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Preparing Future Healthcare Professionals for Collaborative Practice: Attitudes and Readiness for Interprofessional Education Among Undergraduate Health Care Students: A Cross-Sectional Study

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ABSTRACT:

Background: Contemporary health care systems depend on collaborative, team-based practice, and interprofessional education is recognized as a key strategy to prepare health care students for effective interprofessional collaboration. Despite global emphasis, structured incorporation of Interprofessional Education across undergraduate health care curricula in India remains limited. Assessing students' attitudes and readiness is essential to inform curriculum development.

Purpose: The purpose of the study was to assess the attitude and readiness for interprofessional education and collaboration among undergraduate healthcare students.

Methods: A quantitative cross-sectional study was conducted among undergraduate students from Sri Ramachandra Institute of Higher Education and Research, Chennai, India. Using probability-based stratified random sampling, 400 participants were recruited. Data were collected using a structured questionnaire comprising demographic variables, the Interprofessional Attitudes Scale, and the Readiness for Interprofessional Learning Scale. Descriptive statistics summarized participant characteristics and scale scores, while inferential statistics, including ANOVA, examined differences across Medicine, Nursing, and physiotherapy programs.

Results: Most participants were aged 20–22 years (87%), single (98%), and reported no prior formal exposure to Interprofessional Education (88.3%). High IPAS scores were observed for teamwork and roles and responsibilities (35.510 ± 4.453), followed by patient-centeredness, community-centeredness, and diversity and ethics, whereas interprofessional biases scored comparatively lower. No significant program-wise differences were found for teamwork, roles, and responsibilities; however, significant differences were noted for other IPAS subscales. Overall readiness for IPE was high (74.843 ± 8.733), with physiotherapy students demonstrating higher readiness scores, a difference that was statistically significant ($F=11.139$, $p=0.000$).

Conclusion: Undergraduate health care students demonstrated positive attitudes and high readiness for interprofessional education despite limited formal exposure. However, gaps related to role clarity and interprofessional biases persist. These findings highlight

the need for structured, longitudinal, and clinically integrated Interprofessional Education within undergraduate curricula to strengthen collaborative competencies and support effective interprofessional practice.

INTRODUCTION

Contemporary health care systems depend on collaborative, team-based practice, providing a learning environment that aids in building shared knowledge, skills, and professional attitudes, and motivates learners to work collaboratively towards a common goal to achieve better patient outcomes (Mohammed, Anand, & Ummer, 2021). The World Health Organization (WHO) defines “Interprofessional Education” (IPE) as a learning experience gained when two or more professionals learn about, from, and with each other to collaborate effectively to improve health outcomes. The term “Interprofessional collaboration” (IPC) refers to multiple health workers from different professional backgrounds working together to engage with patients, their families, caregivers, and communities to deliver the highest possible quality of care (WHO, 2010).

The raising complexity of health care delivery in the 21st century necessitates effective collaboration among professionals through multiple disciplines (Spaulding et al., 2021). Patients are commonly present with complex, chronic, and comorbid conditions that are difficult to manage with a single-discipline approach. Interprofessional collaboration has emerged as a safe, high-quality, and reliable patient-centered care (Spaulding et al., 2021). The literature suggests that interprofessional education, when introduced early and over time, helps prevent the formation of negative attitudes and stereotypes, sustains interprofessional relationships, and better prepares students to enter team-ready workplaces (Yu et al., 2020; Zaher et al., 2022; Sulaiman et al., 2021). Overall, incorporating structured and consistent IPE activities throughout undergraduate health care education is essential for developing graduates capable of effective interprofessional collaboration, which ultimately leads to safer, high-quality patient care (Vermeulen et al., 2025).

