



Exploring the opportunities and challenges to implementing interprofessional education in Saudi Arabia: a qualitative study among faculty

Yazed AlRuthia, Adel Bashatah, Afaf A. Batis, Sarah A. Alradhi, Omar Almohammed, Ibrahim Sales, Nora Kalagi, Mohammad K. Alharbi, Sultan Alghadeer, Abdulmajeed Bin Mobrad, Abdulaziz M. Albaker & Yousif Asiri

To cite this article: Yazed AlRuthia, Adel Bashatah, Afaf A. Batis, Sarah A. Alradhi, Omar Almohammed, Ibrahim Sales, Nora Kalagi, Mohammad K. Alharbi, Sultan Alghadeer, Abdulmajeed Bin Mobrad, Abdulaziz M. Albaker & Yousif Asiri (2022): Exploring the opportunities and challenges to implementing interprofessional education in Saudi Arabia: a qualitative study among faculty, Journal of Interprofessional Care, DOI: [10.1080/13561820.2021.2004097](https://doi.org/10.1080/13561820.2021.2004097)

To link to this article: <https://doi.org/10.1080/13561820.2021.2004097>



Published online: 03 Jan 2022.



Submit your article to this journal [↗](#)



View related articles [↗](#)






View Crossmark data [↗](#)

ORIGINAL ARTICLE



Exploring the opportunities and challenges to implementing interprofessional education in Saudi Arabia: a qualitative study among faculty

Yazed AlRuthia ^{a,b}, Adel Bashatah^c, Afaf A. Batis^d, Sarah A. Alradhi^d, Omar Almohammed ^a, Ibrahim Sales^a, Nora Kalagi ^a, Mohammad K. Alharbi^c, Sultan Alghadeer^e, Abdulmajeed Bin Mobrad^e, Abdulaziz M. Albaker^f, and Yousif Asiri^a

^aDepartment of Clinical Pharmacy, College of Pharmacy, King Saud University, Riyadh, Saudi Arabia; ^bPharmacoeconomics Research Unit, Department of Clinical Pharmacy, College of Pharmacy, King Saud University, Riyadh, Saudi Arabia; ^cDepartment of Nursing Education and Administration, College of Nursing, King Saud University, Riyadh, Saudi Arabia; ^dNational Health Information Center, Saudi Health Council, Riyadh, Saudi Arabia; ^eDepartment of Emergency Medicine, College of Emergency Medical Services, King Saud University, Riyadh, Saudi Arabia; ^fDepartment of Prosthetic Dental Sciences, College of Dentistry, King Saud University, Riyadh, Saudi Arabia

ABSTRACT

Interprofessional education (IPE) has potential benefits for improving the quality of patient care, but its implementation is challenged with multiple barriers. The primary objectives of this study were to explore the challenges, benefits, and incentives to establishing IPE from the perspective of healthcare faculty at King Saud University. Forty-five faculty members attended six focus groups, each consisting of 6–8 faculty members representing the five colleges. The focus group interview guide included the benefits of and barriers to establishing IPE in this academic institution, curricular design, and the feasibility of support from the colleges and University administration. A SWOC (Strengths, Weaknesses, Opportunities, Challenges) frame work was utilized to guide the focus group discussions, and the data were analyzed inductively using thematic analysis. Three main themes emerged and were related to (i) barriers, (ii) benefits, (iii) opportunities to facilitate the introduction of IPE, and (iv) suggestions on how to implement IPE and overcome challenges to establish an IPE curriculum. Participants were generally supportive of IPE and aware of the constraints that might impede its implementation. Moreover, they identified potential barriers and incentives to promote IPE. Although participants appreciated the long-term benefits of IPE, creating a supportive environment will require the involvement of the academic community, including students, faculty members, and the University's top management.

ARTICLE HISTORY

Received 19 January 2020
Revised 4 September 2021
Accepted 3 November 2021

KEYWORDS

Qualitative study;
interprofessional education;
collaboration; saudi arabia

Introduction

The World Health Organization (WHO) defines interprofessional education (IPE) as a learning method where two or more cohorts of students from different healthcare specialties are educated together to be equipped with the knowledge and skills needed to deliver services in the world of increasingly complicated healthcare issues (World Health Organization, 2010). The objective of IPE is to promote interaction and simultaneous learning among students from a variety of healthcare professions with the ultimate goal of improving health outcomes (Gilbert et al., 2010; Irajpour & Alavi, 2013). A collaborative learning environment in medical education settings can have a beneficial impact on the quality of patient care (Safabakhsh et al., 2018). In contrast, education targeted at one healthcare profession is not as effective in empowering future providers to handle typical challenges they will encounter in their daily work (Masoomi & Yamani, 2012; Thistlethwaite, 2015). Personnel representing diverse healthcare specialties are equipped to provide preventative, curative, rehabilitative, palliative, and health promotion services in a more integrated manner (Barr, 2017). This notion is based on the recognition of the importance of teamwork and all members' understanding of their respective

responsibilities to ensure patient safety and clinical outcomes, which are critical issues (Lapkin et al., 2013). Ideally, the interprofessional healthcare team consists of healthcare providers from various specialties who have the necessary knowledge and teamwork skills to address patients' needs in a collaborative fashion (Barr, 2017). Thus, there is an urgent need to establish an institutional framework promoting education beyond individual competence (Kent et al., 2018).

Background

IPE has been introduced to varying degrees in several countries, including the United States of America (USA) (Bridges et al., 2011; Truong et al., 2018), Canada (Buring et al., 2009; Curran et al., 2010), Spain (Jove et al., 2014), the United Kingdom (Layzell, 2012), Australia, and New Zealand (Lapkin et al., 2012). However, educators from these countries have encountered barriers to its implementation that encompass a wide range of issues (Abu-Rish et al., 2012). The need for more complex scheduling, curricula modification, concerns about certain groups gaining and others losing influence in the academic setting, and the failure to appreciate the value of

IPE have led to problems (Curran et al., 2005). Limited institutional resources and commitment aggravate differences in attitudes toward curricula modification between healthcare workers, faculty members, and students (Gardner et al., 2002). Lack of understanding of the roles and responsibilities of non-physicians, such as occupational therapists and pharmacists in clinical practice (Hughes, 2001; Wilson et al., 2016), and a poor understanding of the skills necessary for successful leadership of an interprofessional education program (Brewer et al., 2016; Watkins, 2016) have been identified as potential impediments to implementing this learning strategy.

