequency distribution of the various attributes of demographic variables. Frequency and percentage have been calculated.

- According to age group 43(71.66%) respondents belongs to age group of 20-21 years, 16(26.67%) belongs to age group of 21-22 years and only 1(1.67%) respondent belongs to 23-24 years.
- According to gender 9(15%) respondents were male and 51(85%) were female. Since there were only few male students admitted in to the course, there is a disparity in selection of equal number of students from either gender.
- According to year of the study 30 (50%) respondents from 3rd year GNM and 30(50%) respondents from 4th year B.Sc. nursing.
- According to previous knowledge related to neurological examination 45(75%) respondents were having knowledge related to neurological examination and 15(25%) were not having knowledge related to neurological examination due to lack of revision of theoretical knowledge during their course period.

SECTION II: Analyze of pre-test knowledge & practice scores regarding Neurological examination.

This section deals with analysis of pre-test knowledge and practice scores of nursing students regarding neurological examination as mentioned below.

The knowledge score of sample before administration of lecture cum demonstration programme. According to the pre-test knowledge score 52(87%) have average knowledge, 8(13%) have good knowledge regarding neurological examination.

The practice score of sample before administration of lecture cum demonstration programme. According to the pre-test practice score 53(88.33%) have average practice, 7(11.67%) have good practice regarding neurological examination.

SECTION III: Effectiveness of lecture cum demonstration programme on knowledge and practice scores regarding neurological examination.

Comparison of overall knowledge and practice scores of nursing students with the mean, mean difference, standard deviation (SD), t value and significant level of pre-test and post test knowledge and practice score of respondents. According to table 4, obtained t value for knowledge is (30.61) is greater than the table value of 1.67 at 0.05 level of significance. Hence there is significance difference exists between pre-test & post-test knowledge scores of nursing students. Therefore H_1 is accepted.

The obtained t value for practice is (29.31) is greater than the table value of 1.67 at 0.05 level of significance. Hence there is significance difference exists between pre-test & post-test practice scores of nursing students. Therefore H_2 is accepted.

SECTION IV: Association between pre-test knowledge and practice scores with selected demographic variables.

The section deals with the findings of the association between various demographical variables with their pre-test knowledge score and practice score regarding neurological examination among nursing students.

This are consist of data related to demographic variables and knowledge and practice score of nursing students before administration of lecture cum demonstration programme. The chi square value calculated between the knowledge and practice levels of nursing students and demographic variables.

For knowledge that obtained chi square value in the variables such as age ($X^2=5.48$), Year of the study($X^2=35.3$) and Previous knowledge related to neurological examination ($X^2=8.08$) was greater than the table value at 0.05 level of significance hence H_3 is accepted for these variables. The obtained chi square value for the variable gender ($X^2=0.064$) was less than the table value at 0.05 level of significance. Hence, H_3 is rejected for these variables.

For practice that obtained chi square value in the variables such as age ($X^2=15.98$), Year of the study($X^2=32.4$) was greater than the table value at 0.05 level of significance hence H_4 is accepted for these variables. The obtained chi square value for the variable gender ($X^2=1.71$) & Previous knowledge related to neurological examination($X^2=5.71$) was less than the table value at 0.05 level of significance. Hence, H_4 is rejected for these variables.

MAJOR FINDINGS OF THE STUDY:

Socio demographic characteristics of participants:

- With regards to Age, it was noted that majority of the respondents belongs to age group 20-21 years, 16(26.67%) belongs to age group 21-22 years, 1(1.67%) respondent belongs to 23-24 years.
- Majority 51(85%) were female and 9(15%) respondents were male.
- There are 30(50%) respondents from 3rd year GNM and 30(50%) respondents from 4th year B.Sc. nursing
- Regarding previous knowledge related to neurological examination 45(75%) respondents were having knowledge related to neurological examination and 15(25%) were not having knowledge related to neurological examination.

The findings of the study were based on its objectives and are discussed under the following headings:-

1. To assess the pre-test on knowledge and practice regarding neurological examination among nursing students of Sumandeep nursing college at Piparia, Vadodara.