Interprofessional Education plays a crucial role in preparing health care students for collaborative practice (Hammick et al., 2007). Evidence demonstrated improvements in students’ attitudes towards other professions, increased acceptance of team-based care, and enhanced understanding of collaborative roles following IPE intervention (Fox et al., 2018; Reeves et al., 2016). Beyond attitudinal changes, IPE also supports the development of collaborative competencies, including communication, shared decision-making, and conflict resolution (Hammick et al., 2007). Importantly, IPC has been linked to improved patient outcomes, including patient safety, reduced medical errors, improved management of chronic diseases, and increased patient satisfaction (Spaulding et al., 2021). Moreover, exposure to interprofessional learning has been associated with improved collaborative behaviors, such as information sharing and mutual consultation, which are essential for continuous quality of care (Reeves et al., 2016).

Undergraduate health care students across many settings show moderate to high readiness for interprofessional education, particularly in areas such as teamwork, collaboration, and positive professional identity. Cross-sectional studies conducted across Saudi Arabia, the United Arab Emirates, and other regions, when examining readiness, strongly agreed that learning with other professions improves teamwork, provides a better understanding of clinical problems, and fosters better future working relationships (Aladwani et al., 2025; Alharbi et al., 2024). Attitudes, readiness, and perceptions were found to be positively interrelated, with high readiness associated with more positive perceptions and attitudes towards IPE and collaboration (Falguera et al., 2025; Costa, Jahan, & Shidi, 2021; Mathew, George, & Dsouza, 2023). At the same time, few studies report overall lower readiness, and few report a fear of their own identity in interprofessional collaboration, highlighting the need for increased interprofessional exposure (Shah et al., 2025).

Undergraduate interprofessional education and collaboration are not yet widely incorporated into Indian health professions curricula, though there is recognition of their importance. A paper from India proposed an action framework to implement interprofessional learning and collaborative practices in pharmacy and allied health sciences programs, suggesting that students graduating from India should work both autonomously and collaboratively with doctors, nurses, pharmacists, and other professionals in complex clinical environments (Rajiah & Maharajan, 2016). The lack of studies on this concept in the Indian context is evident, indicating that IPE in India remains more emergent than routine in most undergraduate settings, highlighting the urgent need for the introduction, evaluation, and adoption of IPC in India (Aldriwesh, Alyousif, & Alharbi, 2022).

Although interprofessional education and collaboration are globally recognized as safe, reliable, and patient-centered, their structured integration into the undergraduate health care profession is inconsistent and limited in India (Aldriwesh, Alyousif, & Alharbi, 2022). Noting the increasing complexity of patient care, the need for coordinated, team-based practice is essential. Therefore, it is critical to assess the attitude and readiness of healthcare students towards interprofessional education and collaboration in the Indian context. As this concept is still emerging and underexplored in India, the study seeks to identify the attitude and readiness toward interprofessional education and collaboration among undergraduate healthcare students.

METHODS

Research approach and design

A quantitative research approach and a cross-sectional research design were used to assess attitudes toward and readiness for interprofessional education and collaboration among undergraduate health care students. This study was conducted and reported in accordance with the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) guidelines.

Research setting

The study was conducted at Sri Ramachandra Medical College, Sri Ramachandra Faculty of Nursing, and Sri Ramachandra Faculty of Physiotherapy at Sri Ramachandra Institute of Higher Education and Research, Chennai, Tamil Nadu, India.

Population

Target population

The target population for the study consisted of all undergraduate health care students enrolled in a professional health science program. Specifically, the students pursuing medicine, nursing, and physiotherapy were included.

Accessible population

The accessible population for the study consisted of all undergraduate health care students enrolled in professional health science programs at Sri Ramachandra Medical College, Sri Ramachandra Faculty of Nursing, and Sri Ramachandra Faculty of Physiotherapy, Sri Ramachandra Institute of Higher Education and Research (DU), Chennai, Tamil Nadu, India.

Sample and sample size

The sample size was calculated based on the previous study by Hossein, Mandana, and Seyed (2012), which examined the attitudes of nursing, pharmacy, and medical students toward IPE in Tehran, Iran. With a 95% confidence level and a relative precision of 15%, the calculated sample size was 363. Accounting for the anticipated 10% attrition rate, the final sample size consisted of 400 participants.

