

Practicing Interprofessional Teamwork Among Nursing and Medical Students

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Abstract

Learning how to work effectively on interprofessional teams has been identified as an outcome competency in nursing education as specified by the Quality and Safety Education in Nursing Teamwork and Collaboration Competency [1] and in medical education as specified in the Liaison Committee on Medical Education [2]. How to teach teamwork skills, and where to place this content in the curriculum, is an ongoing problem for both medicine and nursing. The purpose of this paper is to describe the development and evaluation of a community workplace learning activity that evolved from a nursing student experience to an interprofessional experience.

Background: Nursing students from a large midwestern research university had been participating in a health screening research project of schoolchildren, supported by the Elisabeth Severance Prentiss Foundation, of their community health courses. Learning objectives for each course were broad, with very little differentiation between levels. Using concept-based curriculum principles, and content from the TeamSTEPPS in 2006 national program, the courses were restructured and an interprofessional teamwork experience for nursing and medical students was implemented.

All students participated in an extensive orientation that required each one to pass skills tests for taking an accurate blood pressure and performing accurate height and weight measurements. Nursing students were educated at two different levels: junior nursing students lead the activity, while sophomore students focused on health screenings data collection and assessment. Previous to the restructuring, the team leader role was assumed by faculty. With role clarification, faculty shifted their function to the role of a team coach. Medical students were trained much like sophomore nursing students with the role of carrying out clinical tasks. Following each interprofessional teamwork experience, students completed the Interprofessional Collaborative Competencies Attainment Survey (ICCAS). The institutional review board determined this to be exempt from review.

Results: An independent sample t-test was used to compare mean score differences. The mean score differences on the ICCAS between interprofessional collaborative competencies before and after the experience for 122 participants showed a significant improvement between Total pre-mean score ($M=114.61$, $SD=17.14$) and Total post-mean score ($M=125.22$, $SD=15.17$); $t=8.5$, $p<0.001$. Additionally, all ICCAS subcategories (Communication, Collaboration, Roles and Responsibilities, Collaborative Patient/Family-Centered Approach, Conflict Management/Resolution, Team Functioning) showed a significant difference between pre- and post-mean score differences.

Conclusion: The public health screening project funded by the Prentiss grant was effective in learning interprofessional collaborative competencies while meeting nursing and medical student course learning objectives. Faculty creatively working together can overcome the obstacles to inter-professional education to promote learning teamwork and collaboration.

Introduction

Today, learning how to work effectively on interprofessional teams has been identified as a critical component for healthcare students and practitioners [3,4]. It is also a competency in nursing education as specified by the Quality and Safety Education in Nursing Teamwork and Collaboration Competency [1] and in medical education as specified in the Liaison Committee on Medical Education [2]. How to teach teamwork skills and where to place this content in the curriculum is an ongoing problem for both medicine and nursing. Constraints exist such as clinical scheduling issues across disciplines and a lack of understanding as to what is meaningful interprofessional education [5,6]. Although the importance of teamwork in healthcare has become widely recognized, evaluation of experiential opportunities

is needed. The purpose of this paper is to describe the development and evaluation of a community workplace learning activity that evolved from a nursing student experience to an interprofessional experience.

Background

Sophomore and junior nursing students from Frances Payne Bolton School of Nursing, Case Western Reserve University (CWRU) had been participating for 3 hours weekly in a national program of health screening and data collection for schoolchildren supported by the Elisabeth Severance Prentiss Foundation as a requirement of their community health courses. The study was reviewed by the CWRU institutional review board and given exempt status. Learning objectives

for each course were global and similar, with very little differentiation between levels. Student feedback from course evaluations consistently requested change. Using concept-based curriculum principles, and content from the TeamSTEPPS in 2006 national program, the courses were restructured to embed an interprofessional teamwork learning experience for nursing students [7].

Restructuring began by educating nursing students at two different levels. Sophomore nursing students received didactic education on basic teamwork concepts of communication, situational monitoring, and mutual support from TeamSTEPPS curricular content in 2006 [7]. Their responsibilities included clinical tasks such as obtaining height, weight, and blood pressure measurements; data reporting and recording; and observation of potential growth and development abnormalities for school age children in kindergarten, 3rd and 5th grades.

Junior level nursing students received the same educational content with an additional focus on leadership roles, responsibilities, and strategies, which were implemented while practicing in the community clinical experience. *The brief, a teamwork strategy initiated by the junior nursing student leaders, began when all team members arrived. Junior nursing student leaders requested team members to introduce themselves, a first meeting, required step. Junior nursing student leaders followed the membership introductions with clinical tasks instructions for the 3-hour health-screening event. Team members were then provided with an opportunity for questions and answers regarding procedure protocols, role clarification, and any other concerns. This activity took approximately ten to fifteen minutes to complete.*

The debriefs, a second teamwork strategy, also lead by the junior nursing student leaders, occurred following the completion of the daily workload. Team members were asked again to stand in a circle and were prompted to respond to three questions: "What went well today? What could we have improved upon?" and, "What health issues did you identify today while health screening the schoolchildren?" Completion of this activity took approximately ten minutes.

A third teamwork strategy junior nursing student leaders implemented when needed was a huddle. During the morning brief, junior nursing student leaders shared with team members the purpose of a huddle and who could initiate this strategy. A huddle could be called if any team member felt that the workload needed to be redistributed, a crisis seemed imminent, or the plan of the day needed modification. Team member response to a huddle would be for team members to stop what they were doing and gather together to discuss and plan next steps. Time for this activity depended on why the huddle was called and what new plan needed to be outlined.

