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Original Article

Readiness for Interprofessional Learning Among Undergraduate Healthcare Students

Hamna Zahid[1*], Amena Batool[2], Komal Ahmed[3], Ujala Bashir[4], Hira Majeed Bhutta[5], Suhair Asif[1]

[1]Department of Physiotherapy, Riphah International University, Lahore Pakistan. [2]Department of Physiotherapy, Imran Idrees Institute of Rehabilitation Sciences, Sialkot Pakistan. [3]School of Health Sciences, University of Management Sciences, Lahore, Pakistan. [4]Physical Therapy Department, Sahara University, Narowal, Pakistan. [5]University Institute of Physical Therapy, University of Lahore, Lahore Pakistan*

ABSTRACT

Background: In interprofessional learning, students from different healthcare professions learn collaboration skills and teamwork so they can provide good quality healthcare. For patients and their allied care to improve, there must be excellent teamwork, communication and collaboration among professionals. Recent global emphasis on the urgent need for human resource enhancement has increased the need for successful interprofessional collaboration to deliver the best healthcare possible. **Objective:** To determine the attitude and behavior toward interprofessional learning among a group of undergraduate students enrolled in seven health science-related courses **Methods:** A cross-sectional research approach was used. Data was gathered from institutions in the Lahore region that provide physical therapy, nursing, occupational therapy, nutritional sciences, speech therapy, MBBS, and pharmacy education, including Riphah International University, Children's Hospital, Mayo Hospital, Nursing College of General Hospital, and Allama Iqbal Medical College. After the approval of the synopsis study was completed in 6 months. A simple random sampling technique was used. The sample size was 300 as calculated by Epitool. Target was a multiple-student population. Students from nursing, occupational therapy, nutritionist, physiotherapy, speech therapy, MBBS and pharmacy department were included in the study. While Students who were not willing to participate and had psychosocial factors, students who had depressive episodes over the last 6 months and who had a death in the family (paternal/maternal) over the past 6 months were excluded. The Readiness for Inter-professional Learning Scale (RIPLS) questionnaire was distributed among students of 7 healthcare programs. When handouts are collected in person or by representatives at particular colleges, the questionnaire will be delivered. **Results:** This showed that students had positive attitudes, perceptions and attributes toward interprofessional learning and they shared knowledge. Pharm-D and nursing had the highest scoring in it and MBBS and speech therapist had the lowest level of agreement. **Conclusion:** Overall students have shown positive attitudes, perceptions, and attributes toward Inter-professional learning and shared knowledge. The findings indicated that clinical nutritionists respected and appreciated interprofessional practice and teamwork. MBBS and speech therapists have the lowest level of agreement toward interprofessional learning.

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***Corresponding Author:** Hamna Zahid, Riphah International University, Lahore Pakistan
Email: hamnazahid71@gmail.com

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INTRODUCTION

The most common definition of interprofessional learning (IPL) is "when different professionals and specialists learn and study with, from and about each other so that they can increase their collaborative skills, develop communication and learn teamwork" (CAIPE 2002). In literature, several terms uses but the most common is interprofessional education (IPE) and interprofessional learning (IPL) which can be used interchangeably.[1,2] This learning is a platform where medical professionals/students exchange knowledge, explore issues and develop abilities with a clear aim of enhancing collaborative teamwork and increasing medical outcomes.[3] It is about modernizing and preparing healthcare students for challenges they will experience in this 21st century like chronic disease and an aging population and also contains how to stay up-to-date with the latest technological changes that the world is presently experiencing.[4] Health professions education: A Bridge to Quality, published by the Institute of Medicine in 2003, states that "All healthcare professionals should be cultivated to provide client-centered care as members of an interdisciplinary team emphasize evidence-based practice, quality enhancement approaches and informatics".[5]

