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Cover Page Footnote

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Abstract

Background: A thorough clinical assessment is the initial step to be done by the the nurses in order to provide quality care. The more precise the assessment, the more accurate the interventions are going to be. **Objectives:** The aim of this study was to assess the effect of a structured training program on comprehensive neuro system assessment among registered nurses. **Materials and methods:** This pre-test post-test research design was carried out among a convenient sample of 83 registered nurses. Data was collected before and after the training program, using a semi structured questionnaire prepared by the researcher assessing knowledge on various aspects of neuro assessment like consciousness, orientation, memory, cognition, mental status, motor, sensory, and reflex assessment. The training program was developed and validated by the researcher before it was implemented. Data was analyzed using descriptive and inferential statistics. **Results:** The study has shown that structured training program has improved the graduate nurse's knowledge. The entire pre-test knowledge mean score out of 20 was 12.7 with a standard deviation of 2.56. The post-test knowledge mean score was 17.41 with a standard deviation of 1.97. **Conclusion:** The study has shown that structured training program was effective in improving the knowledge of graduate nurses. There should be provision of in-service education for nursing personnel to update their knowledge, so that they can enhance their assessment skills for quality care.

Key words: Comprehensive neuro assessment, effectiveness, registered nurses, training

Introduction

Assessment is the first aspect in nursing process. The nurse's skill in performing assessment has a decisive role in determining the health needs of the patient, designing nursing care plan, and implementing nursing interventions. The more accurate the assessment is, the more quality results would be obtained by the nurses caring the patient. Thus ensuring the registered nurses knowledge in each area is an important concern (Abid-Hajbaghery & Safa, 2013).

Nervous system helps the human body to interact with external environment and to maintain functions of all body organs internally (Bartolo et al., 2012). An impairment in the nervous system can manifest from

subtle weakness to drastic loss of mobility and an impairment in the consciousness to death. Therefore, it is vital for the nurses to accurately perform a thorough neurological assessment and understand the implication of any change in the assessment findings, in order to initiate life saving measures (Ellchuk, 2013). Expertise in patient assessment comes from a number of factors like using systematic approach, regular practice, and receiving feedback on completing the assessments (Kaur et al., 2016).

A comprehensive neuro assessment can be challenging for nurses because of its complexity, hence thorough training is essential to equip the nurses to carry it out as and when necessary. All registered nurses received adequate instruction related to assessment during their formal education (Mattar, Liaw & Chan, 2013).

Objective: The objectives of the study were to assess the effect of a structured teaching program on the knowledge of registered nurses regarding comprehensive neuro system assessment by comparing

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the pre and post-test mean scores.

Materials and methods: A quantitative approach with a pre-experimental pre-test post-test design was used for the data collection. The data collection was done among 83 registered nurses from different hospitals of greater Mumbai, using a non probability convenient sampling technique.

Training program: Researcher has prepared and validated a four hours training program on comprehensive neuro assessment, which includes theory session on neuro assessment for two hours using power point presentation and video of 30 minutes on nervous system assessment; demonstration, and hands on training sessions on comprehensive neuro assessment delivered over one and a half hours. A pre-test on comprehensive neuro system assessment was done before the training program and a post-test was done after the training session.

Data collection instrument: Researcher has prepared a structured questionnaire containing 20 items to assess the pre-test knowledge on comprehensive neuro system assessment, which includes areas like consciousness, orientation, memory, cognition, mental status, motor, sensory, and reflex assessment. Same tool was used after the training program to assess the post-test knowledge. The knowledge scores were classified as 1-6 inadequate, 7-13 moderate, and 14-20 as adequate.

Ethical clearance: Ethical clearance was obtained from institutional ethical board before conducting the study (August 2015). Informed consent was obtained from all the participants for participating in the research.

Sample size calculation: The sample size is calculated by using online sample size calculator.

