

Effectiveness of Lecture Cum Demonstration Method on Knowledge and Skill Regarding Cranial Nerve Assessment among Under Graduate Nursing Student In Selected Nursing College

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Abstract: ***Aim of the study:** The study aims to find the effectiveness of lecture cum demonstration method on knowledge and skill regarding cranial nerve assessment among under graduate nursing student in selected nursing college. **Objectives of study:** 1) To assess existing knowledge and skill regarding cranial nerve assessments among under graduates students of selected nursing college. 2) To evaluate effectiveness of lecture cum demonstration method regarding cranial nerve assessments among under graduates students of selected nursing college. 3) To find out association between pre-test knowledge score with their selected demographic variables. **Method:** Quasi experimental one group pre test post test design and quantitative approach was carried out on 60 nursing students selected by simple random sampling technique to test effectiveness of lecture cum demonstration method. The data was collected by using structured questionnaire consists of 30 items. **Results:** The presents study evaluates and found that demographic variables, Majority 38(63.33%) of subject were in the age group of 18-21 years, Majority 42 (70%) of nursing students were females, Majority 37(62.67%) of subjects were not having any previous knowledge, Majority 14(60.87%) of subjects were having knowledge from books, 07(30.43%), Majority the subjects 30(50.00%) were belongs to urban area. **Interpretation and conclusion:** The data were analysed by applying descriptive and inferential statistics. The result of the study indicated that after intervention there was an improvement in the knowledge and they gain good knowledge and skill about cranial nerve assessment. Analysis data shows that highly significance difference found between the pre-test and post- test knowledge scores at the level of ($P < 0.05$). The hypothesis are proved and accepted.*

1. Introduction

Neurology is a branch of medicine dealing with disorders of the nervous system. Neurology deals with the diagnosis and treatment of all categories of conditions and disease involving the central and peripheral nervous system. Practical skills are the base of a challenging case in nursing education.^[1] The Neurological Examination is a systemic process that includes a variety of clinical tests, observations, and assessments designed to evaluate a complex system. It divided into five components: Cerebral function, Cranial nerves, Motor system, Sensory system, and Reflexes to determine whether the Nervous System is Impaired. It is the foundational database for the nursing staffs to use in making nursing diagnosis, planning care implementing interventions and evaluating care for the patient.^[02] One of the problems and apprehensions in higher education is how to learn different fields and especially different practical skills. This problem is of great importance in the medical university, as knowing about new teaching methods, using educational accessories and getting rid of invaluable traditional methods will help both the professors and the students to use their opportunities more effectively and also able them to make changes in education.^[03] By improving technological education, students get opportunities for modern and new education method. The practical skills of the nursing are taught in the Educational Skills Centre In the clinical areas the assessment was usually based on specific skills tests, ward/unit reports and perhaps the one of assessments in total patient care, managerial and teaching skills. Almost all the procedure in nursing practice requires demonstration, which requires continues observation and constant practice. One such procedure is Cranial nerve assessment^[04]

2. Need for the Study

According to Canadian National Longitudinal Survey of Children and Youth which has been in effect for over 20 years, identifies various social factors influencing neurodevelopment. Poverty, maternal mental health and education are reported to be key determinants of neurobehavioral intellectual development. The survey showed that single mothers who are new immigrants to Canada are particularly at risk of having children with neurobehavioral intellectual developmental problems.^[05] In 1960, neuroscience nursing was in its infancy, the next three decades showed tremendous growth in the field. So that by 1990-neuroscience nursing was well established. The demand for neuroscience nurses is always high, both in Australia and internationally. This can provide the neuroscience nurse with travel opportunities and job flexibility to work virtually in any major hospital. Neuroscience nursing can provide a diversity of employment opportunities from acute care/intensive care, neurology, neurosurgery units, stroke care, community care, and specialized support services in both public and private sectors.^[06]

3. Review of Literature

Karimi Mouneghi (2003) A study was conducted to find the effectiveness of two teaching methods for 'Cranial Nerve Assessment', on knowledge and skill of Undergraduate Nursing Students was conducted with the aim to compare Teacher Guided Instruction (TGI) and Computer Assisted Instruction (CAI). Method the data were collected using Base line information, Interpretive Exercises and

Observational Checklist on Cranial Nerve Assessment. The study adopted a quasi experimental (pre experimental) design with evaluative approach. The samples were 64 (TGI=34 and CAI=30) students 2nd year B.Sc. Nursing. The students were divided into two groups and were taught using TGI and CAI respectively. Result In comparison between the effectiveness of two teaching methods, TGI and CAI, both the teaching methods were effective to improve the knowledge and skill of Cranial Nerve Assessment (CAN) and there was no significant difference { $t(62)=0.13$ (knowledge) and $t(62)=0.185$ (skill)} found in the resultant knowledge and skill of students in Cranial Nerve Assessment.^[07]

Assumption: (I) Nursing students may have knowledge regarding cranial nerve assessment (II) Lecture cum demonstration method regarding cranial nerve assessment may enhance the knowledge of nursing students. (III) Lecture cum demonstration method is an accepted teaching strategy. (IV) Demonstration method may enhance the skill of nursing students regarding cranial nerve assessment.

