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Original Article

Measuring the attitudes of healthcare faculty members towards interprofessional education in KSA

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الملخص

أهداف البحث: على الرغم من وضوح مفهوم التعليم المتداخل بين التخصصات في البلدان المتقدمة، إلا أنه لا ينظر له بشكل موحد في البلدان النامية. تهدف هذه الدراسة إلى قياس مواقف أعضاء هيئة تدريس التخصصات الصحية تجاه التعليم المتداخل بين التخصصات وقياس الاختلافات المهمة المحتملة في الخصائص الديموغرافية لأعضاء هيئة التدريس وجاهزيتهم لدمج هذا التعليم المتداخل بين التخصصات في المناهج الحالية.

طرق البحث: أجريت هذه الدراسة العشوائية البسيطة بواسطة توزيع استبانة مقياس جاهزية التعلم المتداخل بين التخصصات عشوائيا على ٢٠٠ عضو هيئة تدريس بالكليات الصحية في جامعة الدمام وجامعة طيبة في المملكة العربية السعودية. أجري الاستطلاع ورقيا بجامعة الدمام وعبر الإنترنت بجامعة طيبة.

النتائج: متوسط الدرجة لجمع البنود (ماعدا- بند واحد) لمقياس جاهزية التعلم المتداخل بين التخصصات كانت مرتفعة (٣.٤ > المتوسط). وكانت هناك اختلافات ذات دلالة إحصائية بين الجنسين في القضايا المتعلقة بدور التعليم المتداخل بين التخصصات في تعزيز فهم الطلبة لحدود دورهم المهني، وكذلك في حاجة طلاب التخصصات الصحية للتعلم مع بعضهم. كما كانت هناك فروق ذات دلالة إحصائية بين استجابة أعضاء هيئة التدريس من جامعة الدمام وجامعة طيبة فيما يتعلق بتصورهم لدور التعليم المتداخل بين التخصصات في تعزيز التفكير الإيجابي عن غيرهم من المتخصصين في التخصصات الصحية. وكذلك اعتقادهم بأهمية عاملي الثقة والاحترام بين المهن في تحقيق نتائج ناجحة. أظهرت نتائج مقارنة مواقف أعضاء هيئة التدريس من مختلف الفئات العمرية وجود فروقات ذات دلالة إحصائية نحو التعليم المتداخل بين التخصصات يعتبر الإناث وأولئك الذين تتراوح أعمارهم بين ٤١ و ٥٠ عاما التعليم المتداخل بين التخصصات أكثر إيجابية من غيرهم.

الاستنتاجات: أظهرت هذه الدراسة مواقف إيجابية لأعضاء هيئة تدريس التخصصات الصحية في كلا الجامعتين نحو التعليم المتداخل بين التخصصات. وقد توفر هذه النتائج المشجعة حافزا للانخراط المحتمل لأعضاء هيئة التدريس في الكليات الصحية السعودية في تقديم التعليم المتداخل بين التخصصات عند تطبيقه.

الكلمات المفتاحية: مواقف أعضاء هيئة التدريس؛ الكليات الصحية؛ متخصصو الرعاية الصحية؛ التعليم المتداخل بين التخصصات؛ المملكة العربية السعودية

Abstract

Objectives: Interprofessional Education (IPE), although well-understood in developed countries, is not uniformly perceived across developing countries. This study aimed to measure healthcare faculty attitudes towards IPE and to measure possible significant differences in demographic characteristics of faculty for their readiness to incorporate IPE in existing curricula.

Methods: This simple-random sampling study was conducted by administering the Readiness for Interprofessional Learning Scale (RIPLS) to 200 randomly selected faculty members of health colleges of University of Dammam (UoD) and Taibah University (TU) KSA. The survey was conducted as a paper-based survey at UoD and online at TU.