Sampling technique

A probability-based stratified random sampling technique was used to select undergraduate students from the medical, nursing, and physiotherapy departments at Sri Ramachandra Medical College, Sri Ramachandra Faculty of Nursing, and Sri Ramachandra Faculty of Physiotherapy at SRIHER (DU), Chennai. A total of 213 medical students, 107 nursing students, and 80 physiotherapy students were included in the study.

Inclusion criteria

The study included students enrolled in third- and fourth-year medicine and third- and fourth-year B.Sc. Nursing and enrolled in third- and fourth-year Physiotherapy. Students willing to participate were included.

Exclusion criteria

The study excluded students who were absent during data collection, those who declined to participate, and those who had incomplete or improperly filled questionnaires.

Ethical considerations

Ethical approval for the study was obtained from the Institutional Ethics Committee of Sri Ramachandra Institute of Higher Education and Research before the data collection (IEC reference no: IEC-NI/17/MAR/58/31). Formal permission to

conduct the study was obtained from the Dean of Sri Ramachandra Medical College, Sri Ramachandra Faculty of Nursing, and Sri Ramachandra Faculty of Physiotherapy. Written informed consent was received from all the participants before data collection. Participation was voluntary, and the participants were informed that they had the right to withdraw from the study at any stage without any consequences. Anonymity and confidentiality of the participants were maintained throughout the study.

Data collection instrument

Demographic variables

It included age, gender, program of study, year of study, marital status, residence, previous experience with IPE, recent clinical/community posting, and major tasks in clinical settings.

Interprofessional attitude scale (IPAS)

Attitude towards interprofessional education was assessed using a five-point Likert scale developed by Norris et al. (2015). It is a scale ranging from strongly disagree to strongly agree, used to assess attitudes related to the core competencies of interprofessional collaborative practice. IPAS consists of 27 items in 5 sub-scales;

"Teamwork, Roles, and Responsibilities" (9 items)

"Patient Centeredness" (5 items)

"Interprofessional Biases" (3 items)

"Diversity & Ethics" (4 items) and

"Community-Centeredness" (6 items)

Readiness for Interprofessional Learning Scale (RIPLS)

This scale was used to assess students' attitudes and perceptions to determine their readiness for interprofessional learning. It is a self-administered questionnaire. The RIPLS scale is a 19-item tool with a five-point Likert scale ranging from strongly agree to strongly disagree, used to assess the readiness of health care students for interprofessional education. The tool has four subscales;

Teamwork and collaboration (Items 1 – 9)

Negative professional identity (Items 10-12- reverse scored)

Positive professional identity (Items 13-16)

Roles and responsibilities (Items 17-19- reverse scored)

Maximum/Minimum scores are: 45/9; 15/3; 20/4; 15/3 respectively

Data collection

Data collection was carried out following approval from the Institutional Ethics Committee and the administrative authorities. Undergraduate students who met the inclusion criteria were selected using a stratified random sampling technique. During non-instructional hours, the principal investigator approached the students, explained the study's procedure and purpose, and invited them to participate voluntarily. Data were collected using a structured questionnaire that included demographic variables, the Interprofessional Attitude Scale, and the Readiness for Interprofessional Learning Scale. The questionnaires were handed to the undergraduate students, and each participant was allotted 30-45 minutes to complete them.

Data analysis

The data were organized and analyzed using both descriptive and inferential statistics.

RESULTS

Demographic profile of the participants

The majority of participants (87%) were aged 20-22 years. 98% of respondents were single. Regarding residence, 50.1% of participants were accommodated in a hostel. In terms of academic course, almost half of the students were enrolled in medicine (48.6%), followed by nursing (27.4%) and physiotherapy (23.9%). 53.4% of participants were in the 4th year of the course, while 46.6% were in the 3rd year. Most students lacked formal IPE experience (88.3%). Over 50.8% of students performed multiple roles, such as patient care, teamwork, and coordination, in clinical settings. Awareness of professional roles was higher among

doctors (68%) than among physiotherapists (43.1%). Although 30.2% experienced role conflict, the majority (77.6%) found IPE useful and reported no major problems (Table 1).

