

Care Across Campus: Athletic Training, Nursing, and Occupational Therapy Student Experiences in an Interprofessional Simulation

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Context: This study explored health care students' experiences after participation in an interprofessional simulation. Interprofessional education incorporates students from several health care professions in a controlled, collaborative learning environment. Athletic training students are not well represented in interprofessional education literature.

Objective: This study sought to explore the attitudes of athletic training, nursing, and occupational therapy students toward other professions after their participation in an interprofessional simulation.

Design: This article describes the results of the qualitative portion of a mixed-methods study. Focus group discussions related to elements of the Interprofessional Attitude Scale to explore participants' attitudes toward other professions. Researchers analyzed transcribed focus group discussions for themes.

Setting: This study occurred in a private midsized Midwestern university.

Patients or Other Participants: Seventy-nine students, representing athletic training, nursing, and occupational therapy, participated in the simulation; a sample of 13 of these participated in the focus groups.

Intervention(s): Students in all professions cared for or observed the care of a standardized patient from the time of a spinal cord injury on the football field through an ambulance ride and subsequent emergency and inpatient care. Students collaborated and communicated with one another. Faculty conducted debriefing after the simulation and before the focus groups.

Main Outcome Measure(s): Focus groups included relevant questions from the Interprofessional Attitudes Scale, and themes were identified from participants' responses.

Results: Researchers identified 4 themes from the focus group discussions: *collaboration*, *respect*, *knowledge of other professions*, and *communication*. These themes also mirror elements of the Interprofessional Education Collaborative's core competencies of interprofessional collaborative practice.

Conclusions: After the simulation, students expressed positive attitudes toward other professions. This study suggests that athletic training, nursing, and occupational therapy students have positive attitudes toward each other's professions after an interprofessional simulation activity.

Key Words: Qualitative, attitudes, collaboration, respect, communication

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KEY POINTS

- Athletic training, occupational therapy, and nursing students expressed positive attitudes and increased respect toward each other's professions following an interprofessional simulation.
- Students noted improved collaboration, respect, communication, and knowledge of other professions following an interprofessional simulation, themes that resemble the Interprofessional Education Collaborative's core competencies interprofessional collaborative practice.
- Educators should integrate athletic training students into interprofessional education experiences with other health care students and research the efficacy of such experiences.

INTRODUCTION

According to the World Health Organization,¹ "Interprofessional education [IPE] occurs when students from two or more professions learn about, from, and with each other to enable effective collaboration and improve health outcomes."^(p7) Interprofessional education, a method used widely over the last 20 years in health care education, has the goal of demonstrating to students how to work together to provide optimal health care.²⁻⁴ Benefits of IPE⁵ include team building, sharing knowledge, collaboration, and enhanced communication among the team members. The World Health Organization¹ reported there is sufficient evidence showing that IPE in the clinical setting promotes effective patient care.

Health care simulation has advanced in conjunction with technology and health care education, providing a number of advantages to student learning. These can include a likeness to clinical practice, the opportunity to change patient conditions, and the ability to provide students with more relevant feedback.⁶ Historically, silos in professional education have resulted in patient care mistakes based on miscommunication and poor collaboration among the health care team; however, interprofessional simulations may reduce these mistakes.⁶

Interprofessional education benefits students in several ways. Lachman et al² linked IPE to increased student understanding of various health care team members, collaboration in care provision, and professionalism. Additionally, Barr et al⁷ found that IPE facilitated interprofessional collaboration, communication between students and faculty, and improvements in patient care. Breitbach et al⁸ indicated the importance of athletic training education embracing IPE, which has previously been emphasized by medicine, nursing, and allied health professionals though not seen as consistently throughout athletic training education.

