Original Article

Interprofessional Education: Are we ready for it?

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ABSTRACT

Introduction: Pakistan is a developing country with rich cultural values. With increased urban development and high workforce demands in the labor market during the last two decades, we have seen a positive shift in the stereotypical paradigm with an immense influx of female students in all fields of education including medicine. Although there is increased representation of female doctors, their academic contribution and representation in higher academic rank seem scarce.

Objective: In this study, we investigate gender differences in academic ranks and research in renowned Medical Institutions of Pakistan.

Methods: Websites of three institutions were used to identify male and female faculty members, their respective publications were counted using "Pakmedinet.com" and "Scholar.google.com".

Results: A one-way ANOVA showed a significant difference in the male-female ratio at higher academic ranks. This ratio drastically increases at the Full Professor level where males are three times more than female Professors. ANOVA results also show that publications by male faculty members are significantly higher than females. Even on the same rank, women have not published their work in the same capacity as men.

Conclusion: The results are in alignment with several previous studies that indicate gender disparities between males and females especially as they climb up the academic ladder. Publications are a measure of academic productivity. This study suggests that although female representation as faculty members have increased over the years, their lack of frequent publications might be a factor that hinders women in advancing in academic ranks.

KEYWORDS: Gender imbalance, academic productivity, medical institutions, Pakistan.

INTRODUCTION

Inter-profession Education (IPE) came into practice as a response by the World Health Organization (WHO) and its partners, to the rising complexity in the global healthcare issues (Lestari et al., 2018). Diverse health care challenges such as shortage of health care related workforce, increasing health care cost, lack of patient safety and management practices are among the few crises being experienced by the communities worldwide (Buring et al., 2009b; Herath et al., 2017). Thereby, WHO deemed it unacceptable that the future health care professionals should be trained solely confined within their respective disciplines (O'Keefe & Ward, 2018).

The most widely agreed-upon definition of IPE is that adapted by The Centre for Advancement of IPE (CAIPE) and WHO which states: 'IPE occurs when two or more professions learn with, about, and from each other to enable effective collaboration and improve health outcomes' (Reeves et al., 2016). With a lack of collaborative practices, a system is bound to be fraught with challenges such as overestimation of one's professional competence, lack of mutual trust, and ineffective communication between team members (Lestari et al., 2016a). WHO also believes that just producing a mass level of doctors is not enough to deal with the evolving 21st century healthcare needs; what we need is to upscale the education and training

of our graduates to provide our society with the right kind of competent health workforce (Akhtar, 2015). Hence, the need for a more progressive concept like IPE is justified; where its characteristics imply training students and professionals in an interactive setting. It aims to train them to achieve common goals, values, accountability, learning, and decision-making processes; to prepare them to act in concert to provide patient-centred care (Olenick et al., 2010).

In our local health care set-up, there are increasing complaints from patients regarding lack of teamwork and communication skills among doctors (Junaid & Rafi, 2019); patient safety and an overall decrease in healthcare quality is an even bigger concern (Khalid & Abbasi, 2018). In our tertiary teaching hospitals, postgraduate trainees form the early workforce and are responsible for managing and treating the majority of patients that come in. Hence, educating them to work efficiently in collaborative healthcare teams should be a salient feature of medical education.

Although IPE is internationally recognized as an integral part of the curriculum, the concept is mostly seen to be lacking in many developing countries; Pakistan being one of them (Rehman et al., 2017). Apart from a few studies in the undergraduate context, very limited research has been done on IPE; suggesting this area has yet to be much explored in Pakistan (Rehman et al., 2017; Riaz et al., 2019).

Several barriers in establishing IPE have been listed in the literature, amongst which varying attitudes of students regarding IPE e.g. stereotyping and prejudices have been thought of as

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major obstacles (Parsell & Bligh, 1999). Jaideep (2016a) suggests that it is important to understand the perspective of the local students before implementing a new educational approach, as their cultural and educational background affects their perception. Since most interprofessional learning initiatives occur after qualification in the postgraduate context (Parsell & Bligh, 1999), it is essential to explore the attitude and readiness of postgraduate students towards IPE. Their beliefs, motivation, and attitude will play a major role in determining the need and success of the program if it is to be formally established (Talwalkar et al., 2016a). This study is the first to explore IPE from the perspective of postgraduate trainees in Pakistan. The objectives of the study were:

1. To assess the readiness of the postgraduates towards interprofessional education.

2. Explore whether there is a difference in readiness of postgraduates with respect to their medical or dental disciplines, gender, and training level.

