



Original Article

The perceptions and readiness toward interprofessional education among female undergraduate health-care students at King Saud University

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Abstract. [Purpose] Interprofessional education (IPE) is an important academic approach for preparing health-care professionals to provide patient care in a collaborative team environment. This study aimed to measure the perceptions and readiness toward IPE among female undergraduate health-care students at King Saud University (KSU). [Subjects and Methods] A cross-sectional study carried out using a survey in the form of an electronic questionnaire: The Readiness for Interprofessional Learning Scale (RIPLS). The questionnaire was distributed to the students via e-mail and social media networks. [Results] The RIPLS was completed by 296 female health-care students at KSU who valued the importance of IPE. The differences between health-care disciplines in the perceptions and readiness toward IPE were statistically significant, but there were no differences between students of different years of study in their perception and readiness toward IPE. [Conclusion] Administering a course of interprofessional teamwork in the health-care curriculum is a major challenge for the clinical education community. IPE offers an opportunity to address the multi-disciplinary concept in hospitals. Our findings indicate that undergraduate health-care students have high perception and readiness toward IPE.

Key words: Perception, Interdisciplinary team, Interprofessional education

(This article was submitted Nov. 4, 2015, and was accepted Dec. 23, 2015)

INTRODUCTION

Interprofessional education (IPE) is an important academic approach for preparing health-care students to provide patient care in a collaborative team environment¹⁾. The World Health Organization (WHO) defines IPE as “a process that occurs when two or more professionals learn about, from, and with each other to enable effective collaboration and improve health outcomes”²⁾. The IPE for Collaborative Patient-Centered Practice has three components: 1) “socializing health-care professionals to work together”; 2) “developing mutual understanding and respect for various disciplines”, and 3) “imparting collaborative practice competencies”²⁾.

Recently, many studies have supported the effectiveness of IPE as part of the education process^{3–8)}. The students^{3–5)} and faculty⁶⁾ reported an enhanced understanding of multidisciplinary team roles and better communication, which improves the collaboration between team members. One study rated more patient satisfaction with the care provided by interprofessional students than a control group who were treated in a regular ward⁷⁾. Another study emphasized the importance of IPE in

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improving self-development as a professional as well as developing interprofessional understanding⁸).

Misunderstanding of interprofessional teamwork adversely influences the collaborative practice of health-care professionals in the field, which limits communication between the team members and the implementation of the treatment plan. These effects eventually lead to a decrease in patient satisfaction and the overall health outcomes. However, an early intervention in the education process of undergraduate students, in order to increase their understanding about interprofessional teamwork should reflect positively on their future practice as a health care provider, and enhance the collaborative teamwork for optimal patient-centered health services. In this study, we aimed to measure the perceptions and readiness toward IPE among students of different health-care disciplines. Our hypotheses were that health-care students have no background knowledge of IPE and are not ready to implement it in the university. The alternative hypothesis was that health-care students have background knowledge of IPE and are ready to implement it in the university.

SUBJECTS AND METHODS

The inclusion criteria were female students, with good English language ability (subjects were taught in English). The students were in their second year of study or above. Their ages ranged from 20 to 30 years old, and students with Medicine, Nursing, Pharmacy, Physical therapy, Occupational therapy, Speech and hearing therapy, Health education and Nutrition specialties responded. First-year students were excluded as they represent preparatory-year students in the university. The present study was approved by the Institutional Ethics Committee (IEC) of King Saud University, Saudi Arabia. All the participants signed a written, informed consent approved by the IEC. All the participants had the right to withdraw at any time. The research data was confidentially stored, and only the researcher had access to the information. The present study conformed to the ethical principles of the Declaration of Helsinki (1975, revised 1983).

The sample size was computed using the Raosoft program⁹). The population size for the health-care students who were included in the study was 1767 based on the information obtained from the academic affairs of each college. With a margin of error 5%, confidence level 95% and 50% response distribution, the recommended sample size for our study was 316 participants.

This cross-sectional study was carried out in Riyadh City at the King Saud University (KSU) female campus, in order to assess the perceptions and readiness toward IPE by distributing a survey among health care students⁷). We created an online survey using the Typeform website¹⁰). The survey was distributed in the English language via e-mail and social media networks such as WhatsApp. A reminder e-mail was sent to the non-respondents after one week, followed by another e-mail after two weeks.

The survey was divided into two parts. The first part of the survey contained questions about demography and general questions about age, years of study at KSU, and a multiple-choice question about the meaning of the IPE concept. The answer choices of the IPE question were: a) study involving drawing a mental map, which contains branches, colors, and pictures for easy memorization; b) a method of studying in which lectures are broadcast or classes conducted by correspondence or over the internet, without the student's needing to attend a school or college; c) two or more professionals learn about, from, and with each other to enable effective collaboration and improve health outcomes, the correct definition of IPE. The second part of the questionnaire utilized the Readiness for Interprofessional Learning Scale (RIPLS)¹¹), which includes 19 items divided into four subscales: 1) Teamwork and Collaboration (items 1–9, total possible score 45); 2) Negative Professional Identity (items 10–12, total possible score 15); 3) Positive Professional Identity (items 13–16, total possible score 20); and 4) Roles and Responsibilities (items 17–19, total possible score 15). RIPLS uses a 5-point Likert scale with responses ranging from “strongly disagree” (1) to “strongly agree” (5)¹²), with higher scores indicating stronger agreement. A high score on the Teamwork and Collaboration subscale means the respondents agree with the importance of collaboration and work with other health-care professionals. On the second subscale, Negative Professional Identity, a high score means the respondents do not value collaborative learning with other health-care professionals. A high score on the third subscale, Positive Professional Identity, means the respondents value sharing experiences with other health-care professionals. On the last subscale, Roles and Responsibilities, a higher score means unclear perception among respondents of their role and those of others¹³).

