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Impact of Educational Modules on Knowledge among Neuroscience Nurses Working in the Epilepsy Monitoring Unit

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Introduction

Patients admitted to the Epilepsy Monitoring Unit (EMU) for intractable epilepsy evaluations have a unique hospital experience. The admissions often require seizures to be captured on the electroencephalogram (EEG) to appropriately identify epilepsy syndromes. For the purpose of monitoring and collecting data, seizure-provoking methods may be utilized, including withdrawal of anti-seizure medications (ASMs) and sleep deprivation. These measures can increase the frequency and severity of seizures experienced by patients during their admission, thus increasing the risks of injury and complications (Fahoum, Kipervasser, Bar-Adon, & Neufeld, 2016). The increased risk is an inevitable health concern for the type of testing and for the specific patient population. Nursing education is necessary to address the concerns, provide optimal patient care and to maximize patient safety on the EMU.

Problem Statement and Significance

Among nurses, how does a didactic educational intervention on intractable epilepsy compared to no educational intervention affect nursing knowledge?

Neuroscience nurses working on the EMU at a Midwestern children's hospital have posed questions regarding patient care related to intractable epilepsy and epilepsy surgery on the EMU regarding the frequency of seizures, determination of surgical candidacy, the need for surgical interventions, the basics of the various testing involved in the evaluation process, anti-epileptic drugs and rescue medications. Sentinel events on EMUs are relatively infrequent, however, there have been reported injuries and death among the population of electively admitted patients on EMUs (Dworetzky et al., 2015). Nursing education is key to ensuring nursing knowledge, competence and optimal patient outcomes

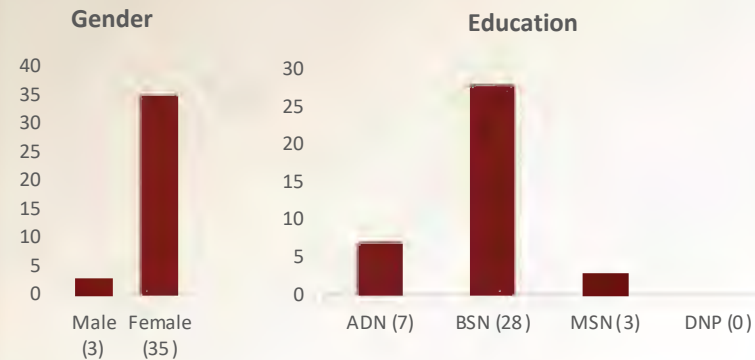
Project Description and Design

The pre-test and post-test design was appropriate to assess the impact of a specific intervention (Terry, 2018). The pre-test and post-test assessed the nurses' knowledge, and confidence in providing care for patients on the EMU before and after the educational intervention. The educational modules included the current EMU procedures and protocols for care. The director of the epilepsy surgery program and EMU AHP team reviewed the content of the modules prior to dissemination among neuroscience nurses. The author's academic advisor, a certified nurse educator, reviewed each questionnaire to ensure test validity.



Outcome and Evaluation

Nurses' assessments were recorded before and after each educational module. The post-test scores demonstrated a statistically significant difference in the scores. Evaluations demonstrated an increase in confidence and knowledge reported by nurses after completion of each module. There was a decrease in number of participants with each subsequent module, likely due to higher patient census, patient acuity and limited staffing during the times of presentation



Nursing Experience

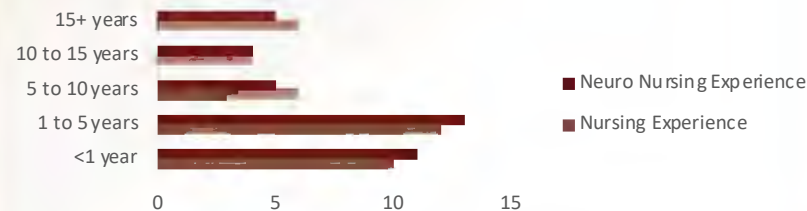


Table 1
Knowledge and Confidence Gained

Module	n	Mean
Module 1	Knowledge	37
	Confidence	37
Module 2	Knowledge	29
	Confidence	29
Module 3	Knowledge	22
	Confidence	22

Table 2
Pretest and Posttest Scores

Sample	n	Mean	SD	p value	
Module 1	Pretest	37	5.86	1.42	<0.0001
	Posttest	37	9.08	1.16	
Module 2	Pretest	29	6.07	1.75	<0.0001
	Post Test	29	9.45	0.91	
Module 3	Pretest	22	5.86	0.99	<0.0001
	Post Test	22	9.55	0.67	

Conclusions and Recommendations

The pretest and posttest provided a quantitative measure of assessment of knowledge before and after the educational modules. The data collected indicated the educational modules significantly improved post-test scores. The educational modules demonstrated an increase in knowledge and confidence reported by nurses.

Protected time to allow nurses to attend educational modules on dayshift and nightshift would provide nurses with the opportunity to embrace educational presentations and further improve their knowledge and confidence in the care they provide to patients on the EMU.

Acknowledgements

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