Implementation of IPE in developing countries, in general, and the Middle East, specifically, have faced similar challenges. Integrating IPE activities and courses into an established curriculum and overcoming heavily-ingrained stereotypes related to roles and responsibilities was reported by medical students and pharmacy faculty throughout the Arabic-speaking Middle East (El-Awaisi et al., 2016; Hosny, Kamel, El-Wazir, & Gilbert, 2013). In addition, resource limitations including financial, human, and time restrictions are crucial factors that have stalled the progression of IPE initiatives in Africa and the Middle East (El-Awaisi et al., 2016; Wessels & Rennie, 2013). Yet, several factors have facilitated the introduction of IPE, such as faculty interest, prior experience working with other faculty members, students' enthusiasm, and the flexibility of faculty to adjust schedules as needed (El-Awaisi et al., 2019). In Qatar as an example, the College of Pharmacy at the University of Qatar has established an IPE committee that worked closely with four healthcare institutions representing 14 various healthcare programs to incorporate IPE in the pharmacy curriculum based on a model that was developed by the University of British Columbia. This committee has succeeded in overcoming multiple challenges through identifying IPE competency domains relevant to all healthcare settings in real world practice, proper planning and facilitation, continuous assessment of different IPE activities, and allocating time and resources needed to conduct these activities (El-Awaisi et al., 2017). Another IPE program was established in the Lebanese American University and is offered throughout the curricula of healthcare students. This program is based on five workshop series aimed to enhance the interprofessional collaboration between students from different healthcare colleges and improve the learning outcomes. The program is perceived favorably by the students and resulted in a decrease in the gender and professional differences with regard to the readiness to interprofessional learning (Zeeni et al., 2016).

Healthcare professionals and students have consistently expressed positive attitudes and a readiness to implement IPE in Saudi Arabia (Al-Qahtani & Guraya, 2016; Alahmari, 2019; Algahtani et al., 2021; Althubaiti & Ghamri, 2019; Alzamil & Meo, 2020; Salih et al., 2019); however, currently, none of the universities have incorporated IPE into the curriculum. (Al-Qahtani & Guraya, 2016; Fallatah, 2016). Although interprofessional collaboration does exist in various clinical settings in Saudi Arabia, published data describing the effects of interprofessional education upon healthcare professional communication and clinical outcomes is lacking (Abdel-Latif, 2017; Ismail, Osman, Abulezz, Alhamdan, & Quadri, 2018). In addition, most of the application of IPE in Saudi Arabia comes in the

form of highly-publicized and funded workshops and initiatives; however, this has yet to materialize into a meaningful component of any university curriculum (Fallatah, 2016). Therefore, the Deanship of Skills Development, which is under the Vice Rectorate for Planning and Development at King Saud University, sponsored a workshop to explore the challenges and opportunities of establishing interprofessional education into the university curriculum.

King Saud University is the oldest and most well-established university in Saudi Arabia and most other local universities were established after 2008 (Alamri, 2011). Although there have been several workshops since the earliest reported initiative, the university is at risk of adopting a reactionary application of IPE as opposed to proactively leading this effort (Fallatah, 2016; *Strategic Workshop for Teaching and Learning Center Health Science Colleges King Saud University Wrap Up*, 2011). Designing a blueprint for integrating IPE into the curriculum among healthcare colleges in Saudi Arabia that would emanate from King Saud University would hopefully result in a ripple effect leading other universities in Saudi Arabia and the region to follow suit. The primary objectives of this study were to explore the perceptions of faculty of healthcare colleges about the benefits, incentives, access to resources, and challenges to establishing IPE and the feasibility of its integration across the curriculum among healthcare colleges in Saudi Arabia. The identification of obstacles that hinder the implementation of IPE in this setting should enable health education policymakers to address them and facilitate its adoption to develop a more efficient collaboration between all institutions.

Methods

Context

The health colleges and their terminal degrees offered at King Saud University include the College of Medicine (Bachelor of Medicine, Bachelor of Surgery), College of Dentistry (Bachelor of Dental Surgery), College of Nursing (Bachelor of Nursing), College of Pharmacy (Doctor of Pharmacy and Bachelor of Pharmaceutical Sciences), College of Applied Medical Sciences (Bachelor degrees in: Biomedical Technology, Clinical Health Services, Dental Health, Optometry, Radiological Sciences, and Rehabilitation Sciences), and College of Emergency Medical Services (Bachelor of Emergency Medical Services). All colleges offer uniprofessional bachelor degrees and the majority provide postgraduate opportunities for their graduates. All universities in Saudi Arabia must be accredited by the National Commission for Academic Accreditation and Assessment (NCAAA) (Al Mohaimeed et al., 2012). Although IPE is encouraged and IPE implementation carries weight in their decision, IPE is not a requirement and is not yet incorporated in the curriculum of any healthcare program in Saudi Arabia.

Study design and data collection

Prior to the commencement of this exploratory qualitative study, the Deanship of Skills Development at King Saud University invited 10 stakeholders representing five healthcare colleges (College of Pharmacy, College of Medicine, College of

Nursing, College of Dentistry, and College of Emergency Medical Services) to a planning meeting. The stakeholders were delegated the responsibility of selecting and inviting faculty members from their respective colleges. Six focus groups consisting of 6–8 faculty members each, with representation from each of the colleges, were formed. This design was chosen to facilitate transparency and openness about the challenges of implementing IPE at the University's healthcare colleges. All focus group interviews were held in English.

In order to create a guide for the focus groups, a planning meeting that included a brainstorming session and lasted approximately two hours was held. This meeting was preceded by an extensive review of the published reports addressing the challenges and benefits of IPE in health related fields. Ten faculty members from the five participating healthcare colleges presented various topics based upon their literature reviews. Each topic was discussed and agreed upon by consensus. Thereafter, a focus group discussion guide which was based on the SWOC (Strengths, Weaknesses, Opportunities, Challenges) frame work was developed and included the following:

1. Possible benefits of establishing IPE among the healthcare colleges at King Saud University;
2. Evident and hidden obstacles and challenges to establishing IPE (e.g., organizational, departmental, environmental, budgetary, and time and space constraints);
3. The optimal way to design the IPE curriculum; and
4. Availability of financial and logistical support from the university and the involved colleges.

