



Effectiveness of Computer Facilitated Teaching Programme on Knowledge of Staff Nurses Regarding Neurorehabilitation in Selected Hospitals, Thrissur

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ABSTRACT

Neurorehabilitation is a group of therapies and techniques that maximizes a patient's quality of life and capability after a nervous system injury. Nurses are key players in the wider rehabilitation team. Thus they are responsible to acquire expertise knowledge and skill for providing quality patient care. Hence a study was undertaken to assess the effectiveness of computer facilitated teaching programme on knowledge of staff nurses regarding neurorehabilitation in selected hospitals, Thrissur. The objectives of the study were to assess the knowledge of staff nurses regarding neurorehabilitation, to assess the effectiveness of computer facilitated teaching programme on knowledge of staff nurses regarding neurorehabilitation and to associate the level of knowledge of staff nurses regarding neurorehabilitation with their selected demographic variables. The design of the study was true experimental design. Sampling technique was simple random sampling with a sample size of 60 and the research tool was structured knowledge questionnaire on neurorehabilitation. Pre-test was conducted for both control group and experimental group. Computer facilitated teaching programme was implemented in experimental group. Post-test was conducted in experimental group and control group. The result of the study showed that, the mean post-test knowledge score of staff nurses regarding neurorehabilitation in experimental group was 25.77 with a SD of 2.750 and the mean post-test knowledge score in control group was 10.97 with a SD of 3.605. The calculated 't' value was 17.876 with a p value of 0.001. Thus it is summarized that the computer facilitated teaching programme regarding neurorehabilitation was effective.

KEYWORDS

Effectiveness; Computer facilitated teaching programme; Knowledge; Neurorehabilitation



INTRODUCTION

BACKGROUND OF THE PROBLEM

Around the world, annually around 17 million people suffer from stroke. Of these, 5 million people die and another 5 million people are left disabled, and become a burden of family and community¹. Neurological disorders cause morbidity and mortality. A cross sectional study conducted in 2016 showed that stroke was the second leading cause of death worldwide².

Traumatic brain injury is the most important cause for lifelong disability and it is one of the public health and socioeconomic problems, as it has motor, sensory, cognitive, emotional and behavioural impacts. Other complications are hydrocephalus, post traumatic seizures, fatigue, paroxysmal sympathetic hyperactivity or psychiatric behavioral symptoms. These disabilities can be modified through neurorehabilitation, especially motor or cognitive exercises improve the functional recovery in patients with neurological disorders³.

NEED AND SIGNIFICANCE OF THE STUDY

Neurorehabilitation helps in reducing the frequency of complications of neurological disorders and promotes functional outcome and prevents morbidity. Neurorehabilitation aids to improve functional ability, level of independence as high as possible, prevent complications and provide an acceptable environment to the patient⁴.

Nurses are key players in the wider rehabilitation team. Thus they are responsible to acquire expertise knowledge and skill for providing quality patient care during neurorehabilitation. This hastens quicker recovery and better patient outcome⁵. However, development of rehabilitation depends on the improvement of scientific and practical knowledge of health care professionals. For acquiring specific knowledge and skills in rehabilitation process and service, the professional rehabilitation nurse must combine their practice with continuing education⁶.

STATEMENT OF THE PROBLEM

A study to assess the effectiveness of computer facilitated teaching programme on knowledge of staff nurses regarding neurorehabilitation in selected hospitals, Thrissur.

OBJECTIVES OF THE STUDY

1. To assess the knowledge of staff nurses regarding neurorehabilitation.
2. To assess the effectiveness of computer facilitated teaching programme on knowledge of staff nurses regarding neurorehabilitation.



3. To associate the level of knowledge of staff nurses regarding neurorehabilitation with their selected demographic variables

MATERIALS AND METHODS

The investigator adopted an evaluative approach for the study to assess the effectiveness of computer facilitated teaching programme on knowledge of staff nurses regarding neurorehabilitation through a quantitative research approach and a True experimental research design was adopted for the study. The setting used in this study was Aswini Hospital Ltd and Mother Hospital Pvt Ltd, Thrissur. The sampling technique used was simple random sampling technique to select 60 samples. The tool used in this study consists of, Section A: Demographic pro forma of staff nurses, Section B: Structured knowledge questionnaire on neurorehabilitation and Section C: Lesson plan on neurorehabilitation

On day 1(morning), 30 staff nurses were selected from Aswini Hospital by simple random sampling. From them, fifteen (15) staff nurses were randomly assigned to experimental group and control group respectively. The staff nurses of experimental group were requested to attend pre-test and computer facilitated teaching programme regarding neurorehabilitation on day 9, while staff nurses of control group were directed to conference hall of Aswini Hospital for conducting pre-test. In the afternoon, the investigator conducted the same procedure at Mother Hospital, Thrissur. On day 8 (7 days after pre-test), post-test was administered to control group in Aswini Hospital at morning and in Mother Hospital at afternoon.