Limitation: (1) The study is limited to only under graduate nursing students. (2) The sample size is limited to 60 subjects. (3) The study is limited to nursing students who are willing to participate in the study. (4) Available during the data collection period.

Hypothesis

H0: There is no significant relationship between pre-test and post-test score regarding cranial nerve assessment at under graduates nursing college.

H1: There is significant relationship between pre-test and post-test score regarding cranial nerve assessment at under graduates nursing college.

H2: There is the significant association between knowledge and skills regarding cranial nerve assessment with their selected demographical variables.

Methodology

Research approach: An evaluative approach was used for this study

Research design: Quantitative, quasi-experimental one group pre test post test design

Variables under study: (1) Independent variable: lecture cum demonstration method. (2) dependent variable: knowledge and skill of under graduate nursing student regarding cranial nerve assessment,

Setting: the study was conducted in selected nursing college.

Population: In this study, the population includes under graduate nursing students. **Target population** consists of of 3rd B.BSc. nursing and 1st P.B.B.Sc. nursing students.

Accessible population nursing students present at the time of data collection. Those fulfill inclusion and exclusion criteria.

Sample and sampling technique

Sample: In the present study sample is under graduate nursing students **Sample size:** The sample size for the present study is 60 nursing students who fulfill the set inclusion criteria.

Sampling technique: A probability simple random sampling technique.

Inclusion criteria

Under graduate nursing students included in the study those who are -

- All respondents nursing students from 3rd B.BSc. Nursing and 1st P.B.B.Sc. Nursing
- Those who are present at the time of data collection.
- Students who are actively willing to participate in the study.
- Those students between the age group 21-36 year of age.

Exclusion criteria- Under graduate nursing students included in the study those who are -

- Those students who are not willing to participate in the research study.
- Those student who are absent during data collection.
- Nursing students from RANM, GNM, & M.sc.

Tool preparation

Tool used for the research study was structured knowledge questionnaire and observational checklist, regarding cranial nerve assessment. The tool was prepared after extensive review of literature search, consultation with experts, and based on the past experience of the investigator.

Development of tool:

The research instrument consists of two parts:

Part I- Demographic data: It consist of 5 items related to demographic variables such as Age, Gender, Previous Knowledge, Source of information, Area

Part II- Structured knowledge questionnaires and observational checklist: - It consists of 30 items. Each item was multiple choices with 4 responses.

Preparation of Lecture cum demonstration (STP): STP was developed based on review of related literature and the objectives stated for knowledge and skill test. The title of the lesson plan was "cranial nerve assessment". The researcher prepared STP based on nine objectives in the form of lesson plan.

Validation of the tool: To ensure the content validity the instrument was given 11 experts from the field of medical surgical nursing, Neuro-physician, and from biostatistician. The experts were requested to give their opinions and suggestions regarding the relevance, adequacy and appropriateness of the tool. Their suggestions were taken into consideration in the preparation of the tool and Lecture cum demonstration (STP)

Reliability: In order to establish reliability of the tool, test re test method was used. Reliability of the tool was **0.76 and 0.87** which showed that tool was highly reliable.

Feasibility of the study: The investigator conducted a Pilot study.

Pilot study: The pilot study was conducted from 20/11/2017 to 29/11/2017 on under graduate nursing students from

selected nursing college, to assess the feasibility of the study and to decide the plan for analysis.

Data collection procedure: Prior permission will be taken from principal selected nursing college. Informed consent will be taken from study participants and data will be kept confidential. The period of data collection was from 06/12/2017 to 29/12/2017. The data was collected by the investigator. Pre-test was conducted on under graduate nursing students who fulfill the inclusion criteria soon after the pre-test structured knowledge questionnaires and observational checklist was administered. Evaluation was done by conducting post-test after 7 days of administration of lecture cum demonstration by using the same structured questionnaires.