In revisiting the Medical School Education Mission at a Time of Expansion, published by the Macy Foundation in 2009, it is stated that "All health professions schools must educate future specialists who are equipped both to assess and to satisfy the community's healthcare needs. In the twenty-first century, the general practitioner and other team members are jointly responsible for important choices about the patient's treatment. This modification necessitates a change in how all providers are set up to operate. Healthcare professionals and specialists must be able to effectively interact with other professionals and understand the roles and specialties of coworkers and associates.[6,7] According to the World Health Organization (WHO), IPL will enhance collaborative practice, which is when healthcare professionals and students from many fields collaborate with patients, families, and communities to deliver high-quality treatment. The WHO contends that IPL necessitates educational or learning strategies that foster teamwork with a shared goal, dedication, and respect.[8] The definitive aim of IPL is "enhance communication and collaborative teamwork" between different healthcare professionals/specialists in various types of work environments. This will increase patient outcomes as well as reduce the risk of adverse events which increases when a professional/specialist work in isolation.[9] According to research, to enhance the health care system, authorities must know how to effectively interact, communicate, coordinate, and bridge professional barriers. In 2006 the Council for the Professions Complementary to Medicine received this information, "Physiotherapists should communicate successfully with other medical practitioners, health-care professionals and relevant outside agencies to provide improved and efficient service to the patient".[10]

Although there are challenges to adopting IPL, Salvatori Berry and Eva (2007) found that removing them is crucial if we want to keep up with other healthcare organizations and better train medical students for collaborative practice. In their study, Oxley and Glover (2002) discovered that some respondents believed that inter-disciplinary interaction had no benefits for them since the curriculum was "too theoretical".[11] However, the majority of the students believed that the incorporation of such elements as practical knowledge, job placements, and inter-professional initiatives made this work effective.[9] In the report titled "Framework for Action on Interprofessional Education & Collaborative Practice", the

WHO stated that "interprofessional learning and collaborative practice can show a major role in alleviating many of the challenges faced by health systems around the world". The medical educational literature emphasizes that all healthcare professionals and students should participate in IPL as a crucial component of their curriculum to get ready for their professional work.[12] To increase symbiotic patient care, interprofessional learning and practice aim to change the cultures of the healthcare system by dismantling the rigid professional boundaries that exist between various healthcare professions. According to WHO, there is enough proof that collaborative practice and IPL will enhance systems for delivering medical services and improve health outcomes globally after over 50 years of research.[13] Expanded possibilities for healthcare workers to actively participate in team-based care in interprofessional collaboration contexts were urged in 2011 by the Interprofessional Education Collaborative (IPEC) expert group.[14]

The debate over how and when to expose students to interprofessional education is ongoing, despite the literature's emphasis on the value of healthcare professionals' effective teamwork with patients and colleagues in health service settings.[15] According to Hind et al., learning IPL at the undergraduate level is the best time for students to do so since it promotes collaboration early in a student's professional career and can assist avoid unfavorable perceptions about other professions.[16] This viewpoint is shared by Curran and colleagues, who also note that for IPE programs to be successful, they must be carefully planned, implemented, integrated, and supported by strong pedagogy.[17] Studies gauging students' attitudes toward interprofessional learning have been undertaken in many different ways. In 2015, research was done to gauge how open and responsive students were to interprofessional learning. Interdisciplinary education enhances students' preparation for interprofessional education with nursing students, according to their study. Compared to students from other fields, pharmacy and dietetics students demonstrated a better degree of preparation for interdisciplinary learning.

To create learning techniques that are intended to promote cooperation, the standard of care, and patient outcomes, it is essential to identify the factors that influence interprofessional learning.[18] The RIPLS was completed by senior undergraduate students from six disciplines at one institution as part of their cross-sectional survey, which was undertaken before they took part in the interprofessional clinical learning modules. The consensus that collaboration is necessary was the response given by 741 students with the highest score (mean 4.42 of 5 points). Compared to medical students, nursing students had considerably more favorable views regarding teamwork and collaboration as well as professional identity (p:0.001). Compared to medical students, midwifery and nursing-emergency-health students rejected confusion about roles and responsibilities (p .001). In each of the four attitude dimensions, one-third of all students who had prior experience with interprofessional learning had higher satisfactory views (p:0.05). Overall, students' views toward interprofessional learning were fortunate, and all student groups were eager to participate in this type of learning.[19] This study aims to explore the medical students' behavior, attitude and interest in IPL, why it is essential and investigates substantial differences in the readiness for IPL among a group of undergraduate students studying enrolled in seven health science-related courses to determine whether or not an interdisciplinary educational activity enhances students' preparation for interprofessional learning. Additionally, it analyses if

demographic factors have an impact on students' attitudes and preparation for IPL. This research done in a novel way focused on the mindsets of healthcare students regarding interprofessional practice. Students' attitudes regarding IPL were evaluated along with their concerns about working with other professionals. We expect that the more inclusive scheme of this study will submit an explanation of some of the contrary conclusions of preceding attitudinal research. It is intended that the study's findings would act as a starting point for decision-makers who want to start and grow IPL at various levels of the university. The results of this study will add to the body of knowledge already available on interprofessional learning.

