

## ORIGINAL ARTICLE

# Readiness for Interprofessional Education Among Preclinical and Clinical Year Medical Students - Does It Change Over the Years?

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## ABSTRACT

**Introduction:** Health care involves team work. Physicians, nurses, pharmacists and social workers need to work in collaboration to deliver quality health care. It is therefore vital that team work and collaboration are integrated into the training of medical students. In a medical school where interprofessional education has not been introduced, the preclinical students are trained in silos whereas the clinical students have interprofessional experiences in hospital and community centers. This study was conducted to explore medical student's receptiveness for interprofessional education and to identify any differences in attitude among the preclinical and clinical year students. **Methods:** This study adopted a cross-sectional study design using purposive sampling technique at a private medical school in Malaysia. Participants completed the standardized Readiness for inter-professional learning Scale and the data was analyzed. **Results:** 436 students with a mean age of 22 years participated in this study. Among them, 170 were from preclinical and 266 were from clinical years. Both the groups scored high on team work while clinical students scored better than preclinical students in understanding professional identity and recognizing their roles. **Conclusion:** This study shows a readiness among medical students for IPE. Clinical year medical student's attitude was similar to preclinical students.

**Keywords:** Readiness, Inter-professional education.

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## INTRODUCTION

In traditional hierarchy, doctors considered themselves as primarily responsible for patient care. They took decisions, gave instructions and coordinated the care of the patient. These roles and boundaries are now being challenged. Healthcare today is very complex, delivered by multidisciplinary teams aiming at both cure and prevention of disease. Poor communication and collaboration among the members of the team may pose serious problems in patient care. Physicians, nurses, physiotherapists and laboratory personnel need to work in collaboration to provide high quality healthcare to the patients. Hence, good communication skills and cooperation need to be inculcated in present day medical students preparing them to collaborate with their colleagues for patient centered quality healthcare paving the need for interprofessional education (1).

Inter professional education (IPE) is defined as "when two or more professions learn with, from and about each other to improve collaboration and quality of care" (2). It is a pedagogical approach aimed at providing healthcare professional students the collaborative team environment. An interprofessional team consists of different professionals with highly specialized knowledge, ability and skills working in concert and collaborating to provide optimum patient centered care; and not merely a group of students of different disciplines learning the same knowledge and skills. The success of IPE thereby totally relies on teamwork, determining the professional responsibilities, optimizing on the strengths and overcoming the barriers (2).

Medical students are adult learners. They learn when they perceive the relevance of this exercise and the scope it offers to their learning experiences. It is also influenced by the learner's self-conceptions regarding working with other professions. Multiple previous studies have found a dominant professional identity among medical students and have stressed on the difficulty in engaging them in IPE (3,4,5,6,7). Involving medical students in

IPE and attempting to change their resentment may have detrimental effects on their learning (8). This makes determining the readiness of the targeted population to IPE important.

Students belonging to varied professions work in the same clinical setting providing opportunity for the clinical year medical students to have informal interactions amounting to a serendipitous IPE. While the preclinical year students are trained in silos with no such interactions. It is widely believed that students are influenced by the “hidden curriculum” that is “not taught but learnt” by the mere presence in a situation or observing a faculty, a clinical behavior or informal interactions (9). Without IPE, medical students especially in the preclinical years maybe devoid of such opportunities to learn and maybe lacking in their ability to be an effective team player. Hence, it is a felt need worldwide to incorporate IPE in the medical curriculum. This study therefore aimed at exploring the readiness among medical students for IPE. An attempt was also made to understand the role of situated learning in shaping their views by comparing the attitude of preclinical and clinical year students towards IPE.