Plan for data analysis: - (1) Description of demographic characteristics of the adults was computed by using frequency and percentage. (2) Mean, Standard deviation of pre and post- test knowledge scores was computed. (3) “t” test was applied to determine the significance of mean difference between mean pre-test and post- test knowledge scores. (4) Chi- square test was used to find the association of knowledge score with demographic variables and the findings were documented in tables, graphs and diagram.

Scoring mode: Score 1 was given to every correct answer. 0 was given to every wrong answer. Based on the percentage of scores, level of knowledge was graded as **Poor-** 0 to10 **Average-** 11 to 20, **Good-** 21 to 30. skill was graded as **Poor-** 0 to08 **Average-** 09 to 16, **Good-** 17 to 24.

4. Results

Organization of the data: The collected data is tabulated, analyzed, organized and presented under the following sections:

Section I: - Description of adults with regards to demographic Variables N=60

Table 1: Frequency and percentage distribution of demographic variables

Sr. No.	Variable	Group	Frequency	Percentage
1	Age	18-21	38	63.33
		22-24	15	25.00
		25-28	5	8.33
		29-31	2	3.33
2	Gender	Male	18	30.00
		Female	42	70.00
3	Previous Knowledge	Yes	23	38.33
		No	37	61.67
4	Source of Information	Books	14	60.87
		Seminar	7	30.43
		Workshop	0	0.00
5	Area	Urban	30	50.00
		Rural	30	50.00

Section II- Description of pre-test knowledge and skill score by using frequency and percentage of pre-test knowledge score. N=60

Table 2: General assessment of pre-test knowledge score

Variable	Groups	Score	Pre test	
			Frequency	Percentage
Knowledge	Poor	1-10.	20	33.33
	Average	11-20.	35	58.33
	Good	21-30	5	8.33

Table 3: General skill assessment with pre-test

Variable	Groups	Score	Pre test	
			Frequency	Percentage
Practice	Poor	1-8.	14	23.33
	Average	9-16.	42	70.00
	Good	17-24	4	6.67

Section III Comparison of the knowledge and skill score of the pre and post tests

Table 4: Comparison of the knowledge of under graduates nursing students regarding cranial nerve assessment

	N	Mean	S.D.	t value	P value
Pre Test	60	13.45	4.25	13.83	0.000
Post Test	60	20.38	4.34		

Table 5: Comparison of the skill scores of under graduates nursing students regarding cranial nerve assessment

	N	Mean	S.D.	t value	P value
Pre Test	60	10.95	2.93	19.36	0.000
Post Test	60	16.95	2.52		

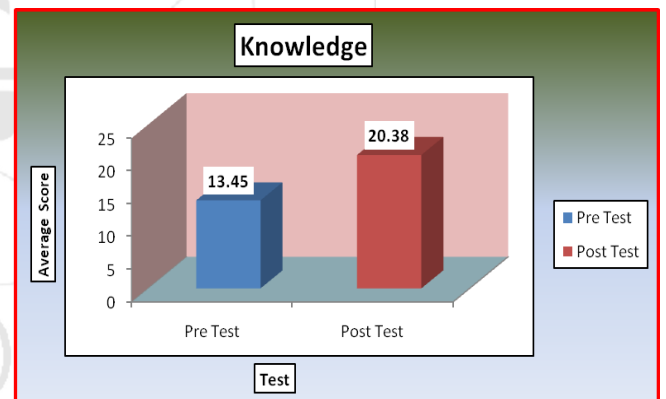


Figure 1: Comparison of the average knowledge in Pre and Post test

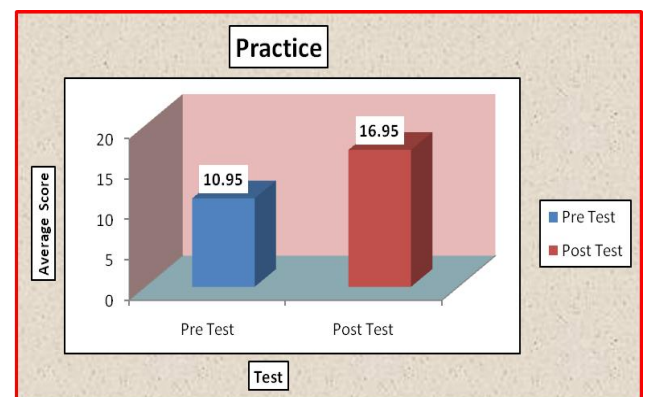


Figure 2: Comparison of the average skill score in Pre and Post test

Section IV: Description of association between knowledge and skills regarding cranial nerve assessment of students with their selected demographical variables. N= 60

Table 6: Association of knowledge of nursing students regarding cranial nerve assessment with their selected demographic variables

