

Pre-University Health Professional Students' Readiness and Perception Toward Interprofessional Education

Abstract

Background: Interprofessional education (IPE) helps preparing the learners in all healthcare professions to work effectively in collaborative teams. This study was undertaken to assess the readiness and perception of IPE of preuniversity health professional students even before they enter their health professional courses. **Methods:** The preuniversity health professional students along with final-year medical and dental students were recruited for the study. The readiness for interprofessional learning scale was used to measure the student's readiness toward IPE before the interprofessional-related activity session. The preuniversity students also completed the IEPS scale after their interaction with final-year medical and dental students. **Results:** Most of the aspiring health professional students during their foundation year expressed positive attitude toward readiness for IPE. Most preuniversity students realized that by learning with various professional students would make them effective member of healthcare team. The students had positive perception toward competence and autonomy, perceived need for cooperation, perception of actual cooperation, and understanding other's value, which were significantly higher from score 3 of somewhat disagree ($P < 0.001$). **Conclusion:** Most of the aspiring health professional students in their preuniversity year expressed positive attitude toward readiness for IPE although were not prepared to take roles and responsibility within the interprofessional group. They could well perceive the need for cooperation, perception of actual cooperation, and understanding other's value while working in an IP team.

Keywords: *Interprofessional education, perception, preuniversity students, readiness*

Introduction

The literature suggests that interprofessional education (IPE) leads to positive mutual attitudes, better understanding of professional roles in caring for patients and their caregivers, as well as improved information and knowledge exchange to cooperate during their daily practical work.^[1] The IPE helps preparing the learners in all healthcare professions to work effectively in collaborative teams and become competent to perform the desired task.^[2] Even IPE with dental hygiene students teaching medical and dental students has been effective.^[3] The literature describes various types of IPE interventions where the results are positive or negative.^[4-6] However, the intervention on preuniversity students on IPE concept before their entry into professional courses has not been reported in the literature to the best of our knowledge. This, we believe can better prepare the aspiring health professional

students in long-term perspective. Hence, we undertook this study to assess the readiness and perception toward IPE among the preuniversity students of our institution.

Methods

This was a cross-sectional study involving total of 71 students from preuniversity (Foundation in Science [FIS]), medical (MBBS), and dental (BDS) programs. The preuniversity students were exposed to interprofessional-related activity such as finding a solution to a given scenario on dental pain management, where they worked with medical and dental students and presented their report to the multidisciplinary faculty member, who had done briefing session before the small group activities. The readiness for interprofessional learning scale (RIPLS) was used to measure the participants' readiness toward IPE before the interprofessional-related activity session. There are 19 questions in RIPLS and the scale is divided into three

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domains such as teamwork and collaboration (questions 1–9), professional identity (questions 10–16), and roles and responsibility (questions 17–19). Five-point Likert scale is used which is from strongly agree (5) to strongly disagree (1). For negative statements, the score is reversed as strongly agree is scored 1 while strongly disagree is scored 5. Total score was also calculated for each domain as well as for the overall scale. Higher scores on the RIPLS and its domains indicate greater readiness for interprofessional learning.^[7,8] Internal consistency of each subscale of RIPLS was calculated. Cronbach's alpha coefficient of teamwork and collaboration was 0.810, professional identity was 0.689, and roles and responsibility were 0.372.

We used interdisciplinary education perception scale (IEPS) for all the preuniversity students after completing scenario-based sessions with medical and dental students.^[9] There were 18 items in the scale, and it was divided into four subscales such as competency and autonomy (8 items), perceived need for cooperation (2 items), perception of actual cooperation (5 items), and understanding of other's value (3 items). Six-point Likert scale was used and it was ranged from 6 (strongly agree), 5 (agree), 4 (somewhat agree), 3 (somewhat disagree), 2 (disagree) to 1 (strongly disagree). Total score was also calculated for each subscale. Higher scores indicated better perception for interdisciplinary education. Internal consistency of each subscale of IEPS was calculated. Cronbach's alpha coefficient of competency and autonomy was 0.856, perceived need for cooperation was 0.647, perception of actual cooperation was 0.851, and understanding of other's value was 0.555.

Microsoft Excel was used for data entry and the SPSS version 23 (SPSS Inc., Chicago, IL, USA) was used for data analysis. Descriptive statistics such as frequency and percentage were calculated for categorical data. Moreover, mean, standard deviation, and median were calculated for total score of each subscale as well as for each item in the RIPLS scale. Wilcoxon signed-rank test was also calculated to determine that the student's perception toward interdisciplinary education was different from score of 3 (somewhat disagree) after participating IPE sessions. The level of significance was set at 0.05. All statistical tests are two-sided.