Results: The average score for all items (except one item) of the RIPLS were high (mean > 3.4). There were significant gender differences on issues related to the role of IPE in promoting students' understanding of their own professional limitations ($p < 0.05$) and on the need for healthcare students to learn together ($p < 0.10$). There were significant differences between faculty responses

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from UoD and TU with regard to their perceptions of IPE's role in fostering positive thinking about other healthcare professionals ($p < 0.05$) and their belief in the role of trust and respect among professions for successful outcomes ($p < 0.10$). Comparisons of faculty attitudes of different age groups towards IPE showed significant differences ($0.000 \leq p \leq 0.09$). Females and those aged 41 to 50 considered IPE more positively than their counterparts.

Conclusion: This study showed favourable attitudes of healthcare faculty from both universities towards IPE. These encouraging findings might provide an impetus for potential engagement of faculty of the Saudi health colleges in the delivery of IPE when implemented.

Keywords: Faculty attitudes; Health colleges; Healthcare professionals; Interprofessional education; KSA

Introduction

The World Health Organization defines interprofessional education (IPE) as 'occasions where two or more professions learn about, from, and with each other to enable effective collaboration and improve health outcomes'.[1,p.13] The main goal of IPE is to encourage shared learning, support trust and teamwork, enhance communication skills, and improve collaboration among health professions for the sake of improving patient care.[2,3]

Among the main drivers for initiating and promoting effective collaboration between healthcare professionals are the increased incidence of chronic diseases, the increased number of patients in need of critical care, the ageing population, workforce pressures, and the requirements of accrediting bodies for healthcare profession education programmes.[2–4]

The literature emphasizes that effecting collaborative interprofessional practices has a positive impact on patient care, improves patient satisfaction, reduces medical errors, enhances efficiency and appropriate use of health services, and raises job satisfaction among healthcare professionals.[5–7] Within the educational setting, many studies have reinforced the usefulness of IPE as a component of educational systems.[8–10] For example, as a result of engagement in IPE, both students and faculty exhibit a deep understanding of multidisciplinary team roles and improved communication.[11–13] In addition, IPE enhances the knowledge and skills required for collaborative team work.[14–16]

Olenick and Allen[17] argue that quality in healthcare is influenced not only by how well healthcare professionals work together but also by their attitudes towards IPE and interprofessional healthcare teams.

Attitudes towards IPE are considered to be the best predictor of intent to engage in IPE.[17] A wealth of published literature emphasizes that faculty attitudes towards IPE

create a significant influence on the development of IPE initiatives in educational settings.[18]

At present, numerous indicators in KSA underline the pressing need for the development of IPE. For example, serious outbreaks of infectious illnesses during the annual Makkah pilgrimage (Hajj), the multi-disciplinary group of experts from different divisions who coordinate to plan the delivery of health services during the Hajj season, and growing chronic health problems such as diabetes mellitus, hypertension, and coronary artery diseases needing complex care by an interprofessional team,[19,20] call for collaborative work by diverse disciplines. A potential example of specific collaboration from different disciplines could be the exchanging of healthcare professionals' expertise and perspectives to build up a common goal of safeguarding one's health and enhancing results while integrating resources. Other examples include conducting a series of small group IPE modules and supporting faculty development efforts that aim at increasing awareness and understanding of collaboration and shared learning. However, to the authors' knowledge, IPE is not formally and officially implemented in the educational system of Saudi Arabian medical schools.

The main objective of this study was to explore the attitudes of faculty of healthcare professions towards IPE. It is hoped that the findings of this study will help in needs analysis and goal-setting for medical educators and policy makers in designing and implementing IPE to meet the needs of our society.

Materials and Methods

Study setting

This study was conducted on faculty members of health colleges of UoD and TU, KSA.

Study design

A simple random sampling study was conducted from April to June 2016.

Target population and sample size

A total of 100 faculty members at health colleges of each university were selected by a simple sampling technique that involved the random selection of faculty members from different medical and allied health disciplines of both universities to create a representative sample for this research.

Data collection tools

Data were collected using a paper-based questionnaire at UoD and online at TU using Survey Monkey software. The software is Statistical Package for Social Science (SPSS) (IBM Corp, Chicago, Illinois, USA) version 20. The first page of each questionnaire had an explanation of the term 'interprofessional education' and the purpose of the study. The voluntary anonymous nature of participation and confidentiality was assured. Approximately 10–15 min were required to complete the questionnaire.