Sample size for before-after study (Paired T-test)

The standard normal deviate for $\alpha = Z_{\alpha} = 1.960$

The standard normal deviate for $\beta = Z_{\beta} = 0.842$

A = 1.000

B = $(Z_{\alpha} + Z_{\beta})^2 = 7.849$

C = $(E/S(\Delta))^2 = 0.095$

AB/C = 82.70

Hence, the sample size for the study was 83.

Results

Descriptive and inferential statistics was used for data analysis. Data analysis was done using Microsoft excel.

1. Knowledge scores of registered nurses

The data collected before and after the training program was summarized as frequency and percentage. Comparison of pre-test and post-test scores was expressed in mean and standard deviation.

Table 1:
Pre-Test Knowledge Score on Comprehensive Neuro System Assessment Among Registered Nurses

Knowledge category	Knowledge score	Pre-test	
		Frequency	Percentage
Inadequate	1-6	1	1
Moderate	7-13	52	63
Adequate	14-20	30	36

N= 83

Data in Table 1 shows that out of 83 samples, 30(36%) had adequate knowledge, 52(63%) graduate nurses had moderate knowledge and 1(1%) had inadequate knowledge.

Table 2:
Post-Test Knowledge Score on Comprehensive Neuro System Assessment Among Registered Nurses

Knowledge category	Knowledge score	Post-test	
		Frequency	%
Inadequate	1-6	0	0
Moderate	7-13	2	2
Adequate	14-20	81	98

N= 83

Data in the Table 2 shows that out of 83 samples, 81(98%) had adequate knowledge, 2(2%) graduate nurses had moderately adequate knowledge and there was no one with inadequate knowledge.

Table 3:
Comparison Between Pre-Test and Post-Test Scores Expressed in Mean and SD

Variable	Pre-test score		Post-test score		Enhancement		Paired t test
	Mean	SD	Mean	SD	Mean	SD	
Knowledge	12.70	2.56	17.41	1.97	4.76	2.55	1.66

N=83

df: 82, p =.01

Data in the Table 3 shows the entire pre-test knowledge mean score was 12.7 with a standard deviation of 2.56. In post-test, after the structured training program 81(98%) has gained adequate knowledge. The post-test knowledge mean score was 17.41 with a standard deviation of 1.97. The enhancement mean knowledge

score was 4.76 with a standard deviation of 2.55. In the table, the enhancement means the gain in knowledge scores after the training program.

Hence research hypothesis, there will be a significant difference between the mean pre-test and post-test knowledge score among registered nurses on comprehensive neuro system assessment is accepted.

Discussion

Researcher emphasizes the importance of medical and nursing care in the recovery of patients. It is not only focusing the technical aspects, but also the communication skills, the knowledge of nurses and doctors and their ability in making decisions. One of the elements influencing the assessment of nursing care quality is the assessment of the nurse's functions that determine the nurse's particular tasks (OElusarz, Biercewicz, Barczykowska, Haor & Glowacka, 2014).

A descriptive correlational survey was conducted among 114 nursing staff (91.2%) in an acute care hospital, Singapore. Data analysis shows 48.2% was with average attitude, knowledge, and self confidence group, and 51.8% was with positive attitude, good knowledge, and high self confidence (Mattar, Liaw & Chan, 2013). In this study, similar results were observed that is out of 83 samples 30(36%) had adequate knowledge, 52(63%) graduate nurses had moderately adequate knowledge, and 1(1%) had inadequate knowledge.

If the assessment is poor, the rest of the process is a failure; for the assessment is the base on which the rest is built. The better the knowledge base of the nurse doing the assessment, the better the assessment will be. In healthcare, staff nurses need excellent initial training and ongoing support. This requires careful attention to a well-planned training design, delivery, and evaluation process. The best way to develop and implement training remains unclear, however, suggestions range from continuous professional development program periodically to theory-driven ones in the department to improve knowledge, skill, and attitude (Kossmann et al., 2006). The present study was designed to develop and implement a training program for nurses to add on to their existing core of knowledge. The post-test knowledge score showed out of 83 samples, 81(98%) had adequate knowledge, 2(2%) graduate nurses had moderately adequate knowledge and 0(0%) had inadequate knowledge. That means training program

does lead to improvement in the mean post-test scores of graduate nurses.