Sr. No.	Variable	Groups	Knowledge			Chi Square	d. f.	p value	Significance
			Poor	Average	Good				
1	Age	18-21	14	24	0	32.08	6	0.00	Significant
		22-24	5	9	1				
		25-28	1	2	2				
		29-31	0	0	2				
2	Gender	Male	5	9	4	6.49	2	0.03	Significant
		Female	15	26	1				
3	Previous Knowledge	Yes	6	12	5	8.87	2	0.01	Significant
		No	14	23	0				
4	Source of Information	Books	6	7	1	12.56	4	0.01	Significant
		Seminar	0	5	2				
		Workshop	0	0	0				
		Conference	0	0	2				
5	Area	Urban	9	19	2	0.65	2	0.72	Not Significant

Table 7: Association of skill of nursing students regarding cranial nerve assessment with their selected demographic variables

Sr. No.	Variable	Groups	Practice			Chi Square	d. f.	p value	Significance
			Poor	Average	Good				
1	Age	18-21	9	29	0	41.99	6	0.000	Significant
		22-24	5	10	0				
		25-28	0	3	2				
		29-31	0	0	2				
2	Gender	Male	3	11	4	10.11	2	0.006	Significant
		Female	11	31	0				
3	Previous Knowledge	Yes	3	16	4	8.12	2	0.017	Significant
		No	11	26	0				
4	Source of Information	Books	2	11	1	10.57	4	0.032	Significant
		Seminar	1	5	1				
		Workshop	0	0	0				
		Conference	0	0	2				
5	Area	Urban	6	23	1	1.66	2	0.43	Not Significant

Testing of Hypothesis

H2: There is the significant association between knowledge and skills regarding cranial nerve assessment with their selected demographical variables.

In that variable like types of as **age, gender, previous knowledge, source of information** were significantly associated with pre- test knowledge and also with skill (**H2 Accepted**).

Here p value is less than 0.05 hence there is significant difference between pre and post test knowledge scores.

Significant- p<0.05

For the variable like **Age, Gender, previous knowledge and Source of information** the p value of the chi square test with knowledge and skill was less than 0.05. Concludes that there was significant association of these demographic variables with the knowledge and skill of the nursing student at the time of pre test. (**H₂ hypothesis was accepted.**)

5. Summary

- Majority 38(63.33%) of subject were in the age group of 18-21 years, 15(25%) were in the age group of 22-24 years, 5(8.33%) were of 25-28 years and 2(3.33%) were belongs to the age group of 29-31 year and above.
- Majority 42 (70%) of nursing students were females and rest 18 (30%) were males.
- Majority 37(62.67%) of subjects were not having any previous knowledge.
- Majority 14(60.87%) of subjects were having knowledge from books, 07(30.43%) were having knowledge from seminar, 2(8.70%) were having knowledge from conference.
- Majority the subjects 30(50.00%) were belongs to urban area and 30(50.00%) were belongs to Rural area.
- The demographic variables such as age, gender, previous knowledge, source of information are having association with pre -test knowledge and skill about cranial nerve assessment and demographic variables such as area had no association between pre-test level of knowledge and skill about cranial nerve assessment.
- Highly significance difference found between the pre -test and post- test knowledge scores at the level of (P<0.05).

- Lecture cum demonstrations proved to be effective in improving the knowledge and skill of under graduates nursing students in selected nursing college.

6. Conclusion

- The findings of the present study showed that, the post – test knowledge score was higher than the pre-test knowledge score range. The mean of post test score (20.38%) also was higher than the mean of pre- test knowledge score (13.45%).
- The findings of the present study showed that, the post – test skill score was higher than the pre-test skill score range. The mean of post test score (16.95%) also was higher than the mean of pre- test skill score (10.95%).
- The comparison of pre- test and post -test knowledge and skill score showed that there was a significant gain in knowledge and skill scores of nursing students after Lecture cum demonstration at 5% level of significance ($p < 0.05$). This shows that the lecture cum demonstration method was effective.
- The study findings concluded that had poor knowledge regarding cranial nerve assessment. The lecture cum demonstration method had great potential for accelerating the awareness regarding cranial nerve assessment among under graduates nursing students in selected nursing college.

7. Recommendations

- 1) A similar study can be conducted on larger sample for wider generalizations.
- 2) A study can be done to assess the knowledge and skill regarding cranial nerve assessment among under graduates nursing students in selected nursing college.
- 3) An experimental study can be conducted to assess the effectiveness of cranial nerve assessment.
- 4) An explorative study should be carried out the various problems

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