On day 9, researcher conducted pre-test followed by computer facilitated teaching programme regarding neurorehabilitation for 45 minutes to the experimental group of Aswini Hospital at morning and Mother Hospital at afternoon. The computer facilitated teaching programme regarding neurorehabilitation was delivered through systematically developed power point instruction. On day 16 (7 days after pre-test), post-test was administered to experimental group of Aswini Hospital at morning and Mother Hospital at afternoon. After the post test, the researcher conducted computer facilitated teaching programme for all staff nurses in control group in order to safeguard the ethical principles.

RESULTS AND DISCUSSION

Section A: Description of demographic pro forma of staff nurses.

- On the basis of age in years, in the experimental group, majority of samples 18 (60%)



belonged to the age group of 26-30 years, 8 (26.7%) samples were in the age group of 20-25 years and remaining 4 (13.3%) samples belonged to the age group of above 30 years. In the control group, majority of samples 14 (46.7%) belonged to the age group of 26-30 years, 12 (40%) samples were in the age group of 20-25 years and 4 (13.3%) samples belonged to an age group of above 30 years.

- On the basis of gender, all subject groups were females in both experimental group and control group.
- With regard to religion, in experimental group, majority of the samples 21 (70%) were Christian, 8 (26.7%) were Hindu and only 1 (3.3%) was Muslim. While in control group, the highest number of samples 18 (60%) were Christian, remaining 12 (40%) samples were Hindu and none of the samples were Muslim.
- In case of educational qualification, in the experimental group, out of 30 samples, majority of the samples 16 (53.4%) completed GNM, 9 (30%) samples completed B.Sc. Nursing, 4 (13.3%) samples completed Post Basic B.Sc. Nursing and only 1 (3.3%) sample completed M.Sc. Nursing. In control group, majority of the samples 14 (46.6%) completed GNM, 11 (36.7%) samples completed B.Sc. Nursing, remaining 5 (16.7%) samples completed Post Basic B.Sc. Nursing and none of the samples completed MSc Nursing.
- With reference to total years of experience, in experimental group, 22 (73.3%) samples had ≤ 5 years of experience, 5 (16.7%) had 5.1- 10 years of experience and only 3 (10%) samples had above 10 years of experience. In control group, majority of samples 27 (90%) samples had ≤ 5 years of experience, 2 (6.7%) samples had 5.1- 10 years of experience and only 1 (3.3%) sample had above 10 years of experience.
- Regarding area of work, in experimental group, out of 30 samples, 11 (36.7%) were in general wards, 10 (33.3%) were in intensive care unit, 5 (16.7%) were in others, 3 (10%) were in operation theatre and only 1 (3.3%) sample was in emergency department. In control group, majority of samples 11 (36.7%) were in general wards, 9 (30%) samples were in Intensive care unit, 6 (20%) samples were in others, remaining 4 (13.3%) samples were in operation theatre and none of the samples were in emergency department.
- With reference to exposure to mass media in relation to neurorehabilitation, majority of samples in control group and experimental group, 26 samples (86.7%) had no exposure to any



mass media in relation to neurorehabilitation.

- Regarding attendance in CNE programme regarding neurorehabilitation more than 6 months, in experimental group and control group, majority of the samples 29 (96.7%) were not attended CNE programme regarding neurorehabilitation and only 1 (3.3%) sample attended CNE programme regarding neurorehabilitation.

Section B: Assessment of mean pre-test knowledge score of staff nurses regarding neurorehabilitation in experimental group and control group.

- In relation to mean pre-test knowledge score (table 1; figure 1), in experimental group, highest percentage of the samples 22 (73.4%) had average knowledge, 7 (23.3%) samples had poor knowledge and only 1 (3.3%) sample had excellent knowledge. In control group, majority of the samples 20 (66.7%) had average knowledge, remaining 10 (33.3%) samples had poor knowledge and none of the samples had excellent knowledge.