The discussion guide was sent to the colleges' representatives for review and suggestions. No major changes were suggested and all five colleges' representatives approved the guide. The focus group meetings were held between October 17th and November 20th, 2019 in Riyadh, Saudi Arabia. They lasted 80 minutes each and were conducted at separate times in a conference room in a hotel nearby the King Saud University campus and were moderated by YA, AS, and OA.

Participants

We invited sixty faculty members with an academic rank of lecturer and above (assistant professor, associate professor, and professor) from the colleges of medicine, pharmacy, dentistry, nursing, applied medical sciences, and emergency medical services to participate in the study. We utilized purposive sampling for participant selection. Stakeholders selected participants with IPE experience or an interest in its implementation.

Data analysis

All discussions of the six focus groups were recorded and transcribed verbatim by two of the authors [AT and SA] and the transcripts were subjected to inductive thematic analysis (Braun & Clarke, 2006). After each focus group interview, the transcripts were read by the primary investigator (YA) and three other investigators (AT, SA, IS) and separately identified broad themes that emerged from each transcript. Multiple narratives were examined for themes and patterns. Each of

the aforementioned investigator compared his/her respective findings and together created a thematic framework based on consensus. The developed thematic framework was then emailed to all investigators to review and revise if necessary. After refining the newly developed framework based on the investigators' comments and suggestions, the data were coded by AT and SA using Atlas.ti software (Cleverbridge AG, Cologne, Germany). Key data excerpts that represent each theme were extracted as well by AT and SA. Subsequently, the data were reviewed by YA and IS to ensure that the extracted themes and key data excerpts are consistent with their initial interpretation of the transcripts. Thereafter, the data were shared with all investigators for review and refinement. The data collection continued until the saturation point was reached (when no new themes emerged from data). (Creswell, 2013; Silverman, 2011). Illustrative quotes were used to support each identified theme and each quote was

labeled based on the assigned number of the participating faculty member in each focus

group as well as the group number (e.g., faculty member (6–8): Focus group (G1–G6)). All information was stored and analyzed in a computer that was accessible with a password known only to the investigators (Capron, 1989; World Health Organization, 2005).

Ethical Approval

Only those who signed the consent form have participated in the focus group discussions, and no personal identifiers were collected. The data was kept in a safe and secure place, and the study was approved by the Institutional Review Board (IRB) of the College of Medicine at King Saud University (Project No. E-19- 4314; Ref. No. 19/0115/IRB).

Findings

Although all of the sixty faculty members who were invited to participate accepted the invitation, only forty-five attended the focus group interviews and consented to participate. The participants' characteristics are shown in Table 1. Participants from the five different colleges were distributed to six focus

Table 1. Characteristics of the participants (n = 45).

Characteristics	n	%
Age		
30–40 yrs.	22	48.88
40–50 yrs.	16	35.55
50–60 yrs.	7	15.55
Gender		
Male	36	80.0
Female	9	20.0
College		
Pharmacy	11	24.44
Emergency Medical Services	10	22.22
Medicine	8	17.77
Dentistry	9	20.0
Nursing	7	15.55
Academic rank		
Professor	5	11.11
Associate professor	10	22.22
Assistant professor	24	53.33
Lecturer	6	13.33

group meetings based on their availability. The study revealed highly diverse views among the participants regarding the implementation of IPE in the curriculum. Among the four discussion points developed by the faculty as the basis for the focus group discussions (benefits, barriers, curriculum design, and logistics), barriers to the implementation and benefits of IPE received the most attention. Although no effort was made by the moderators to facilitate reaching a consensus, the general perception was that the participants of the focus groups were receptive to this novel educational strategy while being aware of its numerous constraints.

Barriers

The focus groups discussed barriers to implementation more extensively than they discussed other issues. Together, the groups identified 20 areas with the potential to hinder IPE in the healthcare colleges.

Course design

The design and coordination of the courses were seen as major obstacles. Faculty members expressed specific concerns regarding the complexity of designing an appropriate curriculum for students of diverse specialties:

I think there will be a barrier to standardizing the course, and how you will design the course to meet the requirements of all the students from different backgrounds. I think that is very challenging. (Medical Faculty Member (3): Focus Group (G1))

Some participants also acknowledged that the separation of genders at the campus generates additional pressure on the availability of appropriate venues to conduct interprofessional education. This was primarily due to the additional work and resources required to organize and implement such an activity.

Physicians' ego and the institution's perception of physicians

Another concern voiced during the discussion of barriers was professional stereotyping. The participants have seen the danger of this attribute not only at the level of individuals but also at the institutional level. It did not come as a surprise that the representatives of other professions perceived the egos of physicians as an obstacle. This was succinctly summarized by the following exchange:

Where do you think this ego originates? Which college has the biggest ego? (Moderator)

Physicians. (Pharmacy Faculty Member (2): Focus Group (G3))

Physicians? (Moderator)

It's always physicians. (Nursing Faculty Member (1): Focus Group (G3))

Another statement highlighted the consequences of the discrepancy between the perceived status of the physicians and the status of the other health professionals:

Imagine that nurses are going to teach physicians! They will not accept that. (Nursing Faculty Member (2): Focus Group (G4))

But physicians still will want and take the credit, and they will not allow you to take it from them. (Emergency Medical Services Faculty Member (5): Focus group (G4))

Participants expressed concern that implementation of an IPE program might suffer from a potential conflict of interest between the different healthcare colleges at the University, with the colleges of medicine and dentistry presumably being treated preferentially by the University's top management:

The university's administration favors the colleges of medicine and dentistry since they provide healthcare services (Pharmacy Faculty Member (2): Focus Group (G5))

This inequality was recognized by the faculty from the college of medicine themselves. They suggested that the more powerful colleges need to be convinced that they will benefit from the introduction of IPE:

Let me say it frankly. Physicians are the strongest barrier to the implementation of interprofessional education! We have to convince them that other colleges, for example, the College of Pharmacy or Nursing will help them and they will benefit. [...] This is the reality! (Nursing Faculty Member (2): Focus Group (G5))

Competition for financial incentives and resistance to change

The participants also anticipated other barriers, and many were in some way related to the obstacles discussed above. Competition for educational funding between the colleges was considered an important issue:

I think the clash [...] is related to the link between education allowances and teaching load. This is what causes this clash. (Medical Faculty Member (1): Focus Group (1))

There was a sense of possible resistance to collaboration among individuals and among the colleges, but no specific rationale to justify this prediction was provided. Some participants felt that the age gap between faculty members and the seniority system might hinder the introduction of IPE. The challenge presented by the need to develop new courses, despite existing time constraints, was indicated as a relevant barrier.