Studies have also included multiple professional programs and demonstrated positive patient outcomes. After an IPE

simulation, occupational therapy, medicine, social work, and pharmacy students improved understanding of professional roles, scope of practice, and teamwork.⁹ Titzer et al¹⁰ found that occupational therapy, nursing, radiology, and respiratory therapy students increased problem-solving and teamwork abilities. Finally, Sergakis et al⁴ found that students from occupational therapy and nursing programs demonstrated improvements in collaboration, teamwork, professional identity, and confidence in a multi-patient simulation. Thus, existing literature supports IPE and simulation in facilitating teamwork, collaboration, respect, communication, professional identity, and confidence.

Although current studies demonstrate benefits of IPE, few studies have incorporated multiple health care disciplines in a simulation experience^{4,8,9} with the goal of measuring student perceptions of health care professions. Additionally, few studies have incorporated athletic training students, which was supported by the findings of Breitbach et al.⁸ Although athletic training students are beginning to be incorporated more into IPE, research thus far indicates that the students' involvement in IPE has been related more to activities like developing presentations and introductory IPE courses.^{11,12} Athletic training students need to be incorporated into IPE simulations more consistently. Furthermore, no literature was found related to an interprofessional simulation that involved graduate-level occupational therapy students or accelerated undergraduate nursing students. To address these gaps in the literature, the authors created an IPE simulation using students from athletic training, occupational therapy, and an accelerated undergraduate nursing program. In the simulation, students in all professions cared for or observed the care of a standardized patient from the time of a spinal cord injury on the football field and ambulance ride through emergency and inpatient hospital care. Students collaborated and communicated with one another to provide optimal patient care. Therefore, the purpose of this study was to determine the attitudes of students from these programs toward other health care professions after an academic interprofessional simulation. Specifically, the purpose of the qualitative portion of the study was to determine how athletic training, nursing, and occupational therapy students describe their experiences in an interprofessional simulation.

METHOD

Design and Setting

The study occurred in a private, midsized (approximately 5400 students) Midwestern university. A mixed-methods convergence design was used to collect quantitative data, with additional qualitative data collected after the intervention from students who participated in the simulation and then volunteered to be part of the focus groups. The focus group methodology was used to explore participants' perceptions

Table. Focus Group Questions

1. How do you define interprofessional team?
2. Who do you anticipate working with in a health care setting?
3. How do you think learning interprofessionally will impact your ability to work with other professions in the future to solve existing patient problems? What would it look like to learn interprofessionally?
4. Have you ever felt as though someone (such as another health care student or professional) has made an assumption about you because of your major/discipline? What kind of assumption did they make, and how did it make you feel?
5. Have you ever made an assumption about another person because of his/her major/discipline? What was the assumption? Did this impact today's experience? If so, in what way?
6. How do you feel that being part of an interprofessional team changes your ability to respect other health care professions?

and thinking about issues, in this case related to health care professions.¹³ The quantitative findings are outside the scope of the current manuscript. The results of the focus groups are presented here.

Participants

Students participating in the IPE simulation were purposively recruited to participate in the study. All athletic training and nursing students enrolled in identified courses were required to participate in the simulation, whereas occupational therapy students were offered extra credit to participate, as the simulation occurred outside of their typical in-class time. In total, 79 professional-level students participated in or observed the interprofessional simulation. Of those, 45 (57%) were undergraduate athletic training students, including 19 sophomores, 9 juniors, and 17 seniors; 27 (34%) were accelerated undergraduate nursing students, including 17 sophomores and 10 seniors; and 7 (9%) were graduate occupational therapy students. All students who participated in the scenario also participated in a group debriefing session about the simulation. A subset of 13 students, representing all programs involved in the simulation, volunteered to participate in 1 of 2 interprofessional focus groups. The researchers did not track whether these focus group participants were actively involved in the simulation or had only observed the simulation.

