Fostering Interdisciplinary Communication Between Pharmacy and Nursing Students

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TEACHERS’ TOPICS

Fostering Interdisciplinary Communication between Pharmacy and Nursing Students

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Objective. To evaluate pharmacy and nursing student self-perceptions of interdisciplinary communication skills, faculty member perceptions of interdisciplinary communication skills, and changes in those skills after increasing the interdisciplinary education content.

Design. Two cohorts of pharmacy and nursing (bachelors of science in nursing, BSN) students in respective, semester-long research courses engaged in active learning on interdisciplinary communication, with the second cohort receiving additional content on the topic. At semester completion, students presented a research project at an interdisciplinary poster session.

Assessment. Self-, peer-, and faculty evaluations (4 items; 5-point Likert-type) assessing self-confidence and actual interdisciplinary communication skills were completed during the poster session. Overall, students responded they were “very confident” or “extremely confident” regarding the skills, with greater confidence reported by the second cohort. Faculty members agreed that students exhibited effective interdisciplinary communication skills, with stronger agreement for the second cohort.

Conclusion. Including interdisciplinary education and experiences in a curriculum increases students’ interdisciplinary communication skills. Using multiple interdisciplinary experiences may result in greater increases in these skills.

Keywords: interdisciplinary, communication, pharmacy education, assessment, poster session

INTRODUCTION

A lack of communication among professionals is a problem in healthcare.¹⁻⁴ Each health care profession has defined its identity, values, scope of practice, and role in patient care.⁴ Discipline-specific socialization often can be subtly negative toward other professions, contributing to ineffective interdisciplinary communication.⁵ The negativity can be overcome through improved communication as it is the key to a successful multidisciplinary team.⁶⁻⁷ Effective interdisciplinary communication leads to improved employment satisfaction among health professionals, improved patient care, and reduced healthcare costs.⁸ Through effective interdisciplinary communication, resources can be more efficiently handled, which can improve patient care because of a reduction in duplication and service provision gaps.⁹

To improve interdisciplinary communication, interprofessional education should be implemented prior to entering the work force, as students often are unprepared to communicate and work with other health care professionals upon graduation.⁵,⁸ Interprofessional education is defined as “educators and learners from two or more health professions and their foundational disciplines who jointly create and foster a collaborative learning environment. The goal of these efforts is to develop knowledge, skills and attitudes that result in interprofessional team behaviors and competence.”¹⁰ Because of the fast-paced and interruptive environment of health care, the better time to teach health care professionals how to build interprofessional relationships is while they are still students.¹¹ Students recognize that shared learning can enhance future relationships.¹² Previous incorporation of interprofessional education into curricula has proven effective, particularly interprofessional learning sessions.⁵,¹³,¹⁴ Simulations provide students with a safe environment to gain confidence in their skills. Students agree they are better able to work in an interdisciplinary
team based on such experiences. Moreover, student perceptions of interprofessional skills increased as a result of a session where students learned about different scopes of practice, and students reported that they gained confidence in their communication skills.

Accrediting bodies also recognize the importance of interprofessional education. For example, the Accreditation Council for Pharmacy Education (ACPE) and the American Association of Colleges of Nursing (AACN) mandate that interdisciplinary communication be incorporated into the curriculum. According to ACPE, pharmacists should be able to “provide entry-level, patient-centered care in a variety of practice settings as a contributing member of an interprofessional team,” while AACN states that BSN nurses must “demonstrate appropriate team-building and collaborative strategies when working with interprofessional teams.” Integrating interdisciplinary communication into the didactic curriculum provides students with a safe environment to learn skills to build interprofessional relationships, and the more confident students feel in their communication abilities, the more likely they are to use them.