In this study, it highlights that the knowledge and practice regarding neurological examination, For knowledge mean percentage is 16.9 with standard deviation of 2.05 and for practice mean percentage 19.07 is with standard deviation of 2.26. Out of 60 Samples, 52 having average & 8 having good knowledge regarding knowledge and 53 samples having average & 7 samples having good practice regarding neurological examination.

2. To evaluate effectiveness of lecture cum demonstration on knowledge and practice regarding neurological examination among nursing students of Sumandeep nursing college at Piparia, Vadodara.

After conducting pre test of knowledge and practice was assessed and based on that lecture cum demonstration programme was given to the students at SNC to improve their knowledge and practice regarding neurological examination.

The effectiveness of lecture cum demonstration programme. The mean, mean difference, standard deviation (S.D), t - value and significant level of pre-test and post-test knowledge and practice score of respondents. As “t” value for knowledge is 30.61 is significant at 0.05 levels and “t” value for practice is 29.32 is significant at 0.05 level.

So, it shows that very highly significant and association between pre-test and post-test practice score of nursing students regarding neurological examination. Hence research Hypothesis H₁ is accepted.

3. To find out association between pre-test knowledge and practice score with selected demographic data.

The association between demonstration program and selected socio demographic variables was done with Chi square formula.

For knowledge there is a significant association between knowledge score regarding Age, Year of the study and previous knowledge related Neurological examination. Were demographic variable such as Gender($X^2=0.064$) showed no significance association between knowledge score of nursing students regarding neurological examination.

For practice there is a significant association between knowledge score regarding Age, and Year of the study. Were demographic variable such as Gender($X^2=1.71$) and previous knowledge related Neurological examination ($X^2=5.71$) showed no significance association between knowledge score of nursing students regarding neurological examination.

So we conclude that from the selected demographic variables that are significantly associated with pre -test knowledge and practice score. Hence H₂ was partially accepted.

4. CONCLUSION

The present study assessed the knowledge and practice regarding neurological examination among nursing students at Sumandeep nursing college, Piparia, Vadodara and found that the majority have average knowledge and practice regarding neurological examination. After lecture cum demonstration programme on neurological examination there was significant improvement on knowledge and practice of the nursing students regarding neurological examination. The study concluded that the lecture cum demonstration programme was effective in improving their knowledge and practice reading neurological examination.

According to pre-test 87% have average knowledge & 13% have good knowledge and 88.33% have average practice and 11.67% have good practice reading neurological examination. According to post test 96.67% have good knowledge & 3.33% have average knowledge and no one have poor knowledge and 100% have good practice and no one have average and poor practice regarding neurological examination, which was higher than pre-test knowledge and practice score range.

The mean post-test knowledge score also was higher than mean pre-test score.

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- [2] Tukaram(2006) "An observational study of the neurological assessment on the clients with altered sensorium with a view to prepare a learning package and to evaluate the efficacy of the staff nurses in terms of gain in practice in KLES'S hospital and medical research Centre, Belgaum Karnataka".

APPENDIX-A

Tables:

TABLE 1: REPRESENTATION OF STUDY DESIGN

PRE-TEST KNOWLEDGE	INTERVENTION(LECTURE CUM DEMONSTRATION PROGRAMME)	POST-TEST KNOWLEDGE
1ST DAY Knowledge and practice regarding neurological examination before administration of lecture cum demonstration programme.	1ST DAY Administration of lecture cum demonstration programme regarding neurological examination.	ON 8TH DAY Knowledge and practice regarding neurological examination after administration of lecture cum demonstration programme.
O₁	X	O₂

Table 2: Frequency and percentage distribution of socio demographic variables

Characteristics	Category	FREQUENCY	Percentage
Age	20-21 year	43	71.66
	21-22 year	16	26.67
	23-24 year	1	1.67
	24-25 year	0	0
Gender	Male	9	15
	Female	51	85
Year of the study	3 rd year GNM	30	50
	4 th year B.Sc.	30	50
Previous knowledge related to Neurological examination	Yes	45	75
	No	15	25

Table 3: Overall pre-test knowledge and practice scores of nursing students regarding neurological examination

Category	Pre-test Knowledge		Pre-test Practice	
	Frequency	Percentage	Frequency	Percentage
Poor	0	0	0	0
Average	52	87	53	88.33
Good	8	13	7	11.67
Total	60	100	60	100

Table 4: Comparison of overall pre & post test knowledge and practice scores of nursing students.