**MATERIALS AND METHODS**

This cross-sectional study was conducted in a private medical school in Malaysia. The study population consisted of five hundred and eighty-two medical students of which two hundred and ninety were in the first two years of study (pre-clinical) while two hundred and ninety-two were studying in the third to fifth (clinical) years of study. The sample size was calculated for single population (10) and a sample size of two hundred and thirty-four was determined. Purposive sampling technique was used to select the study population as the aim of this research was to study the influence of situated learning in shaping the views of medical students towards IPE. Ethical clearance for conducting this study was taken from the institution’s ethical board.

The data was collected during a two month period from June- August 2019. Students who were available in the campus from both pre-clinical and clinical years were provided with the self administered questionnaire during self directed learning sessions. All the participants were explained about the purpose of the study, confidentiality of the data collected and informed consent was taken.

To explore the students’ attitude towards IPE, we used the Readiness for Interprofessional Learning Scale (RIPLS). This questionnaire has 19 items which measures the attitude of students towards IPE using three dimensions: team work and collaboration (items one to nine), professional identity (items ten to sixteen) and roles and responsibility(item seventeen to nineteen) (11). For each item in the questionnaire, there are five options

ranging from strongly agree to strongly disagree. A five-point scale was used to calculate scores for the positive to negative options. For items ten to thirteen which were negative statements, the points were given in the reverse order. The mean value for each item was calculated. The data was analyzed using descriptive statistics of SPSS version 23. The mean scores of the two groups (preclinical and clinical year medical students) were compared using student t test for independent variables and a p value of <0.05 was considered statistically significant

**RESULTS**

A total of four hundred thirty six medical students willingly participated in this study with seventy-five percent response rate. Of them, hundred seventy were in the preclinical years and two hundred sixty- six were in clinical years. The demographic profile of our study group is as shown in table I & II. In our study the mean score for RIPLS was 4.09 for the preclinical students and 4.11 for the clinical year students. This shows the positive attitude towards IPE of all the students across years in medical course. There was no statistically significant difference with a p value of 0. 8 (p value>0.05) between the groups (Table III).

Table I : Age distribution of the study population

Age (years)	Preclinical		Clinical		Total	
	Number	Percent-age	Number	Percent-age	Number	Percent-age
18 – 20	150	88	0	0	150	34
>20 -22	20	12	166	62	186	43
>22 – 24	0	0	80	30	80	18
>24 – 26	0	0	20	8	20	5
<b>Total</b>	<b>170</b>	<b>100</b>	<b>266</b>	<b>100</b>	<b>436</b>	<b>100</b>

On the subscale for the team work and collaboration, the mean scores for preclinical and clinical group of students was 4.36 and 4.41 respectively (Table III). This shows that the mean scores of the clinical year students was slightly more than the preclinical students. But, the p value of 0.49 shows that the difference between the two groups was not statistically significant. However, the scores show a highly positive attitude among our study group towards teamwork.

For professional identity, the preclinical students and clinical students both scored an average of 3.9 with the p value of 0.9 (Table III). When compared to the mean scores of the two groups on team work, their scores on this subscale was lower.

For the subscale on roles and responsibility of the study group, the average scores of the preclinical and clinical year students was 3.6 with a p value of 0.9 which signifies that the difference between the two groups was negligible (Table III). Both the groups scored the least in

this subscale.

**Table II : Gender distribution of the study population**

Gender	Preclinical		Clinical		Total	
	Number	Percentage	Number	Percentage	Number	Percentage
Males	64	37	80	30	144	33
females	106	63	186	70	292	67
Total	170	100	266	100	436	100

**Table III : RIPLS score of the preclinical and clinical year students**

RIPLS score	Preclinical		Clinical		p value
	Mean	SD	Mean	SD	
Total score	4.09 ± 0.47		4.11 ± 0.49		0.898
a Team work and collaboration	4.36 ± 0.17		4.41 ± 0.09		0.491
b Professional identity	3.94 ± 0.27		3.94 ± 0.39		0.991
c Roles and responsibility	3.63 ± 0.90		3.61 ± 0.92		0.985

p < 0.05 significant

## DISCUSSION

Today, the healthcare is delivered by multidisciplinary teams and interdisciplinary practice is inevitable (2). IPE may provide a platform to develop team work skills, collaborative skills among healthcare students equipping them with skills to provide high quality care. It lays the foundation to link students to real world situations which they will encounter following graduation. The importance of team work and collaboration which develop in IPE setting cannot be underscored (12).