Instrument

The Readiness for Interprofessional Learning Scale (RIPLS), originally developed by Parsell and Bligh[21] and modified by Curran et al.,[18] was used to assess the attitudes of faculty members regarding IPE. This scale is a 15-statement validated questionnaire that invites the participants to indicate their level of agreement on a 5-point Likert scale ranging from 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, or 5 = strongly agree. Negatively worded statements (numbers 10 and 11) were reversed-scored. Higher scores represent more positive attitudes towards interprofessional learning. In addition, a personal information form containing socio-demographic variables of age, gender, and nationality was included.

Statistical analysis

The data were entered and analysed through Statistical Package for Social Science (SPSS, IBM, Chicago, Illinois, USA) version 20. The descriptive analysis was done by frequency distribution and a graphic analysis was performed by bar charts. The inferential statistics was done by applying non-parametric tests after normality of data were verified by a one-sample Kolmogorov−Smirnov test. A finding of any item with a significant z value estimated at less than 0.05 would reject the null hypothesis that "data are normally distributed". In which case the non-parametric tests would be appropriate for the comparison of RIPLS statements on the basis of gender, university and age groups of faculty members. A Chi-squared test of independence was used to compare variations in responses as reviewed by the Likert scale (from strongly disagree to strongly agree). The Mann−Whitney U Test was used to compare differences between two independent groups and was applied to compare the differences between more than two independent groups. The Kruskal−Wallis test was used to compare the age groups of faculty members in this study. A P-value of 0.10 was considered statistically significant.

Pilot study

A pilot study was carried out on five faculty members to test the feasibility and applicability of the instrument at UoD. The result showed that the survey was conveniently understood and there was no need to modify its contents.

Ethical considerations

An ethical approval was obtained from the Institutional Review Board of the UoD before this study was conducted.

Results

Sixty-five faculty members from UoD and 61 from TU responded with an overall response rate of 63%.

Descriptive statistics

The descriptive statistics of these 126 respondents showed that the majority, 67 (53.2%), of the responding faculty were females. As many as 43 (34%) were from the age group of 41−50 years, and of the responding faculty, non-Saudi faculty, 69 (54.8%), predominated. Overall mean of scale for the entire cohort of 126 respondents was found to be 4.17; the mean for male respondents (n = 59) was 4.27, while the mean for female respondents (n = 67) was 4.00. The mean of scale for UoD (n = 65) and TU (n = 61) respondents were estimated to be 4.17 and 4.16, respectively.

Frequency distribution of RIPLS statements − score 1 to 5 (where 1 = strongly disagree, 2 = disagree, 3 = don't know, 4 = agree and 5 = strongly agree) − for the faculty responses are shown in Figure 1 as a clustered bar chart. The highest response of 91 (72.2%) was recorded for the eighth statement, *'Team-working skills are essential for all healthcare students to learn'*, where faculty members strongly agreed that IPE was important. On the other hand, the eleventh statement, *'Clinical problem-solving can only be learned effectively when students are taught within their individual departments'*, was considered neutral by 31 (24.6%) faculty members, while 25 (19.8%) strongly disagreed.

Inferential analysis

Before applying inferential analysis, the normality of the data was checked using one sample Kolmogorov−Smirnov test. The result showed that each item had significant z value which is less than 0.01, a finding that rejected the null hypothesis that the "data are normally distributed". Henceforth, the non-parametric tests such as Chi-square test of independence, Mann−Whitney U test and Kruskal−Wallis test were found to be appropriate for the comparison of readiness of interprofessional education statements in terms of gender, university and different age groups.

Overall, attitude scores for all faculty members in both universities were high, with a mean score of no less than 3.4 (except statement 11). The highest scoring response to an item by faculty was statement 8, *'Team-working skills are essential for all healthcare students to learn'*, with a mean of 4.63. The lowest scoring response to an item was statement 11, *'Clinical problem-solving can only be learned effectively when students are taught within their individual departments'*, with a mean of 3.19 (Table 1).