Another issue that was clearly stated during the discussion was the importance of appreciation, particularly of non-physician health professionals and patients:

I need somebody to say, "thank you" for what I am doing because, in our profession, we can find a job easily, and we can increase our salary easily. Acknowledge what I am doing. Sometimes, I leave a job in nursing with a high salary because I am burnt out because nobody knows what I am doing! (Nursing Faculty Member (4): Focus Group (G5))

Participants discussed the need to deal with different attitudes and personalities and different nationalities. However, they were divided in their views on whether these issues represent barriers to the development of interprofessional education:

I think some people are doers: they can do things. Some people are watchers: they are going to watch. [...] Some people will refuse [...] they will say, "We have done this before and there was no continuity." This is the college culture, the university culture, and the Saudi culture (laughter): we start awesomely but we do not continue. (Nursing Faculty Member (2): Focus Group (G5))

Some participants considered lack of familiarity with interprofessional education to have a negative effect on its introduction:

Maybe the lack of understanding of the interprofessional education concept, maybe this is the barrier. (Dental Faculty Member (2): Focus Group (G2))

Benefits

Better educational outcomes

There was a consensus that the implementation of IPE will benefit the involved students, colleges, and university. Participants expected students' appreciation of the new educational approach. Faculty predicted that it would broaden students' horizons, give them an opportunity for exposure to differences, and provide them with a better understanding of future expectations and challenges when they enter the healthcare workforce.

The second point is from a patient safety perspective. When they work together in a simulation or a course, it's going to help a lot when they have to deal with the real situation. (Emergency Medical Services Faculty Member 4: Focus Group (G5))

Participants strongly felt that IPE would benefit the students, expand their horizons, and prepare them to work in real-life healthcare settings. This would be a major factor in familiarizing students about the roles of their colleagues from other healthcare specialties.

For the student or the faculty member, being exposed to different people or different ways of thinking is really good. If there are nursing or medical professionals, you will know their strengths and limitations. (Pharmacy Faculty Member 1: Focus Group (G2))

Participants felt that the new program will increase collaboration between healthcare colleges, and that more interactive work will improve the reputation of the institutions. The possibility was raised that the process will help identify deficiencies in the present system and that improved quality of students' learning will have a positive impact on educational outcomes. The importance of IPE in achieving the objective of obtaining accreditation was mentioned. Participants noted that the inclusion of IPE in the curriculum would increase the attractiveness of the University and have a positive impact on the recruitment of students.

I'm recruiting the highly skilled, best students out there with higher GPA and SAT scores to come to my college [...] Interprofessional education will attract different people to come over because the program will be reflected in the outcomes of my graduates. (Dental Faculty Member (4): Focus Group (G3))

Efficient utilization of resources with an improvement in the quality of healthcare

Several participants listed short-term and long-term economic benefits of introducing IPE. The new curriculum was expected to reduce the cost of education since one course could be taught together to different groups of students, instead of having separate courses. There was a conviction that improved patient care and better clinical outcomes will eventually reduce the cost of healthcare. In this respect, IPE was seen as an

integral part of the transformation of the Saudi healthcare system to one with improved quality and reduced expenditures.

I think the main purpose of interprofessional education is to have the best care for the patient. If you look at it from an economic point of view, maybe you will reduce what is going to be spent on patient care if you have [IPE-trained] healthcare professionals rather than having it ruled by one professional. (Pharmacy Faculty Member (4): Focus Group (G2))

Participants raised the possibility that interaction between faculty members from different healthcare specialties will promote joint research efforts.

Opportunities to facilitate the introduction of IPE.

Incentives and Resources

Participants had a general perception that barriers to the implementation of IPE could be reduced if appropriate incentives are put in place. The types of incentives mentioned most often were financial incentives and a reduction in teaching load. There was an agreement that these types of rewards would go a long way to attract faculty to participate in the efforts necessary to introduce a novel form of student-shared learning:

If you teach one hour [of an IPE course], it will be considered three teaching hours. They will fight to have that! (Medical Faculty Member (4): Focus Group (G5))

If I give you 5000 SR [1,350 USD] and I ask if you would please implement a simulation model on interprofessional education, would you do that? (Moderator)

Honestly, I would do it. (Emergency Medical Services Faculty Member (6): Focus Group (G2))

Academic promotions and awards were also considered an effective tool to promote faculty participation in IPE:

If you add it as a promotion point, everybody would participate! An excellence reward, for example, they are now giving excellence rewards for publications. Excellence rewards should be added as incentives. (Dental Faculty Member (3): Focus Group (G3))

Interprofessional Education Curriculum

When invited to suggest possible courses that should be included in the curriculum, the participants identified a large number covering a wide range of subjects, and a considerable number of proposals were related to patient safety issues:

Maybe drug safety is the one that everyone should take. (Nursing Faculty Member (2): Focus Group (G1))

Other courses identified by the participants were pharmacology, drug information, medical terminology, complementary and alternative medicine, biochemistry, pathophysiology, physical assessment, and communication.

Finally, a critical question was raised during the discussion on whether the courses should be elective or mandatory. Some participants favored elective courses.

However, the prevailing position was that the courses should be required. This view was based on the premise that having a requirement is the best approach to ensure the participation of students in IPE:

I am sorry to say that if you do not require the course, sometimes nobody will join you. (Medical Faculty Member (4): Focus Group (G1))

When they require the course, everybody will comply. (Pharmacy Faculty Member (5): Focus Group (G4))

Participants seemed to hold the conviction that success of the implementation of IPE was contingent upon effectuation by the highest level of the University's management.