Variables		Mean	Mean difference	Standard deviation	t-value
Knowledge	Pre-test	16.9	10.2	2.047	30.6133
	Post-test	27.1		1.818	
Practice	Pre-test	19.0666	9.67	2.261	29.3194
	Post-test	28.7333		1.471	

Table 5: Association between pre-test level of knowledge regarding neurological examination.

Variables		Median & above	< median	X ² Value	df	Inference
Age	20-21 years	19	24	5.48	2	S
	21-22 years	12	4			
	22-23 years	0	1			
	23-24 years	0	0			
Gender	Male	5	4	0.064	1	NS
	Female	26	25			
Year of study	3 rd year GNM	4	26	35.3	1	S
	4 th year B.Sc.	27	3			
Previous knowledge	Yes	28	17	8.08	1	S
	No	3	12			

Table 6: Association between pre-test level of knowledge regarding neurological examination.

Variables		Median& above	< median	X ² Value	df	Inference
Age	20-21 years	19	24	5.48	2	S
	21-22 years	12	4			
	22-23 years	0	1			
	23-24 years	0	0			
Gender	Male	5	4	0.064	1	NS
	Female	26	25			
Year of study	3 rd year GNM	4	26	35.3	1	S
	4 th year B.Sc.	27	3			
Previous knowledge	Yes	28	17	8.08	1	S
	No	3	12			

Table 7: Association between pre-test level of practice regarding neurological examination.

Variables		Median& above	< median	X ² Value	df	Inference
Age	20-21 years	31	13	15.98	2	S
	21-22 years	2	13			
	22-23 years	0	1			
	23-24 years	0	0			
Gender	Male	3	6	1.71	1	NS
	Female	29	22			
Year of study	3 rd year GNM	27	3	32.4	1	S
	4 th year B.Sc.	5	25			
Previous knowledge	Yes	20	25	5.71	1	NS
	No	12	3			

FIGURES:

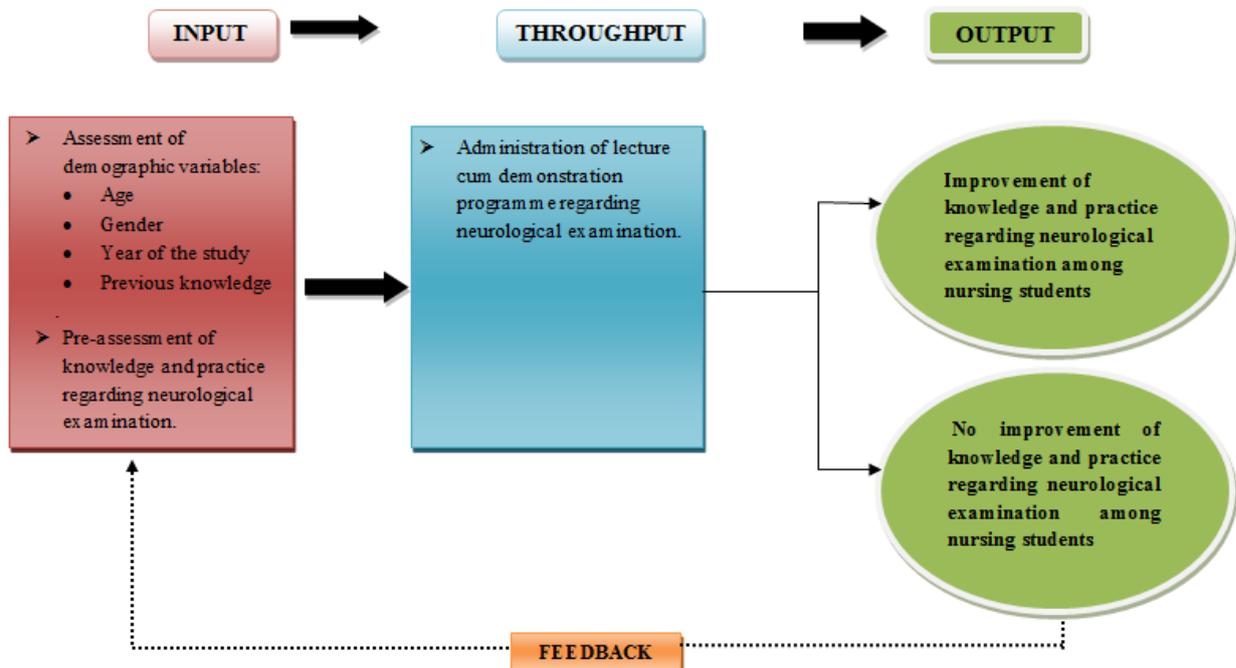


FIGURE 1: CONCEPTUAL FRAMEWORK BASED ON J.W. KENNY'S OPEN SYSTEM MODEL OF NURSING

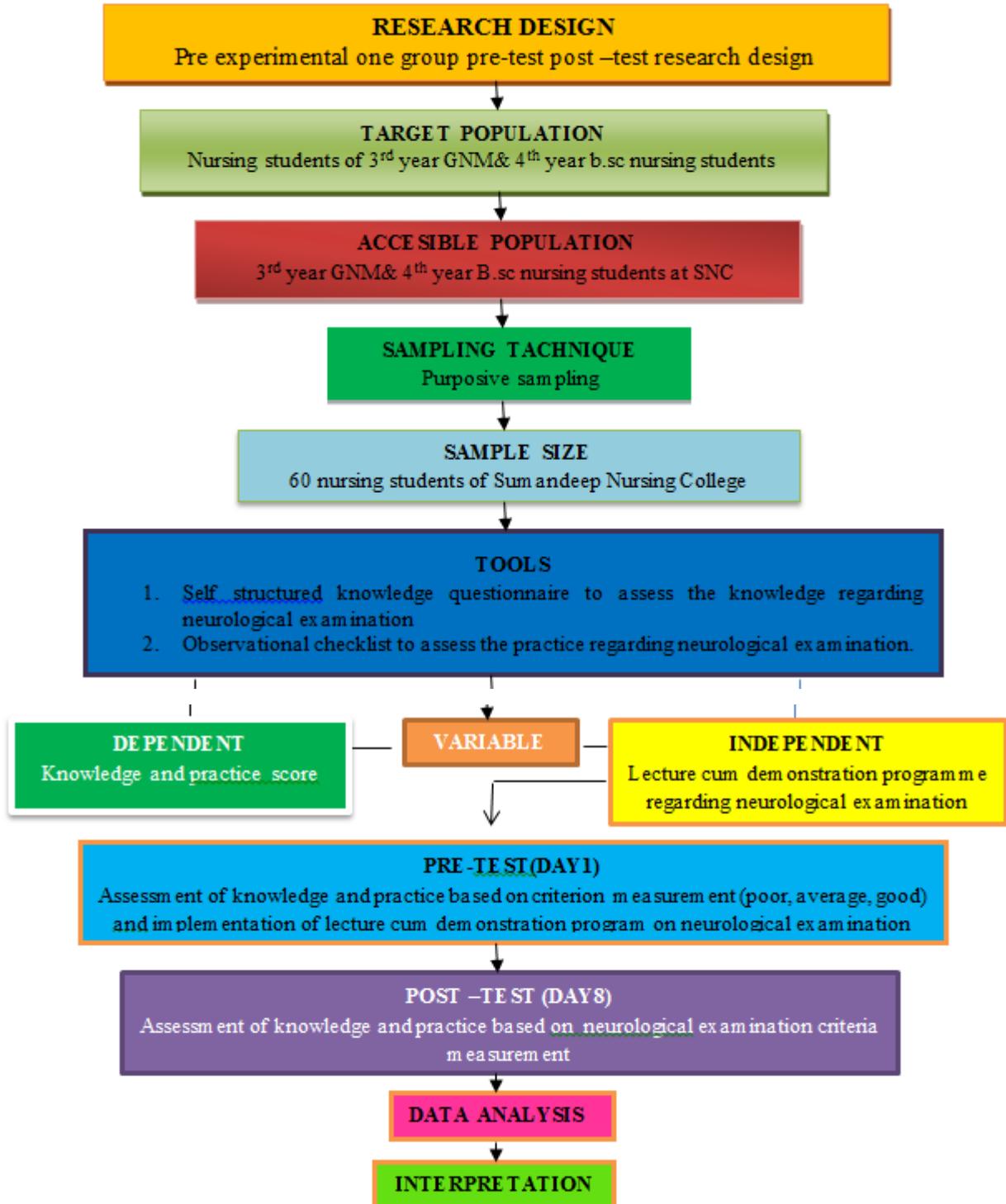


Figure 2: Schematic representation of Research methodology