The Center for the Advancement of Pharmaceutical Education (CAPE) 2013 Educational Outcomes (3.4.3) state that students “should be able to communicate in a manner that values team-based decision making and shows respect for contributions from other areas of expertise.” Competency Domain 3 of the Interprofessional Education Collaborative (IPEC) emphasizes interdisciplinary communication as well. Recommendations from the literature consistently include opportunities for students to practice communicating information, whether it is through the Situation-Background-Assessment-Recommendation (SBAR) communication process or through teamwork. Based on this research, an interdisciplinary poster session was created to give pharmacy and nursing students in respective research courses the opportunity to practice communication skills outlined in the CAPE outcomes and to be able to “organize and communicate information with patients, families, and health care team members in a form that is understandable, avoiding discipline-specific terminology when possible” (IPEC CC2).

Pharmacy students were in a Research Design and Methodology course during the first semester of their first professional year, which gave them the earliest possible introduction to interdisciplinary communication and opened later opportunities for curricular reinforcement. Moreover, students learned in the beginning of the didactic curriculum how to communicate evidence from the literature (eg, a rationale for a research study or the results from an evidence-based literature review) to an interdisciplinary audience.

Therefore, the primary objective of this study was to evaluate pharmacy and nursing student self-perceptions of interdisciplinary communication skills and faculty member perceptions of students’ actual interdisciplinary communication skills. After the first interdisciplinary poster session was incorporated, the interdisciplinary content was expanded to further meet the definition of interprofessional education and to strengthen student skills. Thus, a secondary objective was to examine changes in interdisciplinary communication skills after increasing interprofessional content during the second, consecutive academic year. A third objective was to evaluate the impact of these changes on interdisciplinary communication.

**DESIGN**

This prospective, semester-long project was conducted at Cedarville University in the fall semesters of 2012 and 2013. Institutional Review Board exempt status was obtained at the university prior to conducting the study. Participants were first professional year pharmacy students and third-year bachelors’ nursing students.

The interdisciplinary poster session was integrated into existing overlapping courses: a pharmacy course on research design and methodology and a nursing course on research and evidence-based practice. These courses were selected because interdisciplinary collaboration is an important factor in the application of research results and is associated with the use of evidence-based practice. Specific learning outcomes for the interdisciplinary poster session in years 1 and 2 and the additional sessions in year 2 can be found in Table 1, as well as how each outcome addressed the IPEC competencies. In the pharmacy research course, students completed a research proposal as part of the course requirements. Students were placed into small groups of 4 to 6, and each group created proposals to address pharmacy practice-based research questions (ie, community pharmacists’ ability to communicate in appropriate health-literacy language) or science-based research questions (ie, pharmacokinetics of an antibiotic regimen in pediatrics). In the nursing course, students were placed into small groups of 3 to 4, and each group completed a literature review research project, which incorporated evidence-based principles from a clinical experience question developed at their experiential site. Students in both courses spent the semester working on their projects. Since students completed a project or project proposal, faculty members implemented a poster session at the end of the semester at which students could present their final projects or proposals.

During the first offering in fall 2012, an active-learning lecture about interprofessional communication
Table 1. Student Learning Outcomes, Assessment, and IPECa Competency Addressed

<table>
<thead>
<tr>
<th></th>
<th>Learning (Bloom’s Taxonomy)</th>
<th>Self, Peer, and Faculty Assessment Item</th>
<th>IPEC Competency Addressed</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Poster Session Learning Outcomes for 2012 and 2013</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Describe the general scope of their practice area and expertise to another health care provider</td>
<td>Knowledge</td>
<td>Item 1: I am/the student is able to provide a brief explanation of how the topic relates to the scope of pharmacy or nursing.</td>
<td>CC7</td>
</tr>
<tr>
<td>Present a coherent explanation of their project or proposal to a multi-disciplinary health professional audience using common language</td>
<td>Understand</td>
<td>Item 2: I am/the student is able to provide an overview of the project in a language that any health care professional student can understand. Item 3: I am/the student is able to provide a description of the project importance to the health profession (ie, patients, providers,) in a language that any health care professional student can understand.</td>
<td>CC2</td>
</tr>
<tr>
<td>Provide answers to questions posed by other health care professionals using common language and the appropriate level of depth and understanding</td>
<td>Evaluate</td>
<td>Item 4: I am/the student is able to provide answers to questions from a multi-disciplinary health professional audience with the appropriate level of depth/understanding.</td>
<td>CC3</td>
</tr>
<tr>
<td><strong>Interprofessional Communication Session Learning Outcomes for 2013 Only</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Session 1: Define interprofessional communication. Describe the importance of interprofessional communication.</td>
<td>Knowledge</td>
<td>In-Class Quiz</td>
<td>Introductory – no specific competency addressed</td>
</tr>
<tr>
<td>Session 2: Describe the SBARb method of interprofessional communication. Communicate a situation to another health care professional using the SBAR method.</td>
<td>Knowledge, Apply</td>
<td>Large Group Discussions, Patient Case Practice</td>
<td>CC1, CC2</td>
</tr>
</tbody>
</table>