If it can be implemented and supported by the higher management, then everybody will follow! (Medical Faculty Member (6): Focus Group (G1))

Each college will go in their own direction [...] unless there is an initiative from the top management of academic affairs. (Dental Faculty Member (5): Focus Group (G5))

Suggestions on how to implement IPE and overcome challenges

The participants not only recognized potential problems but also proposed possible solutions. Among the suggestions made to reduce potential problems with course design and coordination was the need to emphasize the importance of transparency, efficient collaboration, and the benefits of using the previous experiences of other academic institutions:

We need to establish an interprofessional education unit with the same objective for all colleges, so that they can design the course. A committee should be responsible for designing the course, recruiting faculty members, and highlighting the success stories. As you said, many people teach, but few share their stories. (Medical Faculty Member 2: Focus Group (G4))

The participants agreed that a unit for coordinating IPE should be established in each healthcare college to facilitate communication between the different colleges. They stressed the need for logistic support in terms of time and space; however, the most critical resources in their opinion were training for faculty members and time to implement IPE:

I was going to say, "human resources." Of course, we have a load that is too heavy for us to teach right now. Everybody has his maximum load. (Nursing Faculty Member 4: Focus Group (G4))

This needs support. We need a lot of collaboration, sitting together, time, everything, free days for interprofessional days! (Emergency Medical Services Faculty Member (3): Focus Group (G6))

Nationality was not viewed to be a barrier; however, personal relationships were considered essential to effective interactions and collaboration:

Nationality does not play a role. Number one will be your personal relationships; if you know that person, everything will be easier. (Dental Faculty Member 1: Focus Group (G3))

In fact, it was noted that faculty educated abroad might have a more favorable attitude toward IPE since they might have had previous exposure to it. Therefore, promoting a culture of cooperation and increasing faculty exposure to IPE may lead to successful implementation.

Finally, participants agreed that the perceived barrier of gender segregation can be overcome with proper planning, adequate facilities, and financial support:

"Even if we are segregated, we can teach interprofessional education to two different groups!" (Pharmacy Faculty Member 5: Focus Group (G6))

Discussion

The present study helped to clarify the current views of the healthcare faculty at King Saud University on the possibility of introducing IPE to the healthcare colleges of this academic institution. A significant finding of this research was that the participants were receptive to the implementation of this learning approach, although they were keenly aware of the many obstacles that might interfere with its introduction in their respective academic environments. The overwhelming majority of the participants appreciated the benefits of IPE for future healthcare professionals and its potential positive impact on the quality of patient care.

IPE has been implemented in several countries because of recognition that effective collaboration across multiple healthcare professions is central to providing high-quality patient care (Fox et al., 2018). Thus, a considerable amount of data on this learning strategy is available and has been extensively analyzed in the research literature (Barr, 2017). However, there is an overall paucity of studies in developing countries and specifically Arabic-speaking Middle Eastern countries that address the implementation of IPE. Sunguya and colleagues conducted a systematic review of the challenges faced by both developed and developing countries when IPE was implemented (Sunguya et al., 2014). There were ten critical challenges: curriculum design, access to resources, professional stereotypes, effective leadership, student diversity, perceptions of IPE, instructional methods, motivation, medical terminology, and accreditation. The authors concluded that the first three challenges, curriculum design, resource limitations, and stereotyping were present in developing countries; however, the remaining seven may pose potential difficulties in the future. Similar difficulties were expressed by the participants in our study which is appropriate for programs in the preliminary stages of IPE implementation. El-Awaisi et al. surveyed pharmacy academicians in 14 Arabic-speaking countries throughout the Middle East. The results were consistent with the conclusions of Sunguya et al. regarding the three primary challenges in developing countries (El-Awaisi et al., 2016). Time and resource limitations, perceptions of IPE, and communication issues also were barriers reported by the majority of respondents. El-Awaisi also conducted a qualitative study of IPE in Qatar (El-Awaisi et al., 2019). Consistent with the present analysis, that investigation indicated that pharmacy academicians appreciate the necessity and importance of incorporating IPE into the healthcare curriculum. Likewise, Katoue

and colleagues found that healthcare faculty members were enthusiastic about IPE implementation (Katoue et al., 2020). Potential barriers included effective leadership, curriculum design, instructional methods, and resistance to change. The focus upon a variety of different challenges which are similar to many developed countries may indicate a more advanced stage of IPE implementation.

Generally, the concerns and perceptions of the faculty working in this part of the world are very similar to those expressed in other parts of the world. A cross-sectional survey on the barriers to IPE implementation among nursing, pharmacy, and medical students in Australia and New Zealand identified scheduling restrictions, lack of appropriate classroom space, and institutional financial support as the major obstacles (Lapkin et al., 2012). Another Australia-based study confirmed that the need to find substantial time to establish new inter-professional programs was a critical hurdle that had to be overcome (Kent et al., 2018). Problems with adding new elements to the existing curriculum (Lash et al., 2014), conflicts of interests in the academic setting, failure to appreciate the value of IPE (Curran et al., 2005), and insufficient institutional resources and commitment (Gardner et al., 2002) have been identified in many developed countries. All of these barriers were cited by the participants in the current study, indicating that a similar set of problems associated with the implementation of IPE can be encountered anywhere.

The views that were expressed by the faculty of King Saud University about the benefits of IPE were consistent with those reported in other previous studies. A survey of faculty members across different health disciplines in the USA identified improved efficiency in patient care, better patient outcomes due to joint decision-making, and promotion of team learning and teamwork as the most significant positive effects of IPE (Lash et al., 2014). Participants in an Australian study viewed improved interprofessional communication, promotion of teamwork, and mitigation of medication errors as important benefits of IPE (Lapkin et al., 2012). Again, participants in the present study also expressed these sentiments.