Data were managed and analyzed using SPSS version 19. Analysis of variance (ANOVA) was performed to compare the differences between groups based on years of study, and groups based on different health-care disciplines, with respect to the one independent variable, which was the RIPLS score. The χ^2 test was used to determine the significance differences among the health-care disciplines or the years of study in answering the IPE definition question to test our null hypothesis of IPE perception. Cross-tabulation was performed to determine if the health-care disciplines or the years of study influenced the students' knowledge of the IPE definition by comparisons of the two variables (health care disciplines/years of study with IPE definition) and displayed the relationship. Frequency table was used for individual variables (answers) in all survey questions.

RESULTS

Table 1 details the results. The RIPLS was completed by 296 participants (response rate, 84.6%: 58 Physical therapy, 58 Medicine, 54 Pharmacy, 41 Health education, 27 clinical nutrition, 25 Nursing, 19 Speech and hearing therapy, and 14 Occu-

Table 1. Participants response to the 19 items of the survey

Items	Strongly agree	Agree	Undecided	Disagree	Strongly disagree
1- Learning with other students will help me become a more effective member of a healthcare team	104 (35.1%)	146 (49.3%)	29 (9.8%)	14 (4.7%)	3 (1%)
2- Patients would ultimately benefit if health care students worked together to solve patient problems.	163 (55.1%)	108 (36.5%)	23 (7.8%)	2 (0.7%)	0
3- Shared learning with other healthcare students will increase my ability to understand clinical problems	162 (54.7%)	114 (38.5%)	15 (5.1%)	2 (0.7%)	3 (1.0%)
4- Learning with healthcare students before qualification would improve relationships after qualification.	110 (37.2%)	139 (47%)	39 (13.2)	6(2%)	2 (0.7%)
5- Communication skills should be learned with other healthcare students.	115 (38.9%)	144 (48.6%)	29 (9.8)	6 (2%)	2 (0.7%)
6- Shared learning will help me to think positively about other professionals	115 (38.9%)	138 (46.6%)	38 (12.8%)	2 (1%)	2 (0.7%)
7- For small-group learning to work, students need to trust and respect each other.	204 (68.9%)	88 (29.7%)	4 (1.4%)	0	0
8- Team-working skills are essential for all healthcare students to learn.	162 (54.7%)	115 (38.9%)	9 (3%)	7 (2.4%)	3 (1%)
9- Shared learning will help me to understand my own limitations.	106 (35.8%)	138 (46.6%)	37 (12.5%)	13 (4.4%)	2 (0.7%)
10- I do not want to waste my time learning with other healthcare students.	7 (2.4%)	18 (6.1%)	52 (17.6%)	177 (59.8%)	42 (14.2%)
11- It is not necessary for undergraduate healthcare students to learn together	4 (1.4%)	30 (10.1%)	54 (18.2%)	151 (51%)	57 (19.3%)
12- Clinical problem-solving skills can only be learned with students from my own department.	13 (4.4%)	41 (13.9%)	72 (24.3%)	130 (43.9%)	40 (13.5%)
13- Shared learning with other healthcare students will help me to communicate better with patients and other professionals.	126 (42.6%)	144 (48.6%)	21 (7.1%)	5 (1.7%)	0
14- I would welcome the opportunity to work on small-group projects with other healthcare students.	107 (36.1%)	142 (48%)	33 (11.1%)	10 (3.4%)	4 (1.4%)
15- Shared learning will help to clarify the nature of patient problems.	122 (41.2%)	142 (48%)	29 (9.8%)	3 (1%)	0
16- Shared learning before qualification will help me become a better team worker.	117 (39.5%)	152 (51.4%)	24 (8.1%)	3 (1%)	0
17- The function of nurses and therapists is mainly to provide support for doctors	33 (11.1%)	76 (25.7%)	31 (10.5%)	98 (33.1%)	58 (19.6%)
18- I am not sure what my professional role will be.	8 (2.7%)	34 (11.5%)	63 (21.3%)	105 (35.5%)	86 (29.1%)
19- I have to acquire much more knowledge and skills than other healthcare students.	66 (22.3%)	111 (37.5%)	84 (28.4%)	32 (10.8%)	3 (1%)