Table 1 Percentage distribution of samples based on the mean pre-test knowledge score of staff nurses regarding neurorehabilitation in experimental group and control group (N=60)

Pre-test level of knowledge	Scoring grade	Experimental Group (n=30) f%		Control Group (n=30) f%	
Poor knowledge	0-10	7	23.3	10	33.3
Average knowledge	11-20	22	73.4	20	66.7
Excellent knowledge	21-30	1	3.3	0	0

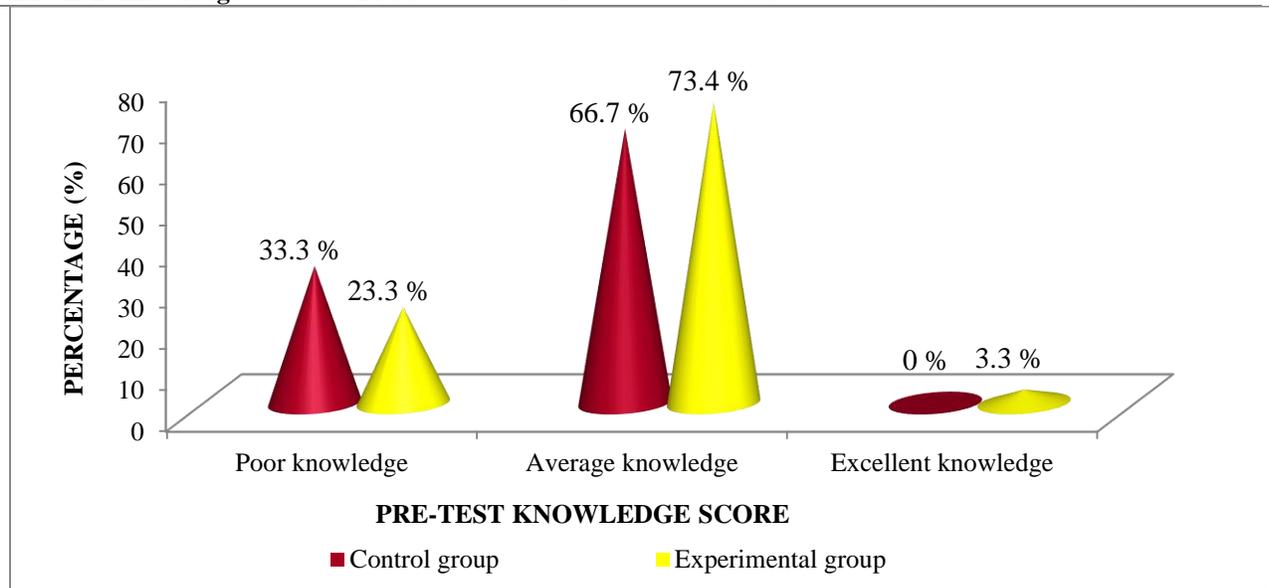


Fig.1 Frequency and percentage of mean pre-test knowledge score of staff nurses regarding neurorehabilitation

Section C: Assessment of mean post-test knowledge score of staff nurses regarding neurorehabilitation in experimental group and control group.

- In relation to mean post-test knowledge score (table 2; figure 2) in experimental group, all



samples 30 (100%) had excellent knowledge. While in control group, 17 (56.7%) samples had average knowledge, remaining 13 (43.3%) samples had poor knowledge and none of them had excellent knowledge.

Table 2 Percentage distribution of samples based on the mean post-test knowledge score of staff nurses regarding neurorehabilitation in experimental group and control group (N=60)

Post-test Level of knowledge	Scoring grade	Experimental Group (n=30) f%		Control Group (n=30) f%	
Poor knowledge	0-10	0	0	13	43.3
Average knowledge	11-20	0	0	17	56.7
Excellent knowledge	21-30	30	100	0	0