METHOD

A cross-sectional descriptive-comparative study was conducted at Fatima Memorial Hospital, College of Medicine and Dentistry, Lahore, from August 2019 to September 2019. Ethical approval was taken from the institute's review board. The participants included were all postgraduate trainees registered with 'Pakistan Medical Commission' in the different medical and dental FCPS programs of the institute. There are 110 trainees from 18 different specialties on the medical side and 78 trainees from 5 specialties in the dental sector. The total sample size was 188 participants and a universal sampling method was used to collect data. Trainees that were on leave were excluded from the study.

The study instrument used was the 'Readiness for Interprofessional Learning Scale (RIPLS)'. Multiple adapted versions of this scale have been used widely, mainly in the undergraduate context, but have also been approved for use in the postgraduate context (Reid et al., 2006). An adapted version of the original scale that best suited our context was used (Latrobe Community Health Service, 2009; Dahlgren et al., 2018). It had 19 questions under three subdomains; Items, 1-9 represented teamwork and collaboration; items, 10-17 professional identity (under which items 10-12 represented negative professional identity and items 13-17, positive professional identity); items, 18-19 represented roles and responsibilities. Items were scored on a 5-point Likert scale (1=strongly disagree, 2=Disagree, 3=Undecided, 2=Agree, 1=Strongly agree) Appendix 1). The score range was in-between 19 to 95 with an average readiness mean of 47.5. Statement number 10,11,12,18 (Table 2) were reverse coded to represent a more positive attitude towards IPE.

The data was collected from trainees in their respective departments through a written paper-based survey. Any queries they had regarding the topic or questionnaire were resolved. The introductory part included the questionnaire's serial number, a brief description of the topic, the objective of the study, and a consent form for them to sign in. This was followed by a few demographic questions including age, specialty, training level, and then the 19 questions on IPE.

Data were entered and analyzed in SPSS version 25. Descriptive analysis was performed on all the variables. Categorical variables were presented in form of frequency and percentage, whereas quantitative variables were presented in form of mean (SD). Independent sample t-test and Mann Whitney U test was applied to determine differences in overall and different domain of RIPLS with respect to gender and discipline respectively. Analysis of variance (ANOVA) was applied to compare the scores of RIPLS and its domains for the different training years. A P-value less than 0.05 was considered significant.

RESULTS

The overall response rate was 57.98%. A total of 109 postgraduates out of the 188 enrolled participated out of which 62.4% were from the medical section and 37.6% from the dental (Table 1). The mean age of participants was 29±2.53SD with 40.4% being males and 59.6% females. The total mean score of readiness of postgraduates was 79.26±6.84. There was a significant difference between both the groups (p<0.05) for statements 7 (Learning between health and social care students before qualification and for professionals after qualification would improve working relationships after qualification/collaborative practice) and 17 (Shared learning before and after qualification will help me become a better team worker) (Table 2). The test showed no significant difference in the overall or subgroup mean values of the medical and dental group (p>0.05) (Table 2). Although there was no overall significant difference in the readiness concerning gender (p=0.478) or training years (p=0.251), the respondents from the final year had comparatively higher mean scores in the different subdomains except roles and responsibilities (Table 3).

DISCUSSION

The objective of this study was to assess the readiness of postgraduates for interprofessional learning; and to explore whether there is a difference in readiness of postgraduates with respect to their disciplines (medical or dental), gender and training level. The results reported the mean value as 79.26±6.84SD which is higher than the average mean value set (47.5), with no significant difference between the readiness of the dental and medical sectors. This means that there is a general and strong consensus amongst the postgraduates to have an educational approach that promotes collaborative learning.

The highest mean scores were for the items related to shared learning under the teamwork and collaboration domain. Similar to our findings, Jaideep's study (Talwalkar et al., 2016b) also showed that students at a higher advanced level in their degree were more ready for shared learning. This suggests that with passing of time, the trainees appreciate the need for IPE more to help them counteract the consequences of their perceived social realities, educational and clinical challenges, and negative impact of uniprofessional education. A lower mean for item 18 (I am not sure what my professional role is/will be) also strengthens the need for introducing IPE, as the trainees were uncertain about

Table I. Demographic characteristics

Characteristics		Medical	Dental	Total
Gender n (%)	**Female**	45(66.2%)	17(47.2%)	59.6%
	Male	23(33.8%)	19(52.8%)	40.4%
Mean Age		29.12±2.41	28.79±2.61	28.92±2.53
Training level n (%)	**1st**	14 (22.2%)	5(16.1%)	19(20.2%)
	2nd	24 (38.1%)	9 (29.1%)	33(35.1%)
	3rd	12 (19.1%)	10 (32.2%)	22(23.4%)
	4th	13 (20.6%)	7 (22.6%)	20(21.3%)

