Effects of an Interprofessional Project on Students' Perspectives on Interprofessional Education and Knowledge of Health Disciplines

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Context: Interprofessional education (IPE) is encouraged in health care education in the hope that it will improve communication among future health care professionals. In response, health professional education programs are developing IPE curricula.

Objective: To determine if a multicourse interprofessional (IP) project impacted students' knowledge and views on other health care professions, as well as their attitudes toward IPE.

Design: Cross-sectional survey.

Setting: Four university classrooms.

Patients or Other Participants: Eighty-one undergraduate students (32 men, 49 women) from 4 introductory courses (2 athletic training sections, 41 students; 1 health administration section, 19 students; and 1 nursing section, 21 students) participated in 2 surveys and an IP project.

Main Outcome Measure(s): Participants completed a modified Readiness for Interprofessional Learning Scale (RIPLS) questionnaire. The faculty assigned students to an IP group with representation from each discipline. Groups were instructed to produce a presentation on an assigned health care profession. After completing the project, students completed the same modified RIPLS questionnaire. Means and frequency were calculated. Quantitative data were analyzed with analysis of variance followed by Tukey post hoc testing when appropriate.

Results: After the IP project, students from all disciplines reported an increased knowledge regarding nursing, health administration, athletic training, and other health care professions in general and how their discipline differed from other health care disciplines. All students agreed that they should practice communication with other health care disciplines. Other perceptions related to IPE did not change.

Conclusions: Undergraduate athletic training, health administration, and nursing students who completed an IP project reportedly increased their knowledge of health care disciplines and increased their appreciation for practicing communication among health care disciplines. Future studies should assess how increasing basic knowledge of health care professions may impact the integration of advanced IPE concepts later in one's professional education.

Key Words: Multidisciplinary, pedagogy, health care education

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With the advent of the Patient Protection and Affordable Care Act of 2010 and its emphasis on health care quality and safety, integrated care has become a priority in a wide variety of health care systems and settings.¹ The positive impact on patient outcomes that comes from coordinated care efforts has been well documented,² particularly in surgical and emergency care.³ Although these positive results have led to an increase in coordinated care efforts in professional practice, they have not necessarily been enough to cause major changes in delivery models throughout the health care system. Health care organizations are recognizing that teamwork and coordinated care are now crucial to both patient outcomes and financial goals, and are making changes to improve teamwork and coordinated care efforts.⁴

Because an integrated team approach can lead to improved health outcomes, there has been an increasing focus on changing models for educating students to include interprofessional education (IPE) interventions.⁵ The creation of the Core Competencies for Interprofessional Collaborative Practice⁶ further prompted inclusion of IPE in a wide variety of health disciplines. In athletic training, the National Athletic Trainers' Association endorses IPE. More specifically, IPE is included as a foundational behavior of professional practice in the Athletic Training Educational Competencies, fifth edition,⁷ and athletic educational programs are now required to integrate IPE throughout their curriculum.8 Indeed, the Commission on Accreditation of Athletic Training Education's Accreditation Standard 44 requires that athletic training students interact with "other medical and health care professionals."9 This increasing IPE focus from a large number of health disciplines⁶ and their accrediting bodies puts the onus on university health care educational programs to find ways to create meaningful IPE experiences for their students.

Interprofessional education interventions can have many benefits for students. They can not only positively impact the development of skills and positive attitudes toward teamwork, but also increase accurate knowledge of other health disciplines and their role in the health care team.¹⁰ These knowledge benefits may be especially important for less-experienced students who are new to health care and may have inaccurate stereotypes about other disciplines. Moreover, early intervention may be especially crucial, as research has shown that early exposure to different health professions leads to a more positive attitude toward IPE and interprofessional collaboration.¹¹

Although IPE has demonstrated great value in training students, many university health care programs struggle to implement this type of educational approach. A variety of obstacles to IPE have been identified, including requirements of accrediting bodies (ie, that the instructor for a course must have particular credentials, such that shared courses are not possible); concerns related to financial resources; and professional turf issues that may exist among academic departments.¹² Such issues can lead health care programs to become cynical about the possibility of providing meaningful IPE experiences. They may resort to the "siloed" training model that has been the status quo, while providing poor-quality or no IPE interventions.