METHODS

A cross-sectional research approach was used. Data was gathered from institutions in the Lahore region that provide physical therapy, nursing, occupational therapy, nutritional sciences, speech therapy, MBBS, and pharmacy education, including Riphah International University, Children's Hospital, Mayo Hospital, Nursing College of General Hospital, and Allama Iqbal Medical College. After the approval of the synopsis study was completed in 6 months. A simple random sampling technique was used. The sample size was 300 as calculated by Epitool. Target was a multiple student populations. Students from Nursing, Occupational Therapy, Nutritionist, Physiotherapy, Speech Therapy, MBBS and Pharmacy department were included in the study. While Students who were not willing to participate and had psychosocial factors, students who had depressive episodes over the last 6 months and who had a death in the family (paternal/maternal) over the past 6 months were excluded. The Readiness for Inter-professional Learning Scale (RIPLS) questionnaire was distributed among students of 7 healthcare programs. When handouts are collected in person or by representatives at particular colleges, the questionnaire will be delivered. The SPSS 21 program was used to examine the data.

RESULTS

This research was conducted to investigate behavior, attitude and perception toward inter-professional education among different undergraduate healthcare students; to explore whether they are ready for IPL or not. A total of 300 number participants were selected from the sampling process. Those students eligible to participate in this study who was enrolled in these seven health-related courses: general

Table 1: Mean and Standard Deviation for each Variable in RIPLS Survey (n=300)

	Minimum	Maximum	Mean	Std. Deviation
Teamwork and Collaboration	30.00	45.00	39.76	3.73
Negative Professional Identity	3.00	15.00	8.47	2.90
Positive Professional Identity	10.00	20.00	17.04	2.10
Roles and Responsibilities	6.00	15.00	10.73	1.76
Total Score	59.00	95.00	76.01	6.78

Table 2: Mean and Standard Deviation of DPT, Occupational Therapist, MBBS, Speech Therapist, General Nursing, Nutritionist and Pharmacist (n=300)

Descriptive Statistics					
Program	Teamwork & Collaboration (Mean±SD)	Negative Professional Identity (Mean±SD)	Positive Professional Identity (Mean±SD)	Roles & Responsibilities (Mean±SD)	Total Score (Mean±SD)
DPT(50)	39.68±4.06	8.24±2.88	16.66±2.56	11.02±1.73	75.60±6.50
G.N(40)	41.05±3.54	8.92±3.04	.90±1.39	10.60±1.76	78.47±6.80
O.T(40)	39.72±3.91	7.85±2.84	17.47±1.97	11.02±1.68	76.07±6.25
M.B.B.S (50)	38.44±4.18	8.04±2.59	16.46±2.58	10.96±1.72	73.906.79
PHARM. D (40)	41.27±2.81	10.45±3.50	17.80 ±1.38	10.67±1.88	80.207.25
SLP(40)	38.77±3.19	8.52±2.36	16.02 ±1.73	10.32±1.70	73.65±5.88
DDNS(40)	39.72±3.25	7.47±2.14	17.20 ±1.84	10.40±1.82	74.80±5.60

Figure 1: Graphical Representation of Teamwork and Collaboration, Negative Professional Identity, Positive Professional Identity and Roles and Responsibilities of Healthcare Students

