Nursing Education Research Conference 2020

Genomic Educational Enhancement through Simulation: A Cystic Fibrosis Scenario

Leighsa Sharoff, EdD, RN, PMHNP/CNS, AHN-BC
School of Nursing, Hunter College, NY, NY, USA

Purpose: Pre and Post assessment surveys of the genomic component integration in a Cystic Fibrosis [CF] simulation scenario exploring pre-licensure baccalaureate nursing students' self-perceived knowledge.
Methods: Three assessment surveys were utilized to glean data: nine multiple choice questions explored factual content of CF pre and post simulation; five question survey explored self-perception of knowledge and one open-ended simplified critical incident report provided qualitative data regarding the students' experience. Descriptive statistics, including frequencies and total percentage correct, was obtained from the pre and post assessment survey. Thematic interpretation of commonalities emerged with theme clustering according to conceptual similarities from the supplemental self-perception survey. Data was managed in an objective and systematic approach leading to the construction of correlating suppositions. Initially, several clusters were identified, and these were eventually collapsed into the four expounding themes.
Results: Twenty-four pre-licensure third year nursing students participated (three groups of eight students). All participants agreed that their understanding of the genetic component of CF improved post simulation. Five questions had 100% correct responses for all three groups both pre/post assessment while three questions showed improvement in correct responses post simulation. One question in one group [n=1] had a decline in correct response post simulation though total number of post correct responses overall for all three groups improved [n=19]. Self-perception of knowledge after simulation data showed majority of students (91.7%; SD=4.32) agreed their understanding of the genetic component improved; all participants agreed their ability to provide information was satisfactory; level of understanding was appropriate to provide effective and efficient nursing care; majority agreed their critical thinking skills and clinical judgment improvement (91.7%). Four super-ordinate themes emerged pertaining to genomic integration into simulation: genomics and nursing; patient education; teamwork exercise and patient-nurse relationship. Each major theme had three sub-themes identified, ranging from experience, confidence, applying patient-centered care and education, teaching and communication to group interaction, advocacy and empathy.
Conclusions: An effective and innovative teaching strategy is the integration of a simulated hospitalized patient with Cystic Fibrosis requiring patient care and genetic education, immersing pre-licensure baccalaureate undergraduate students in a realistic clinical situation, promoting critical thinking and patient education while augmenting students perceived genomic knowledge. Adapting simulation scenarios to meet student educational outcomes requires nurse educators to be creative and innovative in their approach to the inclusion of required competencies, while ensuring optimal health outcomes.

Title:
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Keywords:
Genomic knowledge, Nursing Education and Simulation

Abstract Summary:
How a genetic component in a Cystic Fibrosis simulation scenario enhanced pre-licensure baccalaureate nursing students' self-perceived ability to integrate genomics into their knowledge base of nursing and nursing care.

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First Primary Presenting Author
Primary Presenting Author
Leighsa Sharoff, EdD, RN, PMHNP/CNS, AHN-BC
Hunter College
School of Nursing
Associate Professor
New York, New York
USA

Author Summary: Dr. Leighsa Sharoff is an Associate Professor and Simulation Coordinator at Hunter College in New York City. She has presented nationally and internationally on integrating concepts of holistic nursing, simulation, technology and genetics in nursing curricula, from baccalaureate to doctoral programs.