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Effect of Interprofessional Education on Role Clarification and Patient Care Planning by Health Professions Students

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Abstract

Purpose: To describe the first interprofessional education course implemented at Beirut Arab University and to assess its impact on raising students' awareness on the roles of other professions, improving patient care planning as well as promoting students' readiness for interprofessional collaborative practice.

Methods: An Interprofessional education course was offered for senior students of all Medical Faculties (with the exception of Medicine students) during the spring semester of their graduation year. It evolved into four phases: foundational workshops, role clarification, patient care planning and a project. Students worked individually, first, then in intraprofessional teams and finally in interprofessional teams to complete assignments. After the completion of the course, students filled in a survey on a voluntary basis.

Results: There was no significant difference in the mean students' grades for role clarification and patient care planning assignments when students completed them individually and in intraprofessional teams (P > 0.05). Students in interprofessional teams achieved significantly higher grades than in intraprofessional teams in both role clarification and care planning assignments (3.69 ± 0.04 versus 2.41 ± 0.52, P < 0.001, and 3.94 ± 0.13 versus 2.58 ± 0.62, P < 0.001, respectively). The mean grade of patient education materials developed by students in interprofessional teams was 93.50 ± 3.75. Analysis of the survey showed that most of students with the exception of the Medicine students, were satisfied with the interprofessional education experience and agreed on the importance of interprofessional education in terms of increasing their readiness to work in interprofessional teams. All students agreed that interprofessional education has a positive impact on raising awareness about the role of other professions and on improving patient care planning.

Discussion: Working in interprofessional teams was enjoyable and interesting for health professions students. It gave them a better understanding of the roles of other healthcare professions and improved their readiness for collaborative practice. It also had

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a positive impact on patient care planning and on designing patients’ educational materials. The findings of this study provide evidence that supports IPE implementation in the undergraduate curriculum to prepare health professions students for collaborative practice.

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Keywords: Care planning; Educational tool; Interprofessional education; Role clarification

1. Introduction

Today’s patients have complex health-related needs and require more than one discipline to address these needs.1 The literature suggests that when health care professionals such as nurses, pharmacists, nutritionists, physical therapists and physicians collaborate, a positive and rewarding caring environment leading to improved health care outcomes is ensured.2–5

Interprofessional education (IPE), which occurs when “students from two or more professions learn about, from and with each other”, was proposed by health care educators as an approach to develop the abilities of health care students required to achieve an effective level of collaboration and cooperation in health care practice.6–11 In its report “Learning Together to Work Together for Health”, The World Health Organization (WHO) has endorsed IPE and recommended its integration in the health care undergraduate curriculum to yield its desired effects.6 Nevertheless, IPE planning, initiation and implementation faces several barriers and challenges such as but not limited to lack of resources, students’ diversity, rigid curricula, attitudes towards IPE, stereotypes and inadequate administrative support.12

Despite these challenges and barriers and in response to the WHO call, various forms of IPE curricula were implemented within higher education and health care institutions, most of which were in developed countries.13 Unfortunately, IPE is still in its early stages at many institutions in developing countries and there are fewer research studies on IPE from health care programs in developing countries when compared to those originating from developed countries. Moreover, cultural context, higher education and health care systems in developing countries differ from those of developed countries. Thus, it remains unclear whether IPE interventions and their effectiveness are transferable to those countries. IPE description and effectiveness are therefore needed for developing countries. The present study aimed to describe the first IPE course implemented for health care professions students at Beirut Arab University (BAU), Beirut, Lebanon. It also aimed to assess the impact of IPE on (1) raising students’ awareness on the roles of the other professions; (2) improving patient care planning and (3) promoting students’ readiness for interprofessional collaborative practice after the completion of the IPE course.

2. Methods

2.1. Educational context

Beirut Arab University (BAU) is committed to preparing graduates who are able to work as effective members of the health care teams. Therefore, BAU Medical Faculties have designed and implemented a one-credit hour course (with the exception of the Faculty of Medicine, in which it was included in a course) entitled Inter-Professional Education (IPE) for Health Care Providers. The course was offered in the spring semester and aimed to provide students from different medical faculties with the opportunity to adopt a collaborative approach to patient-centered care, with emphasis on team interaction, role clarification, communication and evidence-based practice.

