

Interprofessional nursing education: a pilot study in the medical intensive care unit and internal medicine outpatient clinics

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ABSTRACT

Background: Healthcare requires frequent interactions among nurses, physicians, and other healthcare professionals. Healthcare students frequently have little or no interaction with other disciplines during their education.

Methods: The nursing students in our health sciences center do not have any formal interaction during their education with physicians in the hospital or clinics. This pilot project allowed senior nursing students to directly observe physicians working in the medical intensive care unit and in the internal medicine clinics. We used pre-and post-intervention surveys and post-intervention interviews to determine their satisfaction with this clinical experience and to determine any changes in their attitudes or understanding following their observations in the work site.

Results: Twenty-two nursing students completed this pilot project. There were no difficulties with the organization or scheduling of these students, and they found this experience useful and educational. There were significant changes on two survey questions. Nursing students thought that physicians had more need for collaboration with other healthcare workers following their observations but also thought that physicians spent less time with patients and family than expected. During the interviews after the experience, the nursing students indicated that this intervention increased their understanding of the need for communication, collaboration, and planning during patient care.

Conclusions: This pilot project demonstrates that it is relatively easy to increase the interprofessional education of nurses by allowing them to observe physicians during routine clinical work in the medical intensive care unit and in the internal medicine clinics. This did not require significant organization or introduce difficult scheduling problems. Nursing students found this activity educational and did have important changes in their understanding of physicians' work following this intervention. This model can be easily used in other clinical situations.

Key words: nursing education, interprofessional relations, medical intensive care unit, surveys, observation

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DOI: 10.12746/swrccc2015.0311.137

INTRODUCTION

After graduation, healthcare professional students are expected to work closely with other professions despite the limited interprofessional interactions and experiences during their training. Interprofessional collaboration is an essential component of patient-centered care which is both holistic and comprehensive.¹ Whelan, Spencer, and Rooney demonstrated that understanding the functions and responsibilities of other healthcare professionals enhanced communication and improved patient outcomes.² As physicians' and nurses' careers advance, many clinical situations require these healthcare professionals to communicate with each other and develop interdisciplinary skills. Currently, nurses and physicians are usually trained separately both in the classroom and during clinical rotations and do not have the opportunity to interact with their peers in other disciplines. Therefore, interdisciplinary skills are usually acquired only through experiences after their formal training. Nursing students have inadequate knowledge of the activities and responsibilities of physicians working in clinics and hospital wards. This pilot study allowed senior level nursing students to observe physicians working in the medical intensive care unit and in the outpatient clinics and recorded their impressions and observations using brief questionnaires and focused interviews about the experience.

METHODS

Twenty-two senior nursing students enrolled in a traditional nursing program were recruited into the study and received a 20 dollar gift certificate after completion of the observation periods and the surveys and the interview. These students spent two hours participating in the medical intensive care unit (MICU) rounds with the internal medicine attending physicians and the resident and medical student team and one hour in the internal medicine clinics seeing patients with a faculty physician. Before the students' interactions with physicians, they completed a questionnaire with eight questions using a five point Likert scale from "strongly disagree [1]" to "strongly agree [5]." After the clinical interaction sessions, they completed a second questionnaire with the same questions plus three additional post-intervention questions. They then participated in a brief

interview and answered three open ended questions. These included: 1) "What was your most important impression following your direct observation of physicians working in patient care areas?" 2) "Did you develop any new insights into the interprofessional contribution to patient management using a team concept?" 3) "Did this experience suggest potential changes in your practice behavior?" These answers were recorded, and three independent evaluators reviewed the answers to identify key concepts, terms, or phrases identified in the answers. After this initial review, a list of three terms (concepts) was generated for each question, and the answers were reviewed again to identify the key concept based on this abbreviated list. Differences between the pre- and post-interactions were analyzed using a sign rank test. A Bonferroni correction was used to correct for multiple comparisons. This study was approved by the Institutional Review Board at Texas Tech University Health Sciences in Lubbock, TX; all participants gave written informed consent. This project was supported by an intramural grant from the QEP grants for interprofessional teamwork.

RESULTS

In general, nursing students strongly agreed with the eight survey questions prior to their clinical experience (Table 1). The range of answers was wider on questions 3, 4, 5, 6, 7, and 8. The nursing students also strongly agreed with the survey questions after the clinical experience, and the range of answers became narrower on questions 3, 5, 6, 7, and 8. There were significant differences between the pre- and post-experience answers on Questions 7 and 8. After working directly with physicians, nursing students had more insight into physician collaboration (Question 7) but thought that physicians spent less time discussing care with patients than they had expected (Question 8) (Table 1). In general, nursing students strongly agreed with the additional questions in the survey after the clinical experience and considered this a good clinical experience (Table 2). The most frequent terms identified from the narrative responses to open ended questions were collaboration, communication, attention to detail, physician focus on work, planning, and understanding the work process in either the ICU or the clinic (Table 3).