aInterprofessional Education Collaborative
bSituation, Background, Assessment, Recommendation
was co-taught by pharmacy and nursing faculty members
to students in their respective classes. The lecture addressed
learning objectives (communicating how their project
relates to their field, providing a project overview, and
answering questions). A brief description of the interdisci-
plinary poster session also was presented in this lecture.
In another class session, a pharmacy faculty member pre-
sented an overview of pharmacy research to nurs-
ing students, and a nursing faculty member presented
a similar overview of nursing research to pharmacy stu-
dents. In each session, faculty members discussed how
multiple health care professions interacted in the area of
research and evidence-based practice. Another class lec-
ture was held during which a nursing faculty member
provided an overview to pharmacy students of using the-
ory in research.

At the end of the semester, a 2-hour interdisciplinary
poster session was held to present the students’ final
proposals and projects. Students were asked to create pro-
fessional conference-style posters and were given exam-
amples of them. Students presented either their research
proposal (pharmacy) or their evidence-based practice lit-
erature review research project (nursing) findings and
performed self-evaluations and peer-evaluations of inter-
disciplinary communication. The posters were displayed
in different rooms throughout the Health Sciences Center.
Each room included pharmacy and nursing student
groups, with approximately 4 to 5 posters per room.
One pharmacy and one nursing faculty member were
assigned to each room to evaluate students’ interdisciplin-
ary communication skills.

The first half-hour of the poster session was an open
session, where faculty members and students could view
posters. During that time, pharmacy and nursing faculty
members and students engaged student presenters regard-
ing their posters which facilitated sharing knowledge
across disciplines. Students were required to have one
team member present at the poster during this time. The
next hour of the poster session was for formal presenta-
tions. Each student group was given 5 minutes to present
to the students and faculty members in the room and
3 minutes to answer questions, again facilitating discus-
sion with those outside of their discipline. During the last
half-hour, evaluations were completed; no further faculty
time was required.

During the second year of implementation, fall 2013,
the class lectures from fall 2012 were continued, and ad-
ditional sessions were incorporated to further address and
reinforce the interprofessional component (Figure 1). In
addition to the previous format, students in the pharmacy
and nursing courses participated in 2 joint interprofes-
sional education class sessions. Prior to each session,
students from both fields completed assigned readings
on interdisciplinary communication. Readings were brief
and were designed to be read and learned in an hour. In
each hour-long session, students completed a 5-item
knowledge quiz based on the preclass readings.

In session 1, students participated in a networking
“Bingo” game to get to know one another and learned
principles of interdisciplinary communication. The game
included a 4x4 Bingo grid with personal or interest-
related characteristics (ie, been to every state in the
United States) or professional-related characteristics (ie, wants
to work in pediatrics). For all professional-related charac-
teristics, students had to find an individual in the other
health profession who fit the category. In the second ses-

The interdisciplinary communication evaluation
rubric was developed from peer-reviewed literature
and underwent review by a pharmacy student, nursing
and pharmacy faculty members, and an assessment ex-
pert prior to administration. Each rubric contained
4 items, based on students’ ability to explain the role of
nursing or pharmacy in the topic area, provide a project
overview, describe project importance, and answer
questions. The rubric was mapped to the learning objec-
tives for the poster session (Table 1), and all questions
were formulated for communicating to an interdisciplin-
ary audience.

