

# Evaluation of a Multidisciplinary Extracurricular Event Using Kolb's Experiential Learning Theory: A Qualitative Study

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**Background and Purpose:** Although health science programs run parallel to each other and comprise of shared core subjects between the different disciplines, students of the different disciplines rarely mix or interact with each other during their undergraduate studies. Extracurricular activities are a big part of university students' life, through which students have an opportunity to express themselves and enhance their soft skills in a safe and relaxed environment. Recently, King Saud University (KSU), Saudi Arabia, launched a multi-disciplinary event aimed at raising public's awareness of their rights and responsibilities in the healthcare system. Although the event was designed to educate the public about their rights and responsibilities in the healthcare system, it has proven to be a good opportunity to promote interprofessional education among participating students. This study aims to review and assess the impact of this multi-disciplinary public awareness event on the acquisition of core interprofessional competencies by participating students from the health sciences using Kolb's experiential learning theory as a framework.

**Patients and Methods:** This qualitative study used semi-structured Zoom interviews in Nov 2020 with health science students who participated in the event. The research team used a pre-designed topic guide based on Kolb's experiential learning theory (KELT) for the interview questions. The interviews were recorded, transcribed, coded, and analysed using thematic analysis.

**Results:** Twenty-one students, representing four health science colleges at KSU participated in three focus groups. The main themes identified were participants' attitudes towards the event, the types of knowledge and skills acquired from the event, and how they practically applied the knowledge acquired. These themes were aligned to KELT as this study's framework.

**Conclusion:** The event covered the most important concepts of interprofessional education and could be a potential tool to educate students from multiple disciplines.

**Keywords:** interprofessional education, patient rights, patients' responsibility, interprofessional collaboration, public awareness, Kolb's theory

## Introduction

Students in the health sciences are traditionally taught independently within curricula that have been designed to cater to the needs of each specific healthcare profession with little or minimal exposure to students from other disciplines during their undergraduate years. Although this system results in the graduation of competent, well-versed professionals in their respective fields, problems emerge when these professionals start working together in healthcare settings. Among the major challenges faced by healthcare professionals in multi-disciplinary teams is a lack of effective communication between the different team members. Miscommunication is alarming and has been linked to poor patient outcomes and

medical error.<sup>1</sup> Many factors contribute to miscommunication within multi-disciplinary teams, including interprofessional (IP) hierarchies, the fast pace and interruptive nature of healthcare settings, a lack of confidence and experience, unclear roles and responsibilities, as well as the inherent differences in communication styles between the different healthcare professions that are emphasised during their training years.<sup>1</sup>

To bridge the gap between the different healthcare professions, there is a shift in healthcare education towards embedding IP education (IPE). IPE occurs when students from at least two different professions learn “about, from and with” each other.<sup>2</sup> Providing opportunities for students across the health sciences to interact and work collaboratively with one another in a supervised and structured environment may help overcome some of the shortcomings of traditional health science education.<sup>3</sup> Indeed, the Eastern Shore Collaborative for Interprofessional Education (ESCIPE) reported that the role played by each healthcare professional in team-based patient care was clarified for students following the implementation of several IP curricular activities.<sup>2</sup> Moreover, these IP activities enhanced the students’ understanding of the clinical problems under study.<sup>2</sup> IP activities have also served to enhance collaboration and improve communication skills between professionals within a multi-disciplinary team.<sup>4</sup>

Although the benefits of IPE are well-recognised, its implementation is hindered by several barriers. Logistics such as busy and inflexible timetables and academic schedules, a lack of adequate space for meeting and conducting IPE, and faculty members’ reluctance due to lack of knowledge and confidence in IPE are some of the challenges that can hamper IPE.<sup>2,5</sup>

King Saud University (KSU) launched a multi-disciplinary event aimed at raising the public’s awareness of their rights and responsibilities as patients in the health-care system. The multi-disciplinary event was designed to simulate the current healthcare and hospital setting in the Kingdom of Saudi Arabia. This was achieved by forming teams within the different health science colleges that collaborated with each other over a period of nine months to plan and execute the event.