The difficulties of beginning and engaging in IPE have impacted athletic educational programs. A 2011 study found that 66% of athletic educational programs were not engaged in IPE activities, and 15% of program directors were unsure if IPE activities were even occurring on their campuses.¹³ Breitbach and Richardson¹⁴ note that for athletic training educational programs, one of the biggest obstacles in IPE participation is a misunderstanding by other health professions of the role that athletic trainers play on the health care team. Athletic training may be viewed as a nonmedical or a low-level profession, and thus athletic trainers may be undervalued or not included in IPE activities. Overcoming such barriers is crucial if athletic educational programs are to become active participants in IPE.

Creative approaches to IPE that both work within the current university structures and provide meaningful IPE opportunities are needed.¹⁵ We developed such an approach with an interprofessional group project involving students from courses in athletic training, nursing, and health services administration. The present study examined whether this intervention had a significant impact on attitudes related to interprofessional teamwork and knowledge of other health care disciplines.

METHODS

We used a cross-sectional, pre-post survey design, which our institutional review board approved, to answer our research question. Eighty-one undergraduate students (32 men, 49 women) from 4 introductory courses (2 athletic training sections, 41 students; 1 health administration section, 19 students; and 1 nursing section, 21 students) participated in the interprofessional group project over the course of an academic semester (16 weeks). We decided to make the level of difficulty for this project low, as research has shown that early interventions focused on simply gaining exposure to teamwork and other health disciplines may be advisable.¹⁶

All participants first completed a modified electronic version of the Readiness for Interprofessional Learning Scale (RIPLS) questionnaire during the second week of the semester. The RIPLS is a measure of readiness of health care students for IPE. Composed of 19 items, the RIPLS uses a 5-point Likert scale and is subdivided into 4 subscales: Teamwork and Collaboration; Negative Professional Identity; Positive Professional Identity; and Roles and Responsibilities. Research has provided evidence of both the construct validity¹⁷ and test-retest reliability¹⁸ of the RIPLS to assess students' attitudes toward IPE and perceived knowledge of other health professions. We used SurveyMonkey (Palo Alto, CA) to

Table.Interprofessional Project Health CareProfessions

Athletic trainer Chaplain Dietitian Informatics Physician Mental health professional Nurse assistant/certified nurse assistant Nurse practitioner Occupational therapist Physician assistant Pharmacologist Physical therapist Respiratory therapist Social worker Speech therapist

deliver an electronic version of the RIPLS. Students' completion of the survey served as their consent to participate.

After the initial administration of the RIPLS and during the third week of the semester, participants were randomly assigned to multidisciplinary groups of approximately 6 students to complete the group project. Because there were not an equal number of students from each discipline, assignments were made such that each group had a similar ratio of students representing each discipline. For the assignment, each group was assigned a particular health care profession (Table). Each group was to research their assigned profession and to conduct an in-person interview with someone from that profession. The assignment culminated with each group delivering a 5-minute presentation about their assigned profession, which included an overview of its work activities, educational requirements, roles and responsibilities, and typical situations in which members of that profession would work with health professionals from other disciplines. In addition, students included information about the profession's philosophy of interprofessional collaboration and impressions professionals from that discipline tended to have about athletic trainers, nurses, and health services administrators. Student groups gave their presentations to all the other participants during the 13th week of the semester. During the 14th week of the semester, and after completing the project, participants completed a second modified electronic version of the RIPLS Questionnaire.

We grouped respondents who endorsed the 2 points into 1 of 3 groups: (1) those who indicated they agreed or strongly agreed with a statement; (2) those who were neutral toward the statement; and (3) those who indicated they disagreed or strongly disagreed with a given statement/item.¹⁹ We calculated means and frequency for each of the 19 items on the modified electronic version of the RIPLS Questionnaire.²⁰ Furthermore, we analyzed quantitative data with analysis of variance followed by Tukey post hoc testing when appropriate. The a priori significance level was set at 0.05.

RESULTS

After the IPE class project, students from all disciplines reported an increased knowledge of nursing (agree + strongly

agree, pre = 44%, post = 78%, $F_{1,157}$ = 23.69, P > .001), health services administration (agree + strongly agree, pre = 34%, post = 74%, $F_{1,157}$ = 29.94, P > .001), athletic training (agree + strongly agree, pre = 54%, post = 84%, $F_{1,157}$ = 41.09, P >.001), and other health care professions in general (agree + strongly agree, pre = 35%, post = 66%, $F_{1,157}$ = 13.14, P >.001). Participants also indicated an increased understanding of how their discipline differed from other health care disciplines (agree + strongly agree, pre = 71%, post = 89%, $F_{1,157}$ = 11.30, P > .001; Figure). Participants also showed an increase in their belief that communication should be practiced with other health care disciplines (agree + strongly agree, pre = 65%, post = 84%, $F_{1,157}$ = 6.39, P > .001). Other perceptions related to IPE did not change regardless of the health care discipline of the student.