Data Collection

Focus groups explored participants' experiences after participation in the interprofessional simulation. Guided focus group questions were adapted from the Interprofessional Attitudes Scale¹⁴ with permission from the author. Researchers reviewed the items of the Interprofessional Attitudes Scale, selected items that were most appropriate for the purpose of the study, and converted statements into a question format. The final questions used in the focus group were content validated by faculty colleagues with IPE expertise (see Table). Two focus groups were conducted in quiet university conference rooms immediately after the simulation and debriefing. Throughout the 35- to 50-minute discussions,

focus group leaders asked clarifying questions of participants or summarized comments but did not provide other input into the discussions. The focus group discussions were audiotaped and then transcribed verbatim approximately 1 week after the simulation.

Ethical Considerations

The study was approved by the Human Research Protections Program at the university, and students were allowed to participate in the simulation without also participating in the research study. At the beginning of each focus group, focus group leaders provided participants with a paper copy of the informed consent and reminded students that the focus group would be recorded. The participants were provided the opportunity to leave the focus group before it began. Focus group participants received a gift card for their participation. A faculty member with extensive experience in leading groups led each session. Neither focus group leader was an instructor in any of the students' courses or involved in the simulation event, to prevent participants from feeling pressured to provide positive responses.

Data Analysis

This study used a descriptive qualitative approach with an inductive analysis approach.¹⁵ Three research team members independently listened to the audiotapes and reviewed the transcripts as a form of member checking for clarity and accuracy. Then, 6 researchers carefully read the transcript to gain a holistic sense of the data collected and inductively analyzed the focus group data. Researchers identified key information related to the purpose and research questions established at the beginning of the study. To reduce bias and the possibility of misinterpreting the data, research team members independently analyzed the transcripts before discussing the emergent themes. Relationships between categories were evaluated and examined, then categories were merged or separated as appropriate. The research team reviewed and approved all final themes. Trustworthiness was established through purposive sampling, use of multiple analyst triangulation, use of code/recode analysis, and triangulation with the quantitative data.

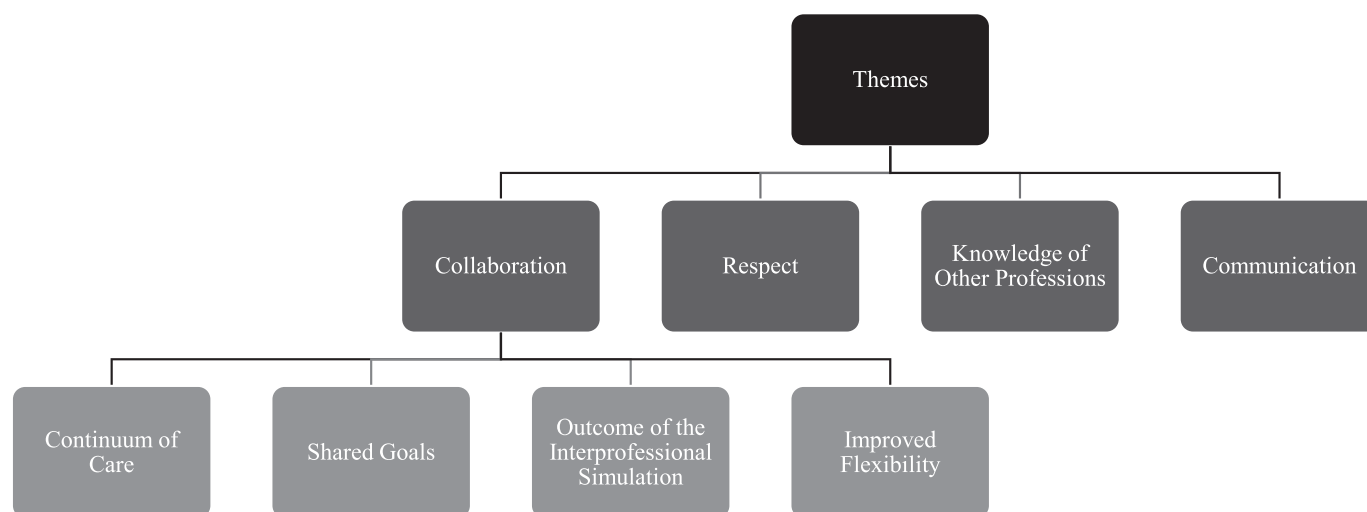
RESULTS

Upon completion of data analysis, 4 themes emerged. These themes were *collaboration*, *respect*, *knowledge of other professions*, and *communication*. These themes are represented in the Figure. Specific comments were identified by the type of student (ie, athletic training, nursing, and occupational therapy) when known; otherwise, the term "student" is used.