On the days of the event, there was a perceived harmony between the different professions both at the student and faculty levels. Thus, what began as a public educational event had a collateral effect in enhancing IP collaboration, communication, teamwork, and networking. To understand the learning process and how students transformed their experience to knowledge, Kolb’s experiential learning theory (KELT), (Kolb, 1984) was used in this study as a framework.<sup>6</sup> KELT is based on the theory that Experience as the Source of Learning and Development (Kolb 1984). It is a dynamic view of learning and is defined as “the process whereby knowledge is created through the transformation of experience knowledge results from the combination of grasping and transforming experience.”<sup>6,7</sup> The aim of this study is to explore these observed collateral benefits by evaluating the impact of the event on health science students who participated in it. Given that any learning acquired during the event was most probably gained through students’ involvement and experience before and during the event, KELT was thought to be a plausible model to use as a frame work for the current study.

## Material and Methods

### Event Description and Preparation

The multi-disciplinary event took place in the main hall of KSU-Female campus. The campus is set on an area of (1,232,000) m<sup>2</sup> and houses 14 different colleges, including 5 Health Science Colleges, 6 Humanities and Social Science Colleges, and 3 Science Colleges. The main hall lies at the center of the campus. A total of 30 faculty members and 248 students mainly from the Colleges of Pharmacy, Medicine, Dentistry, Applied Medical Sciences, and Nursing participated in the event.

The event aimed at raising the public’s awareness of their rights and responsibilities in the healthcare system. To achieve this, the hall was designed to simulate a hospital setting. It was divided into stations that replicated the most visited hospital facilities such as, the reception area, vital signs room, the out-patient clinic, the dental clinic, the laboratory and radiology departments, an in-patient admission room, and the pharmacy. In each of the stations, a role-play scenario was written that depicted common patients’ rights and responsibilities pertinent to that station. The role play scenarios were performed by faculty and students in front of members of the public attending the event. For example, in the in-patient admission station, the role play takes place in a simulated in-patient admission room between a simulated patient, a physician (played by medical student) and a nurse (played by a nursing student). The scenario revolves around the preoperative check of a patient admitted for a scheduled surgery. During the role play, issues such as

effective communication and important considerations in consent acquisition are highlighted. Members of the public who visited the event proceeded from one station to the other, observed the role plays, and interacted with the faculty and students there.

Event preparation included numerous meetings at the organisational level that involved faculty from different colleges. There were also parallel meetings within each college itself that included faculty with different sub-specialties within that college. The meetings were held over a period of approximately nine months and comprised of brainstorming sessions between the faculty as well as between faculty and students, to produce the final theme, decide on content to be presented in each station, and write the educational scenarios. Preparation for the event also involved rehearsal of the educational scenarios by students from the different health sciences in front of faculty members with varying backgrounds and specialties. The event was named “Ask. Save a life” and it took place between 15–16th-March-2019.

## Study Design and Settings

This was a qualitative descriptive study using thematic analysis conducted through a series of focus group sessions. Focus group sessions were conducted after the event, specifically in November-2020 via the ZOOM platform at KSU, Riyadh, Saudi Arabia. Thematic analysis was performed using KELT as a framework.<sup>6</sup>

## Sampling and Recruitment

Health Science students who participated in the “Ask ... Save a life” were purposefully recruited. At least three students from each of the health science colleges were invited to attend one of three focus group (FG) sessions; FG1, FG2 and FG3, Table 1. The students represented five different health science colleges: Pharmacy, Medicine, Dentistry, Nursing, and Applied Medical Sciences. Prior to the focus-group sessions, an information sheet that explained the study was sent to the participants, who signed an informed consent. Noteworthy, the study was conducted during COVID-19 lockdown (Nov 2020); thus, all communications with the participants as well as the structured focus-group sessions were conducted online using the Zoom platform. Three focus-group sessions were conducted on three consecutive days. Each group comprised a minimum of five students from different professions, in addition to the multi-disciplinary faculty members conducting the research. The research team asked the participants to open their cameras, and all the participants verbally consented to audio-recording prior to participating in the focus group. The focus groups were conducted by three faculty members of the research team: one from the pharmacy college (LJ), one from Nursing (LM), and one from the college of medicine (MS). Other members of the research team, including those from the colleges of medicine, pharmacy, and

