

Abstract

Background: Neurological nurses are vital members of the healthcare team that care for patients with severe traumatic brain injury (TBI) in Neurological Intensive Care Units (NICU). To achieve optimal outcomes, the focus is to avoid secondary brain injury. The widespread use of medical technology for healthcare has become a global trend (Jelec, 2016). Modern technology, however, represents a new challenge for health care professionals, especially nurses at the forefront of patient care. The American Association of Critical-Care Nurses (AACN) Procedure Manual for High Acuity, Progressive and Critical Care features a new section on pupillometry, noting that the pupillary examination is a key assessment performed during neurological examinations and guiding nurses on the use of automated pupillometers (“Pupillometry in Critical Care, 2020”). However, the use of Pupillometer devices in the care of head injured patients has remained suboptimal. Nurses now and in the future will have to possess adequate medical technology competency to operate effectively in a technologically enhanced environment (Powell, 2008). This emphasizes the need for neurological nurses to be skilled and confident in the use of technology for patient care (Huston, 2013). Limited research exists on nurses’ confidence and experiences with the use of technology in providing care in healthcare settings (Tunland, 2015).

Methods: The purpose of this project was to evaluate over a 12 week period participants’ confidence, and knowledge with utilizing a Pupillometer device prior to and following completion of an educational intervention, hands on Pupillometer training, and implementation of Pupillometer device.

Results: A Wilcoxon-signed rank test revealed a statistically significant increase in confidence and knowledge of utilizing a pupillometer device and with pupil assessments after intervention and implementation, $z_{Conf} = -2.743$ and $z_{know} = -2.643$, $P_{Conf} = 0.006$, $P_{know} = 0.008$. The median scores for both knowledge and confidence increased from pre-intervention (Md_Conf=32.13) (Md_Know=26.63) to post intervention and implementation ((Md_Conf=37.31) (Md_Know=38.75).

Conclusion: An educational intervention targeted for inpatient Neuro Trauma RNs delivered through a hybrid of virtual and hands on training significantly increased nurse confidence and knowledge outcomes. The findings of this project will hopefully contribute to the discussion of how to increase our bedside nurses confidence and knowledge with the ever evolving medical device technology and whether or not a Pupillometer may be a good investment for one’s institution.