Improving Nursing Care for Patients in Epilepsy Monitoring Units (EMUs)
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Introduction

- Epilepsy monitoring helps to identify possible triggers, evaluate seizure presentations, and analyze EEG patterns for better seizure management.  
- Inconsistent practice guidelines -> High rates of physical injuries and life-threatening medical complications  
- Falls, head trauma, or compression fractures  
- High morbidity and mortality rates  
- Inadequate staff training has been identified as a contributing factor of many seizure-related injuries.  

Purpose & Aims

The purpose of this project was to adapt, implement and evaluate a structured educational program to educate EMU nursing staff to enhance seizure management and response. 

- Aim 1: Increase nursing staff knowledge of seizure management and response through implementation of educational program. 
- Aim 2: Increase nursing staff confidence level of seizure management and response through implementation of educational program.

Methods

- Pretest-posttest design 
- Evidence-based Learning Module 
- Epilepsy center at a large medical center in Baltimore, Maryland 
- All EMU-trained nurses eligible 
- Timeline: November 2020 – January 2021 (~ 11 weeks) 
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Sample Characteristics

- 25 participants enrolled, 22 participants completed at least the first phase 
- Average years of EMU experience: 2.68 years 
- Majority (68.2%) had between 2 and less years of EMU experience 
- Average length of EMU orientation: 3.4 shifts 
- Only 27.3% were Certified Neuroscience Registered Nurses (CNRNs) 
- Question: Was the EMU training adequate? 
- Adequate = 31.8%; Somewhat = 54.5%; No = 4.5% 
- Question: Is there a gap in EMU knowledge and training? 
- Yes (=18): Reading/interpreting EEGs, maintaining electrodes, inadequate exposure to events and computer training, and short length of orientation

Aim 1: Nursing Knowledge

- Difference in pre- and post-knowledge assessment scores was +9.52 percent with a mean increase by 2.857 points 
- Adult epilepsy nurses had higher pre-training knowledge assessment scores. 
- CNRNs scored higher in post-training knowledge assessment. 
- No statistically significant difference in scores based on number of years of EMU experience or patient population.

Aim 2: Nursing Confidence

- Overall increase in mean confidence levels pre-training (=22) and post-training (=21) for all items 
- Areas with highest improvement in nursing confidence post-training: Reading EEG patterns, knowledge of vagus nerve stimulator (VNS) and responsive neurostimulation system (RNS), ketogenic diet 
- Most survey items (=12) illustrated an increase in mean nursing confidence between 1st post-training survey and 2nd post-training survey (=9). 
- No statistical difference in mean nursing confidence was observed between 1st and 2nd post-confidence surveys.

Conclusion

- Findings highlight need for examination of current guidelines to improve training of epilepsy nurses. 
- Participants found the training helpful, informative, and a great refresher based on post-training feedback. 
- Areas of focus may include EEG interpretation, epilepsy medications, care of surgical patients, and epilepsy devices. 
- Collaboration among healthcare professionals at both institutional and national level is integral in development of a standardized nursing education program.

Limitations

- Small convenience sample (=22) 
- Low response in 2nd post-intervention confidence survey (=9) 
- Data was collected from one epilepsy center but may not represent all epilepsy centers.

Dissemination

- Share participant feedback with key stakeholders 
- Inclusion of a mandatory completion of an EMU learning module every six months 
- Simulation exercises as part of EMU orientation 
- Observation day with an epilepsy fellow

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References