Central Intravenous Skills Using High - Fidelity Simulation versus Traditional Methodologies in the Undergraduate Nursing Student

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Introduction

- Today’s healthcare demands, nursing shortages, and high student-to-faculty ratios require innovative methodologies that facilitate clinical reasoning and clinical judgement (Campbell & Daley, 2009).
- This study examined the use of high-fidelity simulation (HFS) on learning outcomes by incorporating the knowledge, skills, and attitudes needed to perform competent patient care.
- Participants included undergraduate nursing students who are currently enrolled in Nursing and the Adult II (NURS 355) at Nicholls State University (NSU).

Purpose

- Examine HFS versus traditional course methodologies by comparing rubric data obtained during summative evaluation of course related skills.

Theoretical Framework

- Patricia Benner’s Novice to Expert Model defines five transitional stages: novice (stage I), advanced beginner (stage II), competent (stage III), proficient (stage IV), and expert (stage V) (Butts & Rich, 2015).
- Nursing students are identified as a novice, a stage classified by being inexperienced and rigidly practicing skills according to textbook guidelines (Butts, Rich, 2015).
- Incorporation of HFS would further advance nursing students to the next phase of Benner’s model prior to graduation, which is advanced beginner.

Literature Review

- HFS is directly correlated with improved clinical reasoning, the student’s ability to link theory to practice, and the development of professional communication skills in the healthcare arena (Press & Prytula, 2018).
- Studies indicated that less than 36% of BSN graduates meet the entry-level standards needed for clinical reasoning skills and the safe delivery of care (Richardson & Claman, 2014).

Methods

- The quasi-experimental design included a control group (CG)(n = 10) and an intervention group (IG) (n = 10) randomly assigned with outcomes measured by post-test design only.
- All subjects received traditional methodologies
- The IG participated in a simulation activity on campus that was approximately two hours in duration.
- The CG practiced the same skill in the traditional laboratory setting.
- Summative evaluation of the skill will align with the mandatory check-off required for successful completion of the skill.
- An independent samples t-test was used with n=20 and α=0.05
- Scores for IG were (M=26.4, SD=1.50) and CG (M=24.2, SD=2.90) at the p<0.05 level.
- Data was statistically significant

Findings

- HFS involved assessment of an infected right subclavian triple lumen catheter and an unused port to the left chest wall.
- Total parenteral nutrition (TPN), lactated ringers, and dexamethasone were infusing to each lumen of the CVAD.
- This exercise allowed students to use clinical judgement when deciding which intervention took precedence.
- A rubric was designed and implemented for NURS 355’s CVAD skills check offs.

Implications

- Findings could be used to influence future course design in NURS 355 as well as influence future curricular changes in BSN programs.
- Strengths included conflict resolution, therapeutic communication, professional collaboration and clinical reasoning.
- Participants were able to prioritize care based on assessment data while linking theory to practice.
- The debriefing session facilitated group discussions of high level thinking and promoted engagement in course content.
- Conducting a longitudinal study would further strengthen this methodology in NURS 355 and should be considered.

Conclusions

- Contemporary nursing students are conditioned to utilize technology while multitasking and nurse educators must develop innovative methodologies that incorporate the strengths of this tech savvy generation (Campbell & Daley, 2013).
- BSN programs have the autonomy to develop simulation activities that align with the curriculum and promote achievement of learning outcomes.
- When developing a scenario, it is important to limit group size and establish a time limit.

References