EXPERIENCE EXCHANGE

Home health simulation: Helping students meet the changing healthcare needs

Teresa Gore,* Rebecca Lutz, R. Oscar Bernard, Ivonne F. Hernandez

College of Nursing, University of South Florida, Tampa, Florida, United States

ABSTRACT

Background/Objective: Nursing education has traditionally educated students in an acute care setting. However, recent trends in health care delivery models have moved the care of clients to a variety of out-patient settings. For the role of the nurse educator to transform, the curriculum must be able to expand beyond just the hospital-based focus to also include a community-based focus. To meet this demand, the College of Nursing faculty created a geriatric home care simulation to enhance the students' experiences of providing care beyond the hospital setting to this growing population.
Methods: A gap analysis of current simulations imbedded within the curricula identified the need for a community-based simulation and a geriatric home care simulation was chosen. The American Association of Colleges of Nursing Essentials of Baccalaureate Education and Recommended Baccalaureate Competencies and Curricular Guidelines for the Nursing Care of Older Adults were used as the framework for the analysis.
Results: This simulation was designed as an interactive, low-stakes experience since many students lacked the opportunity to experience this unique clinical care setting. This article describes the development of the simulation, specific content objectives and outcomes, summary of the reactions of the students and faculty, as well as revisions and closing reactions.
Conclusions: Nursing education has historically focused on acute care and now nursing students must be able to care for clients in a variety of out-patient settings, while focusing on the management of chronic diseases, promoting wellness and disease prevention. The future of nursing education will continue to require that faculty members explore innovative solutions to meet the educational needs of students, while balancing the health care needs of various populations and our changing health care delivery systems.

Key Words: Community, Home health, Simulation, Geriatric population

1. INTRODUCTION

With the movement away from fee-for-service to the "triple aim"[1] of improving the health of the population, reducing per capita costs, and improving patient experience, care delivery in the United States (U.S.) is undergoing tremendous change. The impetus for this change is based on the aging of the population, a focus on patient safety, and evolving healthcare delivery system as identified by the Institute of Medicine (IOM) Future of Nursing Report.[2] Analysis of data from the most recent U.S. Census in 2010 offers insight into demographic changes within the older population. The percentage of the population over 65-year-old continues to increase and Florida remains the state with the highest percentage of older adults over 65.[3] In the 10 years from 2000 to 2010, those over 65 increased from 35.0 million to 40.3 million.[4] Centenarians increased from 32,194 in 1980 to

53,364 in 2010.[4] In addition to an aging population and patient safety concerns, the shift also included developing geriatric workforce training programs (Geriatric Workforce Enhancement Programs) to expand comprehensive primary care, through medical care homes, community health care centers, and enhanced coverage for preventable care service.[5] To promote older adults' wellness, prevent disease, and manage chronic conditions better, the role of the nurse educator must also change to better prepare nurses to enter the workforce and care for the aging population.[2]

Background/literature review

In the past nursing education focused on the acute care setting. Now, nursing students must be able to meet the care needs of clients in a variety of out-patient settings. To meet this demand, nursing education must transform to fully prepare students to meet the upcoming workforce and community demands.[6] This reform requires a shift from acute care to prevention and treatment of chronic care conditions in order to promote wellness, prevent disease, and more effectively manage chronic conditions. This reformation is also paramount because nurses must function as members of inter-professional teams and embrace information technology.[7] Nurse educators must change the method of educating future nurses to ensure safe and effective practitioners.[8]

For the role of the nurse educator to transform, the curriculum must be able to expand beyond just the hospital-based focus to also include a community-based focus. This change will allow the profession of nursing to thrive instead of struggle during the continued years of health care reform.[7] One way to help create this change is to expand the simulation learning experience beyond the hospital bedside. Designing simulation scenarios that embrace community-based settings will more holistically embody the shift from a disease-focused mindset to one that promotes wellness and prevents disease.[9] Simulation in the community setting has been evaluated by students as a valuable experience that increased their confidence.[9, 10] Dieselhorst and Wyss embedded community nursing simulation curriculum with four themes: a) care of the individuals in the community, b) care of aggregates in the community, c) care of vulnerable populations in the community, and d) health of community (pg. e447).[11]

Community simulations have been developed with varying levels of fidelity using manikins and standardized patients. Standardized patients were perceived by the students as the most realistic for the community setting.[9, 12] Simones also addressed the environmental fidelity for a community setting to increase realism.[10] Improving environmental fidelity was accomplished through the use of props, such as, food, ashtrays, alcoholic beverages, food, furniture, throw rugs

and clothes on the manikins. The use of environmental fidelity helped optimize student learning by immersing the students in the experience. In order to achieve the desired outcomes, the simulation plan must include: scripts, staff development and orientation, execution of the simulation and evaluation.[12]

As part of the National Council of State Boards of Nursing (NCSBN) National Simulation Study,[13] community simulations were used as a substitute for some of the clinical rotations. Seven simulated patients were selected with some unfolding case studies to provide a total of 12 simulation scenarios. This study included stations in addition to the simulation scenarios such as sensory game challenge, heart and lung sounds, documentation, medication reconciliation activity, and home safety evaluation.[14] Husson and colleagues identified challenges when substituting community simulation as clinical hours, especially when it occurs over multiple clinical days.[14] Some of the challenges identified were the number of faculty and staff members required to implement the simulation, recruitment and training of volunteer standardized patients, time and availability of the simulation spaces, storage of the community props, and providing a clinical make up day if a student was absent.