Collaboration

The first theme identified was collaboration. Within this theme of collaboration, 4 main subthemes were identified. These include the continuum of care, shared goals, outcome of the interprofessional simulation, and improved flexibility. Many of the students spoke of collaboration as they attempted to define an interprofessional team. One student described collaboration as "different people from the different professions working towards one goal for a patient." Another student stated that collaboration "is a group of multidisciplinary professionals who are working towards the same end

Figure. Concept map of themes.



goal, returning the patient to the best level of function.” A third student defined collaboration as “a group of multidisciplinary professionals who are working towards the same end goals and people are returning the patient to the best level of function.” Yet a nursing student stated, “It’s like you rely on somebody else to tell you what’s happened instead of seeing it...with your own eyes.”

When discussing the concept of the continuum of care, an athletic training student stated:

I think it was good to see the full progression between all of the different disciplines like on the field, the athletic trainers like taking care of the patient there and then seeing the nurses and the occupational therapists kind of take over in the inpatient setting. I thought that was really good to see the full flow...when the injury happens and how the care continues to progress from there.

When speaking about shared goals, an athletic training student said,

There are so many ideas...ways that you could go with treatment, so...we can bounce ideas off of each other. Everyone has a different approach and, in the end, our goal is always the same.

Another student said simply, “I think it’s...different people from the different professions working towards one goal for a patient.” Other students defined collaboration as related to the outcome of the interprofessional simulation. For example, an athletic training student said:

I think doing something like this today and just learning to work together and seeing the different types of professional[s] and watching what they do, it really just gives you a whole new respect for the type of work that they do and the different things they’re responsible for that other times we don’t...see just in our own field. I think just being able to respect them and know what’s going on when you’re not around is just a way that you can...better work together and communicate and...understand maybe what kind of questions you can ask to see [what’s] truly being done with your patient

once you get into the real world and start working on your own.

Finally, students discussed the importance of flexibility for the success of the collaboration. Students commented on flexibility within their professional roles and in working with others, with one student suggesting, “Let’s just work together and see where the overlaps are.” Another student stated, “If I’m trying things and I don’t know what to do, let me go talk to the nurse...they might have a technique that I don’t know of or a suggestion. I think that’s really important.”

Respect

The second theme that emerged from the data was the concept of gaining respect for other professions involved in the simulation. A nursing student commented that having increased knowledge about other professions is one way she felt increased respect for her peers. One nursing student described it as,

I think most of the reason why people make assumptions is because they don’t know; they make uneducated assumptions and I think the more we learn about other disciplines and other specialties, the more respect we have for them.

An athletic training student commented about the simulation,

I think doing something like this today and just learning to work together, seeing the different types of professions and watching what they do, really gives you a whole new respect for the ... different things they’re responsible for.

Echoing those sentiments, another athletic training student stated, “I think other professions learned what we do, and, I guess, built some respect for us.”

Furthermore, many students identified that this new respect for their peers can improve patient care. This is exemplified by a nursing student’s comment that “the best venue for patient care is having a team that respects each other... and you all play an important role in the success of the treatment.” Another nursing student described it this way:

We're all in a health-related field, yet our job description and what we can do is so different, so just having that knowledge and respect and knowing how to communicate with other disciplines is important. . . It builds trust . . . they don't have to go back and recheck everything that we did, and we're not nervous that they're gonna screw anything up.