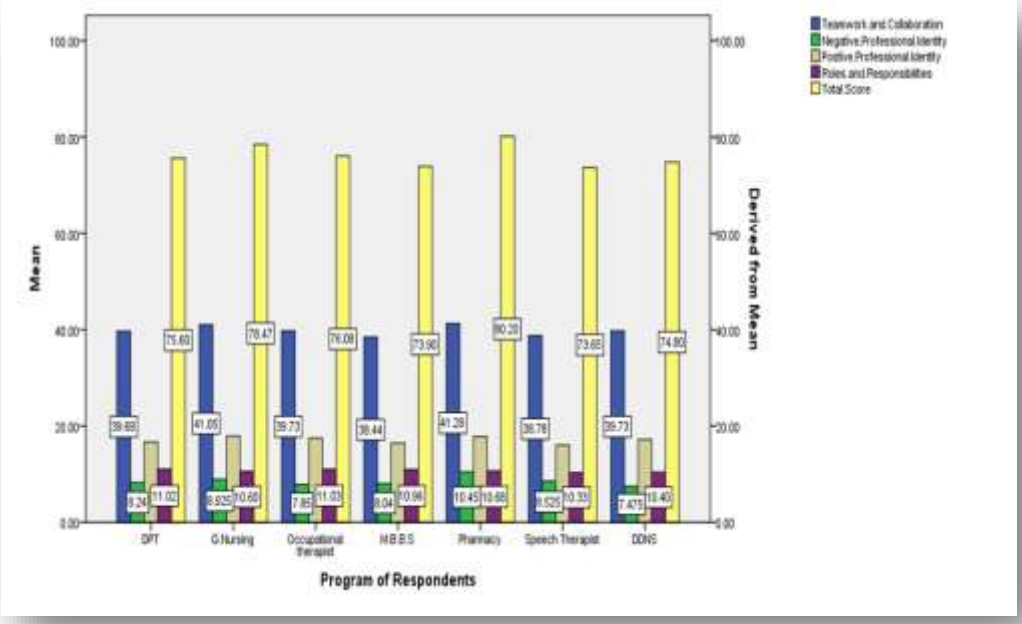
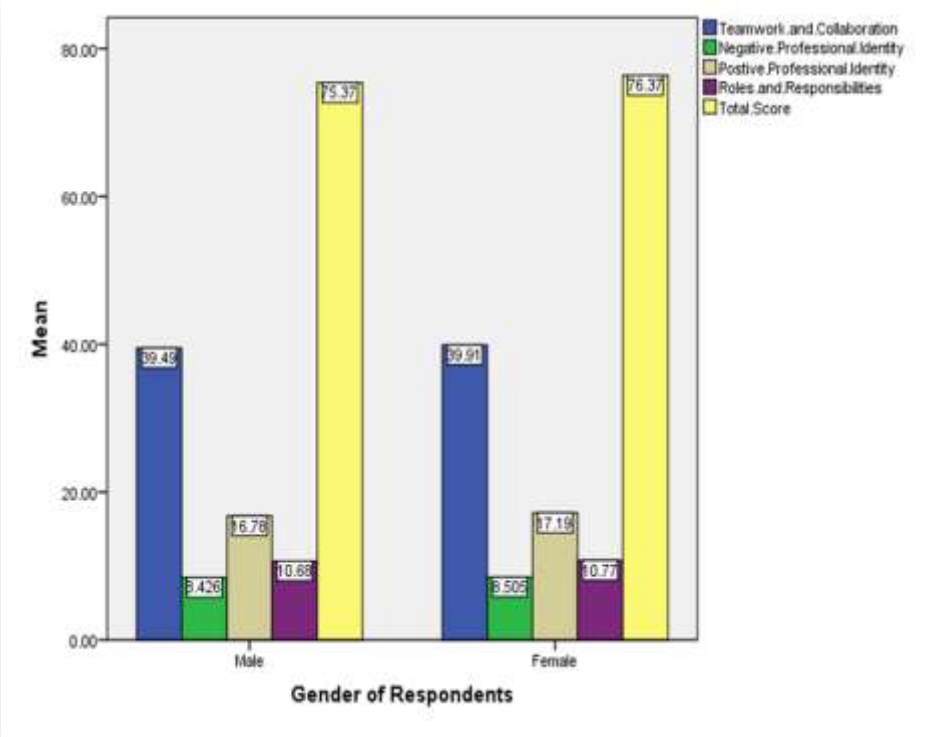


Figure 2: Graphical Representation of Teamwork and Collaboration, Negative Professional Identity, Positive Professional Identity and Roles and Responsibilities of Male and Female Students



nursing, occupational therapy, nutritionist, physiotherapy, speech and language pathology, MBBS and pharm-D. The students' attitudes and behaviors toward IPL were assessed using the Readiness for Inter-professional Learning Scale (RIPLS). Male and female students both completed questionnaires. The majority of participants were female 192 (64.00%) and male 108(36.00%) out of 300. The analysis was done through the SPSS program version 21. The results of this study showed that the mean and standard deviation for the following subscales: teamwork and collaboration, negative professional identity, positive professional identity, and roles and responsibilities in the RIPLS survey for the entire group of 300 students was 39.76, which is consistent with other studies.