The NCSBN provides nurse educators with six broad guidelines to direct implementation of simulation within the curricula.[15] These guidelines include: commitment on the part of the school for the simulation program; appropriate facilities for conducting simulation; educational and technological resources; equipment to meet the intended simulation objectives; lead faculty and simulation laboratory personnel qualified to conduct simulation; faculty prepared to lead simulations; and an understanding of policies and processes for the simulation experience. By following these guidelines, simulation facilitators incorporate best practices in the development, implementation, and evaluation of simulation experiences.

Criteria for developing purposeful simulations guide nurse educators in the pre-work necessary to develop scenarios that promote desired outcomes while meeting curricular objectives.[16] Criteria include an analysis of current curricula and community needs, the development of desired objectives and outcomes, maintaining simulation fidelity and design including prebriefing and debriefing, as well as the ability to pilot and analyze the scenario prior to full integration.[16]

2. METHODS

We reviewed the baccalaureate curriculum to identify gaps and to enhance content with the broader goal of advancing geriatric competencies among undergraduate nursing

students.[17] A crosswalk of the American Association of Colleges of Nursing (AACN) Essentials of Baccalaureate Education for Professional Nursing Practice and Recommended Baccalaureate Competencies and Curricular Guidelines was conducted to identify gaps in the undergraduate curriculum that could be met with simulation. An analysis of current simulations imbedded within the undergraduate curriculum identified the need for a geriatric community-based simulation. The AACN Essentials of Baccalaureate Education[18] and Recommended Baccalaureate Competencies and Curricular Guidelines for the Nursing Care of Older Adults[19] were the framework for the analysis. Subject matter experts collaborated in the development and implementation of the pilot simulation. The team designed the simulation to be a for-

mative experience rather than a summative evaluation since many students lacked the opportunity to experience a home health visit in their clinical rotation. Objectives and outcomes were based upon the identified gaps from the curricular mapping to meet required student learning outcomes. The team used the college of nursing's modified National League for Nursing (NLN) Simulation template that included a script, phases, stages, and debriefing that incorporated The International Nursing Association for Clinical Simulation and Learning (INACSL) Standards of Best Practice: Simulation DesignSM.[16] As part of designing the simulation, the team tested it by conducting a rehearsal to ensure the intended objectives would be met. Table 1 reflects the crosswalk and how the simulation helps narrow the gaps identified.

Table 1. Community health simulation crosswalk

Simulation Learning Objectives	AACN Essentials of Baccalaureate Education for Professional Nursing Practice	Recommended Baccalaureate Competencies and Curricular Guidelines for Nursing Care of Older Adults
1. Recognize interaction of foods and drugs related to the home health patient scenario (turnip greens with warfarin, grapefruit juice with cholesterol medication).	Essential I Essential VII Essential VIII Essential IX	Competency 1 Competency 2 Competency 14 Competency 19
2. Evaluate and educate patient about sodium intake in relation to the Congestive Heart Failure diagnosis (tomato soup, ramen noodles).	Essential II Essential III Essential VII Essential IX	Competency 2 Competency 4 Competency 7 Competency 8 Competency 15 Competency 17
3. Perform a safety assessment of the patient's environment (throw rug as trip hazard, cigarettes, grandchild playing with electrical cord, and cat litter box needs cleaning).	Essential I Essential III Essential VII Essential IX	Competency 4 Competency 5 Competency 6 Competency 8 Competency 15 Competency 17 Competency 18 Competency 19
4. Educate patient on disease processes (Congestive Heart Failure, Atrial Fibrillation, Hypertension, and Dyslipidemia).	Essential I Essential V Essential VII Essential VIII Essential IX	Competency 5 Competency 8 Competency 18 Competency 19