2.2. Participants

Senior students (graduating year, with the exception of the Faculty of Medicine which included students from a junior level) from all Medical Faculties: i.e. Faculty of Dentistry, Faculty of Health Sciences, which includes Medical Lab Technology, Nursing, Nutrition and Dietetics and Physical Therapy, Faculty of Medicine, and Faculty of Pharmacy were enrolled in this course. During the sessions of the course, students were grouped into intraprofessional and interprofessional teams. Each interprofessional team had a student representative from each of the participating faculty. Each team had a faculty member acting as a team facilitator.
Team facilitators received formal training before the beginning of the IPE course on the course learning outcomes (LOs), session objectives, their roles and responsibilities and the materials that they will be using during the sessions such as teamwork assessment rubric.

2.3. Materials

The LOs of the IPE course (Table 1) were developed by a committee (IPE committee), which was composed of the Deans of the Medical Faculties, the coordinator of the IPE course and four faculty members from each of the participating Faculties, who served as Faculty coordinators. A subcommittee formed by the course and Faculty coordinators designed the course, the learning objectives and activities for each session of the course to achieve the course learning outcomes. The same subcommittee then carefully developed all course materials in view of students' prior knowledge and relevance. Materials for the IPE course included two written (paper) clinical cases, a teamwork assessment rubric, a project assessment rubric and a survey. The cases were designed to have an average level of complexity, such that they reflect patients with multiple co-morbid conditions that are commonly encountered in routine clinical practice. Each case consists of a brief description of a patient's medical history, clinical presentation, medication history and results of investigations. The same subcommittee then carefully developed all course materials in view of students' prior knowledge and relevance. Materials for the IPE course included two written (paper) clinical cases, a teamwork assessment rubric, a project assessment rubric and a survey. The cases were designed to have an average level of complexity, such that they reflect patients with multiple co-morbid conditions that are commonly encountered in routine clinical practice. Each case consists of a brief description of a patient's medical history, clinical presentation, medication history and results of investigations. The teamwork assessment rubric aimed to assess student's participation and contributions to the team during the activities. The feedback survey was developed based on the course learning outcomes and was filled after the completion of the course. The feedback survey consisted of an 11-item questionnaire that collected students' satisfaction with the IPE course, perceived impact of IPE on understanding the roles and responsibilities of health care professionals and on optimizing patient care planning as well as their opinions if IPE helped them be prepared for collaborative practice. All IPE material was tested for internal consistency, clarity, and validity during a three-day IPE pilot experience that took place in the year preceding the course implementation and was modified according to the received feedback.

2.4. Procedure

The IPE evolved into four phases. During each phase, students had to complete an activity to achieve well-defined learning outcomes (Table 2). The students completed each activity, first individually, then in intraprofessional teams and finally in interprofessional teams. Tasks that were done individually had to be completed and submitted online the day before the scheduled IPE session. Activities done in intraprofessional teams and interprofessional teams were done sequentially during the same day in two consecutive sessions.
The first phase consisted of two 2-h sessions. The first session introduced students to the IPE LOs and components as well as to basic skills required for effective professional communication, team building and conflict resolution. During the second session, students grouped into interprofessional teams, completed together a workshop on "understanding and managing different behavioral styles" which aimed at building-up the interprofessional teams while fostering the knowledge and skills essential for teamwork.

The second phase, which is the role clarification phase, aimed at understanding the roles and responsibilities of other health care professionals. During this phase, the students were given a written clinical case and were asked to determine the role, responsibilities, and professional boundaries of all health care professionals who would be involved in the care of this case.

The third phase, which is the patient care-planning phase, focused on identifying the health-related needs/problems for a written clinical case and developing a comprehensive care plan to solve the identified needs/problems. The care plan should include patient-centered goals and non-pharmacological and pharmacological recommendations.

In the fourth phase, students in interprofessional teams, were asked to develop a patient education material for diabetic patients from a multi-profession perspective. The focus of the team project was disease management education in the form of physical activity, nutrition, personal care, outcomes monitoring (glycemic targets) and treatment options.

At the end of each phase, time was set aside for discussions and debriefings.