Hence, it is a felt need worldwide to incorporate IPE in the medical curriculum (8,12,13,). As we are dealing with adult learners, readiness is perceived to be the threshold which needs to be crossed for learning to occur (8). We therefore tried to study the willingness of our study population who had no exposure to formal IPE using the Readiness for Interprofessional Learning Scale (RIPLS). It was one of the first scales to be developed by Parsell and Bligh in 1999 for the measurement of student's attitude towards IPE (11). Since then, it has been widely used to measure attitudes towards IPE (8,12,13,14,15,16,17,18). The principle component analysis was based on three subscales: team work and collaboration, professional identity and finally roles and responsibility (14). Previous studies have shown that students with prior exposure to healthcare systems often appreciated the value of working with students of other disciplines (15). The clinical year students of our study group had opportunities for informal interactions with students of other health profession students in the hospital settings. We wanted to study whether these interactions help them to be more confident on their expertise, be more responsible and willing to learn from other professions. An attempt was therefore made in to understand the role of situated learning in shaping their views by comparing the perspective of preclinical and clinical year students towards IPE.

In our study, a total of four hundred thirty six medical students willingly participated. Most of our study population (eighty one percent) showed a positive response to IPE. Our study population being drawn from enthusiastic young adults may have contributed to this high positive response. Hertwick et.al in their study found that older, more experienced students were less interested in working with students of other professions (16). Higher positive attitude in our study can also be attributed to the greater fraction of our study population being female students. Lie et .al in their study reported improved attitudes among female physician assistant students when compared to others towards IPE (17). Wilhelmsson et. al also made an observation that female students irrespective of their program of study had more positive attitude towards IPE (18). Besides, as our medical students were not formally introduced to IPE, their responses might reflect idealistic views. Similar observation was made by Endang et al. in their study in Indonesia (14).

In our study, for the subscale on team work and collaboration both the preclinical and the clinical year students scored high signifying good attitude towards IPE. The mean scores for preclinical and clinical group shows that though the clinical year students were slightly better, the difference between the two groups was not statistically significant. Both the groups valued teamwork in spite of not being exposed to formal IPE probably due to the fruitful interactions in various twenty first century teaching learning methods to which they are exposed in the class room.

Professions are distinguished by expert knowledge in the field, experience and competencies. Professional identity refers to the development of professional values, principles, actions, competences which link an individual to the particular profession. It is a complex situation which can have both positive and negative influences. Therefore, in RIPLS, item ten to thirteen are negative statements while items fourteen to sixteen are positive statements. In our study, the mean score for this subscale of RIPLS was lower than for team work. Both the groups had an almost equal average score with no significant difference between the groups. This observation shows that our study population might not be having clear views on their own professional identity and those of other disciplines.

On the subscale for roles and responsibility, the average scores of the study group was the least. The preclinical and clinical year students had a similar score with no significant difference between the two groups. This shows that most of the students have no clear decision on their roles and responsibilities. This may also signify their recognition of the complex needs of health care like good communication skills among members of the team involved in patient care, critical thinking, leadership skills and working in cooperation for patient safety.

The expected effects of hidden curriculum on clinical year medical students by their informal interactions with fellow healthcare students or observing professionals of different disciplines in the clinical area was not seen in our study. A formal IPE helps to fill in this gap by increasing confidence in one's own professional identity. It also provides scope for understanding their respective roles and responsibilities (19).

## CONCLUSION

Our study shows that the students in our medical school are favorable towards IPE and are ready to learn in a collaborative team environment preparing them towards patient centered care. The preclinical and clinical year students demonstrated similar attitudes towards IPE.

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