The results of the Chi-squared test, presented in Table 2, are meaningful at 5% level of significance, confirming that faculty responses were independent and statistically significant (strongly disagree to strongly agree) on the Likert scale. However, the largest Chi-square value of 234 for statement 8, *'Team-working skills are essential for all healthcare students to learn'*, indicates that the responses had significantly high variations from strongly disagree to strongly agree, as depicted in Figure 1. On the other hand, statement 11, *'Clinical problem-solving can only be learned effectively when students are taught within their individual departments'*, showed a significantly low value of 47.

The Mann−Whitney U Test was used to compare responses of male and female faculty members to RIPLS inventory (Table 3). The results showed statistically significant variations in responses to statements 9 and 10; the response from female faculty was dominant for *'Interprofessional learning will help students to understand their own professional limitations'*, with a mean rank of 69.08, contrasting a mean rank of 57.16 reported by their male
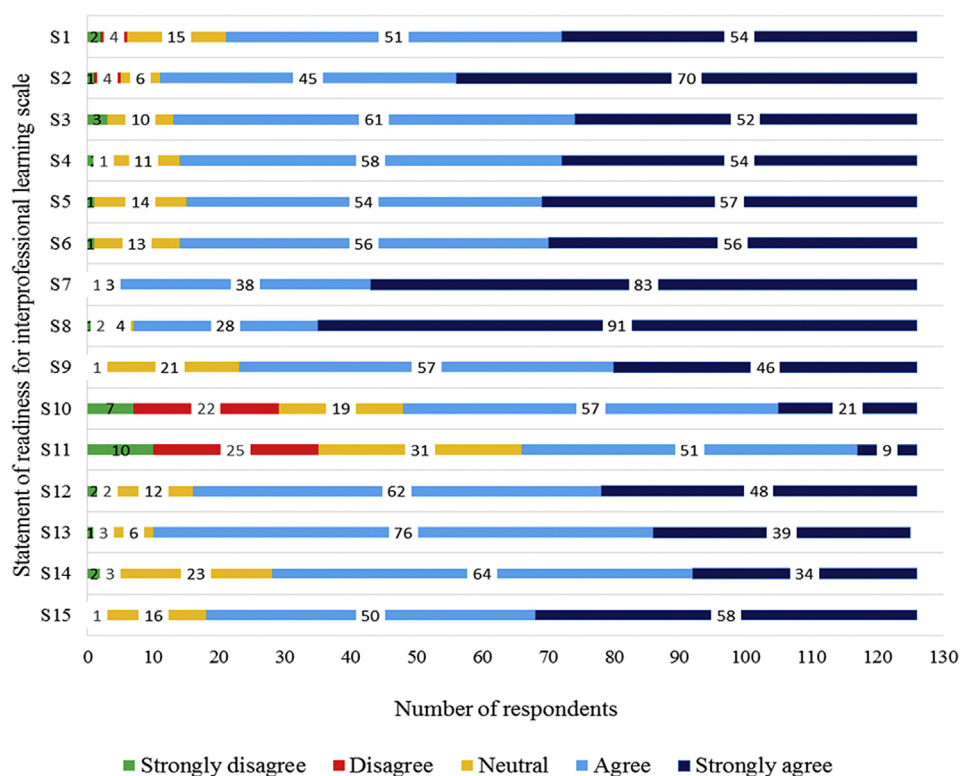
Figure 1: The analysis of responses to the readiness for Interprofessional Learning Scale from UoD and TU, KSA 2016 (n = 126).

Table 1: The analysis of the responses by the one-sample Kolmogorov−Smirnov test (n = 126).

Statement	Mean	Most extreme differences			Kolmogorov−Smirnov Z	Asymp. Sig. (2-tailed)
		Absolute	Positive	Negative		
1	4.20	0.25	0.18	−0.25	2.76	0.00*
2	4.42	0.32	0.23	−0.32	3.63	0.00*
3	4.26	0.27	0.22	−0.27	3.02	0.00*
4	4.28	0.25	0.21	−0.25	2.82	0.00*
5	4.31	0.27	0.22	−0.27	3.02	0.00*
6	4.32	0.27	0.23	−0.27	3.05	0.00*
7	4.60	0.39	0.27	−0.39	4.37	0.00*
8	**4.63**	0.42	0.30	−0.42	4.73	0.00*
9	4.16	0.24	0.22	−0.24	2.66	0.00*
10	3.50	0.29	0.16	−0.29	3.26	0.00*
11	**3.19**	0.25	0.16	−0.25	2.79	0.00*
12	4.21	0.27	0.22	−0.27	3.05	0.00*
3	4.19	0.31	0.30	−0.31	3.49	0.00*
14	3.99	0.28	0.23	−0.28	3.16	0.00*
15	4.29	0.28	0.19	−0.28	3.12	0.00*

