Effectiveness of demonstration on practice skills regarding upper limb neurological examination among nursing interns in govt. nursing colleges of Uttarakhand.

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***Abstract*- Introduction: An upper limb neurological examination is part of the neurological examination and is used to assess the motor and sensory neurons which supply the upper limbs. This assessment helps to detect any impairment of the nervous system, being used both as a screening and an investigative tool. The examination findings when combined with a detailed history of a patient, can help a health practitioner reach a specific or differential diagnosis.**

Material and Method: Pre-experimental method with one group pre-test and post-test design was used in this study. A total of 70 nursing interns, studying in Govt. Nursing colleges of Uttarakhand were included in the study, by using a convenient sampling technique. An OSCE checklist was used to evaluate the practice skill regarding upper limb neurological examination.

Result: Shows that the majority (65.71%) of nursing interns were between the age group of 22-23 years, 28.57% were between 20-21 years and 5.71% of students were between the age group of 24-25 years.30% of nursing interns were having previous knowledge regarding upper limb neurological examination and 70% were not having any previous knowledge regarding upper limb neurological examination.28.57% of nursing interns were having previous knowledge regarding upper limb neurological examination from sources like books and 1.42% nursing interns were having previous knowledge regarding upper limb neurological examination from other sources. The mean pre-test practice skill score of samples regarding upper limb neurological examination was 6.68, whereas the mean post-practice skill score was 32.44 with a mean difference of 25.76 and SD pretest was 1.22 and the post-test was 4.23. The calculated 't' value of 6.77 was greater than the tabulated 't'= 1.66 which was statistically proved at a 0.05 level of significance. It revealed that demonstration regarding upper limb neurological examination was effective in increasing practice skills among the Samples. The association between the post-test score and demographic variables was tested using the chi-square test. There was no significant association found between pre-test practice skill score and demographic variables such as age, previous knowledge regarding upper limb neurological examination and specifying sources like books, workshops, seminar, and others and if they have previous knowledge regarding upper limb neurological examination. Conclusion: This indicates that the demonstration regarding upper limb neurological examination was effective to enhance the practice skill regarding upper limb neurological examination among nursing intern students.

***Keywords*: Demonstration, Practice Skills, Upper Limb Neurological Examination, Nursing Interns.**

I. INTRODUCTION (HEADING 1)

An upper limb neurological examination is part of the neurological examination and is used to assess the motor and sensory neurons which supply the upper limbs. This assessment helps to detect any impairment of the nervous system, being used both as a screening and an investigative tool. The examination findings when combined with a detailed history of a patient, can help a health practitioner reach a specific or differential diagnosis. This would enable the doctor to commence treatment if a specific diagnosis has been made or order further investigations if there are differential diagnoses.[1]

Assessing clients feeling a neurological disorder is a challenge to student nurses. Neurological disorders are mostly critical and major concerns for everyday living activities & existence.[2]

Extremely advanced nursing assessment and clinical cognitive skills are required for managing Neurological patient and in providing Nursing Management. Working nurses must know the proper parameters to be evaluated, correct practice for assessing the patient and appropriate way of recording. Nurses should be able to understand the recorded data, and should know to identify the noticeable variations in the neurological examination.[3]

The neurological examination is an assessment tool to determine a patient's neurologic function. It is beneficial in a variety of ways as it allows the localization of neurologic diseases and helps in ruling in or ruling out differential diagnoses. Neurological diseases can present a myriad of ways, including cognitive/behavioral, visual, motor, and sensory symptoms. Certain red flags during examination allow early detection of life-threatening neurologic diseases and recognize disorders that may negatively impact the quality of life.[4]

The main purpose of a neurological examination is to localise where in the nervous system the problem is. **Is there an upper motor neuron lesion** (i.e., Brain or spinal cord) **or lower** (i.e., Nerve roots, peripheral nerves, neuromuscular junction or muscle) **motor neuron lesion.**

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This assessment helps to detect any impairment of the nervous system, being used both as a screening and an investigative tool. The examination findings when combined with a detailed history of a patient, can help a health practitioner reach a specific or differential diagnosis. This would enable the doctor to commence treatment if a specific diagnosis has been made, or order further investigations if there are differential diagnoses.[5]

Potentially work-related upper limb disorders remain diagnostic challenges when the standard physical examination cannot identify well-described clinical conditions [6]. In many patients the character of pain and the accompanying subjective motor and sensory disturbances suggest a peripheral nerve-involvement. The management of work-related upper limb symptoms frequently causes frustrations because the majority of patients cannot be diagnostically classified according to current criteria.

