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Using Simulation in Nursing Didactic Classes to Enhance Students' Critical Thinking and Knowledge

Tamera L. Ledbetter, DNP, RN, CNE

Kholoud Alharbi, MSN, RN

School of Nursing, Indiana University Kokomo, Kokomo, IN, USA

Purpose:

Abstract

The purpose of the study is to show the need for improved critical thinking in nursing students and how simulation in the didactic setting can be achieved. The National League for Nursing Accreditation Commission (1998) defined critical thinking as: "the deliberate nonlinear process of collecting, interpreting, analyzing, drawing conclusions about, presenting, and evaluating information that is both factually and belief based. This is demonstrated in nursing by clinical judgment, which includes ethical, diagnostic, and therapeutic dimensions and research." Critical thinking has been elusive to nursing students, with nursing students and new nurses having a lower ability to critically think than experienced nurses (Unver, Tastan, & Akbayrak, 2102). The new nurses' lower critical thinking abilities can lead to poor patient outcomes and errors (Caputi, 2018). Teaching nursing students critical thinking skills is achieved by allowing students to collect cues, process the cues, plan and implement interventions and then reflect on their experience (Caputi, 2018). Simulations allow the students to participate in a patient care scenario, thus collect and process the cues, plan and implement the interventions and then with the guidance of an instructor to reflect on their outcomes. Simulations are a proven method of improving critical thinking skills among nursing students (Adib-Hajbaghery & Sharifi, 2017). Simulation gives nursing students the opportunity to make and apply critical thinking skills and enhance problem-solving skills (Gamble, 2017; Ko & Kim, 2014). The passage rate of The National Council Licensure Examination (NCLEX) increases by "3.69 %" when simulation is used in the pre-licensure nursing programs (Terwilliger, 2013, p.1). The problem arises when teaching a beginning level didactic class, the students do not have any experience to draw upon and create a meaning of the information given to them. They are simply memorizing facts and then doing a memory dump.

Methods:

The research study took the students to the simulation laboratory during a didactic pharmacology class and allowed the students to experience medication administration, pre and post administration assessments and live what they were learning in class. The research was quasi-experimental and had a convenience sample. The Watson-Glaser Critical Thinking Appraisal was taken by the students prior to the four simulations and then again at the end of the semester.

Four simulation sessions will be conducted during the 16-week semester. The simulation session will be for 2 hours. They will have a 20-minute simulation with high fidelity mannequins and 20- minute debriefing session. The four simulations are 1) cardiac hypertension and hyperlipidemia, 2) cardiac MI and heart failure, 3) diabetes, 4) asthma. Simulation lab has four rooms, and six students will be in each room. The students will be rotated in and out of the simulation. When the students are not in the actual simulation lab, they will have case studies or critical thinking activities to promote critical thinking (low fidelity simulation). At the end of their course, the students' grades and test scores will be compared to the previous semester to appreciate any improvement.

Results:

A one-tailed paired t-test was done with an SPSS software. A paired-samples one-tailed t-test was conducted to compare the Watson-Glaser Critical Thinking Appraisal results before nursing students were exposed to four high-fidelity simulations to the results of the Watson-Glaser Critical Thinking Appraisal after the nursing students had simulation exposure. There was a significant difference between the scores with a $t = 1.79$ and a $SD = 4.65$. The $n = 36(35)$, and the one-tailed $P = 0.040$.

Conclusion:

Student nurses' critical thinking is improved by simulation. Although critical thinking is the first step in nursing clinical judgment, it is a vital step to help nursing students think with deliberation and as they begin their journey (Caputi, 2018). This study shows the potential to improve nursing student's critical thinking with simulation added to the didactic environment.

Title:

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Keywords:

Didactic Class, Pharmacology and Simulations

References:

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Abstract Summary:

Four high-fidelity simulations were added to a didactic pharmacology class potentially to improve critical thinking of beginning nursing students. The session will discuss how the scenarios were chosen, and mechanics of getting a class of students through the simulations within time restraints.

Content Outline:

Literature Review relevant to critical thinking

Simulation Scenarios, why specific content was chosen, example of a scenario

Mechanics of how the simulations were conducted and student learning activities when the students were not participating in the simulation

Demographics of the student population

One-Tailed Paired *t*-test results

Conclusions and recommendations

First Primary Presenting Author

Primary Presenting Author

Tamera L. Ledbetter, DNP, RN, CNE
Indiana University Kokomo
School of Nursing
Assistant Professor, Simulation Center Director
Kokomo IN
USA

Professional Experience: My DNP study was on critical thinking. This is my third research study related to critical thinking and either the nursing student or new graduate nurse.

Author Summary: Tamera Ledbetter, DNP became a nurse for 39 years ago and has spent the last 11 years as an educator. Her passion is to help nursing students transition to practice with great clinical judgment skills. She has published one article: Are technology interruptions impact your bottom line?

Second Author

Kholoud Alharbi, MSN, RN
Indiana University Kokomo
School of Nursing
Masters of Nursing Education Graduate Student
Kokomo IN
USA

Professional Experience: Simulation and critical thinking are Ms. Alharbi's expertise. She plans to continue her education and obtain her PhD in Nursing Science at Indiana University Purdue University Indianapolis.

Author Summary: Kholoud Alharbi has recently graduated with her MSN in Nursing Education from Indiana University at Kokomo. She has been accepted as a PhD student at Indiana University Purdue University Indianapolis, School of Nursing.