Interprofessional training enhances collaboration between nursing and medical students: A pilot study ☆

Florence E. Turrentine [a,*], Karen M. Rose [c,1], John B. Hanks [a,2], Breyette Lorntz [c], John A. Owen [c,3], Valentina L. Brashers [c,4], Erika E. Ramsdale [b,5]

[a] University of Virginia, Department of Surgery, Box 800709, Charlottesville, VA 22903, United States
[b] Department of Medicine, Emily Couric Cancer Center, Charlottesville, VA 22903, United States
[c] School of Nursing, McLeod Hall 4012, Charlottesville, VA 22903, United States

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ABSTRACT

Background: Effective collaboration among healthcare providers is an essential component of high-quality patient care. Interprofessional education is foundational to ensuring that students are prepared to engage in optimal collaboration once they enter clinical practice particularly in the care of complex geriatric patients undergoing surgery.

Study Design: To enhance interprofessional education between nursing students and medical students in a clinical environment, we modeled the desired behavior and skills needed for interprofessional preoperative geriatric assessment for students, then provided an opportunity for students to practice skills in nurse/physician pairs on standardized patients. This experience culminated with students performing skills independently in a clinic setting.

Results: Nine nursing students and six medical students completed the pilot project. At baseline and after the final clinic visit we administered a ten question geriatric assessment test. Post-test scores (M = 90.33, SD = 11.09) were significantly higher than pre-test scores (M = 72.33, SD = 12.66, t(14) = −4.50, p < 0.001. Nursing student post-test scores improved a mean of 22.0 points and medical students a mean of 11.7 points over pre-test scores.

Analysis of observational notes provided evidence of interprofessional education skills in the themes of shared problem solving, conflict resolution, recognition of patient needs, shared decision making, knowledge and development of one's professional role, communication, transfer of interprofessional learning, and identification of learning needs.

Conclusions: Having nursing and medical students "learn about, from and with each other" while conducting a preoperative geriatric assessment offered a unique collaborative educational experience for students that better prepares them to integrate into interdisciplinary clinic teams.

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1. Introduction

Effective collaboration among healthcare providers is an essential component of high-quality patient care. Interprofessional education (IPE) is foundational to ensuring that students are prepared to engage in optimal collaboration once they enter clinical practice. Collaboration among interdisciplinary teams is of particular importance in the care of complex geriatric patients undergoing surgery (Mion et al., 2006). The patient's preoperative assessment, which in part determines the composition of the interdisciplinary perioperative team, underscores the importance of effective healthcare provider collaboration.

Currently several comprehensive IPE simulation experiences are taught at the University of Virginia (UVA). We wanted to enhance the transfer of learning by moving the learning experience from a controlled simulation setting into a workplace clinical environment. To accomplish this goal, clinicians first modeled the desired behavior and skills needed for interprofessional preoperative geriatric assessment for the students, followed by an opportunity for the students to practice these skills in nurse/physician pairs on standardized patients. This educational experience culminated with the students performing these skills in a clinic

setting. Having medical and nursing students "learn about, from and with each other" (World Health Organization, 2010) while conducting a thorough preoperative geriatric assessment offered a unique collaborative educational experience for students that better prepares them to integrate into interdisciplinary clinic teams.

2. Methods

Fourth year nursing and medical students were invited to participate in this pilot project. At this point in their training, nursing students have completed Clinical and Interactive Skills courses and medical students have completed their surgical clerkship, preparing them for interaction in the clinical setting. However, nursing and medical students are taught these skills independently and therefore may not be prepared to perform assessments that draw on other disciplines' expertise in the clinical setting.

Fourth year nursing students received an invitation to participate from their program director and medical students were contacted by their resident coordinator. To incentivize participation, and as remuneration for time, we offered refreshments, $150 payment to complete the project, and a drawing at the completion of the study for accommodations to an IPE focused conference for one nurse and one medical student. We issued an open invitation and specified that walk-ins would be included, but requested a response to confirm participation. All students who attended the first session had responded with their interest. This was the only opportunity offered for study enrollment.

An initial education session was led by an IPE trained, doctoral prepared nursing educator and a physician educated in an IPE focused curriculum. A doctoral prepared qualitative nurse researcher observed the students throughout the study and recorded observations. The session began with an icebreaker where students were asked to introduce themselves to someone from a different discipline and share what attracted them to their profession. A brief ten question geriatric knowledge pre-test was administered. The pre-test and post-test were validated by content experts who were members of our institution's interdisciplinary Nurses Improving Care for Healthsystem Elders (NICHE) Steering Committee. This Steering Committee consists of geriatric experts from nursing, physical therapy, occupational therapy, social work, nutrition, pharmacy, quality improvement, research, education, and administration.