2.5. Students' evaluation

The students in the intraprofessional and interprofessional teams were assessed during each phase based on their completed assignments (50% of the phase grade), and teamwork (50% of the phase grade) (Table 3). The teamwork was assessed by the team facilitator during the activity using a teamwork assessment rubric. The assessment rubric used a three-point Likert scale. The endpoints of the scale were "Does not meet expectations" (1) to "Exceeds expectations" (3). It assessed the student in the following areas: accountability for his/her own learning, active participation in the group learning process, understanding of his/her professional role and boundaries, demonstration of effective teamwork skills while dealing with the other team members, effective communication with the other team members and with peers and the application of evidence-based approach when solving clinical cases.

The intraprofessional and interprofessional assignments were collected at the end of each session and sent to a trained expert who in turn corrected and graded the assignments based on a model answer that was developed by the Faculty Coordinators.

The project was evaluated in the light of its final design, content clarity and validity, and creativity in addressing the idea. The project was graded using a rubric that was specifically designed for that purpose.
The rubric used a three-point Likert scale with the following endpoints: "Does not meet expectations" (1) to "Exceeds expectations" (3) for each of the evaluated item.

2.6. Students' survey

The survey was filled by the students independently on a voluntary and anonymous basis in their respective faculties. It was designed on a three-point Likert scale to collect information on three key areas. These included students' satisfaction from the IPE course (5 items); the impact of IPE on raising their awareness on the roles of other professions (3 items) and on optimizing patient's care planning (1 item); opinions if the course helped promoting their readiness for collaborative practice (2 items). The endpoints of the scale were "disagree" to "strongly agree". The survey also asked the students to reflect on their IPE course experience and to write relevant open comments. The survey was analyzed for each health profession students group separately. When the survey was analyzed, the second and third points of the scale (i.e. those who strongly agreed and agreed to some extent) were grouped together and considered as positive responses (agreement with the survey statement).

2.7. Statistical analysis

Data were analyzed using descriptive statistics when appropriate. Means with standard deviations are reported for assignment grades. Differences between assignment grades of two groups were compared using the Student's t-test and among groups using analysis of variance. Pearson's Chi-square was used to test the statistically significant difference in positive response percentages for each survey item between the different health profession students. All data analyses were conducted using Megastat® for Microsoft®. A P value of ≤ 0.05 was considered significant.

Table 4
Total number of students enrolled in the IPE course stratified by faculty and group distribution.

<table>
<thead>
<tr>
<th>Faculty</th>
<th>Number of students per group</th>
<th>Total number of students</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dentistry</td>
<td>1</td>
<td>39</td>
<td>14.66</td>
</tr>
<tr>
<td>Health Sciences:</td>
<td>2–3</td>
<td>105</td>
<td>39.47</td>
</tr>
<tr>
<td>Medical Lab Technology</td>
<td></td>
<td>36</td>
<td>13.53</td>
</tr>
<tr>
<td>Nursing</td>
<td>12</td>
<td></td>
<td>4.51</td>
</tr>
<tr>
<td>Nutrition and Dietetics</td>
<td>27</td>
<td></td>
<td>10.16</td>
</tr>
<tr>
<td>Physical Therapy</td>
<td>30</td>
<td></td>
<td>11.27</td>
</tr>
<tr>
<td>Medicine</td>
<td>1–2</td>
<td>47</td>
<td>17.67</td>
</tr>
<tr>
<td>Pharmacy</td>
<td>2</td>
<td>75</td>
<td>28.20</td>
</tr>
<tr>
<td>Total number (6–8)</td>
<td>266</td>
<td></td>
<td>100</td>
</tr>
</tbody>
</table>

Table 5
Mean students' grades of written assignments on role clarification stratified by faculty.