DISCUSSION

It has been shown that interprofessional practice and more advanced IPE interventions may be more effective if students have positive attitudes toward teamwork and some basic knowledge of other health professions in relation to their own.²¹ In this beginning IPE intervention, our goals for the IPE group project were to assist students in developing such knowledge and attitudes with the goal of preparing them for future IPE activities. Further, by working with students from other health professions, we hoped that students would develop positive attitudes about IPE itself.

We did find statistically significant increases in self-reported knowledge of other health professions, including those of students' team members. Having designed the assignment such that students heard the presentations of other students (about different health professions), it appears that we were effective in helping students to learn more about what many different health professions do. In free-response items, students made statements such as "I know the basics of what other health care disciplines do. I understand their contributions to the health care teams." This knowledge base is important, as having knowledge about health professions is necessary if students are to be effective in interprofessional practice²¹ and may provide the necessary foundation for students to get more out of more advanced IPE interventions working in teams on cases, simulations, or actual patients.16

Also, students noted that they gained knowledge about their own health profession through this exercise. It may be that by seeing their health profession through the eyes of students and professionals from other disciplines gave them a different perspective on how their profession fits into the health care landscape. This different perspective combined with an understanding of where practice domains intersect may give students a richer understanding of their own profession.

Students reported that communication with other health disciplines should be practiced. This recognition is crucial, as communication is essential to other IPE interventions as well as interprofessional practice. In free-response items, students noted, "We all need to learn to work together better for the good of our patients." Having a positive attitude toward IPE is important for it to be effective, as negative attitudes toward such interventions have been linked to less favorable IPE



outcomes.²² Other similar attitudinal items from the **RIPLS** did not reach significance (ie, welcoming the opportunity to work on small group projects with students from other health care disciplines, understanding what make IPE teams difficult), but trended in the direction of increased understanding. It may be that the size of the participant group was too small to reach significance for such items.

Finally, it is important to note that students had overall positive feelings about this assignment. Although we do not have quantitative data regarding student satisfaction, we were able to look through data from free-response items regarding the IPE class project. Students did express frustration about an unequal division of labor for the project, as well as frustration with finding time to meet and get work done. However, we would point out that these frustrations are not foreign to those working as professionals in health care, and learning to deal with such things may be an unintended benefit of this kind of project.

FUTURE RESEARCH

With the success of the IPE group project, it seems warranted to use this same approach to early IPE intervention again in future semesters, perhaps with a larger group of students and a wider array of health-related majors. Completing this assignment with such a group would provide the opportunity for us to investigate several different things. First, it would provide the opportunity to replicate the results from this study, and perhaps demonstrate generalizability to more health professions. Also, increasing the size of the participant group might allow us to determine if results that approached significance in this study would reach significance because of increased power in statistical analysis (most notably, those related to attitudes toward IPE). In order to do such a study, some changes in the assignment would be necessary. For example, it would not be possible with a larger group to have in-person group presentations, and we would likely need to use video technologies in some manner for the presentations.

It has been demonstrated that approximately 80% of undergraduate students change their majors at some point before they graduate.²³ Because the students involved in this IPE class project are early in their curriculum, learning about other health professions might lead them to change their plans regarding which health profession to pursue. Many younger students early in their college careers lack information about the different options available to them in the world of health care. Gaining such knowledge might therefore result in students deciding to change their major to a different health care field if they discovered one that fit them better. This hypothesis could be tested if data related to college major choice and change for students participating in this IPE intervention could be compared with data from students from these same courses from earlier years where this project was not completed. This kind of study would allow for exploring whether this IPE intervention assists students in getting into the right major/health care field for them.

Finally, with the success of this interclass project, we are planning a second project of this nature where students in the middle of their major curriculum could work on a health care case. This would involve students from different health care courses coming together to work through a case together, write up a plan for the case, and present it to their classmates. The goals of such an intervention would be to positively impact students' attitudes toward interprofessional teaming. Also, such an activity would allow students to develop skills in teamwork, something essential to health care practice in today's environment.²⁴

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