Overall, the importance of respecting other members' knowledge was summarized best by an athletic training student who said,

I think just being able to respect them and know what's going on when you're not around is just a way that you can better work together and communicate. . . and have a better understanding . . . what kind of questions you can ask. To see . . . truly what's being done with your patient.

Knowledge of Other Professions

The third theme revealed from the postsimulation focus group discussion was knowledge of other professions. One nursing student reflected on the simulation and knowledge of other health professions in general and stated, "Simulations like this, I think, are really good to learn about any other careers and what their expectations are, cause...we're so focused on our own that it's hard to see." An athletic training student stated, "It would be good if there was a class where we...took time and learned the different things that everybody does." Students also reported having a lack of knowledge regarding scopes of practice and availability of resources within health care professions. For example, a nursing student indicated,

I didn't know what the [athletic] trainer's role was until this collaboration at all. I wouldn't have known how to best utilize their presence if I was there...in the emergency room...I know now that that's a big resource.

Communication

The final theme identified in the focus group discussion was communication. When asked how interprofessional learning would impact future interprofessional work, one student stated,

And that's something that's good for us to understand, so that we can learn and build on that, interdisciplinary communication, which we're going to have to be doing for our whole lives, our whole careers anyway.

Other students commented on their previous lack of understanding of the importance of communication. Two different athletic training students had similar experiences, with one noting:

. . . before today, I didn't know how important it was for us to get the full story and everything that's wrong with the person and everything's that's going on so that we can get it to the [emergency medical technicians] so that they can get it to you [nursing and occupational therapy].

The second athletic training student also emphasized the importance of reporting on a client or patient to other professions, stating, "...I didn't realize how substantially important it is for us to get everything [from report], so that

makes it easier for you guys [nursing and occupational therapy] to do what you need to do." Other students expressed the need to share information interprofessionally regardless of education level, such as the occupational therapy student who simply said, "No, absolutely not...if you [nursing] have knowledge, share it." Finally, students also commented on how knowledge of and respect for other professions can impact communication. A nursing student said,

So just having that knowledge and respect and knowing how to communicate with other disciplines because like as a nurse we're not going to do like occupational therapy. . . or physical therapy. . . So just having that knowledge and respect for another profession.

DISCUSSION

The findings from the focus groups were similar to findings from other research studies that used interprofessional simulations. The students who participated in the study had not received formal education regarding interprofessional collaborative practice; even so, their discussion centered on the 4 Interprofessional Education Collaborative (IPEC)¹⁶ core competencies for interprofessional collaborative practice, which are (1) values/ethics for interprofessional practice, (2) roles/responsibilities, (3) interprofessional communication, and (4) teams and teamwork.

Values/Ethics for Interprofessional Practice

The first core competency identified by IPEC is that of values and ethics for interprofessional practice, defined as "work with individuals of other professions to maintain a climate of mutual respect and shared values."^{16(p10)} For IPE and interprofessional practice to be successful, it is critical that clinicians and students respect one another's professions, as well as the individual members of the professions. The students who participated in this simulation consistently noted the importance of mutual respect and shared values with individuals from other disciplines. Students identified that they gained respect for what other professions do, as well as the importance of how this newfound respect leads to enhanced interprofessional teamwork. Additionally, throughout the focus groups, students continually commented on the shared values component of this core competency, as they described working toward one goal with the patient.

The findings of the qualitative data from the focus groups were similar to findings from other IPE research. When Tivener and Gloe¹⁷ completed an interprofessional simulation with athletic training and nursing students, they found students demonstrated a reinforced respect for the other discipline. Similarly, nursing, pharmacy, and medical students reported developing a mutual respect for one another's professions after a simulation that included presenting their findings to an interprofessional team.¹⁸ Interprofessional education simulations allow students to have the opportunity to learn more about and gain respect for other professions, as well as for the individuals practicing within the discipline.