Table II Comparison of mean and standard deviation of overall scale and subdomains with respect to disciplines

Statement (S)		Medical Mean (SD)	Dental Mean (SD)	Total Mean (SD)	P value
TEAMWORK/ COLLABORATION		40.08±3.11	40.34±4.01	40.18±3.46	0.713
S.1	Learning with other professionals will make me a more effective member of a health and social care team	4.51±0.5	4.44±0.74	4.49±0.6	0.991
S.2	Patients would ultimately benefit if health and social care professionals work together	4.56±0.5	4.51±0.58	4.54±0.53	0.845
S.3	Shared learning with other health and social care professionals will increase my ability to understand clinical problems	4.41±0.55	4.44±0.74	4.42±0.63	0.447
S.4	Communications skills should be learned with other health and social care professionals	4.46±0.53	4.37±0.83	4.42±0.66	0.941
S.5	Team-working skills are vital for all health and social care professionals to learn	4.54±0.5	4.63±0.49	4.58±0.49	0.359
S.6	Shared learning will help me to understand my own professional limitations	4.43±0.56	4.49±0.64	4.45±0.58	0.425
S.7	Learning between health and social care students before qualification and for professionals after qualification would improve working relationships after qualification / collaborative practice.	4.34±0.54	4.59±0.5	4.43±0.53	0.021*
S.8	Shared learning will help me think positively about other health and social care professionals	4.37±0.54	4.44±0.55	4.39±0.54	0.499
S.9	For small-group learning to work, professionals need to respect and trust each other	4.47±0.61	4.44±0.71	4.46±0.64	1.0
NEGATIVE PROFESSIONAL IDENTITY		10.73±2.72	9.97±3.27	10.44±2.95	0.194
S.10	I don't want to waste time learning with other health and social care professionals	2.09±1.02	2.24±1.34	2.15±1.14	0.937
S.11	It is not necessary for postgraduate health and social care professionals to learn together	2.32±1.13	2.46±1.36	2.38±1.21	0.867
S.12	Clinical problem solving can only be learnt effectively with professionals from my own organisation	2.85±1.21	3.32±1.33	3.03±1.27	0.059
POSITIVE PROFESSIONAL IDENTITY		21.5±1.96	21.78±2.27	21.6±2.08	0.498
S.13	Shared learning with other health and social care professionals will help me to communicate better with patients and other professionals	4.29±0.56	4.37±0.77	4.32±0.65	0.258
S.14	I would welcome the opportunity to work on small group projects with other health and social care professionals	4.38±0.51	4.39±0.54	4.39±0.52	0.907

S.15	I would welcome the opportunity to share some generic lectures, tutorials or workshops with other health and social care professionals	4.29±0.55	4.29±0.51	4.29±0.53	0.941
S.16	Shared learning and practice will help me clarify the nature of patients' or clients' problems	4.29±0.52	4.29±0.68	4.29±0.58	0.796
S.17	Shared learning before and after qualification will help me become a better team worker	4.24±0.52	4.44±0.59	4.31±0.55	0.047*
ROLES AND RESPONSIBILITIES		6.92±1.2	7.17±1.22	7.02±1.2	0.309
S.18	I am not sure what my professional role will be / is	3.06±1.17	2.88±1.12	2.99±1.15	0.431
S.19	I have to acquire much more knowledge and skill than other professionals in my own organisation	3.99±0.7	4.05±0.92	4.01±0.78	0.522
TOTAL SCORE		79.25±5.72	79.27±8.45	79.26±6.84	0.989

The differences are significant ($p<0.05$)

Table III. Comparison of mean and standard deviation of overall scale and subdomains with respect to genders and training levels

Variables	Male	Female	T.L* 1	T.L 2	T.L 3	T.L 4
Teamwork/ collaboration	40.12±3.26	40.45±3.58	40.53±3.13	39.79±3.47	40.36±2.68	41.1±3.97
Negative professional identity	10.47±3.21	10.56±2.8	10.31±3.0	10.27±2.52	10.95±2.59	11.6±2.76
Positive professional identity	21.33±2.02	21.85±2.17	21.79±1.9	21.15±1.9	21.6±2.13	22.1±2.45
Roles and responsibilities	7.02±1.16	7.05±1.25	7.31±1.0	6.97±1.4	7.0±1.17	7.05±1.27
Total Scale	78.95±6.23	79.92±7.15	79.95±6.52	78.18±5.39	80.0±5.59	81.85±8.42

*T.L (Training Level)**

their expected role in a collaborative setup. Esther Suter (Suter et al., 2009) highlighted understanding of individual roles and responsibilities as a critical ingredient in the composition of an effective team; the effects of which directly reflect upon positive patient outcomes. The point of collaboration in teams is not for one profession to overshadow another; but is to create a situation where each member understands his strengths and limitations and thereafter brings forth his best knowledge/skill and attitude for the sole benefit of the patient (Buring et al., 2009a).