<table>
<thead>
<tr>
<th>Faculty</th>
<th>Individual grade (Mean ± SD)</th>
<th>Intraprofessional team grade (Mean ± SD)</th>
<th>Interprofessional team grade (Mean ± SD)</th>
<th>P value*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dentistry (N = 39)</td>
<td>1.78 ± 0.72</td>
<td>1.85 ± 0.65</td>
<td>3.69 ± 1.30</td>
<td>1.52E-11***</td>
</tr>
<tr>
<td>Health Sciences (N = 105)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medical Lab Technology (N = 36)</td>
<td>1.61 ± 1.10</td>
<td>1.79 ± 0.96</td>
<td>3.72 ± 2.05</td>
<td>0.0001***</td>
</tr>
<tr>
<td>Nursing (N = 12)</td>
<td>2.33 ± 0.62</td>
<td>2.65 ± 0.93</td>
<td>3.67 ± 1.26</td>
<td>0.0338***</td>
</tr>
<tr>
<td>Nutrition and Dietetics (N = 27)</td>
<td>1.79 ± 0.66</td>
<td>2.65 ± 0.87</td>
<td>3.64 ± 1.12</td>
<td>4.65E-06***</td>
</tr>
<tr>
<td>Physical Therapy (N = 30)</td>
<td>1.89 ± 0.995</td>
<td>1.97 ± 1.01</td>
<td>3.74 ± 1.66</td>
<td>6.87E-06***</td>
</tr>
<tr>
<td>Medicine (N = 47)</td>
<td>3.02 ± 0.87</td>
<td>3.02 ± 0.59</td>
<td>3.64 ± 0.65</td>
<td>0.0138***</td>
</tr>
<tr>
<td>Pharmacy (N = 75)</td>
<td>2.68 ± 0.80</td>
<td>2.92 ± 0.97</td>
<td>3.72 ± 1.04</td>
<td>1.91E-11***</td>
</tr>
<tr>
<td>All students (N = 266)</td>
<td>2.15 ± 0.53</td>
<td>2.41 ± 0.52</td>
<td>3.69 ± 0.04</td>
<td>3.11E-05***</td>
</tr>
</tbody>
</table>

*P value comparing intra- and interprofessional teams.
**P < 0.05.
***P < 0.0001.
3. Results

A total number of 266 students from the four faculties; Dentistry 39 (14.66%), Health Sciences 105 (39.47%) [Medical Lab Technology 36 (13.53%), Nursing 12 (4.51%), Nutrition and Dietetics 27 (10.16%) and Physical Therapy 30 (11.27%)], Medicine 47 (17.67%), and Pharmacy 75 (28.20%) were involved in this IPE course (Table 4). Students were divided into two large groups, A and B, each of 133 students. Each large group was further subdivided into 20 small groups each composed of 6 to 8 students. Small groups of each large one were seated at a small round table setting all together in a large hall.

Tables 5–7 show that there is no statistically significant difference in the mean students’ grades for role clarification and patient care planning assignments when students completed them individually and in intraprofessional teams ($P > 0.05$) and this was noted for all health professions students (Tables 5 and 6). For role clarification assignments completed individually, Medicine students had the highest mean grade (3.02 ± 0.59) and Medical Lab Technology students had the lowest mean grade (1.61 ± 0.92). Similarly, Medicine students had the highest mean grade (3.02 ± 0.59) for role clarification assignments completed in intraprofessional teams while the lowest mean grade was for Medical Lab Technology students (1.79 ± 0.96). As for patient care planning assignments completed...
Table 8
Number and percentage of students who showed agreement with the survey statements stratified by faculty.