Some of the issues raised by this study's participants appear to be specific to Arabic countries and should be noted. Many participants raised the additional logistic burden associated with the segregation of genders on academic campuses in the Middle East (El-Awaisi et al., 2018a). Separate courses for male and female students would require not only an investment of additional time from the faculty but it would also increase the demand for space. Nevertheless, the participants felt this barrier could be overcome. There was greater concern about the well-established hierarchical structure in the academic institutions of the Middle East and a distinct lack of traditions in collaboration (El-Awaisi et al., 2018b, 2019). The potential for a negative impact of a power struggle between representatives of different health professions was also viewed as a threat to the successful implementation of IPE. Admittedly, the participants did not have ready-made solutions for these complex cultural issues. However, the progress in the development of IPE curricula in other countries of the region with similar educational culture, such as Qatar (El-Awaisi et al., 2019) and Iran (Safabakhsh et al., 2018) indicate that these obstacles can be successfully overcome. The growing need for the accreditation

of educational institutions by international organizations may be an additional factor helping to motivate stakeholders and decision-makers to embrace the concept of IPE in the health-care field.

Similar to clinical inertia, educational inertia can hinder the progress of student development. The study results highlight the need for King Saud University and other local educational institutions to provide the necessary resources and incentives for designing an IPE-based curriculum. These resources and incentives include forming an IPE unit, financial and professional incentives such as bonuses, reductions in faculty teaching loads, incentives when applying for promotion, and professional acknowledgments. In addition, based upon the results of this study and similar results from previous studies, the following strategies may be helpful for successful implementation of IPE at King Saud University and other prospective institutions from the grassroots. These suggestions are also areas of future research to determine the effect of these interventions upon the willingness of institutions to implement IPE and the perception of healthcare professionals and students of IPE:

The Ministries of Education and Health and their local accreditation bodies should make IPE a requirement in the educational and healthcare settings such as didactic courses, practice labs, and clinical rounding and educational meetings. Clinical faculty should take the initiative to build interprofessional teams that learners can observe and benefit from during their training and allow their students to receive a portion of their training from other members of the interprofessional team. Academicians with a desire to implement IPE should use research grants to fund, study, and publish about IPE activities. Highly motivated educators should volunteer to teach, co-teach, or send their residents to teach other learners from different healthcare colleges in IPE-related lectures and/or activities. Finally, increasing awareness of IPE can be facilitated by conducting IPE workshops and by organizing IPE student organizations.

One of the strengths of this study was that it highlighted gaps in knowledge and uncovered myths of the application of IPE in Saudi Arabia, a central country in the Middle East. Secondly, the perceptions and opinions regarding IPE were solicited from a large number of faculty members working in a major educational institution in Saudi Arabia. Finally, adequate measures were utilized to ensure the quality and credibility of the qualitative data analysis.

Limitations

This study also has limitations. One of the study limitations is participation bias. The participants were invited primarily based upon their perceived interest by the stakeholders. Furthermore, those who participated may have previously held positive views regarding IPE than those who declined. Another limitation was that all the participants were from the same university. This may affect the generalizability of the results since the hierarchical structures, financial and human resources, and healthcare college composition may differ within the country and region. There was also a lack of

participation from the College of Applied Medical Sciences. Participants from this college may have offered a different perspective than members of the other colleges.

Future studies are needed to determine healthcare academics' attitudes and readiness toward IPE from multiple institutions and investigating whether these perspectives materialize into better interprofessional communication and eventually an improvement in patient outcomes.

Conclusion

This qualitative study showed that the faculty of healthcare colleges at King Saud University appreciate the long-term benefits of interprofessional education and are willing to participate in its implementation despite a multitude of potential barriers to achieving this objective. Creating a supportive environment for this initiative will require the involvement of all members of the academic community, from students to faculty members, to the top management of the University. Cultural traditions of the Middle East will have to be taken into consideration and accommodated during this process. Successful implementation of IPE that can be inspired by the successful IPE implementation in Qatar and Lebanon may provide guidelines for other institutions in the region that are interested to adopt IPE to prepare collaborative healthcare professionals. The successful implementation of IPE in these institutions with similar culture, such as Qatar, came after serious efforts that led to the identification of challenges similar to the ones identified in this study (El-Awaisi, 2020).

Acknowledgments

The authors would like to acknowledge the contribution of Dr. Ahmad Raed Tarakji from the college of medicine, Dr.Hana Alsobayel from the college of applied medical sciences, Dr.Dalal Alqahtani from the college of dentistry, and Dr.Raha Orfali from the college of pharmacy at King Saud University to the conceptual development of this paper.

Disclosure statement

No potential conflict of interest was reported by the author(s).

Funding

This research project was funded by the Researchers Supporting Project (No. RSP-2020/16), King Saud University, Riyadh, Saudi Arabia.

Notes on contributors

Yazed AlRuthia is an associate professor of Health Policy and Economics at King Saud University, Saudi Arabia. His research interests include health outcomes and economics, health policy, educational strategies, curriculum evaluation, and interprofessional education.

Adel Bashatah is an associate professor of nursing at King Saud University, Saudi Arabia. His research interests include educational strategies, curriculum evaluation, and interprofessional education.

Afaf A. Batis is a researcher at the Saudi Health Council, Saudi Arabia. Her research interests include health informatics, public health, and health policy.

Sarah A. Alradhi is a researcher at the Saudi Health Council, Saudi Arabia. Her research interests include health informatics, public health, and health policy.

Omar Almohammed is an assistant professor of health outcomes at King Saud University, Saudi Arabia. His research interests include health outcomes, patient reported outcomes, medication therapy management, and educational strategies.

Ibrahim Sales is an associate professor of clinical pharmacy at King Saud University, Saudi Arabia. His research interests include medication therapy management, medication adherence, drug safety, and educational strategies.

Nora Kalagi is a lecturer of clinical pharmacy at King Saud University, Saudi Arabia. Her research interests include drug evaluations, drug safety, drug-food interactions, and educational strategies.

Mohammad K. Alharbi is an assistant professor of nursing at King Saud University, Saudi Arabia. His research interests include educational strategies, curriculum evaluation, and interprofessional education.

Sultan Alghadeer is an associate professor of clinical pharmacy at King Saud University, Saudi Arabia. His research interests include medication therapy management, medication adherence, emergency medical services, drug safety, and educational strategies.

Abdulmajeed Bin Mobrad is an associate professor of emergency medicine at King Saud University, Saudi Arabia. His research interests include emergency medical services, drug safety, curriculum evaluation, and educational strategies.

Abdulaziz M. Albaker is a professor and Consultant Prosthodontist at King Saud University, Saudi Arabia. His research interest include dental services, dental biomaterials, healthcare workforce planning, health policy, and curriculum development.