When compared to international literature our findings are consistent with those reported in several regions. From the eastern world, studies from Malaysia and Iran also report their medical students being prepared for IPE (Lestari et al., 2016b; Maharajan et al., 2017; Vafadar et al., 2015). This inclination was due to them having ambiguity about their roles in certain clinical situations. Similar to our findings, two studies from the USA (Talwalkar et al., 2016b) and Sweden (Wilhelmsson et al., 2011) also showed females being more inclined towards IPE; accounting for their differences in learning style for the varying result.

A multi-institutional study (Rehman et al., 2017) done previously in Lahore, on readiness for IPE between MBBS and Pharm D undergraduate students, highlighted the 'superiority complex' perceived by the MBBS students as a cause for them being less ready to work with Pharm D students. Two possible reasons can explain our result variation: Firstly, working full time in a clinical setting provides maximum exposure to the harsh realities and deficiencies of the healthcare system. This would make the trainees realize and appreciate the true importance of collaborative teamwork, which otherwise is difficult to perceive at the undergraduate level with limited clinical exposure. Secondly, an important point that was noticed during the distribution of the questionnaire, was that a large number of participants required detailed clarification on the concept of interprofessional education. Before clarification, most had it confused with multidisciplinary education which they more commonly experience. Since there is no formal current IPE program in Pakistan, there is a possibility that participants who did not ask for clarification may have misperceived the meaning of IPE. They might have considered it as shared learning with similar professionals that takes place in their routine curricular activities.

The terms interprofessional, multidisciplinary, and interdisciplinary education are often used non-selectively. The difference between them lies in the degree of collaboration and patient-centeredness practiced. Multidisciplinary education involves working side by side without any substantial interaction, whereas interdisciplinary involves minimum interaction but with an unclear coordination process between the disciplines. This compromises patient care as the central goal (Hammick et al., 2007; Olenick et al., 2010). To distinguish interprofessional education, an example can be treating a patient having limited mouth opening; in this case, a dentist, occupational therapist, speech therapist, and a dietician can work together as a team to come up with the best diagnosis and treatment plan for the patient.

The importance and advantages of IPE have been well reported in the literature so the need for its establishment is not argued upon. There are only mixed opinions regarding the most appropriate time for its introduction. A benefit of introducing IPE early at the undergraduate level is said to discourage the build-up of stereotyping and promote equal respect for other professions. But since most interprofessional learning initiatives occur in the postgraduate context (Parsell & Bligh, 1999) and considering concerns of decline in our health care quality, it is imperative IPE should formally be a part of our postgraduate curriculum as well as it has been internationally since many years. Any level of exposure to IPE is said to positively influence a student's attitudes therefore, IPE can be introduced through different methods e.g. one-day seminars, orientation programs, simulation techniques, short IPE meetings, web-based modules (Dahlgren et al., 2018). But to have a lasting effect these need to be practiced regularly as part of the postgraduate curriculum. This would help our trainees develop self-awareness, define their roles and responsibilities, and improve their communication and negotiating skills; all competencies which are critical to work efficiently in a team (Olupeliyawa et al., 2013).

Limitations and way forward: This study measured the readiness of only dental and medical postgraduates in one institute. To get a more holistic picture, other professions such as nursing, physiotherapy, nutritionist and Pharm D from different universities in Pakistan should be included in a study to strengthen findings. A qualitative research to explore and clarify understanding of IPE among different healthcare professionals would provide a better view.

CONCLUSION

Both, medical and dental postgraduate professionals showed equal and considerable readiness towards interprofessional education. They appreciate the need for collaborative learning in their workplace, however require clarity regarding their roles and responsibilities. This suggests that it is imperative to introduce IPE at our postgraduate level to counteract some challenges being faced in our health care system and help provide our communities with better health care services. An immediate application of this study is to conduct more workshops and seminars to raise the concept of IPE. The aim should be to enlighten students/professionals/curriculum developers about its features and benefits, help clarify uncertainty about their professional identities, roles, and responsibilities. Any study on IPE done in our region will provide supporting data to bring attention to this subject so that further research and formal work can be done on it to develop an appropriate program.

DECLARATION OF INTEREST

Author report no declarations of interest.

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AUTHORS CONTRIBUTION

1 Dr. Rabbia Qadeer. Conception and design of the work; acquisition, analysis and interpretation of data for the work; and manuscript writing