Roles/Responsibilities

One way of gaining respect for other professions is to enhance the students' understanding of the roles and responsibilities of

these professions through the simulation. The IPEC defines their second core competency of roles/responsibilities as the use of “knowledge of one’s own role and those of other professions to appropriately assess and address the health care needs of patients and to promote and advance the health of populations.”^{16(p10)} This core competency matches up with the theme from the focus groups of knowledge of other professions. Students in the postsimulation focus groups indicated that they thought the simulation was helpful in learning more about other professions, as well as the other professions’ scopes of practice.

When a large number of students from 10 different health care professions completed an introductory IPE course, they described the purpose of IPE as teaching them about their future roles as clinicians and learning more about what other professions do.⁹ Doll et al^{19(p195)} found that the students who participated in their IPE experience described the importance of roles/responsibilities as they related to the prioritization of patient care goals and the use of holistic care by health care professionals. Understanding of the roles and responsibilities of each member of the health care team is perhaps the most critical element needed to successfully meet the other 3 core competencies. Without an understanding of the role each health care member plays, students may not develop respect for other professions, and this lack of knowledge can decrease the perceived need for interprofessional collaboration or communication. Specifically, students described a lack of understanding of the roles and responsibilities of athletic trainers, which further emphasizes the need for athletic training to be included in IPE simulations and activities.

Interprofessional Communication

The IPEC defines interprofessional communication as communication with “patients, families, communities, and professionals in health and other fields in a responsive and responsible manner that supports a team approach to the promotion and maintenance of health and the prevention and treatment of disease.”^{16(p10)} Students emphasized the importance of communication with other health care professionals in a way that would lead to an improved level of care for the patient, as well as an increase in efficacy for members of the health care team. The connection between the students’ discussion on communication and the IPEC core competency of interprofessional communication may have best been described by the student who said:

...just ask them. You know, ask the family, ask the other people in your team. Because then you can get the patient’s perspective rather than the professional’s perspective on how care is going and can see the patient reacting to what care is being given to them.

The theme of communication is consistent with previous findings in the literature. Within IPE opportunities, researchers of 2 recent studies^{17,19} found that students emphasized communication as an important aspect. Doll et al¹⁹ used students from a variety of health care professions, which included occupational therapy and nursing, who indicated that interprofessional communication impacted team dynamics and decision making. Similarly, Tivener and Gloe¹⁷ completed an interprofessional simulation with athletic training and nursing students. When debriefed after the simulation, these students reiterated the necessity of good

communication for providing appropriate care and always being aware of what was going on with their patient.

Much of students’ learning in the health care professions takes place within their specific discipline of study. However, health care services to patients typically do not occur with the involvement of just one discipline, but rather a variety of disciplines interacting with the patient and one another in multiple settings. Even after only one exposure to an IPE opportunity, students participating in this study understood the importance of communication with their health care peers. It is critical for students to learn to communicate with individuals in other health care professions, as well as with their patients and patients’ families, in a way that supports an interprofessional approach.

Teams and Teamwork

The final core competency delineated by the IPEC is the concept of teams and teamwork, defined as the application of “relationship-building values and the principles of team dynamics to perform effectively in different team roles to plan, deliver, and evaluate patient/population-centered care and population health programs and policies that are safe, timely, efficient, effective, and equitable.”^{16(p10)} The theme that emerged from the focus groups was one of collaboration. Collaboration is closely connected with teamwork; the IPEC defines interprofessional teamwork as “the levels of cooperation, coordination, and collaboration characterizing the relationships between professions in delivering patient-centered care.”^{16(p8)} Strong interprofessional teams cannot exist effectively without collaboration. Similarly, the theme of collaboration came up most frequently with students during their focus group discussions when trying to define an interprofessional team. Statements from focus group participants show the importance of collaborating as an interprofessional team in providing the best evidence-based care for the patient. This is similar to findings from Doll et al,¹⁹ whose students indicated the importance of team interaction skills as well as valuing viewpoints from other health care disciplines. The student participants in the study by Sergakis et al,⁴ representing 8 different disciplines, including nursing and occupational therapy, identified teamwork and collaboration as important, noting that they could rely on other disciplines for expertise. By participating in an interprofessional simulation experience, the students actively worked together to provide patient care, as well as identified the importance of collaborative care and the benefit it can provide the patient.