Note: H_o = Data are normally distributed and * indicates the 5% level of significance.
The bold numbers present the highest and the lowest mean scores.

counterparts. On the other hand, male faculty score of a mean rank of 68.99 was higher than that of female faculty for statement 10: *'It is not necessary for undergraduate healthcare students to learn together'*.

A comparison of responses from the two universities is shown in Table 4. The results showed that the mean rank of faculty members from UoD was significantly higher than that from TU for statements 6 and 7, *'Interprofessional learning will help students think positively about other healthcare professionals'* and *'For small-group learning to*

work, students need to trust and respect each other', with mean ranks of 70.53 and 68.52, respectively.

The Kruskal−Wallis test was used to compare the attitudes of faculty in the different age groups towards interprofessional education (Table 5). The results showed statistically significant responses to statements 1 to 5. Faculty members aged 41−50 years obtained higher scores than those in younger age groups, with a mean rank of 77.38, 71.93, 69.79, 78.99 and 70.37 for statements 1 to 5, respectively. In contrast, faculty aged 31−40 years scored a

Table 2: The analysis of the responses by the Chi-squared test of independence (n = 126).

Statement of readiness for interprofessional learning scale	Chi-Square	Asymp. Sig.
S1. Learning with students in other health professional departments will help undergraduates to become more effective members of a healthcare team.	103[a]	0.00*
S2. Patients would ultimately benefit if healthcare students worked together to solve patient problems.	151[a]	0.00*
S3. Interprofessional learning among healthcare students will increase their ability to understand clinical problems.	81[b]	0.00*
S4. Learning between healthcare students before qualification would improve working relationships after qualification.	128[a]	0.00*
S5. Communication skills should be learned with integrated classes of healthcare students.	74[c]	0.00*
S6. Interprofessional learning will help students think positively about other healthcare professionals.	78[b]	0.00*
S7. For small-group learning to work, students need to trust and respect each other.	205[a]	0.00*
S8. Team-working skills are essential for all healthcare students to learn.	**234**[a]	0.00*
S9. Interprofessional learning will help students to understand their own professional limitations.	104[a]	0.00*
S10. It is not necessary for undergraduate healthcare students to learn together.	56[a]	0.00*
S11. Clinical problem-solving can only be learned effectively when students are taught within their individual departments.	**47**[a]	0.00*
S12. Interprofessional learning among health professional students will help them to communicate better with patients and other professionals.	124[a]	0.00*
S13. Students would benefit from working on small-group projects with other healthcare students.	169[d]	0.00*
S14. Interprofessional learning will help to clarify the nature of patient problems for students.	104[a]	0.00*
S15. Interprofessional learning before qualification will help health professional students to become better team-workers.	117[a]	0.00*

Note: * indicates the 5% level of significance.
The bold numbers present the extreme values of Chi-square. The largest Chi-square value indicates that the responses had significantly high variations from strongly disagree to strongly agree. While the smallest Chi-square value indicates that the responses had significantly low variations.
[a] 0 cells (0.0%) have expected frequencies of less than 5. The minimum expected cell frequency is 25.5.
[b] 0 cells (0.0%) have expected frequencies of less than 5. The minimum expected cell frequency is 31.5.
[c] 0 cells (0.0%) have expected frequencies of less than 5. The minimum expected cell frequency is 31.
[d] 0 cells (0.0%) have expected frequencies of less than 5. The minimum expected cell frequency is 25.

Table 3: The results of the Mann–Whitney U test for comparison of responses between genders (n = 126).

