Introduction:
The aim of this study has been to develop and test the reliability and validity of Sparks Code-Blue Ability Questionnaire of the Novice Nurse in the ICU tool. Bridging the knowledge gap between what nurses learn in nursing school, and the skills novice nurses need to fulfill their new role as an intensive care unit (ICU) nurse takes education. Running simulation code-blue scenarios is a project that is designed to bridge the gap between the novice nurse and the new high-acuity specialty. The Sparks Code-Blue Ability Questionnaire of the Novice Nurse in the ICU was developed by the author and is designed to measure the confidence of the novice nurse in their ability to participate in a code-blue drill.

Background & Significance:
In 2013, the American Association of Critical Care Nurses reported that the national statistics for nurse turnover is an average of 14% and the number of RN’s will need to increase by 26% in order to accommodate the baby-boomer generation and the new Affordable Healthcare Act. That equals to approximately 712,000 new nurses that need to be trained in various post BSN specialties including critical care.

With the hiring of 21 new nurses during the last six months in the medical intensive care unit (MICU) at University Medical Center (UMC) there are a significant number who have minimal experience in an ICU. The demands of being able to recognize a code-blue situation and skills necessary to participate in code-blue are not covered in nursing school. Nurses who have experience on a medical surgical floor where advanced cardiac life support (ACLS) certification is not required, often lack the skills needed to be a proficient critical care nurse.

In September of 2013 seven code-blue events occurred in MICU. Being confident in code-blue situations can mean the difference between life and death for patients and simulation can help bridge this gap. Simulation can increase learner engagement,” stimulates immediate application of new concepts (Banfield, Fagan & Janes, 2012). Education through simulation has already been highly supported to be an effective form of learning, and will be used in this study.

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Literature Review
A comprehensive review of the literature was done in an attempt to find a concise ability assessment tool that focuses on the confidence level of nurses that had already been tested. The search engines Medline and CINAHL were used to find a large number of articles that supported the use of simulation in education. Each study either did not report how the assessment of the education was measured, or a tool was drawn up without any validity testing or reliability testing for that specific educational study indicating a need to develop a tool to measure the confidence level of nurses after code-blue education using simulation.

Research Questions:
1. What is the initial reliability and validity of the Sparks Code-Blue Ability Assessment of Novice Nurses in the ICU?
2. What is the confidence of the Novice Nurse before and after the mock code-blue event?

Methodology
In the first phase of this study a draft of the survey questions was developed and presented to 5 RN’s each of whom has six or more years of experience in the MICU to assess face validity. Next, the suggestions from each of the nurses was taken along with suggestions from my professor and adjustments were made. Afterwards, nine nurses that hold an Advanced Cardiac Life Support (ACLS) certification rated each question on the questionnaire to determine the item content validity index (I-CVI) and then the scale validity index (S-CVI).

Phase two of this study will use a quasi-experimental, pre-post test design in which the Sparks Code Blue Questionnaire will be administered during two simulation code-blue events. Both the night and day shift will participate. Each simulation will take about 30 minutes to complete. “Simulation is rooted in adult learning theory. Three learning theories, cognitive, social, and constructivist,” (Rutherford-Hemming, 2012). Simulation will provide an environment in which the nurses can practice skills and critical thinking without fear of causing harm to a patient.

A paired t-test will be used to analyze the study data. The data will be entered into SPSS version 22 to determine the difference in confidence levels at pre/post.

Results:
For research question one the validity of the questionnaire has been tested. Each question on the questionnaire had a range in validity index (I-CVI) between .89 and 1.0. Eight questions had 100% agreement between raters and two questions had 98% agreement between raters. The questionnaire over all has an evaluated validity of (S-CVI/Ave.) of .97. This supports excellent content validity. Of the 9 nurses who evaluated the validity of the questionnaire there was an average of 10 years of experience with 6 of those years being in an ICU. Over 60% of these nurses had a BSN or higher, and 66% of these nurses hold national certifications for working in critical care settings.

The reliability is expected to be supported in the results from the code-blue simulations. “Reliability refers to the accuracy and consistency of information obtained in a study,” (Polit & Beck, 2012). We are planning on sampling 20-30 novice nurses in the MICU during our pilot study. We will also be collecting demographic data to see if there is any correlation in the demographic information and the novice nurse’s self-assessment in their confidence and ability to participate in a code-blue event.

The Likert-type scale used on the questionnaires is expected to show an increase in confidence of the novice nurse’s ability to participate in a code-blue event.

Conclusion:
The validity of the Sparks Code-Blue Questionnaire of the Novice Nurse in the ICU is strongly supported by the results from the 9 nurse’s evaluations and the I-CVI/ S-CVI data.

The practice of code-blue simulations is expected to increase confidence in our 21 novice nurses in the MICU this year. The new tool Sparks Code-Blue Ability Questionnaire of the Novice Nurse in the ICU is expected to reliably measure if the novice nurses are gaining confidence after simulation practice and in what areas confidence in their ability is lacking.

The other expectation is that future lives of patients in MICU will be saved by strong nurses are now confident in their code-blue skills.

References:

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