Limitations

This study was completed at a private midsized Midwestern university, which may limit the transferability of the results to larger institutions. The authors of this study did not control for or assess whether students participating in the simulation had previous interprofessional experience. Prior interprofessional didactic or clinical experiences may have influenced students’ attitudes toward other professions. While debriefing the students after the simulation, it became clear that the students had received differing levels of preparation from their discipline-specific faculty members. Some faculty did not prebrief their students, whereas others provided information about the patient’s diagnosis to prepare students for their roles. These differences could have impacted how the students

experienced the simulation and the opportunity to interact interprofessionally. Students also described that they had not had equal opportunity to explore and use the simulation center before the simulation experience. Nursing students who had been in the simulation center before may have felt more comfortable during the simulation experience, whereas athletic training and occupational therapy students visiting the simulation center for the first time may have felt uncomfortable with the new setting, which could have impacted their attitudes toward the simulation experience. Additionally, focus groups had some inequality in that one focus group comprised only nursing and athletic training students, because only one occupational therapy student participated in the focus groups. Finally, researchers did not control for whether focus group members actively participated in or only observed the simulation activities. The focus groups consisted of student volunteers, and these students may have had positive attitudes toward IPE that prompted them to participate in the focus groups. Therefore, the focus groups may not have been indicative of all students' perceptions of IPE. The authors recommend further studies about IPE involving athletic training students as well as the students' attitudes about the resultant IPE experience.

RECOMMENDATIONS

It is possible that students' perceptions and attitudes after an interprofessional simulation do not necessarily precipitate improved interprofessional attitudes, behaviors, or collaboration in the practice setting. Further research is needed to determine the impact of an interprofessional simulation involving athletic training students on the interprofessional collaborative practice of those involved. Furthermore, the researchers recommend further longitudinal research related to the persistence of perceptions after educational events.

In the future, the authors plan to continue to increase the number of disciplines that are involved in the simulation, with the intent to include social work, psychology, and physical therapy in the immediate future. With the addition of these new disciplines, the team would like to increase the number of students who participate in the simulation experience, as well as have 3 or 4 interprofessional focus groups. Finally, the team anticipates building in an opportunity to orient students to the simulation center before beginning the simulation to remove some of the sense of the unknown from the experience.

CONCLUSIONS

In conclusion, athletic training, nursing, and occupational therapy students who participated in an interprofessional simulation described their experiences in a way that was congruent with the IPEC¹⁶ core competencies. The themes that students described were collaboration, respect, knowledge of other professions, and communication. Respectively, these themes correspond to the IPEC¹⁶ core competencies of teams and teamwork, values/ethics for interprofessional practice, roles/responsibilities, and interprofessional communication. A single IPE simulation provided an opportunity for students to collaborate with fellow health care students and observe positive patient outcomes. The event generated positive student participant reflections related to attitudes toward interprofessional collaboration.

Athletic training students have not been well represented in the IPE literature. Anecdotally, educators from other professions have told the authors that they forget about the athletic training role in patient care and see them as peripheral to the care that traditionally occurs in the inpatient setting. However, this study used athletic training students in the prehospital and emergent care of an injured athlete, seeing them as essential for other professional students' understanding of the care of a patient in the field. The authors recommend further studies about IPE education involving athletic training students as well as the students' attitudes about the resultant IPE experiences. The research team continues to develop and implement IPE events including athletic training students, expanding experiences to other professions as well.

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