Yousif Asiri is a professor of clinical pharmacy at King Saud University. His research interests include health outcomes, patient reported outcomes, medication therapy management, pharmacy administration, and educational strategies.

ORCID

Yazed AlRuthia  <http://orcid.org/0000-0002-0029-5924>

Omar Almohammed  <http://orcid.org/0000-0002-3792-4106>

Nora Kalagi  <http://orcid.org/0000-0003-4051-4121>

References

- Abu-Rish, E., Kim, S., Choe, L., Varpio, L., Malik, E., White, A. A., Craddick, K., Blondon, K., Robins, L., Nagasawa, P., Thigpen, A., Chen, L. L., Rich, J., & Zierler, B. (2012). Current trends in interprofessional education of health sciences students: A literature review. *Journal of Interprofessional Care*, 26(6), 444–451. <https://doi.org/10.3109/13561820.2012.715604>
- Al Mohaimeed, A., Midhet, F., Barrimah, I., & Saleh, M. N.-E.-D. (2012). Academic accreditation process: Experience of a medical college in Saudi Arabia. *International Journal of Health Sciences*, 6(1), 23. <https://doi.org/10.12816/0005970>
- AlAhmari, M. D. (2019). Interprofessional Education: Saudi Health Students' Attitudes Toward Shared Learning. *Adv Med Educ Pract*, 10, 1061–1067. doi:10.2147/amep.S226477
- Alamri, M. (2011). Higher education in Saudi Arabia. *Journal of Higher Education Theory and Practice*, 11(4), 88–91. <http://digitalcommons.www.na-businesspress.com/JHETP/AlamriWeb11-4.pdf>
- Algahtani, H., Shirah, B., Bukhari, H., Alkhamisi, H., Ibrahim, B., Subahi, A., & Aldarmahi, A. (2021). Perceptions and attitudes of different healthcare professionals and students toward interprofessional education in Saudi Arabia: a cross-sectional survey. *Journal of Interprofessional Care*, 35(3), 476–481. doi:10.1080/13561820.2020.1758642