**Table 1** Focus Group and Participants' Characteristics with Duration of the Interview and Academic Level

Focus Group	Number of Participants (Total)	Number of Participants (n) Per College and Their Academic Level (AL) at the Time of Event Participation										Duration of Interview (Min)
		Medicine		Pharmacy		Nursing		Dentistry		Applied Medical Sciences		
		n	AL*	n	AL	n	AL*	n	AL*	n	AL*	
Focus group 1 (FG1)	9	3	I in Y2 I in Y3 I in Y4	2	All interns	3	All Y3	—	—	1	NA	69
Focus group 2 (FG2)	5	2	I in Y1 I in Y5	—	—	—	—	3	All in Y2	—	—	53
Focus group 3 (FG3)	7	1	Y1	1	Intern	1	Y3	1	Y2	3	NA	59

**Notes:** \*Refers to the academic level of the student at the time of participation in the multidisciplinary patient safety event. Y2, Y means year while the number refers to the academic year of the Bachelor's program in each respective College, ie Y2 means 2nd year student in the Medical, Pharmacy, Dentistry, etc Bachelor's program.

**Abbreviation:** NA, no information available.

dentistry, attended the interviews. The interview questions followed a predesigned topic guide (questions based on KELT frame work). In this regard, the design of the topic guide was based on KELT, which was used as the theoretical framework for this study. A set of questions were written that addressed each of the four phases of the experiential learning cycle: concrete experience, reflective observation, abstract conceptualization, and active experimentation (see [Appendix Table 1](#)). Focus group sessions were conducted in Arabic. Faculty members responsible for conducting the interviews asked participants the questions over the one-hour time frame specified for the interviews. Students' answers were recorded for subsequent analysis by the research team.

## Data Analysis

The researchers transcribed the focus groups' audio-recordings manually, removing any identifiers, translated and transcribed the recordings as the interview was in Arabic (MS, LM, HA), and checked them for accuracy (LJ, HM, FZ, HZ, LO). The thematic analysis of the transcripts was based on the themes explored using the topic guides (MS, LM, HA, LJ, HZ, FZ, LO). Inductive and deductive thematic analysis was used. The researchers independently identified codes from the transcripts and then categorised them using the four stages of KELT, thus generating a coding index based on which they coded all the transcripts. The principal investigator and co-investigators undertook independent, duplicate coding of a sample of the transcripts, that were double checked by another member of the research team. The group discussed the themes that emerged from the coded transcripts and presented them under the four stages of KELT. Prolonged engagement with the data during the process of data analysis was ensured for credibility. After completing the analysis, two members of the team commented on the final results and the appropriateness of the quotes in the context of the themes. The recordings were reviewed again at the final stage to capture the context of each response and check for accuracy. The researchers conducted and reported this study in accordance with the consolidated criteria for reporting qualitative studies (COREQ).<sup>8</sup>

## Ethical Considerations

Several measures ensured the participants' confidentiality. The information sheet explained the study and assured the participants that any information they provided was confidential, and that their anonymized responses may be used for publication. In the case of using direct quotes from participants, participants were referred to with focus group number and each participant was assigned a number to ensure anonymity. The health science college in which the participant is studying was included to provide context to the data. Participants consented electronically and verbally prior to recording the interviews and agreed to the use of their anonymized responses in any publication. The researchers destroyed the recordings once they had checked the transcripts for accuracy. Moreover, they removed all personal identifiers from the transcripts, and will not use them in any reports or publications. The researchers will use any collected demographic information solely to summarise the range of the participants' characteristics. Additionally, the researchers securely stored the transcripts on a password-protected computer and/or a locked filing cabinet, in locked offices; only the research team will have access to these. The KSU Institutional Review Board approved the study (ethical approval No. E-21-5837).

## Results

A total of 21 students from five different health science colleges (Medicine, Nursing, Dentistry, Pharmacy, and Applied Medical Sciences) participated in this study, [Table 1](#).

The participants described the event as fun, interesting, innovative, and educating. It was a real-life experience in terms of the physical layout and the role-play scenarios that prepared them for the real world. They described the knowledge and skills acquired from the event, such as patient rights, the role of the different healthcare professionals, confidence, courage, and empathy. In addition, the participants provided examples of how they applied what they learned from the event in practice. We present these themes within the stages of KELT: concrete experience, reflective observation, active conceptualisation, and active experimentation.