2.1 Simulation scenario

The purpose of the simulation scenario was to meet the needs for care outside the hospital setting for a geriatric patient incorporating the NCLEX-RN test plan categories and subcategories. Health promotion, reduction of patient risk, safety, and infection control were the major drivers identified by faculty to prepare future baccalaureate nurses. The simulated

patient in the scenario was designed to be representative of those with chronic disorders requiring ongoing management. The summary of the case is a 73-year old patient with a history of Congestive Heart Failure (CHF), Atrial Fibrillation (AFib), Hypertension (HTN), and Dyslipidemia. The health-care provider has been concerned about her medication and dietary compliance due to multiple exacerbations of CHF

in the last several months. A home health visit has been ordered to evaluate her living conditions and medical compliance. The simulation learning objectives were: 1) recognize medication interactions with other medications and dietary intake, 2) conduct dietary education, 3) perform environmental assessment, and 4) educate patient on disease processes. The simulation specific objectives were: 1) recognize interaction of turnip greens with warfarin or grapefruit juice with cholesterol medication, 2) evaluate and educate about sodium intake with CHF (tomato soup, Ramen noodles), 3) perform a safety assessment of environment, 4) educate patient on disease processes (CHF, A Fib, HTN, and Dyslipidemia), medications and lifestyle choices impact on the diseases, and 5) notify healthcare provider of assessment findings using Situation, Background, Assessment, and Recommendations (SBAR).

Each simulation scenario was planned to include four students and a facilitator. The simulation was replicated in three areas of the lab to run concurrently. The static mannequin was placed in an armchair wearing street clothes. The home environment focused on safety and medical concerns. To increase the realism, environmental props were incorporated. These included area rugs, extension cords, cigarettes, empty alcohol containers, prescription bottles, food, and a neglected cat litter box. A planned debriefing was constructed into the simulation experience.

This simulation experience was incorporated into the Community Nursing Course and was implemented as part of the clinical health requirement in summer 2016 (n = 76), Fall 2016 (n = 41), and spring 2017 (n = 27). The simulations occurred over one to two days within a seven-day time period each semester depending on the number of students enrolled in the course. The students self-selected the simulation date, time, and student team members.

2.2 Student feedback

Debriefing occurred immediately following the simulation with faculty members that facilitated the simulation. One of the team faculty was assigned to write down student comments during the debriefing. Student feedback was then analyzed for common threads. The most common feedback from the students was the reality of the simulation and being outside of their comfort zone of hospital based care.

Debriefing focused on the patient complexity for medications and dietary interactions, home safety, the role of the nurse, and managing difficult conversations. Students mentioned: 1) this was the first time the patient was sitting up and dressed in regular clothing during a simulation, 2) the condition of the patient's home caused them to question what their

role might be in decreasing safety hazards within the home, and 3) they had difficulty initiating and maintaining crucial conversations regarding lifestyle choices and the effects of these choices on health. The team conducted a plus/delta debriefing at the end of the simulation experience.

The Simulation Facilitator Evaluation (SaFE) tool and the Simulation Effectiveness Tool – Modified (SET-M) were used to evaluation the facilitators and effectiveness of the simulation. The SaFE was developed within the institution for students to provide an evaluation of the simulation facilitator. The SET-M19 tool had an internal consistency that was acceptable (α = .833). The internal consistency reliability was acceptable (α = .852). These tools were provided using an online survey program. Unfortunately, as common with online survey, we had a low response rate (n = 7). The overall SaFe tool averaged 4.29 on a scale of 1-5. The overall SET-M tool averaged 2.91 on a scale of 1-3.

2.3 Revised simulation

The simulation was viewed as a positive learning experience for students. During a debriefing of the faculty and staff involved in the simulation, several components of the simulation were identified as needing improvements. The major component was improving the environmental fidelity. The students were very aware of the food-drug interaction because the items were in the open on a table. The solution was to make a cabinet with doors out of a box and legal paper to look like a cabinet, a sink and faucet, and a television. This was incorporated in fall 2016.

Another improvement made to the simulation was enhanced sensory integration by using odors that nurses experience in home health settings. Cigarette butts were obtained and stored in plastic bags then placed in ashtrays in the simulation room. The litter box had an increased amount of ammonia added to simulate cat urine. This was incorporated in fall 2016.

The nursing lab underwent a major revision during the end of 2016. Based on feedback and the changing healthcare environment, one room was designated as a home health room as an efficiency apartment. This room was used for the spring 2017 students.

3. RESULTS

After spring 2017, the team confirmed the revised simulation was effective for student learning of older adult competencies and to narrow the gap in our curriculum. Both faculty and students viewed the simulation as a positive learning experience. The major thread identified was total immersion. Students stated this was the best simulation they had participated in

nursing school. Several students stated they forgot this was a simulation. The faculty stated they observed students closing the paper doors on the box cabinet after viewing the food present. All involved verbalized the smells added to the believability of the environment.

4. CONCLUSION

The simulation met the identified objectives and was viewed as successful by the faculty. This simulation experience incorporated 12 of the 19 geriatric competencies for the baccalaureate prepared nurse.[20] In addition, this simulation met two of the required clinical hours for community health students. Future planning will include incorporating this simulation in future semesters. The home health care simulation can easily be reproduced with faculty or student peers as the voice of the patient. Faculty members must continue to explore innovative solutions in meeting the health care needs of an aging population with safe and efficient care transitioning from the hospital.