Table 1. Frequency and Percentage Distribution of Demographic Variables among Undergraduate Healthcare Students (N=401)

Sl. No.	Demographic variables	n	%
1.	Age in years a. 18-19 b. 20 – 22 c. 23- 25 Mean Age in years (SD)	48 349 4 20.57 (0.912)	12.0 87.0 1.0
2.	Marital status a. Married b. Single	8 393	2.0 98.0
3.	Residence a. Hostel b. Home	201 200	50.1 49.9
4.	Program a. Medicine b. Nursing c. Physiotherapy	195 110 96	48.6 27.4 23.9
5.	Current year of study a. 3 rd year b. 4 th year	187 214	46.6 53.4
6.	Previous experience of IPE a. Yes b. No	47 354	11.7 88.3
7.	Recent clinical placement a. Less than 3 months b. 3-6 months ago c. 7-12 months d. More than 1 year	278 58 25 40	69.3 14.5 6.2 10.0
8.	Major tasks in the clinical/ community setting a. Patient care b. Health education c. Teamwork d. Coordinate with other professionals e. Support outreach health programme f. Others (describe) g. All the above	64 43 22 20 11 6 235	15.9 10.7 5.5 5.0 2.7 1.5 50.8

9.	Work with IPE in the clinical/ community setting		
a.	Yes	297	74.1
b.	No	104	25.9
10.	If, yes with whom		
a.	Doctors	76	19.0
b.	Nurses	74	18.5
c.	Physiotherapists	27	6.7
d.	Pharmacists	3	0.7
e.	Paramedics	8	2.0
f.	Others (specify)	4	1.0
g.	All of the above	105	26.18
11.	Frequency worked with IPE		
a.	Daily	213	53.1
b.	Once a week	41	10.2
c.	Twice a month	15	3.7
d.	Monthly once	30	7.5
e.	Any other	102	25.4
12.	Roles/ Responsibilities of Doctors		
a.	Yes		
b.	No	275	68.6
c.	Not sure	58	14.4
		68	17.0
13.	Roles/ Responsibilities of Nurses		
a.	Yes		
b.	No	274	68.3
c.	Not sure	35	8.7
		92	22.9
14.	Roles/ Responsibilities of Physiotherapist		
a.	Yes	173	43.1
b.	No	74	18.5
c.	Not sure	154	38.4
15.	Experience role conflict while working with IP group		
a.	Yes	121	30.2
b.	No	280	69.8
16.	Useful learning experience while working with IP groups		
a.	Yes	311	77.6
b.	No	90	22.4
17.	Problems while working with interprofessional groups		
a.	Yes	90	22.4
b.	No	311	77.6

Interprofessional Attitude

There was a significant course-wise difference seen in subscale 2 (patient centeredness) with F value 5.104 and p value = 0.006, subscale 3 (interprofessional biases) with F value 3.966 and p value = 0.020, subscale 4 (diversity & ethics) with F value 6.213 and p value = 0.002, and subscale 5 (community centeredness) with F value 5.284 and p value = 0.005. No significant difference

was found among Medicine, Nursing, and Physiotherapy students on subscale 1 (teamwork, roles, and responsibilities), with an F value of 0.068 and p value = 0.935 (Table 2).