Table 1 Pre and post clinical experience question responses

Question	Median	Range	Question	Median	Range
1. Physicians collect important clinical information.	5*	3-5	5. Physicians provide essential follow-up for the patient.	4	2-5
	5**	3-5		4	4-5
2. Physicians help patients feel comfortable during clinical care.	5	3-5	6. Physicians communicate with other health care providers to provide patient-centered care	4	1-5
	4	3-5		4.5	2-5
3. Physicians monitor patients carefully for changes in clinical status.	5	2-5	7. Physicians collaborate for optimal patient care	4	2-5
	5	3-5		5↑	3-5
4. Physicians provide an extra safety net to help reduce mistakes and omissions.	4.5	2-5	8. Physicians spend adequate time discussing care with patients and immediate family members	4	1-5
	4	2-5		4↓	2-5

* Response prior to clinical experience; ** Response post clinical experience

This analysis represents the differences pre and post clinical experience using a sign rank test and not a comparison of medians using a ranking test.

Table 2 Post clinical experience questions

Additional post clinical experience questions	Median	Range
9. This educational experience made good use of my time.	5	4-5
10. This educational experience has increased my understanding of the responsibilities of physicians in health care.	5	3-5
11. I felt comfortable during this activity and thought that the study coordinators wanted an unbiased opinion.	5	4-5

Table 3 Narrative responses

Narrative responses to open ended questions	Key terms	Reviewer scores		
		#1	#2 ⁺	#3
What was your most important impression following your direct observation of physicians working in patient care areas?	Collaboration	10	14	10
	Communication	9	7	6
	Attention to detail	3	9	6
Did you develop any new insights into the interprofessional contribution to patient management using a team concept?	Collaboration	4	12	9
	Communication	11	11	6
	MD focus	5*	11	7
Did this experience suggest potential changes in your practice behavior?	Collaboration	8	11	6
	Planning	5	8	6
	Understanding work process	8**	20	9**

*No definite answer in two responses; ** no definite answer in one response; + this reviewer rated some responses as equivalent and the total exceeds 22

DISCUSSION

Our results demonstrate that a three-hour clinical experience working with physician teams in the intensive care unit or with physicians in the outpatient clinic provided a good educational experience which improved their insight into physician work responsibilities, approaches to work during patient care, and interactions with other healthcare workers. Important key terms in the narrative responses to open ended questions included collaboration, communication, and planning with attention to detail and work process.

Intraoperative professional education has the potential to improve patient care, increase the efficiency of care, and increase healthcare worker satisfaction and retention. This education can occur during the primary education of nurses and physicians or after graduation at the workplace.³ Forty-eight medical schools responded to a survey in 2010 about their current interprofessional education programs. These educational efforts included medical students, nursing students, pharmacy students, allied health stu-

dents, physician assistants, and social workers. Faculty instructors were usually recruited from schools of medicine and nursing. Most of the learning activities involved small group sessions (22%), case based discussions (19%), and lecture presentations (11%).⁴ Outcome assessments typically included surveys which focused on attitudes and satisfaction and qualitative methods, such as interviews, focus groups, and debriefing. Reese reported an interprofessional collaboration study with 13 nursing and 15 medical students using a simulation scenario (a surgical patient with cardiac arrest).⁵ The session lasted 20 minutes with a 20 minute guided debriefing session. Students were very positive about the collaboration involved in this exercise with mean scores of 4.54 to 4.70 on a 5 point scale (where 5 equals strongly agree). Whelan reported a project in Tasmania which involved case based scenarios using a series of rural emergencies.² These students had more frequent positive responses to statements that interprofessional practice focuses on "problem solving" (27% to 47%) and "patient out-

comes" (10% to 43%) after these workshops. However, positive responses to "collaboration" (67% to 50%) and "using professional skills and knowledge" (87% to 73%) went down. Blue and associates described an online course with 300 medical, dental, and nursing students. This project involved a root cause analysis of a sentinel event with the development of recommendations for patient safety using small groups online.⁶ The majority of students (78%) had an increase in their appreciation for interprofessional collaboration, but only 52% thought their teamwork skills improved, and only 40 % thought the activity was worthwhile. This project required 30 facilitators. The review of interprofessional education programs by Abu-Rish and coworkers reported that the barriers to implementation of these educational activities include scheduling, preparation time, and funding. In addition, very few publications have analyzed patient outcomes.³

Our project involved direct observation of routine daily medical care. The faculty answered questions at the end of the session but the amount of extra time needed for faculty participation was minimal. Our project did not have the barriers described by Abu-Rish and required minimal administrative support. However, we undertook this pilot project with a relatively small number of senior level nursing students. We do not know whether or not this type of clinical experience would be useful to nursing students earlier in their education. We used survey instruments to understand the attitudes and ideas of nursing students and to determine if this activity changed their attitudes or understanding. In general, the baseline attitudes were positive ("strongly agree") but there were some changes based on movement of the responses on a Likert scale towards the right ("strongly agree"). We do not know whether this clinical experience will have long-term effects on attitudes, and we did not measure any clinical patient related outcomes related to this project.

In conclusion, we think this project identifies a relatively good, time efficient approach to providing nursing students with interprofessional education. This project did not require any change in the overall activity of the physicians during their work in the intensive care unit or in the clinic. We would encourage the integration of this activity into the nursing curriculum;

it should probably take place in each year of nursing education and include more medical disciplines. We can improve this education by providing more orientation of physician faculty, adding introductory material, such as written handouts and short online videos for the nursing students, making certain that the students have the opportunity to ask questions at the end of the session, and by adding a structured post-session debriefing by nursing faculty.

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Received: 05/08/2015

Accepted: 06/20/2015

Reviewers: Gilbert Berdine MD

Published electronically: 7/15/2015

Conflict of Interest Disclosures: None

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