Development of an Assessment Tool to Determine Baseline Knowledge of Registered Nurses Hired Into A Pediatric Cardiac Intensive Care Unit

Peterson, Jenifer; Carlin, Kristen; Seattle Children’s Hospital; Seattle, WA

**Aim:** To develop a reliable method to assess baseline clinical knowledge of registered nurses hired into the pediatric cardiac intensive care specialty.

**Background:** Clinical educators often find it challenging to measure effectiveness of orientation and educational programs. It is also difficult to objectively measure baseline knowledge, competency, and skill of new nurse hires. Aside from exams required for licensure and specialty certification, there is limited research regarding the use of validated methods to determine baseline knowledge of registered nurses. A review of literature determined that few validated test exist that reflect pre and post orientation effectiveness, particularly in critical care. There is one validated tool targeting pediatric intensive care nurses, however, there is no validated tool in the specialty area of pediatric cardiac intensive care (PCICU).

**Design:** Convenience sample of current PCICU registered nurses, at one facility, were asked to voluntarily participate in a 50 item anonymous computerized test. All of the nurses completing the survey had at least one year of PCICU nursing experience. Content for the Pediatric Cardiac Intensive Care Knowledge Assessment Tool (PCICU-KAT) utilizes resources from respected experts in the field of pediatric critical care, and was influenced by a similar validated tool for pediatric intensive care nurses.

**Methods:** The PCICU-KAT was comprised of multiple choice and fill in the blank content utilizing online survey software. The tool was made available via email link to all current registered nurse staff in the PCICU care over a two month period (June-July, 2016). Item analyses were performed on the 48 multiple choice questions.

**Results:** The mean exam score was 37.54 out of 48 with a standard deviation of 3.36. The majority of questions were within defined difficulty limits (70.83%). There were 3 questions with a negative correlation between the item and the total test score. The instrument showed an internal consistency indicating that some revisions to the test may be needed (Cronbach’s alpha = 0.65). Years of experience did not correlate with exam score \( r = 0.17, p = 0.44 \).

**Conclusions:** Assessing baseline knowledge of registered nurses on hire into specialty areas provides essential information to enable educators to tailor learning experiences. Furthermore, the utilization of pre and post assessment methods can provide insight to the overall effectiveness of orientation programs. The study utilizing the CICU-KAT demonstrated encouraging potential for future use. Refinement is needed to increase the clarity of individual questions and enhance its overall effectiveness. Additionally, the tool requires further testing with a larger sample size to provide more data regarding the content validity and reliability.

**Contact:** jennifer.peterson@seattlechildrens.org