Table 2. Mean, Standard Deviation, and ANOVA for the Interprofessional Attitudes Scale for three groups of Undergraduate Healthcare Students (N=401)

Subscale	Program	No.	Mean	SD	F	P value
Subscale 1 Teamwork, Roles, and Responsibilities	Medicine	195	35.369	6.684	0.068	0.935
	Nursing	110	35.227	3.818		
	Physiotherapy	96	35.510	4.453		
Subscale 2 Patient-Centeredness	Medicine	195	21.123	4.143	5.104	0.006
	Nursing	110	21.036	2.530		
	Physiotherapy	96	22.354	2.357		
Subscale 3 Interprofessional Biases	Medicine	195	10.476	3.014	3.966	0.020
	Nursing	110	11.327	1.766		
	Physiotherapy	96	10.531	2.679		
Subscale 4 Diversity & Ethics	Medicine	195	16.861	3.351	6.213	0.002
	Nursing	110	16.357	2.127		
	Physiotherapy	96	17.718	2.075		
Subscale 5 Community-Centeredness	Medicine	195	24.723	4.838	5.284	0.005
	Nursing	110	23.136	2.925		
	Physiotherapy	96	23.895	3.801		

Readiness for Interprofessional Learning

Item-wise analysis of readiness for interprofessional learning revealed that most students agreed with statements such as learning with other healthcare students (4.22 ± 0.862), working together to solve patient problems (4.21 ± 0.845), trusting and respecting each other (4.21 ± 0.833), and teamwork skills (4.24 ± 0.817). Lower mean scores were observed for clinical problem-solving skills (2.92 ± 1.322), the function of nurses mainly to support the doctors (2.43 ± 1.221), and acquiring many more skills than other healthcare students (2.18 ± 1.065) (Table 3).

Table 3. Mean and Standard Deviation of the Readiness for Interprofessional Learning Scale among Undergraduate Healthcare Students (N=401)

Sl. No.	Item	Mean	SD
1.	Learning with other students will help me become a more effective member of a health care team	4.22	0.862
2.	Patients would ultimately benefit if health care students worked together to solve patient problems	4.21	0.845
3.	Shared learning with other health care students will increase my ability to understand clinical problems	4.15	0.882

4.	Learning with health care students before qualification would improve relationships after qualification	4.11	0.878
5.	Communication skills should be learned with other health care students	4.08	0.904
6.	Shared learning will help me to think positively about other professionals	4.11	0.881
7.	For small group learning to work, students need to trust and respect each other	4.21	0.833
8.	Team-working skills are essential for all health care students to learn	4.24	0.817
9.	Shared learning will help me to understand my own limitations	4.01	0.926
10.	I don't want to waste my time learning with other health care students	3.33	1.409
11.	It is not necessary for undergraduate health care students to learn together	3.24	1.415
12.	Clinical problem-solving skills can only be learned with students from my own Department	2.92	1.322
13.	Shared learning with other health care students will help me to communicate better with patients and other professionals	4.04	0.935
14.	I would welcome the opportunity to work on small-group projects with other health care students	4.00	0.915
15.	Shared learning will help to clarify the nature of patient problems	4.06	0.869
16.	Shared learning before qualification will help me become a better team worker	4.12	0.898
17.	The function of nurses and therapists is mainly to provide support for doctors	2.43	1.221
18.	I'm not sure what my professional role will be	3.14	1.430
19.	I have to acquire much more knowledge and skills than other health care students	2.18	1.065

Physiotherapy students showed the highest overall readiness compared to medical and nursing students in all the subscales with an F value of 11.139 and p value=0.000 (Table 4).

Table 4. Mean, Standard Deviation, and ANOVA for the Readiness for Interprofessional Learning Scale for three groups of Undergraduate Healthcare Students (N=401)

Subscale	Program	Mean	SD	F	P value
Subscale 1	Medicine	37.035	7.284	3.273	0.039
	Nursing	36.672	4.079		

	Physiotherapy	38.656	4.669		
Subscale 2	Medicine	8.912	3.856	8.935	0.000
	Nursing	9.400	3.251		
	Physiotherapy	10.760	3.042		
Subscale 3	Medicine	16.148	3.395	2.755	0.065
	Nursing	15.863	2.443		
	Physiotherapy	16.802	2.386		
Subscale 4	Medicine	7.564	2.898	6.993	0.001
	Nursing	7.327	2.468		
	Physiotherapy	8.625	2.402		
Total	Medicine	69.661	11.264	11.139	0.000
	Nursing	69.263	6.994		
	Physiotherapy	74.843	8.733		