Statement	Male MR	Female MR	Mann–Whitney U	Z	Asymp. Sig. (2-tailed)
S1	63.29	63.69	1964	−0.07	0.947
S2	61.28	65.46	1846	−0.72	0.469
S3	62.55	64.34	1921	−0.30	0.762
S4	63.37	63.61	1969	−0.04	0.968
S5	63.54	61.61	1850	−0.33	0.743
S6	60.60	66.05	1806	−0.92	0.357
S7	62.42	64.45	1913	−0.38	0.708
S8	62.94	63.99	1944	−0.21	0.837
S9	57.16	**69.08**	1603	−1.98	0.048*
S10	**68.99**	58.66	1653	−1.68	0.094**
S11	60.57	66.08	1804	−0.89	0.375
S12	65.94	61.35	1833	−0.78	0.438
S13	63.94	62.19	1889	−0.31	0.755
S14	61.05	65.66	1832	−0.77	0.442
S15	61.41	65.34	1853	−0.66	0.510

Note: Grouping variable here is gender, total respondents 126, * and ** represents the level of significance at 5% and 10%, respectively.
The bold numbers present the higher mean rank scores of participants' responses that are statistically significant.

mean rank of 72.77, which was higher than other age groups for statement number 9.

Discussion

In the educational context, faculty attitudes towards IPE have a significant influence on the development of IPE initiatives. This study showed positive attitudes of faculty from both universities towards shared education. In addition, the respondents acknowledged the role of teamwork and collaboration in enhancing the benefits the patient derives from healthcare provided by an interprofessional team, promoting better communication skills, enabling healthcare professionals to think positively about other healthcare professionals, and improving skills for team work.

Table 4: The comparison of responses between the health colleges of University of Dammam and Taibah University by Mann−Whitney U test (n = 126).

Statement	TU MR	UD MR	Mann−Whitney U	Z	Asymp. Sig. (2-tailed)
S1	61.20	65.65	1843	−0.74	0.459
S2	61.29	65.58	1848	−0.75	0.456
S3	64.03	63.00	1950	−0.18	0.861
S4	66.04	61.12	1828	−0.83	0.404
S5	61.78	63.15	1875	−0.23	0.815
S6	56.01	**70.53**	1526	−2.46	0.014*
S7	58.16	**68.52**	1657	−1.92	0.055**
S8	61.25	65.62	1845	−0.86	0.391
S9	60.17	66.62	1780	−1.07	0.284
S10	67.43	59.81	1743	−1.24	0.215
S11	66.86	60.35	1778	−1.05	0.294
S12	67.76	59.50	1723	−1.40	0.162
S13	66.86	60.35	1809	−0.81	0.418
S14	67.76	59.50	1940	−0.23	0.819
S15	65.36	60.82	1703	−1.49	0.135

Note: Grouping variable here is university, total respondents 126, * and ** represents the level of significance at 5% and 10%, respectively. MR stands for mean rank.
The bold numbers present the higher mean ranks that are statistically significant.

Table 5: Kruskal−Wallis test of age groups.

Statement	20−30	31−40	41−50	51−60	Chi-square	Asymp. Sig. (2-tailed)
S1	54.48	61.29	**77.38**	48.78	12.98	0.005*
S2	63.02	62.87	**71.93**	47.18	8.05	0.045*
S3	51.33	67.72	**69.79**	56.35	6.41	0.093**
S4	52.04	65.26	**78.99**	40.52	22.00	0.000*
S5	53.58	67.18	**70.37**	47.62	9.16	0.027*
S6	62.96	64.47	69.38	49.60	4.92	0.178
S7	72.40	59.08	59.58	69.88	4.52	0.211
S8	56.69	64.22	65.30	66.40	1.77	0.622
S9	58.44	**72.77**	66.93	44.12	10.52	0.015*
S10	67.46	55.54	69.44	61.50	3.73	0.292
S11	56.83	63.21	70.59	56.82	3.40	0.334
S12	56.04	63.45	70.71	57.05	4.00	0.261
S13	59.93	63.67	66.38	57.95	1.26	0.738
S14	61.00	63.33	68.38	56.32	1.96	0.580
S15	59.12	65.04	64.77	63.02	0.56	0.906

Note: Grouping variable here is age group, total respondents 126, * and ** represents the level of significance at 5% and 10% respectively.
The bold numbers present the highest mean rank scores of participants' responses to statements 1−5 that are statistically significant.