## Concrete Experience

The participants talked about their experience during both the event itself and the time preceding it, ie the preparation phase. They discussed their assigned tasks before and during the event and how they accomplished them.

The participants described their roles in the activity in their own words:

I am xxx, from the college of dentistry, and together with a team of internship doctors, we educated the patients about what they should do in the clinic and what should happen. Thus, our guidance was mainly on how to communicate, their rights in the dental clinic, and what should happen with them. (FG3: Dentistry-2)

As they discussed the planning phase, they talked about the meetings that took place and the brainstorming that helped them create ideas to be implemented in the event; for example, one of participant said:

‘We even brainstormed together, saying “let’s do this”. (FG1: Pharmacy-1)

In their description, the word “collaborate” was mentioned. According to the participants, there was collaboration between students from different professions as well as with those from the same college.

The participants positively expressed this collaboration and stated that it provided them a sense of being one team. This is evident in the following words from two participants:

The experience was interesting because more than one specialty collaborated; it was interesting to see different patient rights for every college, whether it was medicine, nursing, or pharmacy. It definitely added knowledge, and we saw how people acted and the difference between colleges; thus, we collaborated during the large meeting. (FG1: Pharmacy-2)

For me, I liked the idea itself and the teamwork; everyone collaborated. (FG1: Nursing-1)

During the event, the students were also required to construct scenarios for role play that highlighted certain issues regarding patient care in their pertinent fields, one of which was effective communication. During the interviews, the participants described their roles in writing/acting scenarios that emphasised the importance of communication between patients and healthcare professionals and highlighted the potential detrimental effects of miscommunication.

This is highlighted in the following quotes from two different participants:

My role in the activity was to act out the difficulties that can arise in the communication between them (referring to a patient and a healthcare practitioner), both the patients and the healthcare practitioner’s mistakes. Thus, with a colleague, I acted out the mistakes that a doctor can make that can lead to miscommunication and can even harm a patient. (FG3: Medicine-1)

We are from the college of pharmacy, and the idea was to enact multiple scenarios of patients participating with a doctor and vice versa, to compare how miscommunication could generally play a big role in the treatment. (FG1: Pharmacy-1)

During role play, the participants described how they improvised and exaggerated patients’ mistakes to help relay the message to the public. This is evident in the following quote:

My supervisor, my friend, and I did a simple scenario ... I was the patient, of course. The patient who does everything wrong. I came out free and improvised. I did everything patients do wrong. I really wanted people to see all the wrong things. (FG2: Dentistry-3)

## Reflective Observation

The participants noted that using role play to raise public’s awareness of their rights was more effective than traditional methods such as verbal advice. Additionally, some participants emphasised that they liked the experience and felt it was an opportunity to interact with their colleagues and teachers. They noticed that the activity did not only educate the public about their rights but also helped healthcare workers comprehend their roles and responsibilities towards patients. One of the participants said:

Raising awareness using this method is more effective than using papers or through words only. (FG3: Applied Medical Sciences-3)

Another participant stated:

I feel that there has never been an event that raised patients' awareness of their rights; I mean, this is a new topic for the patients and even for physicians themselves; yes, on the level of the community, how a patient should ask for their rights and know them; meanwhile, the physician should know their responsibility. (FG2: Dentistry-3)

Some participants mentioned that role playing and watching a simulated scenario in action was fun, very interesting, and very attractive for the public who attended the event.

It was fun, frankly; even in the break, we used to sit together, all of us; I mean, there were situations that occurred that we remember even now; and then, when we got the opportunity to actually perform all the things that we planned and for which we spent more than one meeting preparing, we actually brought them to life when we interacted with the community in general. (FG1: Pharmacy-1)

Interestingly, the students mentioned that they were proud to be part of this activity. Although they felt that their contribution was simple, the collective work of all the students and staff was gratifying.

