The Study of Relationship between Simulations based Training in New Hired Nurses Relevance to Critical Thinking

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Abstract:

This research aimed to study the critical thinking of 25 new hired nurses (year of service less than 12 months) who instructed by simulation based training for 3 times. The lessons be used in this research are belonged to Program for Nursing Curriculum Integration (PNCI®)

The purpose of the research is to discover the performance of nurses who passed simulation based training in 6 areas which are problem recognition, problem management-reports essential clinical data, problem management-initiates independent nursing interventions and assessments, problem management-anticipates relevant medical orders, rationale, and prioritization have relationship to simulation based training.

The research recruited 25 newly hired nurses to the simulation based training course and used High-Fidelity Human Simulation (HFHS) Assessment Tool (specific for evaluated critical thinking skill in simulation based training) to assess critical thinking from performance expression.

The result as showed that the performance of critical thinking in new hired nurses who passed simulation base training get differ from the previously.

The simulation based training has effected on performance especially related to critical thinking.

Keywords: Critical Thinking, Simulation – based Training, Newly Hired Nurse.

Introduction

Preparation of personnel for workplace and helping employees adapted to their organization could reduce turnover rates (Berkow, Virkstis, Stewart & Conway, 2009) and if applied to nurses, may improve patient safety. One of the key concepts in training nurses is to build critical thinking skills for the nurses so that they can work with

confidence and be acclimatized to the working environment and well adaptive to work simulation based training based training technique has been used to raise the critical thinking skill in nurses.

Critical Thinking has been considered as an essential competence for nurses. In the last decade, the science of critical thinking in nursing education were intensely addressed and explored different terms have been used to critical thinking e.g. clinical reasoning, clinical decision-making, and clinical judgment (Sharon, 2010).

In the present-day training, it is still usually required that nurse trainees have direct experiences under real-life situations. However, this training method puts both the nurse trainee and the patients in uncertain environments. With the development of information and communication technology (ICT) Clinical simulation has been developed for use in nursing education. Clinical Simulation could increase patient safety, while maintaining good learning experiences for the nurse trainees (Bearnson & Wiker, 2005).

With the help of ICT, the High-Fidelity Simulation (HFS) was developed by Larry Michaelson. HFS is an active term-based learning. It has been used as large-class, cased-based learning strategy that involved development of multiplex terms within a class to solve moving problem based on training cause concepts.

The HFS has been tested in an undergraduate preregistered in nursing program in a Canadian nursing school. The project developed reusable simulation resources for team-based learning for use in the test. Effectiveness of the method was evaluated by faculty and students. This team-focused learning method has been proved to be a cost-efficient strategy (Larry, Dean & Kathryn, 2008). Several positive aspect of the method was highlighted by the students, e.g. realtime change of patient status, safe environment for improving learning competency. With the rapidly-improving ICT, simulation techniques (ranging from low-to-high fidelity mannequin to complex scenario) are being used to train nurses from nurse trainees to novice nurses working in health care sector. The Human Patient Simulation (HPS) was developed for use in the training. HPS is a technology-based education tool that is based on transformative learning theory aim to transform individual meaning schemes. It provides educator with tools to authorize students to challenge their preconscious beliefs, assumptions, and values and to socialize them appropriately in clinical practice (Bernard, Muara & Cathryn, 2010). The main point of HPS is to promote transformative learning events. Debriefing is an important part of the HPS. Debriefing is to promote critical reflex on and social address that is integrate to the learning process and to the implementation of the learning scenarios. (Parker & Myrick, 2010).

Walter has developed an integrated conceptual framework that blended simulation with debriefing into the so called "PEARLS" (Promoting Excellence and

Reflective Learning in Simulation). The PEARLS framework integrates 3 common educational strategies i.e., learner self-assessment, facilitated focused discussion, and feedback information. The PEARLS debriefing tool incorporates scripted language to guide the debriefing, depending on the strategy chosen. The PEARLS framework and debriefing script fulfill the need for healthcare educators to facilitate debriefing in simulation-based educate on The PEARLS offers a structured framework adaptable for debriefing simulation with a variety in goal including clinical decision making, improve technical skills, teamwork training and inter-professional collaboration (Walter & Adam, 2015).

Nurses in graduate study the effectiveness of realized simulation to promote learning, leadership skills, and critical thinking skills. The use of simulation ensure that graduate nurse acquire clinical skills and critical thinking skills, and maintain their standardized clinical competency to promote safety and high-quality patient care.

As nurse educators are faced with increasing challenges to provide significant and real learning opportunities for both new and skills nurses (Mahmoud, 2010). Simulation-based training as teaching and learning methodology is being used in nursing care in theoretical and practical settings to provide immersive educational experiences to access and develop clinical competency promote teamwork, and improve care process, It also provides a description to integration of scenario-based program and full-scale patient simulator into nursing education programming in large academic medical center (Beth, 2009).

We intend to use simulation-based training as a strategy to transform newly-hired nurses to competent nurses in our organization

Concept theory framework

This study was to study the performance of newly hired nurses who was trained by simulation-based training in 6 areas, i.e.
- problem recognition,
- problem management-reports essential clinical data,
- problem management-initiates independent nursing interventions and assessments,
- problem management-anticipates relevant medical orders,
- rationale,
- prioritization

This study was also to determine whether theses competencies are associated with the simulation-based training.

Materials and Methods

This research study was conducted on newly hired nurses who had been working in critical care unit for less than 1 year. Nurse Manager and an instructor from training department provided a 4-month training course to transforms them from novice to advanced beginner by using Critical Care Residency Program. The research added one session of simulation-based training every week for 4 weeks, (Benner, 1982). The sessions used in the training were the Simulated Clinical Experience (SCE) from PNCI®. Before adding of the SCE, These was a self-assessment of the nurses in the 6 area as specified in the objectives, After adding the SCE sessions, final assessment was performant by the unit manager. The "Postoperative Pulmonary Embolism" was selected for the last SCE and the assessments; High-Fidelity Human Simulation (HFHS) Assessment Tool was used for each assessment.

Results

It was found that the content of the simulation was delivered effectively to the target audience. There was a high association between the problem recognition performance score and the overall critical thinking score (Cramer's V=.714. p=0.005). However, a quite low degree of association was observed between the problem management-anticipation of relevance medical orders and the overall critical thinking score (Cramer's V=.414 p=0.005). However, perior experiences before the training were not associated with the overall critical thinking score.

Conclusions and Discussion

The main purpose of competency development is to cultivate critical thinking. There are a number of tools available for evaluation of critical thinking. All of them are grounded in certain theoretical concepts. The HPS used in this study is the tool for nursing practice modified from the California Critical Thinking Disposition Inventory (CCTDI) and California Critical Thinking Skills Test (CCTST). This study demonstrated that the newly-hired nurses could be trained to increase overall critical thinking score after taking SCEs. However, due to time limitation, only short-term effects could be demonstrated. It may be necessary to study longer-term effects, e.g. at 6 and 12 months. It effective and having long-term effects the HPS may be considered as a core part in orientation program of newly-hired nurses.

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