Students then observed the geriatric assessment videotape we created to model collaborative behavior and teach geriatric assessment skills, available at https://vimeo.com/77789688 (Turrentine et al., 2013). The video showed geriatric experts from medicine and nursing, collaboratively performing the American College of Surgeons' (ACS)/American Geriatrics Society Preoperative Assessment of the Geriatric Surgical Patient (American College of Surgeons National Surgical Quality Improvement Program, 2013) on a standardized patient. Several IPE skills were selected for focused presentations during the pilot project; instructors led the discussion with the emphasis on IPE skills of shared problem solving, conflict resolution, recognition of patients' needs, shared decision making, knowledge and development of one's professional role, and communication. The workshop ended with students completing an evaluation of the educational session.

Two two-hour sessions in the Clinical Skills Laboratory were offered for nursing and medical student pairs to work with clinical mentors to complete an interprofessional practice session on three standardized patients exhibiting mild dementia, Parkinson's disease, and frailty, respectively. Experts from different disciplines emphasized profession-specific skills; the physical therapist reviewed gait assessment; the occupational therapist reviewed use of the dynamometer to assess grip strength; the social worker reviewed resources for family and evaluation of post-discharge support; and the pharmacist reviewed medications. An on-line copy of the ACS geriatric assessment guidelines was made available to students. Also, a condensed guide was created for students' reference and for note taking while conducting the assessment.

For the next phase of the project, the clinic schedule was retrieved from the electronic medical record and appropriate patients were selected and confirmed with the clinic nurse and physician. Signup Genius (SignUp Genius, 2014) was used to post available medical student and nursing student clinic slots. Students could sign up individually or partner with a student from another discipline. The day before the appointment the clinic nurse was contacted to confirm that there had not been any schedule changes.

Students arrived at the geriatric oncology clinic and reviewed the patient's history and medication list with the attending physician and clinic nurse. Individually or in nurse/physician pairs, the students then conducted the Preoperative Assessment of the Geriatric Surgical Patient on patients who consented to participate in the project. The same geriatric clinic nurse supervised all students while performing their assessments.

After completing the assessment, students independently presented their recommendations to the attending physician. Students were asked to evaluate their own performance, identify areas for growth, and encouraged to ask questions. After the discussion and response to questions, students took the post-test and completed the final evaluation. Upon completion of the evaluation the students' names were submitted to receive payment of $150 for their participation. The project protocol was submitted to our Internal Review Board, waived from review, and no further approval was required.

Descriptive statistics, paired samples t-tests and independent samples t-test were used to analyze data. All calculations were performed using IBM Corp. Released 2012. IBM SPSS Statistics for Windows, Version 21.0. Armonk, NY: IBM Corp.

3. Results

3.1. Demographics

Of the 145 fourth year nursing, Clinical Nurse Leader, and RN to BSN students and 155 fourth year medical students who were invited to participate, 17 (9 nursing and 8 medical) initially enrolled in the pilot project. Of these, all but two, 88% (n = 15) completed the study.[6] Eighty-nine percent (8/9) of nursing students and 71% (5/7) of medical students participated in the practice session with standardized patients. 100% (9/9) of nursing students and 86% (6/7) of medical students completed their clinic assessment; four in pairs and seven individually.

A study team member was present and recorded observations at each clinic assessment. All students were proficient in using the ACS Preoperative Assessment of the Geriatric Surgical Patient guidelines, successfully completed the ten components of the geriatric assessment and were able to present assessment findings to the attending physician. Assessments took an average of 22 min, 23 min for pairs and 21 min for individuals.

3.2. Pre-and Post-test Assessments

After the initial education session, we administered an evaluation asking students to indicate their agreement with eight statements on a scale from 1 = "Strongly disagree" to 5 = "Strongly agree." The mean evaluation score of the initial education session, across all eight statements was 4.1. The highest scoring statement on the evaluation, with 82% of students selecting "Agree" or "Strongly agree" was, "Learning with other professional students was valuable." Conversely, the statement receiving the lowest score, with only 71% of students selecting "Agree" or "Strongly agree" was "This learning activity increased my knowledge of another profession."

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[6] One medical student withdrew from the study after the first session due to restrictions associated with an H-1B employment visa. One medical student did not attend the second session nor did they sign up for a clinic assessment. A follow-up email was sent inquiring if they were interested in continuing with the project, but a response was not received.