Frankly, I am proud that such a work was done by the university; it is true that I did not participate a lot, but to [feel] that you are an important part in this activity, this is enough. Thus, frankly, I am very proud, specially that it is from my university. (FG1: Nursing-3)

The participants mentioned that this unique activity added knowledge that was related to their future careers and enlightened them about patient's rights in an integrated setting that mimicked the hospital environment.

For me, I felt that this experience added to me more than what I added to it; I did not know that a patient had these kinds of rights. (FG1: Nursing-1)

I can say that it added to my knowledge. I agree with the girls who talked about how the activity helped in the internship. (FG1: Pharmacy-1)

Another participant stated:

The activity made us more aware about medication errors that could occur. (FG1: Pharmacy-2)

Another common observation among the participants was appreciating the teamwork; they felt that the event highlighted the importance of integrating the efforts of all healthcare workers to deliver the best patient care.

I feel it was nice if we knew we were actually a team, and even people could have known that we worked together; I mean, we are not working as individuals. (FG2: Medicine-5)

The participants reflected on how this IP activity allowed them to socially interact and interconnect with other individuals. First, it provided them with an opportunity to engage with staff and faculty, as this event made the faculty members more accessible. The following words further explained this point:

What makes a difference to me is that I felt that my doctors (professors) were approachable... and I felt that I could open up to them and speak frankly with them. (FG1: Nursing-1)

In addition to interacting with faculty members and doctors, this event allowed the participants to interact with other students, as they described it as an opportunity to engage with students from different academic levels and professions.

We met with colleagues, especially many girls from different years... I felt that we were really a close family, especially because my colleagues, who were with me, were students one year younger than I was, I think; this thing was really nice. (FG1: Medicine-1)

## Abstract Conceptualisation

The participants described how this IP activity taught them new knowledge and skills on different occasions and described and linked this knowledge to situations with which they were familiar in their practice.



The participants described and conceptualised the meaning and importance of teamwork between different healthcare professions and understood how an action of a member of the team could affect the whole team's job.

I see that we need one another; I mean, with patients, we need to work as a team.... (FG3: Medicine-1)

The importance of collaboration between healthcare providers, because each one's role affects those of the others.... (FG3: Applied Medical Sciences-1)

The participants described other healthcare professionals' roles, and how the responsibilities differed according to a team member's speciality:

Honestly, in the past, before this, I did not focus that much on the presence of each person... I mean ok, I knew that the role of everyone present in these health specialties was important; however, I did not know that there would be a limitation on delivering the treatment plan if one of them were not present.... (FG3: Pharmacy-1)

One of the students from the college of nursing further emphasised this as she explained how she learned the pharmacist's role through this activity:

... in the activity a... thing that became clear for me was the role of the pharmacist. (FG3: Nursing-2)

Through this event, the participants explained the importance of patients' rights, whether it was the right to ask questions, to have someone listen to them, or the right to understand why they were given or denied a certain treatment:

That the patients need someone to listen to them... give the patient the opportunity to ask.... (FG3: Pharmacy-1)

... they have the right to refuse, and to ask why, the right to have a general background about their health condition.... (FG1: Nursing-1)

The participants explained how the activity not only enhanced their knowledge about patients' rights, but also about healthcare providers' rights:

I learned that a patient has a right, and I, as a healthcare practitioner, have a right; all of us have rights.. (FG3: Applied Medical Sciences-1)

The participants described how the activity aided them in developing and acquiring various skills, such as confidence and courage.

I was the educator among them; before, I did not even have the courage to go in front of mothers and educate them... it gave me this confidence.... (FG1: Medicine-3)

The participants identified, during the discussion, the importance of being empathetic with patients and of understanding the patients' needs, as they mentioned on several occasions:

I feel that I was more comfortable with patients and more empathetic. (FG1: Medicine-3)

## Active Experimentation

The students shared how they practically applied what they learned from the event in different ways by comparing situations they encountered in practice and how the IP activity influenced their internship.

The participants shared how the activity helped them to be part of a team and to understand everyone's role in their internship.