The 3 rubrics (self-, peer, faculty evaluation) used
the same 4 statements with different scaling (ie, level
of confidence for self-evaluation and level of agreement
with regard to ability for peer and faculty evaluations)
to examine confidence and competence. The self-
evaluation used a 5-point Likert scale-type evaluation
of confidence (1=not at all confident to 5=extremely
confident), while the faculty and peer evaluations used
a 5-point Likert scale-type evaluation of competence
(1=strongly disagree to 5=strongly agree). All surveys
underwent student, peer, and expert review prior to use.
During the poster session presentation, student groups
who were not presenting completed peer-evaluations of
presenters. Faculty members also completed an evaluation
on presenters. At the end of the poster session, student presenters completed the self-evaluation.

Data were analyzed with SPSSv21.0 (IBM, Armonk, NY). Frequencies and descriptive statistics were performed on the interdisciplinary communication assessments. Because the data were from Likert scale-type evaluations and did not pass the Shapiro-Wilk test for normality, nonparametric tests were used. Mann-Whitney U tests were performed to compare the differences in years of implementation and to compare differences between pharmacy and nursing. Spearman correlations were performed to assess the association between student and faculty evaluations.

EVALUATION AND ASSESSMENT

In year 1 (2012), 140 students participated (pharmacy n=51; nursing n=89), along with 9 pharmacy and 7 nursing faculty members. Most of the participants were female (n=86, 79.6%) and between the ages of 20 and 21 (n=75, 53.6%; Table 2). One hundred fifty-seven students participated (pharmacy n=47; nursing n=110) in year 2 (2013), along with 10 pharmacy and 10 nursing faculty members. The majority of students were female (n=128, 81%), with 39.9% (n=63) age 20.

In fall 2012, 54.3% of students reported being extremely confident they could provide a brief explanation of how their topic related to the scope of pharmacy or nursing, with 71.7% of peer evaluations strongly agreeing and 49.5% of faculty evaluations agreeing with this statement (Table 3). Students believed that they provided an overview of their project in an interdisciplinary manner, with 58.6% of students reporting extreme confidence. Peers and faculty members similarly agreed, with 72.1% and 63.7% strongly agreeing, respectively. Students responded with very confident or extremely confident (60.7% combined) that they provided a description of the project’s importance to the health profession in an interdisciplinary manner, with 72.6% of peers and 56% of faculty members also strongly agreeing. Students reported they were able to answer questions from a multi-disciplinary audience with the appropriate level of understanding, with 50% being extremely confident in this skill. Their peers strongly agreed with this (73.6%), and faculty members strongly agreed as well (51.6%).

There were two significant differences between pharmacy and nursing on the self-evaluation in fall 2012. Nursing students rated themselves as more confident than pharmacy students did in providing a brief explanation of how their topic related to the scope of pharmacy or nursing. However, both groups of students and faculty members agreed that nursing students were more confident in their ability to answer questions from a multi-disciplinary audience with appropriate understanding.
Table 2. Demographic Information for the Two Cohorts of Pharmacy and Nursing Students

