Addressing Self-Efficacy in Cardiovascular Emergencies

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Problem & PICOT

Problem: The new graduate nurses in this emergency department do not feel they are effectively prepared to care for their patients independently. The goal of orientation is to ensure that nurses are comfortable in their roles as there is no expectation of being an expert, but the comfort level is essential. Specifically, new graduate nurses that were interviewed identified cardiovascular emergencies as their lowest self-efficacy in an emergency to encounter.

PICOT: In the new graduate nurse and senior nursing student, does the implementation of a cardiac specific education class improve their self-efficacy managing a cardiac emergency within 30 days of completion of cardiac specific education?

Available Knoweldge & Rationale

Knowledge Retention
- Evidence of higher retention of learning through simulation-based education compared to traditional teaching.
- Multi-modality instruction of materials improved overall knowledge retention and self-efficacy after a 6-month post course evaluation was completed.
- Simulation should not be utilized as a sole teaching method and should be used as an adjunctive method.

Self-efficacy Improvement
- Simulation-based education provided positive impacts on nursing self-efficacy.
- Improved development of psychomotor, critical thinking, and teamwork skills lead to improved self-efficacy and application of didactic learning to clinical settings.

Safe Learning Environment
- A safe learning environment such as a simulation allows participants to perform tasks and make mistakes risk-free as part of the nursing learning curve.
- Critical thinking and gaining autonomy is an important aspect learning through simulations.
- Hands-on simulation training improved recognition of deteriorating patient conditions and improved critical thinking.

Rationale:
Simulation exercises will be utilized to build confidence and self-efficacy of the nurse and to provide a safe environment to build interpersonal system interactions between nurse and client. Practice in a controlled environment will encourage the participants to build their nurse-patient interactions and improve their self-efficacy in managing a cardiovascular emergency.

Methods

Intervention
- Approximately 4-hour course was created and implemented by the project coordinator. Course consisted of PowerPoint lecture, case studies, and a cardiovascular emergency simulation.
- Ideal location would have access to a simulation room but was also modified with an interactive PowerPoint for the hospital-based course.
- Ideal participant size was 4-6 individuals – hospital-based course had 3 participants and the college-based course had 7 individuals. The college-based course group was broken up into smaller groups for the simulation.

Study of Intervention
- Completed through identical anonymous online surveys prior to the course, immediately post, and 30 days post. These surveys were completed through Microsoft Forms.

Measures
- 10-question survey using a 4-point Likert scale ranging from “Strongly Disagree” to “Strongly Agree”, eliminating a ”Neither” or “Neutral” option.

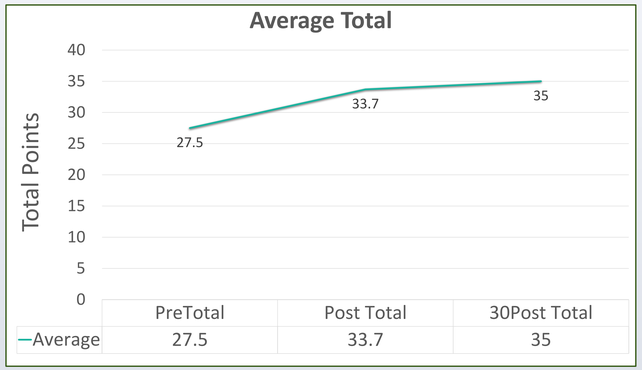
Data Analysis

- Evaluations were focused on self-efficacy in the study participants and were scored on a 4-point Likert scale.

Results

Survey Question (Likert Scale: 1 = strongly disagree, 4 = strongly agree)	Pre-Course	Post-Course	30-Day Post-Course
I can identify a normal cardiac rhythm.	3.7	3.9	3.75
I can identify an abnormal cardiac rhythm	3	3.5	3.75
I know how to manage my patient who is in supraventricular tachycardia	2.5	3.3	3.5
I know common complications of an open-heart surgery.	2.3	3.1	3.25
I can identify symptoms of a congestive heart failure exacerbation.	2.8	3.5	3.5
Understanding cardiovascular emergencies is important to my role as a nurse in the Emergency Department.	3.4	3.8	4
I can confidently be a leader in a cardiac arrest.	1.9	2.8	3
I can identify when my patient’s cardiovascular system is decompensating.	2.8	3.5	3.75
I know the appropriate nursing interventions for a patient experiencing a complete heart block.	1.9	3.1	3
Overall, I have a strong knowledge of cardiovascular emergencies.	2.3	3.2	3.5

Results continued



Discussion

Summary
Participants had an improved sense of self-efficacy when managing a cardiovascular emergency. The simulation outline was identified by faculty at the affiliated college as an excellent resource and was acquired by faculty to guide future simulations. Participants also verbalized appreciation and their desire for more specific education like the course.

Interpretation
- After analysis of the data, this course showed a significant impact on the self-efficacy of senior level nursing students and new graduate nurses in the emergency department.
- The p-value of < 0.01 indicated a significant difference between the pre-course and post-course surveys, with improved self-efficacy.
- In comparisons to the post-course and 30-day post-course data, there was no significant difference with a p-value of greater than 0.732, however there was limited participation in the 30-day post-course survey.
- The 30-day post course survey was focused on retention of self-efficacy. This indicates that participants may require frequent re-education to maintain self-efficacy. This would inspire further research into retention of self-efficacy.

Limitations
- This project was limited by number of participants, lack of concise implementation, and support of the participating hospital.
- There was one outlier for the post-course survey that answered low on all questions. It minimally affected data analysis but does pose as a limitation.

Conclusions

- Through this multi-modal course and exposure to education regarding cardiovascular emergencies the new graduate nurse and senior level nursing student had improved self-efficacy.
- Continued development of education similar to this course’ outline would be beneficial to both new graduate nurses and senior-level nursing students.