Statement of the problem

A study to evaluate the effectiveness of demonstration on practice skills regarding upper limb neurological examination among nursing interns in government nursing colleges of Uttarakhand.

Objectives of the study were:

- To assess the pre-test skill regarding upper limb neurological examination among nursing intern students.
- To assess the post-test demonstration practice skill regarding upper limb neurological examination among nursing intern students.
- To evaluate the effectiveness of demonstration on practice skill regarding upper limb neurological examination among nursing intern students.
- To find out association between the pre-test practice skill score regarding upper limb neurological examination with selected demographic variables.

MATERIAL AND METHOD

Study design

Pre-experimental approach was used with one group pre-test post-test design. The investigator used convenient sampling technique for selecting 70 samples which comprised of 70 nursing interns from government nursing college Haldwani and Almora.

Inclusion criteria:

- Nursing interns who are studying in govt. nursing colleges of Uttarakhand.
- Those who are willing to participate in the study.
- Those who are present at the time of data collection.

Exclusion criteria:

- Those who are not willing to participate in the study.
- Those who are not present at the time of data collection.

Tool Description

The investigator reviewed related literature to describe the tool to assess the practice skill of the samples about upper limb neurological examination. Tool divided into two sections.

Section I: Demographic data Demographic variables of the samples consist of 2 items such as Age and Previous knowledge regarding upper limb neurological examination. If yes specify sources like books, workshop, seminar and other.

Section II: OSCE demonstration developed by researcher consists of the Inspection, Pronator drift, Tone, Power, Reflexes, Sensation, Coordination and completion of the examination. In that total 33 items and marks were distributed according to the area.

Scoring of tool

Maximum score of OSCE checklist had 48 marks. Scoring of the OSCE checklist regarding upper limb neurological examination consists three categories: inadequate skill (0-16), adequate skill (17-32) and proficient skill (33-48).

STATISTICAL ANALYSIS

The data were presented as mean and standard deviation. Paired 't' test was performed to find the significant mean difference between the pre and post-test result.

RESULT OF THE STUDY

The study included a total no. of 70 nursing intern. The frequency (f) and percentage (%) wise distribution of nursing interns according to their selected personal variable is shown in table no.1.

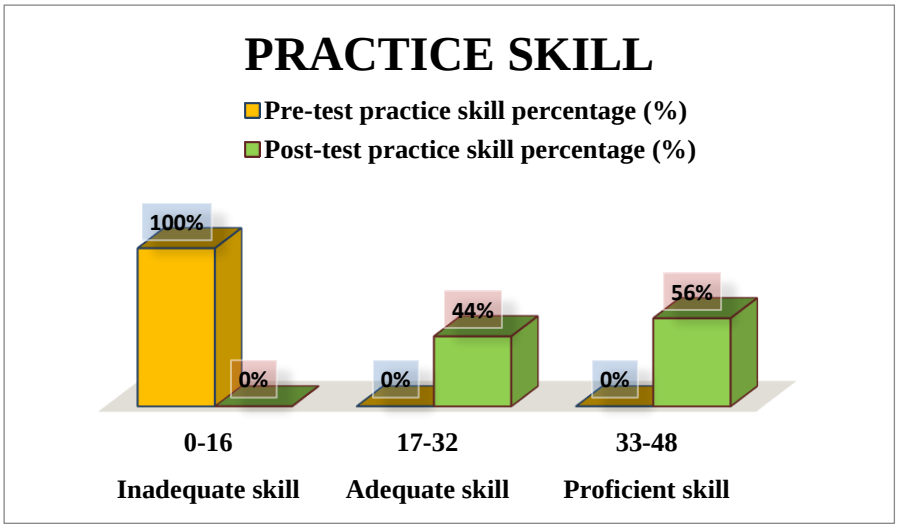
Table 1: Frequency (f) and percentage (%) wise distribution of nursing interns according to their selected personal variable.