Previous to the restructuring, the coach role during the clinical experience was assumed by clinical faculty or Prentiss grant administrators. An important component of the learning was clarification of roles: the sophomore students carried out clinical tasks, the junior nursing students carried out team leadership, and clinical faculty and Prentiss grant administrators carried out the role of a team coach. While sophomore nursing students screened schoolchildren and junior nursing student leaders managed and led the experience, faculty were available as coaches circulating in the room observing the students and evaluating the learning experience of healthcare. Constructive feedback was provided to the healthcare students by faculty coaches immediately and following the clinical learning experience. This enriched the experience not only for the students, but

for faculty who could use direct observation during the learning experience to immediately facilitate change or modify the activities, thus improving the quality of the learning experience.

Expansion to Interprofessional Learning

Simultaneously to the restructuring and embedding of intraprofessional teamwork experiences into the undergraduate nursing program, faculty from the first-year physical diagnosis course at Case Western Reserve University School of Medicine (CWRU SOM) were looking to expand clinical learning experiences. The introductory physical diagnosis course lacked student opportunities to practice and become proficient at taking blood pressures. In addition, CWRU SOM student exposure to children was minimal. The schoolchildren screening program within the undergraduate-nursing program provided the needed clinical relevance. Medical students were trained much like sophomore nursing students with the role of carrying out clinical tasks. Their responsibilities in the community clinical experience included obtaining height, weight, and blood pressure measurements; data reporting and recording; and observation of potential growth and development abnormalities for schoolchildren in kindergarten, 3rd and 5th grades. The medical students were oriented to the clinical tasks and TeamSTEPP concepts, communication, mutual support, and situational monitoring.

Description of the Interprofessional Educational Activity and Learner Assessment

The purpose of the interprofessional educational activity was to give nursing and medical students an opportunity to learn and practice teamwork. Specifically, students were expected to understand the roles and responsibilities of all team members, Practice communication, an collaboration, and teamwork skills. All of the students were required to go through didactic instruction on teamwork concepts specific to their roles and responsibilities. Competency was assessed for obtaining height, weight, and blood pressure measurements. Students were instructed that they would work in interprofessional student teams during the activity. Teamwork assessment occurred following the community health-screening event. Students completed the Interprofessional Collaborative Competencies Attainment Survey (ICCAS). The ICCAS is a validated, retrospective pre-post self-assessment instrument that originated in Canada as part of an interprofessional education toolkit [8]. It has established validity and reliability and uses a 7-point Likert scale [9]. It consists of 20 items in 6 domains (communication, collaboration, roles and responsibilities, patient-/family-centered approach, conflict resolution and management, and team functioning).

Results

During the 2013/2014 school year, 6,993 grade school children were screened, 28% by interprofessional student groups. Children with obesity and hypertension were identified and families were informed and received information about resources for assistance. The experience and orientation were successfully embedded into both the nursing course and the medical school course. All students from the medical school class were successfully integrated into the nursing school course.

For the assessments using the ICCAS, the mean score differences between interprofessional collaborative competencies before and after the experience for 122 participants showed a significant improvement

between the total pre-mean score ($M=114.61$, $SD=17.14$) and total post-mean score ($M=125.22$, $SD=15.17$); $t=9.90$, $p<0.001$. Additionally, all ICCAS subcategories (Communication, Collaboration, Roles and Responsibilities, Collaborative Patient/Family-Centered Approach,

Conflict Management/Resolution, Team Functioning) showed a significant difference between pre- and post-mean score differences (Table 1).

| | Pre-test X (SD) | Post-test X (SD) | T |
|---|-----------------|------------------|-------|
| Communication | 5.75 (0.89) | 6.21 (0.83) | 8.73* |
| Collaboration | 5.68 (0.98) | 6.23 (0.86) | 8.66* |
| Roles and Responsibilities | 5.69 (0.95) | 6.25 (0.87) | 8.63* |
| Collaborative Patient-/Family-Centered Approach | 5.67 (0.97) | 6.20 (0.91) | 7.94* |
| Conflict Management/Resolution | 5.85 (0.96) | 6.36 (0.80) | 7.17* |
| Team Functioning | 5.76 (0.98) | 6.40 (0.75) | 9.13* |
| Total | 114.61 (17.14) | 125.22 (15.17) | 9.90* |

Table 1: Interprofessional collaborative competency attainment survey results (N=122), * $p<0.05$.

Discussion

The interprofessional educational activity provided an opportunity to move didactic TeamSTEPPS training content into a real world clinical practice environment. Faculty from the undergraduate-nursing program serving as coaches, outlined sophomore and junior nursing student team member roles and responsibilities that provided a solution to previous role confusion. Embedding an interprofessional teamwork experience into the undergraduate nursing and medical student curriculum allowed students to practice team skills, including collaboration, communication, situational monitoring, mutual support, and leadership, and to implement team strategies such as briefs, debriefs and huddles. Including first-year medical students as team members expanded the experiential learning opportunity from an intraprofessional to interprofessional teamwork learning activity, which met interprofessional educational (IPE) objectives and competencies for both schools. Saliently, role reversal between medical students and nursing students unfolded as medical students practiced acquisition of schoolchildren height, weight, and blood pressure measurements, while the skill-expert nursing students role-modeled accuracy in skill performance when the medical students called for help. Finally, faculty's role changed from team leader to team coach, enabling students to receive timely feedback.

Conclusion

The Prentiss Grant screening experience was effective in providing learning experiences for students and faculty from the School of Nursing and School of Medicine. Students from both schools were able to practice team member and leadership roles while faculty acted as

clinical coaches. Faculty and students creatively working together can provide collaborative learning experiences that overcome interprofessional educational barriers.

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