<table>
<thead>
<tr>
<th></th>
<th>Fall 2012a (n (%))</th>
<th>Fall 2013b (n (%))</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>22 (20)</td>
<td>29 (18)</td>
</tr>
<tr>
<td>Female</td>
<td>86 (80)</td>
<td>128 (81)</td>
</tr>
<tr>
<td><strong>Age</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than 19</td>
<td>0 (0)</td>
<td>0 (0)</td>
</tr>
<tr>
<td>19</td>
<td>4 (4)</td>
<td>18 (11)</td>
</tr>
<tr>
<td>20</td>
<td>39 (36)</td>
<td>63 (40)</td>
</tr>
<tr>
<td>21</td>
<td>36 (33)</td>
<td>48 (30)</td>
</tr>
<tr>
<td>22</td>
<td>11 (10)</td>
<td>17 (11)</td>
</tr>
<tr>
<td>23</td>
<td>2 (2)</td>
<td>3 (2)</td>
</tr>
<tr>
<td>24</td>
<td>2 (2)</td>
<td>1 (1)</td>
</tr>
<tr>
<td>Older than 24</td>
<td>14 (13)</td>
<td>7 (4)</td>
</tr>
<tr>
<td><strong>Ethnicity</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Caucasian</td>
<td>100 (93)</td>
<td>147 (93)</td>
</tr>
<tr>
<td>African American</td>
<td>4 (4)</td>
<td>3 (2)</td>
</tr>
<tr>
<td>Hispanic</td>
<td>1 (1)</td>
<td>0 (0)</td>
</tr>
<tr>
<td>Asian or Pacific Islander</td>
<td>3 (3)</td>
<td>1 (1)</td>
</tr>
<tr>
<td>Other</td>
<td>0 (0)</td>
<td>1 (1)</td>
</tr>
<tr>
<td><strong>Major</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pharmacy</td>
<td>51</td>
<td>47</td>
</tr>
<tr>
<td>Nursing</td>
<td>89</td>
<td>110</td>
</tr>
</tbody>
</table>

aFall 2012, N=140
bFall 2013, N=157

differences in faculty ratings for pharmacy and nursing students (Table 3). Only one student self-assessment item was associated with the corresponding faculty assessment (Item 3, Spearman’s rho = -0.27, p = 0.037).

In fall 2013, 72% of students reported being extremely confident in their ability to provide a brief explanation of how their topic related to the scope of pharmacy or nursing, with 74.2% of peers and 63.1% of faculty members strongly agreeing (Table 3). Nearly 69% of students were extremely confident they provided an overview of their topic in an interdisciplinary manner, with 75% of peers and 79.8% of faculty members strongly agreeing. Students responded that they were very confident or extremely confident (71.3%) they provided a description of the project’s importance to the health profession in an interdisciplinary manner. Peers strongly agreed (68%), and faculty members agreed (59.5%). Also, 51.6% of students reported being extremely confident in their ability to answer questions from a multidisciplinary audience with the appropriate level of understanding. Peers and faculty members strongly agreed (75.5% and 77.4%, respectively).

There were no significant differences between how pharmacy and nursing students scored themselves on the self-evaluation (Item 1: p = 0.583, 2: p = 0.090, 3: p = 0.157, 4: p = 0.619), or between the pharmacy and nursing students on the faculty evaluations in fall 2013 (Item 1: p = 0.469, 2: p = 0.425, 3: p = 0.068, 4: p = 0.774). There also were no significant associations between faculty member and student assessments of interdisciplinary communication skills.

Table 3. Self-, Peer-, and Faculty Evaluation Responses from the Interdisciplinary Poster Session