I mean, even in real life when there are meetings or rounds, it is really true how each one adds something from their department to the other; thus, I felt it was literally the same when we entered the internship. (FG1: Pharmacy-2)

In our rounds, as a medical intern, the Pharmacist, I mean, his role was more important than the doctors role, because there are many patients and many drug interactions; thus, we were silent and always turned to the pharmacist, "Please correct us". Even

the nurses. I do not know everything about the patient. I come in the morning. I ask her what happened at night. I must work with the team... The activity made us see medicine and nursing together... it made us see that we need them, and we cannot work alone'. (FG2: Medicine-1)

The participants shared their experience of being a patient educator to their families, friends, and patients in the internship after the activity.

I started educating my family and the people around me that one has rights in the hospital; thus, the experience for me was great and I was glad that I enrolled in it, it added to me more than what I added to it. (FG1: Nursing-1)

Being empathetic to patients was a common theme as the activity helped them to understand each patient's different needs and the type of questions they asked. The participants explained how the activity helped them to understand different patients' perspectives and shared how they applied it.

After the activity and During my OSCE which is like a whole consultation from A to Z, so even one of the points that they evaluated us on is how to be empathetic with the patient. So, I benefited from this point, not only how to take patient history and the exam.... (FG1: Medicine-3)

Several times, the participants mentioned their roles as patient advocates, putting patients' preferences first as a priority, and shared some of their experiences in real life and how they applied what they learned.

I gained considerably from it and, frankly, it made me more courageous; I practised it at the beginning of my internship... became a patient advocate and health educator as a part of nursing... I explained to him [patient] the importance of the medication, and I said to him that this was a very important topic, it was part if not all of the treatment, and that the medication was something very important, which was why he was hospitalised here.... (FG1: Nursing-1)

## Discussion

In light of KELT framework: concrete experience, reflective observation, active conceptualisation, and active experimentation. Participating students in this public event had a lot to say when it came to this extracurricular activity. They described this event as fun, innovative, and that it facilitated the understanding of roles and responsibilities of each member of the healthcare team. In addition, it helped in gaining core competencies such as understating importance of collaboration, effective communication, empathy, and confidence to be part of the healthcare team.

The delivery of coordinated patient care depends on the harmonised teamwork of the multi-disciplinary healthcare team delivering the service. Such level of synchrony and coordination demands that the different team members understand their individual roles and responsibilities as well as those of others, collaborate with one another, communicate respectfully and effectively, and can work efficiently within complex teams towards one common goal, ie high quality healthcare. All these core IP collaboration competencies can be instilled in undergraduate students through well-structured extracurricular activities. Extracurricular activities are an important part of students' university experience. The relaxed atmosphere and nature of these activities provide a suitable ground to plant the seeds of IP collaboration. They also provide a window that bypasses the busy, hectic schedules of the various healthcare programmes that remain a challenge. In this study, we show that extracurricular activities in the form of this public awareness event, when channelled properly, may provide an opportunity to instil core IP competencies in health science students.

Upon completion of this event, many aspects were noted that highlight essential aptitudes sought in IPE. The participating students understood their roles as well as those of others, gained multiple skills, and appreciated important concepts of inter-disciplinary healthcare. Experiential learning in a simulated workplace helps trainees to apply knowledge, gain clinical experience, and reflect on observations in safe environments that prepare them for future careers.<sup>9-11</sup> The numerous meetings, brainstorming sessions, and discussions that the students sat through as they prepared for the event made them experience how it felt to "collaborate" and work in "one team" with other colleagues. Their involvement in writing scenarios that depict common miscommunication problems in the healthcare setting helped them feel the importance of clear and effective communication. Moreover, the common goal that was shared by the



different disciplines as they all prepared for the event, and their assimilation under one event/activity raised students' awareness of differences in the roles and responsibilities of each discipline, all of which are core IP competencies.<sup>1,3</sup>

Among the important findings in our study helping health science students comprehend their own roles and responsibilities towards patients in the healthcare setting. Villadsen et al concluded that healthcare students evaluated role play and drama as an appropriate method for learning IP skills.<sup>11</sup> A more recent study reported that students showed great satisfaction with role-plays and that the latter facilitated improvement in their communication skills.<sup>12</sup> Moreover, Wyk et al found that simulation in IPE had advantages as it improved role clarification among professions using standardised patients as well as providing a safe environment for learning. Additionally, it can improve IP competencies such as teamwork, empathy, and mutual respect.<sup>13</sup>