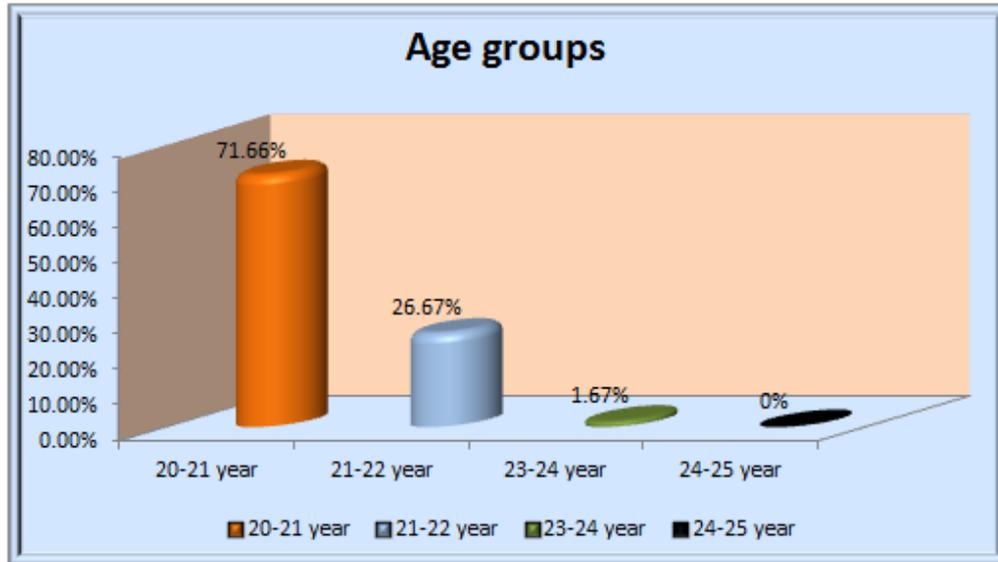


Figure 3: Distribution of sample according to their age group.

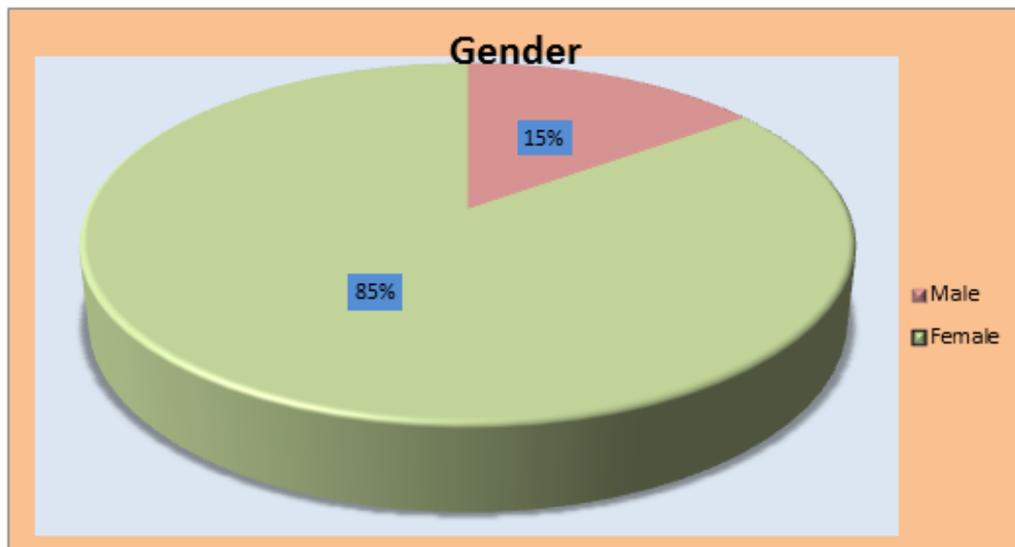


Figure 4: Diagram show Distribution of frequency and percentage of sample according to gender