In this study, on average, the RIPLS mean scores for all individual items (except item 11) were high. These results indicate that the attitudes of faculty towards IPE are more positive than negative. The high perception and readiness towards IPE of faculty reflect their awareness of the importance of IPE and its role in education. These results accord with the findings of both Giordano et al.[12] and Olenick and Allen,[17] which revealed that most healthcare faculty members have a positive attitude towards IPE. In this study, the mean score for item 11, *'Clinical problem-solving can only be learned effectively when students are taught within their individual departments'*, was low. Statement 11 is a negatively worded item that has been reversed-scored. Thus the low mean score suggests that most participants were not in agreement with

such a statement. This in turn may indicate more willingness of faculty for cooperation and shared learning.

The findings of the comparison between male and female faculty showed that female faculty had more favourable attitudes and readiness towards IPE than males. This result is consistent with studies conducted by Curran et al.,[18] which showed that female faculty had significantly higher mean scores for IPE than males. However, the result of this study contradicts the finding of Olenick and Allen,[17] which showed no statistically significant differences between mean in responses by males and females.

A comparison between health colleges of UoD and TU, in this study, highlighted that faculty members from UoD acknowledged the role of IPE in helping students to think

positively about healthcare professions more than their counterparts from TU. In comparison with their colleagues from TU, the UoD faculty also had a strong belief that trust and respect were crucial for effective small group learning, which, in turn, contributes to the success of the outcome of interprofessional functions. One plausible explanation for such differences in faculty perceptions about the role of IPE may be traced back to the characteristics of educational environment that might potentially support innovation in teaching and learning. So to understand the reason for variations in faculty opinions, qualitative studies with generation of concepts and resultant theme analyses are recommended for future work. Despite such differences, as mentioned earlier, faculty at both universities showed a favourable attitude towards IPE. This result generates evidence that faculty members reveal their readiness and favour the incorporation of IPE strands and courses in medical and allied health curricula.

In addition, the results of this study showed that faculty aged 41–50 years had favourable attitudes towards shared learning. Compared with other age groups, they acknowledged the value of IPE as a means of enhancing communication skills, fostering an understanding of clinical problems, improving working relationships, and being effective in a healthcare team. This finding contradicts the results of Olenick and Allen,[17] which showed that age was not significantly related to attitude towards IPE. One plausible explanation for this finding is the fact that the majority of faculty members who participated in this study are non-Saudi nationals. Perhaps these faculty members have had prior experiences of IPE and are ultimately more knowledgeable about IPE. Henceforth, to investigate the role of age and prior experience of IPE as predictors for IPE engagement, a replication study may provide more objective evidence of such assumptions.

Conclusions

It seems that healthcare faculty in both Saudi universities had favourable attitudes towards IPE. Female faculty and those aged between 41 and 50 were likely to view IPE more positively than their counterparts. These significant findings might indicate that the faculty are very likely to engage in IPE whenever it is implemented, as attitude towards IPE is believed to be the best predictor of intent to engage in IPE. Furthermore, the positive attitude of faculty towards IPE might encourage decision-makers in developing and embedding the educational strategy of IPE into the core curriculum.

Limitations of the study

This study was conducted in the health colleges of two main Saudi universities. Therefore, any attempt to make generalizations that would include other universities with similar characteristics should be done with prudence.

Conflict of interest

The authors have no conflict of interest to declare.

Authors' contributions

MFQ and SYG conceived and designed the study, and conducted the data collection. SYG analyzed and interpreted the data, and provide logistical support and the final review of the results. MFQ wrote the initial and final draft of the article. All authors are responsible for the findings, have critically reviewed and approved the final draft of the article.