<table>
<thead>
<tr>
<th></th>
<th>Disagree n (%)</th>
<th>Neutral n (%)</th>
<th>Agree n (%)</th>
<th>Strongly Agree n (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Self</strong></td>
<td>Fall 2012</td>
<td>Fall 2013</td>
<td>Fall 2012</td>
<td>Fall 2013</td>
</tr>
<tr>
<td>1</td>
<td>0 (0)</td>
<td>0 (0)</td>
<td>9 (6)</td>
<td>4 (3)</td>
</tr>
<tr>
<td>2</td>
<td>0 (0)</td>
<td>0 (0)</td>
<td>8 (6)</td>
<td>3 (2)</td>
</tr>
<tr>
<td>3</td>
<td>0 (0)</td>
<td>0 (0)</td>
<td>9 (6)</td>
<td>4 (3)</td>
</tr>
<tr>
<td>4</td>
<td>0 (0)</td>
<td>0 (0)</td>
<td>20 (14)</td>
<td>21 (13)</td>
</tr>
<tr>
<td><strong>Peer</strong></td>
<td>Fall 2012</td>
<td>Fall 2013</td>
<td>Fall 2012</td>
<td>Fall 2013</td>
</tr>
<tr>
<td>1</td>
<td>0 (0)</td>
<td>2 (0)</td>
<td>12 (2)</td>
<td>3 (1)</td>
</tr>
<tr>
<td>2</td>
<td>1 (0)</td>
<td>2 (0)</td>
<td>14 (2)</td>
<td>14 (3)</td>
</tr>
<tr>
<td>3</td>
<td>0 (0)</td>
<td>0 (0)</td>
<td>10 (1)</td>
<td>10 (2)</td>
</tr>
<tr>
<td>4</td>
<td>0 (0)</td>
<td>1 (0)</td>
<td>6 (1)</td>
<td>16 (3)</td>
</tr>
<tr>
<td><strong>Faculty</strong></td>
<td>Fall 2012</td>
<td>Fall 2013</td>
<td>Fall 2012</td>
<td>Fall 2013</td>
</tr>
<tr>
<td>1</td>
<td>2 (2)</td>
<td>0 (0)</td>
<td>1 (1)</td>
<td>4 (5)</td>
</tr>
<tr>
<td>2</td>
<td>1 (1)</td>
<td>0 (0)</td>
<td>1 (1)</td>
<td>5 (6)</td>
</tr>
<tr>
<td>3</td>
<td>2 (2)</td>
<td>0 (0)</td>
<td>1 (1)</td>
<td>6 (7)</td>
</tr>
<tr>
<td>4</td>
<td>0 (0)</td>
<td>0 (0)</td>
<td>4 (4)</td>
<td>0 (0)</td>
</tr>
</tbody>
</table>

aFall 2012 N=140; Fall 2013 N=157
bFall 2012 N=689; Fall 2013 N=507
cFall 2012 N=91; Fall 2013 N=84
Of the 4 self-evaluation items, 3 items had significant increases during the second year of implementation ($p<0.05$, Table 4). For example, students reported being more confident they could provide a brief explanation of how their topic related to the scope of their discipline and that they could provide a description of the project importance to the health profession in a language that any health care professional student could understand. There were no significant differences in the results of the peer assessments between the years. Of the 4 faculty-evaluation items, 2 items had significant increases during the second year of implementation ($p<0.05$). Faculty members had greater agreement in the second year that students could provide an overview of their project in a language any health care professional student could understand and that students were able to provide answers to questions from a multidisciplinary health professional audience with the appropriate depth.

**DISCUSSION**

The increasingly interprofessional nature of health care and the improved patient outcomes associated with interprofessional care emphasize the importance of preparing future health care professionals to effectively work in teams. Moreover, accrediting bodies and education collaboratives believe interprofessional education should be incorporated into curricula. $^{14,18,24}$ To meet these needs, an interdisciplinary poster session was incorporated into the beginning of a professional pharmacy program to improve interdisciplinary communication skills.

Even though the first interdisciplinary poster session resulted in positive student outcomes, potential improvements to the experience were identified. Consequently, the content was expanded in didactic instruction and evaluated to determine whether these changes further improved interdisciplinary communication.

Students reported a high level of confidence in their interdisciplinary skills. This could be a result of their exposure to the topic of interdisciplinary communication through the poster session as well as the 2 additional interprofessional education sessions included in the second year. Moreover, researchers used multidisciplinary health care training teams to complete case tutorials, and student confidence and willingness to interact interprofessionally increased as a result of the experience. $^{25}$ Thus, increasing student exposure to interdisciplinary experiences could improve confidence when interacting with other health disciplines.

During both years of this project, students expressed high confidence in their ability to speak to a multidisciplinary audience in an appropriate manner, and faculty members agreed overall that students successfully presented their posters with these skills. According to Bandura’s social cognitive theory, individuals will be more likely to complete a skill if they are confident in their ability of the skill. $^{16}$ Therefore, as students increase their confidence in talking to other health professionals, they will be more likely to continue using this skill in their future career. Previous research showed health professionals who participated in interprofessional educational opportunities as students were more confident in their abilities to engage interprofessionally in the workplace. $^{26}$

Student confidence significantly improved during the second year of implementation, which included additional education and activities in interdisciplinary communication. Providing students with further awareness of the topic, as well as increased interactions with other health professions students created an opportunity to build their confidence in interdisciplinary communication. One reason for the significant increase in self-confidence from fall 2012 to fall 2013 could be because of the increased interaction students had with other health professional students prior to the final poster session. Giving diverse health professions students time to become acquainted with one another can lead to an increase in trust and respect. $^{27}$ Relationships may have been established during the sessions and, therefore, communication in the poster session may have been easier.