This study was approved by the institutional research and ethics committee as per the approval number: MMMC/FOM/Research Ethics Committee – 1/2019.

Results

A total of 52 preuniversity students from FiS program participated in this study. The mean age of the students was

Table 1: Demographic characteristics of preuniversity students (n=52)

Variable	n (%)
Program	
Foundation in science program	52 (100.0)
Age ^a	20.4 (1.4)
Gender	
Male	18 (34.6)
Female	34 (65.4)
Previous experience of interprofessional learning	
Yes	2 (3.8)
No	50 (96.2)

^aMean (SD). SD: Standard deviation

Table 2: Descriptive statistics of each item in Readiness for Interprofessional Learning Scale

Number	Statement	Mean (SD)	Median
	Teamwork and collaboration		
1	Learning with other students will help me become a more effective member of a healthcare team	4.6 (0.5)	5.0
2	Patients would ultimately benefit if health-care students worked together to solve patient problems	4.3 (0.6)	4.0
3	Shared learning with other health-care students will increase my ability to understand clinical problems	4.5 (0.5)	5.0
4	Learning with health-care students before qualification would improve relationships after qualification	4.3 (0.7)	4.0
5	Learning with health-care students before qualification would improve relationships after qualification	4.7 (0.5)	5.0
6	Shared learning will help me to think positively about other professionals	4.5 (0.6)	5.0
7	For small group learning to work, students need to trust and respect each other	4.3 (0.7)	4.0
8	Team-working skills are essential for all health care students to learn	4.1 (0.8)	4.0
9	Shared learning will help me to understand my own limitations	4.5 (0.7)	5.0
	Positive and negative professional identity		
10	I don't want to waste my time learning with other health-care students ^b	4.4 (0.7)	4.0
11	It is not necessary for undergraduate health-care students to learn together ^b	4.0 (0.9)	4.0
12	Clinical problem-solving skills can only be learned with students from my own department ^b	3.9 (1.1)	4.0
13	Shared learning with other health-care students will help me to communicate better with patients and other professionals	4.4 (0.7)	5.0
14	I would welcome the opportunity to work on small-group projects with other health-care students	4.3 (0.7)	4.0
15	Shared learning will help to clarify the nature of patient problems	4.3 (0.6)	4.0
16	Shared learning before qualification will help me become a better team worker	4.4 (0.6)	4.0
	Roles and responsibility		
17	The function of nurses and therapists is mainly to provide support for doctors ^b	1.6 (0.7)	2.0
18	I'm not sure what my professional role will be ^b	3.7 (1.1)	4.0
19	I have to acquire much more knowledge and skills than other health-care students ^b	2.0 (1.0)	2.0

^bReverse coding (1: Strongly agree; 5: Strongly disagree) - higher response indicates more positive scores. SD: Standard deviation

20.4 years and 65.4% were female students. The majority of the students (96.2%) did not have any experience of interprofessional learning [Table 1].

Table 2 shows the mean, standard deviation, and median of each statement of RIPLS before participating IPE activities.

Table 3: Descriptive statistics of subscales in Readiness for Interprofessional Learning Scale

Variable	Mean (SD)	Minimum-maximum
Teamwork and collaboration	39.6 (3.7)	32.0-45.0
Positive and negative professional identity	29.6 (3.3)	21.0-35.0
Roles and responsibility	7.4 (1.9)	3.0-12.0
Total score	76.7 (5.8)	65.0-88.0

SD: Standard deviation

Table 4: Descriptive statistics of subscales in Interdisciplinary Education Perception Scale after participating interprofessional education sessions (n=38)

Variable	Mean (SD)	Minimum-maximum
Competency and autonomy	39.5 (5.2)	27.0-48.0
Perceived need for cooperation	8.9 (2.0)	2.0-12.0
Perception of actual cooperation	25.6 (3.3)	17.0-30.0
Understanding of other's values	13.4 (2.5)	7.0-18.0
Total score	87.8 (11.3)	58.0-108.0

SD: Standard deviation

Table 3 shows descriptive statistics of each subscale in RIPLS before participating IPE activities.

Table 4 shows descriptive statistics of each subscale in the IEPS after participating IPE sessions.