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References

1. World Health Organization. *Framework for action on interprofessional education & collaborative practice*. Geneva (Switzerland): WHO Press; 2010. Available from: http://www.who.int/hrh/resources/framework_action/en/.
2. Thistlethwaite J. Interprofessional education: a review of context, learning and the research agenda. **Med Educ 2012**; 46: 58–70.
3. Williams B, McCook F, Brown T, Palmero C, McKenna L, Scholes R, French J, McCall L. Are undergraduate health care students ready for interprofessional learning?: a cross-sectional attitudinal study. **Internet J Allied Health Sci Pract 2012**; 10(3).
4. Buring SM, Bhushan A, Broeseker A, Conway S, Duncan-Hewitt W, Hansen L, et al. Interprofessional education: definitions, student competencies, and guidelines for implementation. **Am J Pharm Educ 2009**; 73. Article 59.
5. McCaffrey RG, Hayes R, Stuart W, Cassel A, Farrell C, Miller-Reyes S, et al. An educational program to promote positive communication and collaboration between nurses and medical staff. **J Nurses Staff Dev 2011**; 27: 121–127.
6. Reeves S, Zwarenstein M, Goldman J, Barr H, Freeth D, Hammick M, et al. Interprofessional education: effects on professional practice and health care outcomes. **Cochrane Database Syst Rev 2013**; 28(3): CD002213.
7. Brock D, Abu-Rish E, Chiu C, et al. Interprofessional education in team communication: working together to improve patient safety. **Qual Saf Health Care 2013**; 22(5): 414–423.
8. Vafadar Z, Vanaki Z, Ebadi A. The readiness of postgraduate health sciences students for interprofessional education in Iran. **Glob J Health Sci 2015**; 7(4): 190–199.
9. Lairamore C, George-Paschal L, McCullough K, et al. A case-based inter-professional education forum increases health students' perceptions of collaboration. **Med Sci Educ 2013**; 23: 472–481.
10. Ayala N, MacDonnell C, Dumenco L, et al. A cross-sectional analysis of perceptions of inter-professional education in medical students. **Ann Behav Sci Med Educ 2014**; 20: 6–9.
11. Keshtkaran Z, Sharif F, Rambod M. Students' readiness for and perception of inter-professional learning: a crosssectional study. **Nurse Educ Today 2014**; 34: 991–998.
12. Giordano C, Elena U, Kevin JL. Attitudes of faculty and students in medicine and the health professions towards interprofessional education. **J Allied Health 2012**; 41(1): 21–25.
13. Hosoda M, Isozaki K, Morita S, et al. Interprofessional education for physical therapists. **J Phys Ther Sci 2005**; 17: 115–118.

14. Lumague M, Morgan A, Mak D, Hanna M, Kwong J, Cameron C, et al. Interprofessional education: the student perspective. **J Interprof Care 2006**; 20: 246−253.

15. Hammick M, Freeth D, Koppel I, Reeves S, Barr H. A best evidence systematic review of interprofessional education: BEME guide no. 9. **Med Teach 2007**; 29(8): 735−751.

16. Hammick M. Interprofessional education: evidence from the past to guide the future. **Med Teach 2000**; 22: 461−467.

17. Olenick M, Allen LR. Faculty intent to engage in inter-professional education. **J Multidiscip Healthc 2013**; 19(6): 149−161.

18. Curran VR, Sharpe D, Forristall J. Attitudes of health sciences faculty members towards interprofessional teamwork and education. **Med Educ 2007**; 41: 892−896.

19. Al-Daghri NM, Al-Attas OS, Alokail MS, Alkharfy KM, Yousef M, Sabico S, Chrousos G. Diabetes mellitus type 2 and other chronic non-communicable diseases in the central region, Saudi Arabia (riyadh cohort 2): a decade of an epidemic. **BMC Med 2011**; 9: 76.

20. Memish ZA, Zumla A, Alhakeem R, Assiri A, Turkestani A, Al Harby K, Alyemni M, Dhafar K, Gautret P, Barbeschi M, McCloskey B, Heymann D, Al Rabeeah A, Al-Tawfiq J. Hajj: infectious disease surveillance and control. **Lancet 2014**; 383(9934): 2073−2082.

21. Parsell G, Bligh J. The development of a questionnaire to assess the readiness of health care students for interprofessional learning (RIPLS). **Med Educ 1999**; 33: 95−100.