Faculty agreement validated the students’ reported confidence levels. Self-evaluations completed by students may not have accurately reflected their skills; therefore, it was important to have other measures—in this case, faculty evaluations. $^{28}$ Faculty agreement that students exhibited interdisciplinary skills increased significantly from fall 2012 to fall 2013. This agreement provided validated not only students’ interdisciplinary communication skills, but also that inclusion of more interprofessional education and activities in interdisciplinary communication skills, but also that inclusion of more interprofessional education enhanced students’ skills in this area. However, there were no significant associations between faculty scores and student scores in the second year and only one association in the first year (ability to provide a description of the project importance). Thus, while the frequency data suggested faculty agreement, inferentially, that case cannot be made.

Incorporating interdisciplinary education into the curriculum is not without its issues. Scheduling the poster session was challenging, given the different dates and times the pharmacy and nursing courses were held. In the second year, scheduling became more complicated with the addition of 2 interdisciplinary sessions. To address these challenges, both pharmacy and nursing academic departments rescheduled classes during those time periods. The 2 faculty members (one pharmacy and one
<table>
<thead>
<tr>
<th>Self</th>
<th>Fall 2012 Mean (SD)</th>
<th>Fall 2013 Mean (SD)</th>
<th>Z</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I am able to provide a brief explanation of how the topic relates to the scope of pharmacy or nursing.</td>
<td>4.5 (0.6)</td>
<td>4.7 (0.5)</td>
<td>3.24</td>
<td>0.001</td>
</tr>
<tr>
<td>2. I am able to provide an overview of the project in a language that any health care professional student can understand.</td>
<td>4.5 (0.6)</td>
<td>4.7 (0.5)</td>
<td>1.99</td>
<td>0.047</td>
</tr>
<tr>
<td>3. I am able to provide a description of the project importance to the health profession (ie, patients, providers) in a language that any health care professional student can understand.</td>
<td>4.5 (0.6)</td>
<td>4.7 (0.5)</td>
<td>2.06</td>
<td>0.039</td>
</tr>
<tr>
<td>4. I am able to provide answers to questions from a multi-disciplinary health professional audience with the appropriate level of depth/understanding.</td>
<td>4.4 (0.7)</td>
<td>4.4 (0.7)</td>
<td>0.30</td>
<td>0.77</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Peer</th>
<th>Fall 2012 Mean (SD)</th>
<th>Fall 2013 Mean (SD)</th>
<th>Z</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. The presenter was able to provide a brief explanation of how the topic relates to the scope of pharmacy or nursing.</td>
<td>4.7 (0.5)</td>
<td>4.7 (0.5)</td>
<td>0.99</td>
<td>0.32</td>
</tr>
<tr>
<td>2. The presenter was able to provide an overview of the project in a language that any health care professional student can understand.</td>
<td>4.7 (0.5)</td>
<td>4.7 (0.5)</td>
<td>0.95</td>
<td>0.34</td>
</tr>
<tr>
<td>3. The presenter was able to provide a description of the project importance to the health profession (ie, patients, providers) in a language that any health care professional student can understand.</td>
<td>4.4 (0.5)</td>
<td>4.7 (0.5)</td>
<td>1.76</td>
<td>0.079</td>
</tr>
<tr>
<td>4. The presenter was able to provide answers to questions from a multidisciplinary health professional audience with the appropriate level of depth/understanding.</td>
<td>4.7 (0.5)</td>
<td>4.7 (0.5)</td>
<td>-0.59</td>
<td>0.55</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Faculty</th>
<th>Fall 2012 Mean (SD)</th>
<th>Fall 2013 Mean (SD)</th>
<th>Z</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. The student was able to provide a brief explanation of how the topic relates to the scope of pharmacy or nursing.</td>
<td>4.4 (0.6)</td>
<td>4.6 (0.6)</td>
<td>1.91</td>
<td>0.056</td>
</tr>
<tr>
<td>2. The student was able to provide an overview of the project in a language that any health care professional student can understand.</td>
<td>4.6 (0.6)</td>
<td>4.7 (0.6)</td>
<td>2.17</td>
<td>0.030</td>
</tr>
<tr>
<td>3. The student was able to provide a description of the project importance to the health profession (ie, patients, providers) in a language that any health care professional student can understand.</td>
<td>4.5 (0.6)</td>
<td>4.5 (0.6)</td>
<td>0.31</td>
<td>0.75</td>
</tr>
<tr>
<td>4. The student was able to provide answers to questions from a multi-disciplinary health professional audience with the appropriate level of depth/understanding.</td>
<td>4.4 (0.6)</td>
<td>4.8 (0.4)</td>
<td>4.53</td>
<td>&lt;0.001</td>
</tr>
</tbody>
</table>
nursing) taught the interdisciplinary sessions in the second year, so there was little impact on other faculty members’ workloads.