<table>
<thead>
<tr>
<th>Survey Items</th>
<th>Dentistry 37/39 N (%)</th>
<th>Medical Lab Technology 34/36 N (%)</th>
<th>Nursing 12/12 N (%)</th>
<th>Nutrition &amp; Dietetics 20/27 N (%)</th>
<th>Physical Therapy 25/30 N (%)</th>
<th>Medicine 42/47 N (%)</th>
<th>Pharmacy 70/76 N (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>I- Satisfaction from IPE course</strong></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>The content of the IPE experience is satisfactory</td>
<td>25* (67.5)</td>
<td>30 (88.2)</td>
<td>11 (91.6)</td>
<td>16* (80)</td>
<td>22* (88)</td>
<td>5 (11.9)</td>
<td>50 (71.4)</td>
</tr>
<tr>
<td>The timing of the learning experience is appropriate</td>
<td>9 (24.3)</td>
<td>5 (14.7)</td>
<td>8 (66.6)</td>
<td>4 (20)</td>
<td>5 (20)</td>
<td>8 (19)</td>
<td>21 (30)</td>
</tr>
<tr>
<td>The IPE experience is interesting</td>
<td>36 (97.2)</td>
<td>30 (88.2)</td>
<td>9* (75)</td>
<td>13* (65)</td>
<td>22* (88)</td>
<td>5 (11.9)</td>
<td>50 (71.4)</td>
</tr>
<tr>
<td>The IPE experience is motivating</td>
<td>17 (45.9)</td>
<td>29 (85.2)</td>
<td>8 (66.6)</td>
<td>16* (80)</td>
<td>21* (84)</td>
<td>6 (14.2)</td>
<td>49 (70)</td>
</tr>
<tr>
<td>The IPE experience is enjoyable</td>
<td>29* (78.3)</td>
<td>27* (79.4)</td>
<td>8 (66.6)</td>
<td>15* (75)</td>
<td>21* (84)</td>
<td>6 (14.2)</td>
<td>50 (71.4)</td>
</tr>
<tr>
<td><strong>II- Impact of IPE</strong></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>a. Awareness on the roles of other professions</td>
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<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IPE helped understanding your own scope of practice</td>
<td>30* (81)</td>
<td>27 (79.4)</td>
<td>11 (91.6)</td>
<td>16* (80)</td>
<td>20* (80)</td>
<td>8* (19)</td>
<td>51 (72.8)</td>
</tr>
<tr>
<td>IPE helped understanding the role of other professions</td>
<td>34* (91.8)</td>
<td>30 (88.2)</td>
<td>10 (83.3)</td>
<td>18* (90)</td>
<td>22* (88)</td>
<td>5* (11.9)</td>
<td>51 (72.8)</td>
</tr>
<tr>
<td>IPE helped valuing the roles of other professionals</td>
<td>32* (86.4)</td>
<td>26 (76.4)</td>
<td>10 (83.3)</td>
<td>16* (80)</td>
<td>21* (84)</td>
<td>36 (85.7)</td>
<td>49 (70)</td>
</tr>
<tr>
<td>b. Patient’s care</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IPE helped optimizing patient care planning</td>
<td>30* (81)</td>
<td>26 (76.4)</td>
<td>12 (100)</td>
<td>15* (75)</td>
<td>20* (80)</td>
<td>34* (80.9)</td>
<td>59* (84.2)</td>
</tr>
<tr>
<td><strong>III- Readiness for collaborative practice</strong></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IPE helped improve readiness to work as part of a multidisciplinary team</td>
<td>28* (75.6)</td>
<td>29 (85.2)</td>
<td>11 (91.6)</td>
<td>16* (80)</td>
<td>21* (84)</td>
<td>6 (14.2)</td>
<td>50 (71.4)</td>
</tr>
<tr>
<td>IPE helped raising awareness of the need for support from the other professions in providing health care</td>
<td>37* (100)</td>
<td>29 (85.2)</td>
<td>11 (91.6)</td>
<td>18* (90)</td>
<td>21* (84)</td>
<td>36 (85.7)</td>
<td>59* (84.2)</td>
</tr>
</tbody>
</table>

*P < 0.05 (between students who agreed and those who did not) within the same profession.
individually, Pharmacy students had the highest mean grade \((3.45 \pm 0.92)\) and Medical Lab Technology students had the lowest mean grades \((1.31 \pm 0.75)\). Pharmacy students also got the highest mean grade \((3.62 \pm 1.26)\) and Physical Therapy students the lowest mean grade \((1.99 \pm 0.99)\) when working in intraprofessional teams (Table 6).

Students in interprofessional teams achieved significantly higher scores than in intraprofessional teams in both role clarification and care planning assignments, \((3.69 \pm 0.04\) versus \(2.41 \pm 0.52, P < 0.001\) and \(3.94 \pm 0.13\) versus \(2.58 \pm 0.62, P < 0.001\), respectively). This trend was observed among all health profession students (Tables 5 and 7).

The mean grade for patient education materials that were prepared by the interprofessional teams during the last phase was \(93.50 \pm 3.75\).