DISCUSSION

This cross-sectional study aimed to explore the attitude and readiness of undergraduate health care students for interprofessional education and collaboration in the Indian context. Overall, the findings indicate a strong agreement and readiness for interprofessional learning across medicine, nursing, and physiotherapy students. Though students reported limited exposure to interprofessional education, their willingness to engage in shared learning, mutual respect, and collaborative practice was evident. However, variations across professional programs were noted, particularly regarding uncertainties in professional roles and responsibilities, highlighting existing gaps that warrant attention. The upcoming discussion elaborates on the related and contradictory findings from the available literature to identify, address, and work on the existing gaps, thereby aiding in preparing students for future collaborative practice in a complex healthcare environment.

Undergraduate health care students in the present study demonstrated a strong attitude towards interprofessional education, with the highest scores in teamwork, roles and responsibilities, followed by community centeredness, patient centeredness, and diversity & ethics. Consistent with the present study's findings, previous studies have reported strong, consistent Interprofessional Attitude Scale scores, particularly in teamwork and interprofessional learning, as beneficial for future team working and collaborative practices (Sakr et al., 2022; Berger et al., 2020). In contrast, despite IPE exposure, a longitudinal cohort study showed declining IPAS scores and attitudes of students as they advanced through academic years, necessitating incorporation of well-integrated, sustained IPE programs with follow-up to maintain collaborative practices (Foushee et al., 2025). Likewise, Sakr et al. (2022) observed a decline in scores for teamwork, roles and responsibilities, community centeredness, patient centeredness, and diversity & ethics, with a more significant reduction in patient centeredness. This contrasting evidence may be because of differences in curriculum, timing, and duration of IPE exposure, suggesting that IPE may be influenced by various factors.

Evidence from the present study also demonstrated no significant program-wise differences among nursing, medicine, and physiotherapy students in teamwork and roles and responsibilities, while significant differences persisted in community-centeredness, patient-centeredness, diversity & ethics, and interprofessional biases. Supporting these findings, a Pakistani study found no significant differences across disciplines in overall attitude following a 4-week IPE module (Bruce et al., 2025). In contrast, a study from Baluchistan demonstrated significant differences in teamwork and collaboration across nursing, medicine, pharmacy, and physiotherapy programs, with the largest differences in pharmacy and the smallest in nursing education (Shah et al., 2025). Comparable findings were reported by Aziz & Hassan (2024), who noted higher scores in patient-centeredness among nursing students and higher roles and responsibilities in medical students (Aziz & Hassan, 2024).

Additionally, it was found that attitudes toward teamwork and collaboration differed significantly between programs and countries (Alsharari et al., 2025).

Our study found greater readiness among those without prior IPE exposure, while more positive attitudes were observed among those who had previously worked with an interprofessional team. Our reports diverge from the available evidence, notably a study conducted at an Indonesian medical school that reported significantly higher Readiness for Interprofessional Learning Scale scores among students who had experienced IPE education, with no effect of age, sex, or level of education (Prakoeswa et al., 2025). Similar findings were reported in a systematic review and a cross-sectional study, demonstrating that students with prior IPE or interprofessional experience generally show higher readiness, with readiness tending to be high immediately post-exposure and declining over time (Visser et al., 2017; Falguera, 2025). Moreover, a longitudinal follow-up of students who underwent a 5-week IPE immersion placement showed higher attitudes toward teamwork and collaborative skills up to 4 years into practice (Darlow et al., 2022).