Another challenge was the recruitment of faculty members to participate in the poster session each year and the training session the second year, though a sufficient number of faculty members from each school volunteered to assist. Volunteers for the second year were easier to obtain because many faculty members mentioned (anecdotally) how much they enjoyed the experience. Some faculty members could not attend the training session at its scheduled time; consequently, a separate training session was held for those individuals. A final challenge was funding the poster session, as printing at least 40 posters annually generated a significant expense. To address this problem, an internal educational grant was obtained that covered the costs of both poster sessions.

Despite these challenges, the experience as it was offered in fall 2013, (Figure 1) remains part of the curriculum because it successfully introduced the concept of interdisciplinary communication to students. The experience is now funded by student fees and, in the future, we hope to expand this project to include other health professions on campus. This study can be used as a foundation for additional experiences or interactions. Further directions could include the evaluation of students at before and after the semester on their interdisciplinary communication skills to determine if the interprofessional education components improved their skills and confidence. This would help faculty members evaluate existing integrated lectures and improve them as needed. Another future direction could be the increased incorporation of interprofessional content in the curriculum to reinforce the concepts. Incorporating interprofessional education into the curriculum showed benefits, particularly with regard to student confidence, thus providing support for even more content.

There are some factors that could be considered limitations of this study. The peer evaluations may not have been accurate, as students may have felt inclined to rate their peers positively. This was anticipated from the beginning of the project; thus, the peer evaluations were not included as a research objective. Training sessions for students on conducting peer evaluations may have improved the validity of the assessments. Comparison of the faculty evaluations from fall 2012 to fall 2013 may not have been accurate, as faculty members were trained for the evaluation the second year but not the first year. All evaluations completed were at risk for social desirability bias, where evaluators rate higher on items because of the social risk that it entails.

While the project was conducted for more than one year, it was only conducted at one school of pharmacy. To increase the generalizability and the validity of the project, it should be evaluated at other schools of pharmacy as well. Nearly half the faculty members who evaluated the poster session in the first year also evaluated in the second year; thus, they may have approached the training and subsequent poster session differently than those who had not previously participated. This may have impacted faculty assessments of student competence in the second year.

SUMMARY

Incorporating interprofessional education and an interdisciplinary poster session into the curricula of pharmacy and nursing can benefit students’ interprofessional communication skills. These experiences resulted in an increase in student confidence, which was validated by faculty agreement that they had these interprofessional skills. The increase in confidence was a foundation that could be built upon and reinforced throughout the curriculum. Thus, it may be beneficial to integrate more of these concepts into health care curriculum to create interprofessionally competent practitioners.

ACKNOWLEDGMENT

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REFERENCES