The total number of students who participated in the survey was 240 out of 266 students (90.2%). The survey analysis showed that there were more students from all faculties, except for the Faculty of Medicine, who were satisfied with the content of the IPE course and agreed that the IPE course was interesting, motivating and enjoyable \((P < 0.05)\) (Table 8). Yet, the majority of the students from all faculties were not satisfied with the timing of the sessions except for the Nursing students \((P < 0.05)\). In addition, there were more students who agreed that IPE was important and had a positive impact in terms of raising awareness about the role of other professions and of improving patient care planning \((P < 0.05)\). Concerning promoting students' readiness for interprofessional collaboration, the majority of students with the exception of Medicine students agreed that the IPE course did promote their readiness and willingness to work in interprofessional teams \((P < 0.05)\). Moreover, there were more students who agreed that the IPE course raised their awareness of the need for support from other professions in providing healthcare \((P < 0.05)\).

There was no statistically significant difference between students from the different faculties who agreed with the various elements of the survey, except for the Medicine students who were mostly disagreeing \((P < 0.005)\). Two main issues were raised by the students’ in the open comments. The first was for the duration of the IPE course. It was raised by 50% of the students participating in the survey. They considered the duration of the IPE course not enough to complete all the required tasks conveniently. The second was about the academic level of the medical students who were enrolled in the IPE course. Fifty percent of the students considered that they did not benefit from the expertise of the Medical students while solving the clinical case in interprofessional teams, as they would have expected.

4. Discussion

4.1. Internal drivers

Teamwork, effective leadership, and professionalism have become core competencies of the twenty-first century health care practitioners. This has redefined our understanding of graduate competencies and best practices in health professions education at Beirut Arab University (BAU), and prompted us to join health professions educators worldwide by endorsing IPE as a means to improve the quality of health care. Curriculum design was done to meet the international standards of graduate students with competencies one of which is interprofessional collaboration.

4.2. Challenges and strengths

Several barriers to the effective implementation of IPE can be encountered at various levels including administration, faculty members and students. Rigid curricula, lack of the perceived value of IPE, attitudinal differences in health professionals, faculty members and students may greatly influence the implementation of IPE. Moreover, lack of resources and commitment can also negatively affect the implementation of IPE. Some of these challenges were encountered and overcome at BAU. IPE was endorsed by the BAU higher administration that supported the IPE implementation through allocating enough resources and forming an IPE Committee. This committee ensured the alignment among outcomes of teaching/learning strategies and assessment of the IPE. In addition, the timetables of the four participating Medical Faculties were aligned such that two hours per week were allotted to the IPE learning activity in all the participating Faculties. Moreover, teaching assistants from the various participating Faculties were recruited and they were trained on all IPE related materials. One of the major strengths of the present study is that, to the best of our knowledge, it is among the first IPE learning experiences in Lebanon and in the Middle East and that it also enrolled all health care professions. Moreover, the diversity and design of the IPE activities used in this learning experience helped the students develop the IPE competencies while moving from one phase to the next.
4.3. IPE and role clarification

It was noted that there was no statistically significant difference between individual versus interprofessional teams as regards the average grades for role clarification of each profession. On the other hand, the interprofessional teams managed to recognize the role of each profession in a statistically significant better manner as compared to the intraprofessional teams. This shows that working in teams would give the students a better understanding of the roles of the other healthcare professions. This result is in agreement with results from other studies in which IPE was found to help clarify the roles of each of the health professions and enhance the students’ opinions on the values of the roles of other professionals. Learning about the roles of other professions would help to broaden and to enrich the knowledge required to collaborate with other team members which has been linked to successful interprofessional practice. Therefore, it was recommended that the preparation of undergraduate health care provider students should provide the kind of interprofessional education that enables them to gain insight into the roles, professional cultures, and practices of collaborating team members, as well as their own. Interestingly, Pharmacy and Nursing students had higher average grades than the other specialties as regards role clarification at the level of intraprofessional teams. This may be attributed to a holistic approach in their curriculum design since during their final year of study Pharmacy and Nursing students are exposed to more interaction with physicians and nurses during their professional practice courses.