pational therapy students). About 44.9% of the respondents were students in their fourth year, followed by 28.7% students in their third year; and 19.9% were second-year students, and 6.4% were fifth-year students. The majority of respondents (78%) answered the IPE definition correctly, and the rest 22% answered it incorrectly. Cross-tabulation was used to determine the relationship between the medical disciplines or the years of study with the IPE definition, to determine students' knowledge of IPE. The differences among the health-care discipline's knowledge of the IPE definition were significant according to the chi-squared test ($p = 0.039$), as well as those among the years of study and knowledge of the IPE definition ($p = 0.008$). The mean score of the readiness of the students was 75.67 (SD=7.29) and it ranged from 34–90 out of a possible 95. Only one score (34) was lower than the median score of the scale (47.5), and the other scores ranged from 52–90. The results of each subscale were: Teamwork and Collaboration (89% strongly agree/agree, 8% undecided, 3% strongly disagree/disagree), Negative Professional Identity (13% strongly agree/agree, 20% undecided, 67% strongly disagree/disagree), Positive Professional Identity (89% strongly agree/agree, 9% undecided, 2% strongly disagree/disagree), Roles and Responsibilities (37% strongly agree/agree, 20% undecided, 43% strongly disagree/disagree).

To compare the groups with respect to the RIPLS score, we used the ANOVA test. The test showed a significant difference among the health-care disciplines in the readiness for IPE ($p=0.019$), but no differences among years of study in the university and their readiness for IPE ($p=0.938$).

DISCUSSION

Our study aimed to measure the degree of students' perceptions and readiness toward IPE in different health-care disciplines. We were expecting that the undergraduate health-care students at KSU would have no background knowledge or readiness toward IPE. However, the results of this study indicate that undergraduate health-care students have perception and readiness toward IPE, and we should therefore implement the notion of shared learning. The high perceptions and readiness of the students reflect the students' awareness of the educational and clinical challenges of IPE. The results are in agreement with some previous studies, which showed most health-care students have positive perceptions of IPE at the undergraduate levels of their professional program^{2, 3}).

However, other studies have indicated that some students were confused by the concept of IPE. One of these studies showed that graduate students from different health-care disciplines valued interprofessional collaboration less than other undergraduate health-care students, and this was reflected by their different years of experiences¹³). Our results show that on the Teamwork and Collaboration subscale, most of the students agreed with the importance of collaboration and work with other health-care professionals. This result matches previous findings that noted students had positive attitudes toward teamwork and collaboration⁵). The Negative Professional Identity subscale had a low score of students' agreement with the items, which indicates that the students valued collaborative learning with other health-care discipline students. On the third subscale, Positive Professional Identity, the students scored highly, which means they valued sharing experiences with other health-care discipline students. On the last subscale, Roles and Responsibilities, there were divergent results between strongly agree/agree and strongly disagree/disagree, which shows that some of the students had a clear perception of their own role as well as the roles of others, while other students did not. In the present study, the highest percentage of students who responded to RIPLS were students in their fourth year of study, while the lowest percentage were students in their fifth year of study. The majority of respondents' disciplines were physical therapy and medicine. According to the scale score there was a significant difference between the RIPLS score with respect to the health-care disciplines. Determining which discipline had the highest score compared to the others wasn't determined, as the aim of this study was to determine the perception and readiness of health-care students at KSU in general. Consistent with our findings, the results of previous studies reported significant differences among disciplines^{2, 5}). In contrast, the perception of IPE with respect to the years of study presented no significant difference in our study. This result conflicts with the results of other studies that reported significant differences in the perception of IPE between higher levels of education (medical residents and interns), who had a higher perception of IPE than lower levels (medical and nursing students)²). The difference found in that study might be due to residents and interns having experience of health-care services and having learned about interprofessional work, unlike medical and nursing students. Our study findings were collected through a valid and reliable questionnaire. It is an appropriate instrument to explore the student's readiness toward IPE¹⁴). El-Zubeir et al. validated the RIPL scale for Middle Eastern populations¹⁵). The data collected from 296 students represented a response of 84.6%, and it was close to the recommended sample size. Our study findings may be useful for students who are being considered as future members of rehabilitation teams, faculty members of universities, and rehabilitation teams in health-care centers. The findings indicate the need to redesign the curriculum to enhance interprofessional teamwork learning in clinical settings.

Some of the challenges encountered in our study affected the results. The short period of time restricted the involvement of psychology department students in our study; therefore, we were unable to include all the disciplines related to the rehabilitation team. The time also restricted our ability to collect the recommended sample size (n=316), so the present study may have insufficient statistical power. The subjects were selected from one university of Saudi Arabia in the Najed area; therefore, the results cannot be generalized to students of other universities or contexts. Our study design was a cross-sectional study that is not able to exactly determine the factors that affect the differences among the results. Ideally, IPE would advance specific competencies in the learner, including teamwork, leadership, consensus building, and the ability to identify and achieve common patient-care goals. Administering the course of interprofessional teamwork in the health care curriculum is a major challenge for the clinical education community. IPE offers an opportunity to address the multi-disciplinary concept in hospitals. Our findings show that female undergraduate health-care students at KSU have favorable perceptions and readiness toward IPE.

ACKNOWLEDGEMENT

The authors would like to extend their sincere appreciation to the Deanship of Scientific Research at King Saud University for funding this research through the research group NO. RGP-VPP-209.

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