- Curran, V. R., Sharpe, D., Flynn, K., & Button, P. (2010). A longitudinal study of the effect of an interprofessional education curriculum on student satisfaction and attitudes towards interprofessional teamwork and education. *Journal of Interprofessional Care*, 24(1), 41–52. <https://doi.org/10.3109/13561820903011927>
- El-Awaisi, A. (2020). Qatar—Sustaining Interprofessional Collaboration in Collaborative Partnership with Other Universities. In D. Forman, M. Jones, & J. Thistlethwaite (Eds.), *Sustainability and Interprofessional Collaboration* (pp. 125–145). Palgrave Macmillan, Cham. https://doi.org/10.1007/978-3-030-40281-5_7
- El-Awaisi, A., El Hajj, M. S., Joseph, S., & Diack, L. (2018). Perspectives of pharmacy students in Qatar toward interprofessional education and collaborative practice: A mixed methods study. *Journal of Interprofessional Care*, 32(6), 1–15. <https://doi.org/10.1080/13561820.2018.1498466>
- El-Awaisi, A., El Hajj, M. S., Joseph, S., & Diack, L. (2018b). Perspectives of practising pharmacists towards interprofessional education and collaborative practice in Qatar. *International Journal of Clinical Pharmacy*, 40(5), 1388–1401. <https://doi.org/10.1007/s11096-018-0686-9>
- El-Awaisi, A., Hajj, S. E., Joseph, M., & Diack, L. (2016). Interprofessional education in the Arabic-speaking Middle East: Perspectives of pharmacy academics. *Journal of Interprofessional Care*, 30(6), 769–776. <https://doi.org/10.1080/13561820.2016.1218830>
- El-Awaisi, A., Joseph, S., El Hajj, M. S., & Diack, L. (2019). Pharmacy academics' perspectives toward interprofessional education prior to its implementation in Qatar: A qualitative study. *BMC Medical Education*, 19(1):1-15. <https://doi.org/10.1186/s12909-019-1689-5>
- El-Awaisi, A., Wilby, K. J., Wilbur, K., El Hajj, M. S., Awaisu, A., & Paravattil, B. (2017). A Middle Eastern journey of integrating Interprofessional Education into the healthcare curriculum: A SWOC analysis. *BMC Med Educ*, 17(15), 1-10. <https://doi.org/10.1186/s12909-016-0852-5>
- Fallatah, H. I. (2016). Introducing inter-professional education in curricula of Saudi health science schools: An educational projection of Saudi Vision 2030. *Journal of Taibah University Medical Sciences*, 11(6), 520–525. <https://doi.org/10.1016/j.jtumed.2016.10.008>
- Fox, L., Onders, R., Hermansen-Kobulnicky, C. J., Nguyen, T. N., Myran, L., Linn, B., & Hornecker, J. (2018). Teaching interprofessional teamwork skills to health professional students: A scoping review. *Journal of Interprofessional Care*, 32(2), 127–135. <https://doi.org/10.1080/13561820.2017.1399868>
- Gardner, S. F., Chamberlin, G. D., Heestand, D. E., & Stowe, C. D. (2002). Interdisciplinary didactic instruction at academic health centers in the United States: Attitudes and barriers. *Advances in Health Sciences Education*, 7(3), 179–190. <https://doi.org/10.1023/A:1021144215376>
- Gilbert, J. H., Yan, J., & Hoffman, S. J. (2010). A WHO report: Framework for action on interprofessional education and collaborative practice. *Journal of Allied Health*, 39(suppl. 1), 196–197. <https://www.who.int/publications/i/item/framework-for-action-on-interprofessional-education-collaborative-practice>
- Hosny, S., Kamel, M. H., El-Wazir, Y., & Gilbert, J. (2013). Integrating interprofessional education in community-based learning activities: case study. *Med Teach*, 35 Suppl 1, S68-73. doi:10.3109/0142159x.2013.765550
- Hughes, J. (2001). Occupational therapy in community mental health teams: A continuing dilemma? Role theory offers an explanation. *British Journal of Occupational Therapy*, 64(1), 34–40. <https://doi.org/10.1177/030802260106400107>
- Irajpour, A., & Alavi, M. (2013). Developing a virtual network for interprofessional education and collaboration. *Iranian Journal of Medical Education*, 13(9), 999–1000. <http://ijme.mui.ac.ir/article-1-3067-en.html>
- Ismail, S., Osman, M., Abulezz, R., Alhamdan, H., & Quadri, K. H. M. (2018). Pharmacists as Interprofessional Collaborators and Leaders through Clinical Pathways. *Pharmacy (Basel)*, 6(1). doi:10.3390/pharmacy6010024
- Jove, A. M., Fernandez, A., Hughes, C., Guillen-Sola, M., Rovira, M., & Rubio-Valera, M. (2014). Perceptions of collaboration between general practitioners and community pharmacists: Findings from a qualitative study based in Spain. *Journal of Interprofessional Care*, 28(4), 352–357. <https://doi.org/10.3109/13561820.2014.898621>
- Katoue, M. G., Awad, A. I., Dow, A. W., & Schwinghammer, T. L. (2020, February). (2020) Interprofessional education and collaborative practice in Kuwait: Attitudes and barriers from faculty. *Journal of Interprofessional Care*, 35(2), 208-216. <https://doi.org/10.1080/13561820.2020.1713062>
- Kent, F., Nankervis, K., Johnson, C., Hodgkinson, M., Baulch, J., & Haines, T. (2018). 'More effort and more time.' Considerations in the establishment of interprofessional education programs in the workplace. *Journal of Interprofessional Care*, 32(1), 89–94. <https://doi.org/10.1080/13561820.2017.1381076>
- Lapkin, S., Levett-Jones, T., & Gilligan, C. (2012). A cross-sectional survey examining the extent to which interprofessional education is used to teach nursing, pharmacy and medical students in Australian and New Zealand Universities. *Journal of Interprofessional Care*, 26(5), 390–396. <https://doi.org/10.3109/13561820.2012.690009>
- Lapkin, S., Levett-Jones, T., & Gilligan, C. (2013). A systematic review of the effectiveness of interprofessional education in health professional programs. *Nurse Education Today*, 33(2), 90–102. <https://doi.org/10.1016/j.nedt.2011.10.013>
- Lash, D. B., Barnett, M. J., Parekh, N., Shieh, A., Louie, M. C., & Tang, T. T. L. (2014). Perceived benefits and challenges of interprofessional education based on a multidisciplinary faculty member survey. *American Journal of Pharmaceutical Education*, 78(10), 1–9. <https://doi.org/10.5688/ajpe7810180>
- Layzell, S. (2012). Evaluation of the learning experiences afforded through multipractice learning in primary care: A project in the development of a multiprofessional learning organisation. *Education for Primary Care*, 23(6), 422–429. <https://doi.org/10.1080/14739879.2012.11494153>
- Masoomi, R., & Yamani, N. (2012). A review on interprofessional education in health professionals' training. *Iranian Journal of Medical Education*, 11(9), 1231–1240. <http://ijme.mui.ac.ir/article-1-2062-en.html>
- Safabakhsh, L., Irajpour, A., & Yamani, N. (2018). Designing and developing a continuing interprofessional education model. *Advances in Medical Education and Practice*, 9, 459–467. <https://doi.org/10.2147/AMEP.S159844>
- Salih, S., Gameraddin, M., Kamal, S., Alsadi, M., Tamboul, J., & Alsultan, K. (2019). The Readiness For Interprofessional Education (IPE) In The School Setting Among The Internship Students Of Applied Medical Sciences At Taibah University. *Adv Med Educ Pract*, 10, 843–848. doi:10.2147/amep.S208870
- Silverman, D. (2011). *Interpreting qualitative data: A guide to the principles of qualitative research* (5th edition ed.). Sage Publishing.
- Sunguya, B. F., Hinthong, W., Jimba, M., Yasuoka, J., & Zunt, J. R. (2014). Interprofessional education for whom? –challenges and lessons learned from its implementation in developed countries and their application to developing countries: A systematic review. *PLoS One*, 9(5), e96724. <https://doi.org/10.1371/journal.pone.0096724>
- Thistlethwaite, J. E. (2015). Interprofessional education: Implications and development for medical education. *Educación Médica*, 16(1), 68–73. <https://doi.org/10.1016/j.edumed.2015.04.007>
- Truong, H. A., Gorman, M. J., East, M., Klima, D. W., Hinderer, K. A., Hogue, G. L., Brown, V., & Joyner, R. L., Jr. (2018). The Eastern Shore collaborative for interprofessional education's implementation and impact over five years. *American Journal of Pharmaceutical Education*, 82(4):6522. <https://doi.org/10.5688/ajpe6522>
- Watkins, K. D. (2016). Faculty development to support interprofessional education in healthcare professions: A realist synthesis. *Journal of Interprofessional Care*, 30(6), 695–701. <https://doi.org/10.1080/13561820.2016.1209466>
- Wessels, Q., & Rennie, T. (2013). Reflecting on interprofessional education in the design of space and place: lessons from Namibia. *J Interprof Care*, 27 Suppl 2, 69–71. doi:10.3109/13561820.2013.804043

- Wilson, A. J., Palmer, L., Levett-Jones, T., Gilligan, C., & Outram, S. (2016). Interprofessional collaborative practice for medication safety: Nursing, pharmacy, and medical graduates' experiences and perspectives. *Journal of Interprofessional Care*, 30(5), 649–654. <https://doi.org/10.1080/13561820.2016.1191450>
- World Health Organization. (2005) *Handbook for good clinical research practice (GCP): Guidance for implementation*. World Health Organization. https://apps.who.int/iris/bitstream/handle/10665/43392/924159392X_eng.pdf?sequence=1&isAllowed=y
- World Health Organization (2010) *Framework for Action on Interprofessional Education & Collaborative Practice*. WHO. https://www.who.int/hrh/resources/framework_action/en/
- Zeeni, N., Zeenny, R., Hasbini-Danawi, T., Asmar, N., Bassil, M., Nasser, S., Milane, A., Farra, A., Habre, M., Khazen, G., & Hoffart, N. (2016). Student perceptions towards interprofessional education: Findings from a longitudinal study based in a Middle Eastern university. *Journal of Interprofessional Care*, 30(2), 165–174. <https://doi.org/10.3109/13561820.2015.1117060>