DISCUSSION

The teamwork and collaboration subscale was rated highest in the Williams B article the mean of subscale 1 was 37.34±4.34 in the Mona FQ study the mean was 34.66±6.47, in the Kerry Hood study mean was 39.59±3.77 and in Zoriah Aziz study mean was 38.5±4.7.[20] Clinical nutritionists had the greatest overall RIPLS mean score of 69.03 in a research comparable to this one done by Mona FQ in 2016, while physiotherapists had the highest mean score of 73.52 in a study by P Meche.[21,22] According to a year of study mean and standard deviation of seven healthcare students n=300 pharmacy students in final year n=20 rated the highest score the mean was 81.50±8.24. If we examined the scores of male and female undergraduates, it was found that the mean

was 76.37. Female students with advanced degrees and those who had practiced medicine before entering a health professional school had alarmingly higher scores. Meche research for a group of 140 female undergraduates rated the highest score and the mean was 71.4±20.[23] The overall result of the study shows that all programs have a positive attitude toward IPL. Pharm-D and G-Nursing undergraduates have good perceptions among all healthcare programs. Another study conducted by MP Judge and EC Polifroni with 308 participants revealed that undergraduates' total mean willingness score was 66.09, which is 8.7 higher than the RIPLS questionnaire's average score of 47.5. Students majoring in clinical nutrition had the highest mean, followed by students majoring in clinical laboratory sciences and students majoring in respiratory care.[18] The findings indicated that clinical nutritionists respected and appreciated interprofessional practice and teamwork more than students in other healthcare disciplines.

Additionally, as they reached their senior year, students appeared to have a high level of comprehension and curiosity about IPL. Although the study's findings were encouraging, the sample size was insufficient, and there remained room for improvement. Because of this, a sample size that was considered to be adequate was used for this investigation. Students reacted to the subscale measuring cooperation and collaboration with a higher comprehension in all seven of the investigators' programs. The consistency with which one health profession, pharm-D, gave four important survey items the highest rating and, similarly and in contrast, the consistency with which another health profession, physiotherapists and MBBS, gave the same four items the lowest rating was the most interesting aspect of this study. The purpose of this paper is to evaluate, in very much characterized zones, the states of mind of interprofessional practice inhabitants between other professionals. The worry of the creators was regardless of whether interprofessional practice inhabitants expressed negative behaviors toward sharing knowledge and working under supervision. Two-thirds of the undergraduates in our study are female, with an unequal ratio of male to female undergraduates. Additionally, the research's sample sizes were limited to four to five Lahore institutions, which may have had an impact on how broadly applicable the results were. Another limitation of the study might be the absence of other factors such as individual personality traits that might have had an impact on the findings. Future research will need to be qualitative to properly understand participant perceptions of IPL across various healthcare programs. Future research should examine the effect of IPL on patient quality of care as the main goals of IPL were to foster teamwork and raise the standard of treatment.

The main limitation of this study is that only data from 4 to 5 universities were used, which limits how broadly the findings can be applied. Two-thirds of the students in our research are female, with an unequal distribution of male and female pupils. Future research should be done at many universities. The sample size in this study should have been higher, though, and this was a glaring shortcoming. Since postgraduate students should be included in future research, it was confined to undergraduate students in this study. Future studies should also investigate the influence of IPL on healthcare quality. Qualitative research is necessary to establish opinions of IPL among various healthcare students. Students should have access to certain amenities, which universities should offer.

CONCLUSION

Overall students have shown positive attitudes, perceptions, and attributes towards Interprofessional learning and shared

knowledge. The findings indicated that clinical nutritionists respected and appreciated interprofessional practice and teamwork. MBBS and speech therapists have the lowest level of agreement toward IPL. The most rated subscale is teamwork and collaboration.

DECLARATIONS

Consent to participate: Written consent had been taken from patients. All methods were performed following the relevant guidelines and regulations.

Availability of data and materials: Data will be available on request. The corresponding author will submit all dataset files.

Competing interests: None

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Authors' contributions: All authors read and approved the final manuscript.

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