N=70

S. No.	Variables	Frequency (f)	Percentage (%)
1.	**Age in years**		
1.1	20-21 years	20	28.57%
1.2	22-23 years	46	65.71%
1.3	24-25 years	4	5.71%
2.	**Previous knowledge regarding upper limb neurological examination**		
2.1	Yes	21	30%
2.2	No	49	70%
3.	**If yes specify sources**		
3.1	Books	20	28.57%
3.2	Workshop	0	0%
3.3	Seminar	0	0%
4.4	Others	1	1.42%

Description of table no. 1: Shows that majority (65.71%) of nursing interns were between the age group of 22-23 years, and 28.57% were between 20-21 years and 5.71% students were between the age group of 24-25 years.30% nursing interns were having previous knowledge regarding upper limb neurological examination and 70% were not having any previous knowledge regarding upper limb neurological examination.28.57% of nursing interns were having previous knowledge regarding upper limb neurological examination from sources like books and 1.42% of nursing interns were having previous knowledge regarding upper limb neurological examination from other sources.

Fig. 1: Bar graph showing the pre and post-test level of practice skill of the nursing interns:



The diagram shows that before teaching demonstration, out of the 70 nursing interns, majority of the nursing interns (100%) have inadequate skill (range score 0-16), 0% of nursing interns have adequate skills (range score 17-32) and 0% of nursing interns have proficient skill (range score 33-48) regarding upper limb neurological examination whereas after demonstration out of the 70 nursing interns (0%) have inadequate skill (range score 0-16), 44% of nursing intern students have adequate skill (range score 17-32) and 56% of nursing interns have proficient skill (range score 33-48) regarding upper limb neurological examination.

Table 2: Comparison of mean scores between pre-test and post-test practice skill regarding upper limb neurological examination (overall)

N=70

Variable	Pre-test Mean±SD	Post-test Mean±SD	Paired t-test	DF	P value
Practice skills regarding upper limb neurological examination	6.68 ± 1.22	32.44 ± 4.23	6.77	69	0.001

Description of table no. 2: Shows that there was a statistically significant difference between pre-test and post-test practice skills regarding upper limb neurological examination with 't' value = 6.77 at p=0.001. Hence, the null hypothesis was rejected and it shows that the demonstration regarding upper limb neurological examination was effective in increasing the practice skills of nursing interns.

DISCUSSION:

The present study was conducted to evaluate the effectiveness of demonstration on practice skills regarding upper limb neurological examination among nursing intern students in selected nursing colleges in Uttarakhand. The investigator collected the samples by non-Probability convenience Sampling Technique. The investigator collected the data by using OSCE checklist to evaluate the practice skills regarding upper limb neurological examination among nursing intern students in selected nursing colleges in Uttarakhand. The investigator used pre- experimental, one group pre-test post-test design. The tool consists of demographic variables, OSCE checklist to evaluate the effectiveness of demonstration on practice skills regarding upper limb neurological examination among nursing intern students. The main study was conducted in the month of July, on 70 nursing intern students and who met the inclusion criteria, who were selected by non-Probability convenience sampling technique. After the selection of samples, the practice skill regarding upper limb neurological examination among nursing intern students was assessed by using the OSCE checklist. OSCE demonstration regarding upper limb neurological examination was administered. After taking a pretest of the samples. After 7 days of OSCE demonstration regarding upper limb neurological examination, Post-test was conducted on the samples using OSCE checklist. The descriptive statistics (frequency, percentage, mean, standard deviation) and inferential statistics(t-test) were used to analyze the data, and to test the study hypotheses The data identified from the present study shows that the pre-test means scores was 6.68 with standard deviation of 1.22 and after the administration of OSCE demonstration conducted the post-test. the post-test mean score was 32.44 with standard deviation of 4.23 and the paired t-test value of practice skill score was 6.77 (Table value–1.66) was obtained, which is statistically significant.

CONCLUSION

This indicates that the OSCE demonstration was effective to enhance the practice skill regarding upper limb neurological examination among nursing intern students.

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