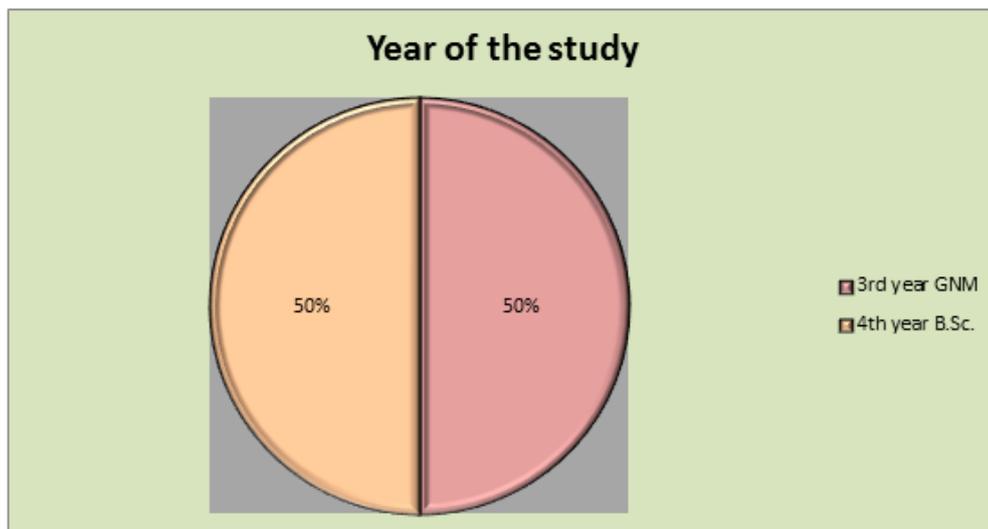


Figure 5: Distribution of sample according to year of the study

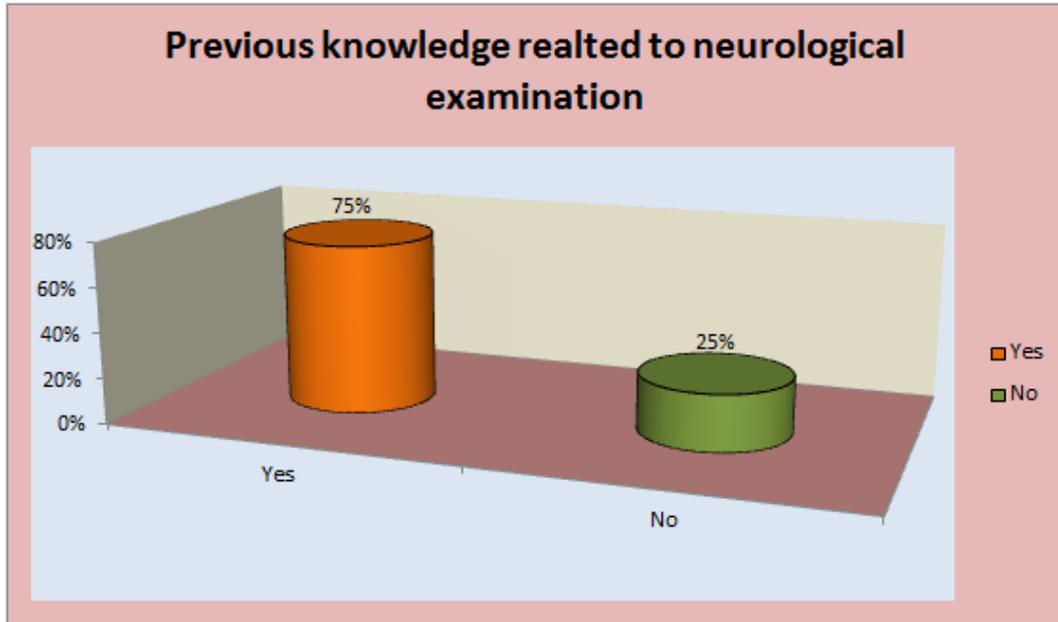


Figure 6: Distribution of sample according to previous knowledge related to Neurological examination.