Motivation and enthusiasm were shown to have a great effect on students' engagement as learning would not be fulfilled without the desire and willingness to learn.<sup>14</sup> In our study, the participating students showed enthusiasm and described the learning experience as fun, interesting, and engaging. They also felt pride in the role they played in raising the community's awareness about patients' rights. Moreover, being a member of a team during the activity had a strong impact on teaching our students the principles of teamwork. It assisted them in understanding their roles as well as those of other professions and helped them appreciate how these responsibilities integrated in patient care. Consistent with our findings, a previous study found that following a simulated IP activity, students experienced changes in their understanding of teamwork fundamentals and professional roles.<sup>15-17</sup> They discovered new roles about other professions and realised the complexities of communication and teamwork in a multi-disciplinary team. Moreover, they had a positive attitude towards learning with other professions as team members and believed that their experience increased all participating professionals' confidence and esteem.<sup>15</sup>

Regarding abstract conceptualisation, the activity enabled the participating students to gain knowledge on the rights of both patients and healthcare providers. The participants were involved in interactions with public and other healthcare providers. Interaction between two members of a healthcare team is one attribute of IPE.<sup>18</sup> In addition, the participating students could understand and comprehend the role of other healthcare professionals and how teamwork was essential and was an integral part of healthcare. Both concepts are also important attributes of a well-defined IPE.<sup>18,19</sup> The participating students in our study gained confidence and empathy skills that are considered very important for all members of a healthcare team as well as for healthcare users. Empathetic skills represent an important priority that should be encouraged in the education of health sciences students, as an empathetic relationship between healthcare workers and their patients increases the latter's satisfaction with the therapeutic process.<sup>20</sup>

The activity provided an environment that mimicked real-life interactions between the participating students from different health science colleges and the public, which helped the former realise the importance of being a patient advocate and of explaining their rights and responsibilities in the healthcare setting. These interactions are skill-based competencies that can be achieved at a behaviour level and learned through role playing and active experimentation during IPE activities.<sup>21</sup>

Several limitations confronted the research team whether at the level of preparation or execution of the event. Firstly, preparation required several meetings and long commitment hours from both faculty and students that had to fit into their busy schedules. This was circumvented by holding meetings during break time. Finding mutual meeting times that suited the diverse schedules of the faculty and students was also a challenge. However, if a member was unable to attend a deputy attended on their behalf which maintained momentum in event preparation. Although schedules for covering the different stations were distributed beforehand to allow participants to choose the most suitable time for their involvement. Unfortunately, some students had to skip a class to join the event. During the event, participants agreed that the activity needed more audience. They proposed insufficient advertisement as a possible reason for the small audience. Another limitation was a lack of interaction from stakeholders such as insurance companies. Additionally, some of the students stated that the activity required better organisation. It is also worth noting that the relationship of interviewers and students in the focus group was a teacher-student relationship which might, to some extent, affect the nature of responses to be more conservative. All these limitations should be addressed if the activity is to be repeated in the future.

Based on the above, this multi-disciplinary, extracurricular event helped the participants appreciate the importance of core IP competencies such as collaboration and effective communication, whether it be between them and their peers

from the same college or with colleagues from different colleges, and the impact it has on patient's care. In addition, it raised their awareness of differences in the roles and responsibilities among the different professions.

To summarise, this qualitative work suggests that the most important concepts of IPE and its core competencies can be instilled in undergraduate health science students during extracurricular activities and events. These events may be used as a useful tool for IP education.

## Abbreviations

COREQ, consolidated criteria for reporting qualitative studies; ESCIPE, Eastern Shore Collaborative for Interprofessional Education; IP, interprofessional; IPE, interprofessional education; KELT, Kolb's experiential learning theory.

## Data Sharing Statement

All data supporting the conclusion are included.

## Ethical Approval

The study received ethical approval from the King Saud University Institutional Review Board (No. E-21-5837), and information was managed with extreme confidentiality, without any participants' identifiers in the data-collection form.

## Informed Consent

The participating students provided both written and verbal consent.

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## Disclosure

Haya M Almalag and Maha F Saja are considered first authors. The authors declare that they have no conflict of interest.

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