4.4. IPE and patient outcomes

In the third phase of the IPE learning experience, the different participating interprofessional student teams were requested to design a comprehensive management plan for a hypothetical patient with comorbidities. It was noted that the average grades for the design of this management plan were boosted in the interprofessional teams as compared to the intraprofessional ones. This is in agreement with George et al. who found that if students from various professions learn and practice together, they work better in patient care and delivery of healthcare services. Also, the average grade for the management plan of the Dentistry, Medical Lab Technology and Nutrition and Dietetics students was significantly higher when they worked in an intraprofessional team probably due to the positive impact of the team-based design of their management plan. The lack of significance in the average grade of the management plan (individual versus intraprofessional) as compared to the other health care disciplines, could be attributed to the fact that Medical, Pharmacy and Nursing students are better acquainted with the design of management plans whether individually or working in intraprofessional teams. In agreement with the previous finding, Nursing and Pharmacy students showed no significant difference in the average grade of the management plan design as compared to all the other health care professions. The small sample size of Nursing students (n = 12) may have contributed to this finding or maybe the cases were too simple and their management plan was easy to design. This implies that they are able to devise a management plan on their own considering that it was an open book learning experience. On the other hand, the statistically significant improvement in the average grade of the management plan design for the other health care professions reflected the positive impact of the intraprofessional teamwork on their performance. Similar to Pharmacy and Nursing students, Medical students were expected to show a better ability to design a management plan intraprofessionally as well as interprofessionally. However, being third-year students, they lacked the adequate clinical experience to be able to handle a management plan intraprofessionally.

4.5. IPE and the educational tool

The high mean grade for the patient educational tool that was developed by the IPE teams may reflect that IPE helped the students to develop an educational tool for patients with a comprehensive content and an appropriate design.

4.6. Analysis of the survey

At the end of the IPE learning experience, the feedback that was obtained from the majority of the participating students showed that they were satisfied with the overall IPE course, except for the Medical students. Also, the majority of participating students agreed that IPE had a significant impact on increasing readiness for interprofessional collaboration, except for the Medical students. The fact that some of the tested parameters showed less satisfaction among the students
of the Faculty of Medicine may be attributed to the fact
that they were third-year students and so they did not
yet have an adequate clinical experience to understand
the importance of interprofessional education and
collaboration in providing health care. However, the
Medical students appreciated the importance of the
roles of the other participating professions as well as the
collaboration and communication with them. There
continues to be a debate focused on the most ‘effective’
time to introduce IPE within educational and practice
organizations. Research indicating that students enter-
ning their first year of a pre-qualification (undergraduate)
program already have an established and consistent set
of stereotypes about other health and social care
professional groups has generated the argument that
IPE delivered at this time may play an important role in
diminishing the negative effects of professional socialization,
such as hostile stereotyping.30,31 In contrast,
others have suggested that post-qualification IPE
is more effective because participants have a firmer
understanding of their own professional identity and
role. In a recent survey of pre-qualification students
from eight healthcare groups from three higher
education institutions in the UK, it was found that the
strength of professional identity in all professional
groups was high on entry to university but declined
significantly over time for some professions. Students’
readiness for IPE was also high at entry but declined
significantly over time for all groups except nursing.32
These results support the argument for early, regular
and sustained IPE given students’ readiness for IPE and
the existence of pre-formed professional identities.
From a continuum of learning perspective, it has
been suggested that IPE should form a part of an
individual’s ongoing professional development, starting
in their pre-qualification programs and continuing
throughout their careers.31

4.7. Limitations of the study

In the present study, the participating students were
senior students of the faculties of Dentistry, Health
Sciences and Pharmacy, but students from the Faculty
of Medicine were third-year students. The number of
participating students was large. Also, the number of
cases was limited (one case per group) and the cases
were not real life cases as all specialties were included
in the written case scenario contrary to what happens in
real life situations. The sessions were held in one large
hall and so the sessions were overcrowded and too
noisy. In addition, in the design of the study, the
readiness of the students for interprofessional learning
was not assessed before and after the IPE learning
experience. One final limitation of this study is that the
significant difference between intra- and interprofes-
tional team scores may be confounded by the mere rise
of scores due to the repetition of the same task.

5. Conclusion

Working in interprofessional teams was enjoyable
and interesting for health professions students. It gave
them a better understanding of the roles of the other
healthcare professions and improved their readiness for
collaborative practice. It also had a positive impact on
patient care planning and on designing patients’
educational materials. Based on that, it is recommended
to include IPE at all levels of education of health
professions students starting very early and building-up
gradually till it is achieved in the workplace in order to
better prepare students for future collaborative practice
in real settings and ultimately improve health care
outcomes. It is also recommended to implement new
teaching strategies in IPE such as simulation to make
activities mimic as much as possible the real practice
settings.

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