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Standardized Patient Simulation as an Active Learning Strategy in Oncology Symptom Management: A Pilot Study

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Background and Significance: More people are surviving cancer and living with the long-term and late effects of the disease and its treatments. Consequently, nurses in all healthcare settings will provide care for patients with or surviving cancer (Komprood, 2013). The management of symptoms related to cancer and its treatments is a core role of the oncology nurse (Brown, 2015). Poorly managed cancer-related symptoms have been associated with negative clinical outcomes, such as a decline in functional status, poor quality of life, and even reduced overall survival (Dodd et al., 2010; Franceschini et al., 2013; Ryu et al., 2010). New nurses do not have the specialized knowledge or skills required to effectively care for cancer patients (Kuhrik et al., 2008) as oncology content taught in undergraduate nursing curricula is often limited to ensuring minimal safety standards necessary for entry to practice (Simmers, 2014). Consequently, it is a major challenge for nurse educators today to prepare baccalaureate nursing students with the evidence-based knowledge and skills required to effectively manage the complexities of symptom management in oncology clinical practice.

The use of simulation, as an active teaching strategy, has been found to be effective in enhancing the development of Registered Nurses' knowledge, skills, and attitudes needed to provide high-level, holistic, evidence-based nursing care to cancer patients and their families (Komprood, 2013; Simmers, 2014). One type of simulation is Standardized Patient (SP) simulation. SP simulation involves the use of trained actors to portray the patient in a simulation-based learning activity, thus allowing students to practice communication and psychomotor skills in a simulated clinical environment (Gliva-McConvey, n.d.). SP simulations allow students to practice addressing sensitive patient issues in a safe environment (Becker et al., 2006). SP simulations have been successfully implemented in medical education to support student learning of communication techniques and to provide students with an opportunity to practice conveying bad news to oncology patients (Eid, Petty, Hutchins, & Thompason, 2009; Kiluk, Dessureault, & Quinn, 2012). However, no researchers have examined the effectiveness of SP simulation in assisting undergraduate nursing students in applying knowledge and skills learned in the classroom to oncology symptom management practice.

Purpose: The purpose of this pilot study was to evaluate the effectiveness of SP simulation, as an active learning strategy, in enhancing senior baccalaureate nursing students' ability to connect evidence-based knowledge and skills gained in theory learning sessions to oncology symptom management practice.

Research Questions: 1. What is the effect of SP simulation, as an active learning strategy, on senior baccalaureate nursing students' a) competence; b) confidence; and c) knowledge related to evidence-based, oncology symptom management? 2. What are senior baccalaureate nursing students' a) perceptions of and b) satisfaction and self-confidence in SP simulation, as an active learning strategy, to apply evidence-based, oncology symptom management knowledge and skills?

Methods: A longitudinal, mixed-methods design was used to conduct this pilot study at a mid-sized Catholic university in the northeastern United States. The pilot study was conducted during the spring semester of 2017 with a cohort of senior baccalaureate nursing students enrolled in a seven week seminar in evidence-based, oncology symptom management. Institutional Review Board approval was obtained for this pilot study.

The overall goal for the development of the SP simulation was for students to apply evidence-based assessment, counseling, and education knowledge and skills learned in the theory learning sessions in a simulated outpatient oncology setting. Two 20-minute SP simulation scenarios were developed: 1) chemotherapy in colorectal cancer, and 2) radiation therapy in breast cancer. Students participated in each SP simulation scenario in groups of 4 to 5 as either a Registered Nurse or observer. Each simulation was followed by a 40-minute debriefing session using the Debriefing for Meaningful Learning (DML) approach (Dreifuerst, 2012). Both SP simulation scenarios underwent two person expert review for both oncology content and simulation pedagogy prior to implementation.

Data collection occurred at three study time points: T1) pre-learning sessions, T2) pre-SP simulations, and T3) post-SP simulations. A 24-item, researcher-developed instrument was used to measure students' knowledge, confidence, and self-reported competence in oncology symptom management at all three study time points (T1-T3). The National League for Nursing's (NLN's) Student Satisfaction and Self-Confidence in Learning Tool (Jeffries & Rizzolo, 2006) was used to measure student satisfaction and self-confidence in learning with the SP simulations at T3. Nine researcher-developed questions (4 open-ended and 5 Likert-style questions) were used to gain further insight into students' satisfaction with and perceptions of the SP simulations at T3. Quantitative data were analyzed using descriptive statistics and Repeated Measures Analysis of Variance (RM-ANOVA) with post-hoc pair-wise comparisons of mean differences adjusted for multiple comparisons using the Bonferroni correction. Qualitative responses to open-ended questions were analyzed for themes using conventional content analysis.