Table 5 shows the difference of student's perception toward interdisciplinary education when it was compared to score 3 of somewhat disagree. The median value of all items in the IEPS ranged from 4 to 5 showing positive perception toward interdisciplinary education. Moreover, the student's perception toward competence and autonomy, perceived need for cooperation, perception of actual cooperation, and understanding other's value were significantly higher from somewhat disagree of score 3 ($P < 0.001$) [Table 5].

Discussion

It has been documented in the literature that the IPE programs could not only improve preparation for interprofessional collaboration^[10] but also helped students improving knowledge^[11] and clinical decision-making ability.^[12] In this study, the majority of the preuniversity students could realize that by learning with various professional students would make them effective member of healthcare team and promote the collaborative practice. Moreover, IPE training through our intervention had a positive influence on students' understanding of collaboration and better attitudes in interprofessional

Table 5: Interdisciplinary Education Perception Scale among students after participating interprofessional education session

IEPS	Test value	Median (Q1-Q3)	P ^a
Competence and autonomy			
Individuals in my profession are well-trained	3	5.0 (5.0-6.0)	<0.001
Individuals in my profession demonstrate a great deal of autonomy	3	5.0 (4.0-5.0)	<0.001
Individuals in other professions respect the work done by my profession	3	5.0 (4.0-6.0)	<0.001
Individuals in my profession are very positive about their goals and objectives	3	5.0 (5.0-6.0)	<0.001
Individuals in my profession are very positive about their contributions and accomplishments	3	5.0 (4.0-6.0)	<0.001
Individuals in other professions think highly of my profession	3	5.0 (4.0-6.0)	<0.001
Individuals in my profession trust each other's professional judgment	3	5.0 (4.0-6.0)	<0.001
Individuals in my profession are extremely competent	3	4.0 (3.0-5.0)	<0.001
Perceived need for cooperation			
Individuals in my profession need to cooperate with other professions	3	5.0 (4.0-6.0)	<0.001
Individuals in my profession must depend on the work of people in other professions	3	5.0 (4.0-6.0)	<0.001
Perception of actual cooperation			
Individuals in my profession are able to work closely with individuals in other professions	3	4.0 (3.0-4.3)	0.007
Individuals in my profession are willing to share information and resources with other professionals	3	5.0 (4.0-5.0)	<0.001
Individuals in my profession have good relations with people in other professions	3	5.0 (4.0-6.0)	<0.001
Individuals in my profession think highly of other related professions	3	5.0 (4.0-6.0)	<0.001
Individuals in my profession work well with each other	3	5.0 (5.0-6.0)	<0.001
Understanding other's value			
Individuals in my profession have a higher status than individuals in other professions	3	5.0 (4.0-6.0)	<0.001
Individuals in my profession make every effort to understand the capabilities and contributions of other professions	3	5.0 (5.0-6.0)	<0.001
Individuals in other professions often seek the advice of people in my profession	3	5.0 (4.0-6.0)	<0.001

^aWilcoxon Signed-Rank test. IEPS: Interdisciplinary Education Perception Scale

teamwork that matches with a study report in the literature.^[13] Our study revealed that preuniversity students were ready for teamwork and collaboration while working in an IP team, which matches with another study.^[14] Moreover, our students showed confidence of what their professional role is. However, they had slightly negative attitudes toward the function of nurses and therapists, and also toward acquiring knowledge and skills in their profession. This might be because of fear complex in working with professional students. The finding also indicates that IPE training through our intervention had a positive influence on students' understanding of collaboration and better attitudes in interprofessional teamwork that matches with a study report in the literature.^[15]

Moreover, after participating IPE sessions, the preuniversity students had positive perception toward interdisciplinary education such as competence and autonomy, perceived need for cooperation, perception of actual cooperation, and understanding other's value. As IPE improves students' shared learning and interdisciplinary collaboration, it is recommended to be introduced at an early stage in medical education.^[16] This not only optimizes the future health care professional's learning experience but also brings satisfactory patient outcomes.^[17] The strength of our study was our novel approach of intervening preprofessional students; however, the limitation might be a low sample size. We plan to conduct a mixed-methods design to better understand the perceptions and attitudes toward IPE by preuniversity students.

Conclusion

Most of the aspiring health professional students in their preuniversity year expressed positive attitude toward readiness for IPE although were not prepared to take roles and responsibility within the IP group. They could well perceive the need for cooperation, perception of actual cooperation, and understanding other's value while working in an IP team. We recommend sensitizing the preuniversity students to IPE before they embark on professional courses.

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Ethical clearance

This study was approved by the institutional research & ethics committee as per the approval number: MMMC/FOM/Research Ethics Committee – 1/2019.

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Conflicts of interest

There are no conflicts of interest.

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