Conclusion

The study has shown that structured training program was effective in improving the knowledge of graduate nurses. There should be provision for in-service education for nursing personnel to update their knowledge, so that they can impart it to the patient care routinely. Since assessment is the base that determines all nurses' actions, further it must be strong for every person directly or indirectly involved in patient care.

Implications

The knowledge about comprehensive neuro assessment enables the graduate nurses to work efficiently and competently, thus maintaining and improving quality of nursing care. Updating the assessment knowledge and skills help in identification of the complication at the earliest and prevent them. The nursing curricular activities should focus on educating the students about comprehensive assessment with special emphasis to each of the systems. The students should be given special training in handling the patients and taught about crisis intervention. Various programs can be arranged for nursing students and the health care professionals in improving knowledge and skill, so that they can focus on improving quality of life of people. More researches are required in improving the practice and attitude of nurses in carrying out a comprehensive assessment and delivering quality care. Nursing administration department should organize several in-service training for all the graduate nurses to keep them up to date with current advances in the field.

Limitations

Demographic profiles of the sample like highest degree of qualification, years of experience, working in neuro ward or ICU currently, recently attended any similar training program etc. were not associated with the knowledge score. The post-test was done on the same day of training only, no consistent knowledge measurement was done.

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References

- Abid-Hajbaghery, S., & Safa, A. (2013). Nurses' Evaluation of Their Use and Mastery in Health Assessment Skills: Selected Iran's Hospitals. *Nursing and Midwifery Studies*, 2(3), 39–43.
- Bartolo, M., Zucchella, C., Pace, A., De Nunzio, A.M., Serrao, M., Sandrini, G., Pierelli, F. (2012) Improving neuro-oncological patients care: Basic and practical concepts for nurse specialist in neuro-rehabilitation. *Journal of Experimental and Clinical Cancer Research*, 31(1), 82.
- Ellchuk, D. (2013) Patient assessment. Self-assessment tool. Available at https://www.clpna.com/wp-content/uploads/2013/02/ed_PatientAssessFCS05.pdf.
- Mattar, I., Liaw, S.Y., & Chan, M.F. (2013) A study to explore nurses' knowledge in using the Glasgow Coma Scale in an acute care hospital. *The Journal of Neuroscience Nursing*. 45(5), 272-80. Available at <https://www.ncbi.nlm.nih.gov/pubmed/24025466>
- Kaur, H(a/pBasauhra Singh), Chong, M.C., Chandran, H (a/l Thambinayagam), Zakaria, M.I., Cheng, S.T., Tang, L.Y., and Azahar, N.H. (2016) Assessing Nurses Knowledge of Glasgow Coma Scale in Emergency and Outpatient Department. *Nursing Research and Practice*. Available at <http://dx.doi.org/10.1155/2016/8056350>
- Rothman, M.J., Solinger, A.B., Rothman, S.I., & Finlay, G.D. (2012). Clinical implications and validity of nursing assessments: a longitudinal measure of patient condition from analysis of the Electronic Medical Record. *BMJ Open*. 2(4), e000646. Available at <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3425946/>
- OElusarz, R., Biercewicz, M., Barczykowska, E., Haor, B., & Głowacka, M. (2014). Assessment of selected quality fields of nursing care in neurosurgical wards: a prospective study of 530 people – multicenter studies. *Patient Prefer Adherence*, 8, 1113–1121.
- Kossmann, S., Casper, G.R., Severtson, D.J., Grenier, A., Or, C., Carayon, P., Brennan, P.F. (2006) Designing Study Nurses' Training to Enhance Research Integrity: A Macroergonomic Approach. *AMLA Annual Symposium Proceedings*. 2006, 439–443. Available at <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1839447/>