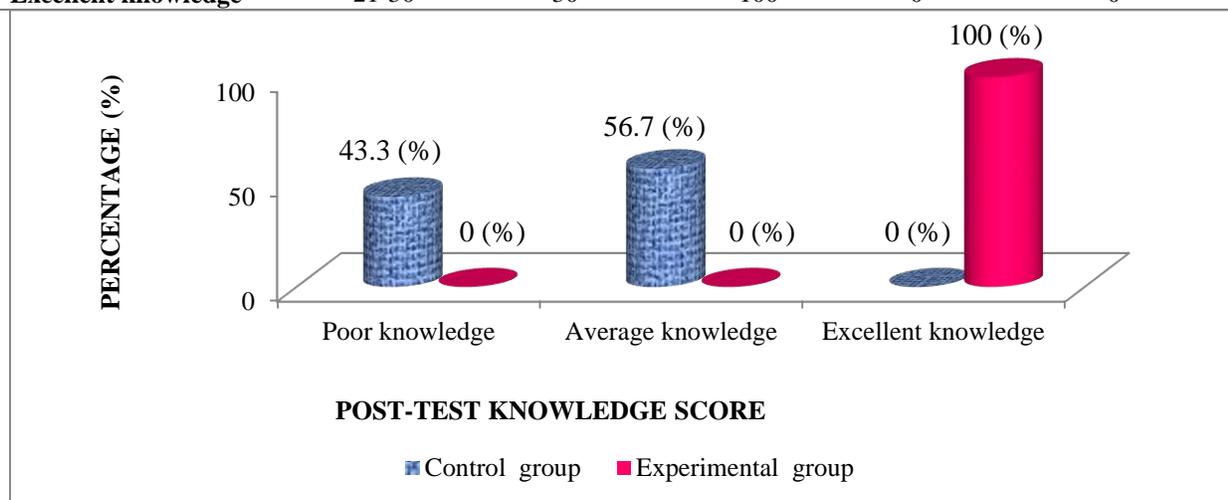


Fig 2 Frequency and percentage of mean post-test knowledge score of staff nurses regarding neurorehabilitation

Section D: Description of assessment of effectiveness of computer facilitated teaching programme on knowledge of staff nurses regarding neurorehabilitation.

Table 3 Difference between the mean pre-test knowledge score and mean post-test knowledge score of staff nurses regarding neurorehabilitation in experimental group by paired 't' test (N=60)

Knowledge score	Mean	SD	N	't' value	p value
Pre-test	12.93	3.562	30	17.420**	< 0.001
Post-test	25.77	2.750			

** Significant at 0.01 level

Table 4 Difference between the mean pre-test knowledge score and mean post-test knowledge score of staff nurses regarding neurorehabilitation in control group by paired 't' test (N=60)

Knowledge score	Mean	SD	N	't' value	p value
Pre-test	12.13	3.980	30	1.699 ^{ns}	0.10
Post-test	10.97	3.605			

ns- non-significant at 0.01 level

- The study revealed that (table 3), the mean pre-test knowledge score of staff nurses regarding neurorehabilitation in experimental group was 12.93 with a SD of 3.562 and the mean post-test knowledge score was 25.77 with a SD of 2.750. Paired 't' test was used to compare the mean pre-test and mean post-test knowledge score of staff nurses regarding neurorehabilitation. The



calculated 't' value was 17.420 with a p value of < 0.001 which is significant at 0.01 level. Thus the research hypothesis H₁ is accepted and null hypothesis H₀₁ is rejected.

- The study findings showed that (table 4), that the mean pre-test knowledge score of staff nurses regarding neurorehabilitation in control group was 12.13 with a SD of 3.980 and the mean post-test knowledge score was 10.97 with a SD of 3.605. Paired 't' test was used to compare the mean pre-test knowledge score and mean post-test knowledge score of staff nurses regarding neurorehabilitation. The calculated 't' value was 1.699 with a p value of 0.10 which is non-significant at 0.01 level.
- The study findings revealed that, in control group the mean pre-test knowledge score of staff nurses regarding neurorehabilitation was 12.13 and in experimental group was 19.93. Unpaired 't' test was used to compare the pre-test knowledge score of staff nurses in control group and experimental group regarding neurorehabilitation. The calculated 't' value was found to be 0.820 with a p value of 0.415 which is non-significant at 0.05 level. It revealed that both the control and experimental group are homogenous.

Table 5 Difference between the mean post-test knowledge score of staff nurses regarding neurorehabilitation in experimental group and control group by unpaired 't' test. (N=60)

Post-test knowledge score	Mean	SD	n	't' value	p value
Experimental group	25.77	2.750	30	17.876**	< 0.001
Control group	10.97	3.605			

**Significant at 0.01 level

- The study result showed that (table 5), in experimental group the mean post-test knowledge score regarding neurorehabilitation was 25.77 with a SD of 2.750 and in control group the mean post-test knowledge score regarding neurorehabilitation was 10.97 with a SD of 3.605. Unpaired 't' test was used to compare the mean post-test knowledge score of staff nurses in experimental group and control group. The calculated 't' value was 17.876 with a p value of < 0.001 which is significant at 0.01 level. Hence, the research hypothesis H₂ is accepted and null hypothesis H₀₂ is rejected. This implies that, the computer facilitated teaching programme regarding neurorehabilitation was effective.

Section E: Description of association of pre-test level of knowledge of staff nurses regarding neurorehabilitation with their selected demographic variables.

- The study result showed that there was no significant association between the level of knowledge of staff nurses regarding neurorehabilitation with their selected demographic



variables such as age in years, educational qualification, total years of experience and exposure to mass media at 0.05 level of significance.

CONCLUSION

Nurses have a major role in health care sector. Thus they should be knowledgeable regarding neurological disorders and neurorehabilitation. From this study, it is clearly evident that computer facilitated teaching programme was effective to improve the knowledge of staff nurses regarding neurorehabilitation. Thus it is concluded that computer facilitated teaching programme can be adopted in the hospital to improve the knowledge level of staff nurses.



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