CONFLICTS OF INTEREST DISCLOSURE
The authors declare that there is no conflict of interest.

REFERENCES

[1] Berwick D, Nolan TW, Whittington J. The triple aim: care, health, and cost, Health Aff. 2008 May; 27(3): 759-769. PMid:18474969 https://doi.org/10.1377/hlthaff.27.3.759

[2] Institute of Medicine. The future of nursing: leading change, advancing health. Washington (DC): The National Academies Press; 2011. 10 p. Available from: http://www.nationalacademies.org/hmd/Reports/2010/The-Future-of-Nursing-Leading-Change-Advancing-Health.aspx

[3] Hyer K, MacDonald G, Black K, et al. Preparing for Florida's Older Adult Population Growth with user-friendly demographic maps. Florida Public Health Review. 2017; 13, 143-154.

[4] Myer J. Centenarians: 2010. Washington (DC): U.S. Government Printing Office; 2012. 1 p. Available from: https://www.census.gov/content/dam/Census/library/publications/2012/dec/c2010sr-03.pdf

[5] Health Resources & Services Administration: Geriatrics Workforce Enhancement Program. Available from: https://bhw.hrsa.gov/fundingopportunities/default.aspx?id=9f260dcc-0978-4c96-8a57-e0a767840ef0

[6] Kunic RJ, Jackson D. Transforming Nursing Practice: Barriers and Solutions. AORN Journal. 2013 Sep; 98(3): 235-248. PMid:23978174 https://doi.org/10.1016/j.aorn.2013.07.003

[7] Buerhaus PI, DesRoches C, Applebaum S, et al. Are nurses ready for health care reform? a decade of survey research. Nurs Econ. 2012 Nov-Dec; 30(6): 318-329, quiz 330.

[8] Benner P, Sutphen M, Leonard V, et al. Educating nurses: A call for radical transformation. Stanford (CA): Jossey-Bass; c2010.

[9] Kim-Godwin YS, Livsey KR, Ezzell D, et al. Home visit simulation using a standardized patient. Clin Simul Nurs. 2013 February; 9(2), e55-e61.

[10] Simones J. Creating a home care simulation laboratory. J Nurs Educ. 2008 March; 47: 131-133. PMid:18380267 https://doi.org/10.3928/01484834-20080301-08

[11] Distelhorst KS, Wyss LL. Simulation in community health nursing: A conceptual approach. Clin Simul Nurs. 2013 October; 9(10): e445-e451. https://doi.org/10.1016/j.ecns.2012.07.208

[12] Yeager ST, Gotwals B. Incorporating High-fidelity Simulation Technology into Community Health Nursing Education. Clin Simul Nurs. 2010; 6(2): e53-e59. https://doi.org/10.1016/j.ecns.2009.07.004

[13] Hayden J, Smiley RA, Alexander M, et al. The NCSBN national simulation study: A longitudinal, randomized, controlled study replacing clinical hours with simulation in prelicensure nursing education. J Nurs Regul. 2014 July; 5(2S): S3-S64.

[14] Husson NM, Zulkosky K, Fetter M, et al. Integrating community health simulation scenarios: experiences from the NCSBN national simulation study. Clin Simul Nurs. 2014 November; 10(11): 581-586.

[15] Alexander MA, Durham CF, Hooper JI, et al. NCSBN simulation guidelines for prelicensure nursing education programs. J Nurs Regul. 2015 October; 6(3): 39-42.

[16] INACSL Standards Committee. INACSL standards of best practice: SimulationSM Simulation Design. Clin Simul Nurs. 2016 December; 12(S): S5-S12.

[17] Michael M, Wilson C. Application of Curriculum Mapping Concepts to Integrate Multidisciplinary Competencies in the Care of Older Adults in Graduate Nurse Practitioner Curricula. Poster presented at: American Geriatrics Society Annual Conference; 2017 May, San Antonio, TX.

[18] American Association of Colleges of Nursing. The essentials of baccalaureate education for professional nursing practice. 2008 [cited 2017 June 1]. Available from: http://www.aacn.nche.edu/education-resources/BaccEssentials08.pdf

[19] Leighton K, Ravert P, Mudra V, et al. Update the Simulation Effectiveness Tool: Item modifications and reevaluation of psychometric properties. Nurs Educ Perspect. 2015 September; 36(5): 317-323.

[20] American Association of Colleges of Nursing. Recommended baccalaureate competencies and curricular guidelines for the nursing care of older adults: A supplement to the essentials of baccalaureate education for professional nursing practice. 2010 [Cited 2017 June 1]. Available from: http://www.aacn.nche.edu/geriatric-nursing/AACN_Gerocompetencies.pdf