Results: For this pilot study, the sample consisted of one section of senior seminar students (N=9). All students were female with a mean age of 21.0 years old. The majority of students were White (77.8%) and Non-Hispanic / Non-Latino (88.9%). There was a statistically significant increase in student's self-perceived competence over time [$F(2,16) = 23.21, p < 0.001$] with mean post-SP simulation competence scores (T3) demonstrating a significant increase from pre-learning session (T1) ($p = 0.001$) and pre-SP simulation (T2) ($p = 0.003$). Similarly, there was a statistically significant increase in student's confidence over time [$F(1.2, 9.8) = 18.27, p = 0.001$] with post-SP simulation student confidence scores (T3) demonstrating a significant increase from pre-learning session (T1) levels ($p = 0.001$) and pre-simulation (T2) levels ($p = 0.002$). Student mean knowledge scores increased over time; however differences in these scores did not achieve statistical significance ($p = 0.345$). Students reported a high-level of satisfaction ($M = 23.40 + 2.07 [20-25]$) and confidence ($M = 36.20 + 3.56 [32-40]$) in learning with the SP simulations. Analysis of open-ended responses resulted in three qualitative themes: realistic application, enjoyable and helpful, and suggestions for improvement.

Discussion: Findings from this pilot study provide preliminary evidence that SP simulation may enhance student self-perceived competence and confidence related to evidence-based oncology symptom management. Findings also suggest that SP simulation increased students' satisfaction with and confidence in learning in this population. Thus, SP simulation holds promise as an active teaching strategy to enhance undergraduate student learning of evidence-based, oncology symptom management knowledge and skills. Although, it must be noted that due to the small and homogeneous sample, the findings from this pilot study must be interpreted with caution. Further research is warranted to definitively determine the effect of SP simulation on senior baccalaureate nursing students' ability to apply evidence-based knowledge and skills gained in theory learning sessions to oncology symptom management practice.

Title:

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Keywords:

Oncology Symptom Management, Standardized Patient Simulation and Undergraduate Nursing Students

References:

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Abstract Summary:

This presentation will describe the development of and findings from a pilot study that evaluated the effectiveness of standardized patient simulation, as an active teaching strategy, in enhancing senior

baccalaureate nursing students' ability to connect evidence-based symptom management knowledge and skills gained in theory learning sessions to oncology clinical practice.

Content Outline:

- I. Background & Significance
- II. Purpose
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- V. Methods:
 - a. Simulation Development
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 - c. Simulation Evaluation
 - i. Data Analysis
- VI. Findings:
 - a. Sample Characteristics
 - b. Student Competence, Confidence, and Knowledge
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- VII. Discussion:
 - a. Limitations
 - b. Nursing Implications
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- IX. References
- X. Acknowledgements

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Professional Experience: Employment: 2015 - Present -- Assistant Professor, College of Nursing, Villanova University, Villanova, PA. 2014 - 2015 -- Assistant Clinical Professor, Rutgers University, Camden, NJ. 2004 - 2014 -- Clinical Instructor, Rutgers University, Camden, NJ. 1998 - 2014 -- Registered Nurse, Surgical Oncology, Thomas Jefferson University Hospital, Philadelphia, PA. Selected Professional Service / Accomplishments: 2017 -- Present -- Secretary, Alpha Nu Chapter, Sigma Theta Tau International. 2016 -- Present -- Secretary, Penns Wood Chapter, Oncology Nursing Society. 2016 -- Co-Principal Investigator, Villanova Institute for Teaching and Learning Grant, Villanova University. 2015 - - Distinguished Dissertation Award, College of Nursing, Villanova University. 2013 -- Teaching Excellence Award, School of Nursing-Camden, Rutgers University. 2011 -- American Cancer Society, Doctoral Scholarship in Cancer Nursing. 2010 - 2104 -- President, Eta Mu Chapter, Sigma Theta Tau International. Summary of Expertise: Surgical oncology nurse for 19 years; academic nurse educator for 12 years; presented nationally and internationally on cancer-related symptoms and quality of life; and co-authored several manuscripts on cancer-related topics.

Author Summary: Dr. Burrell is an Assistant Professor in the College of Nursing at Villanova University. She is a Certified Nurse Educator with 12 years of experience as an academic nurse educator. She also has 19 years of experience as a surgical oncology nurse and 7 years of experience as nurse researcher. Dr. Burrell has presented nationally and internationally about cancer-related symptoms and quality of life and co-authored several manuscripts on various cancer-related topics.

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