CONCLUSION

This cross-sectional study reveals that undergraduate healthcare students generally exhibited a positive attitude and high readiness for interprofessional learning and collaboration, despite having limited exposure to structured interprofessional education. Relatively high scores for teamwork, shared learning, and positive professional identity highlight a forward-thinking approach to collaborative practice among medicine, nursing, and physiotherapy students. Overall, the results underscore the need for more structured, longitudinal, and clinically integrated interprofessional education in the undergraduate health professions curriculum in India, which may enhance role identity and understanding, reduce professional biases, and promote the development of future collaborative practice.

Recommendations

Based on the study findings, it is recommended that interprofessional education be embedded as a structured and continuous component of the undergraduate health professions curriculum. Noting observed gaps in roles and responsibilities and the presence of interprofessional biases, curriculum designers should incorporate learning activities that explicitly address role clarification, scope of practice, and mutual respect among professions. Case-based discussions, role-play, and team-based clinical simulations can help students understand professional boundaries while promoting shared accountability.

Limitations

Data were collected from a single institution, which may limit the generalizability of results. The self-reported questionnaire may have introduced a response bias. Additionally, the majority of participants reported limited prior exposure to structured IPE, which might have influenced their understanding and interpretation of questionnaire items.

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Conflict of interest

The author declares no conflicts of interest associated with this study.

REFERENCE

- [1] Aladwani, M., Khayyat, S., Altalhi, R., Alhulayfi, D., Barifah, M., Aladwani, R., Alsulaymi, S., & Alsheikh, M. (2025). Healthcare Undergraduates' Attitudes and Readiness Toward Interprofessional Education at a Saudi University. *Advances in Medical Education and Practice*, 16, 235 - 244. <https://doi.org/10.2147/amep.s503289>.
- [2] Aldriwesh, M., Alyousif, S., & Alharbi, N. (2022). Undergraduate-level teaching and learning approaches for interprofessional education in the health professions: a systematic review. *BMC Medical Education*, 22. <https://doi.org/10.1186/s12909-021-03073-0>.

- [3] Alharbi, N., Alenazi, N., Althubaiti, A., Alkahtani, R., Nasser, S., & Aldriwesh, M. (2024). Evaluating Interprofessional Education Readiness and Perceptions Among Health Professions Students. *Advances in Medical Education and Practice*, 15, 659 - 668. <https://doi.org/10.2147/amep.s461901>.
- [4] Alsharari, T., Khattak, O., Agarwal, A., Chaudhary, F., Suhail, N., Begum, G., Subramaniam, G., Albagami, H., Felemban, M., Shawli, H., Algahtani, F., & Fareed, M. (2025). Health professional students' perceptions and preparedness for interprofessional education: a multicentric analysis across five countries. *Frontiers in Medicine*, 12. <https://doi.org/10.3389/fmed.2025.1665243>.
- [5] Aziz, A., & Hassan, S. (2024). Attitudes of Healthcare Students Towards Interprofessional Education. *Journal of Science, Technology, Education, Art and Medicine*. <https://doi.org/10.63137/jsteam.151742>.
- [6] Berger-Estilita, J., Chiang, H., Stricker, D., Fuchs, A., Greif, R., & Mcleer, S. (2020). Attitudes of medical students towards interprofessional education: A mixed-methods study. *PLoS ONE*, 15. <https://doi.org/10.1371/journal.pone.0240835>.
- [7] Bruce, S., Khan, M., Sani, S., & Shaikat, I. (2025). Evaluation of Interprofessional Education (IPE) Among Nursing and Medical Students. *Biological and Clinical Sciences Research Journal*. <https://doi.org/10.54112/bcsrj.v6i4.1711>.
- [8] Costa, M., Jahan, F., & Shidi, A. (2021). Health professions students' attitude, perception, and readiness toward interprofessional education and practice in Oman. *Journal of Taibah University Medical Sciences*, 17, 248 - 255. <https://doi.org/10.1016/j.jtumed.2021.10.004>.
- [9] Darlow, B., Brown, M., McKinlay, E., Gray, L., Purdie, G., & Pullon, S. (2022). Longitudinal impact of preregistration interprofessional education on the attitudes and skills of health professionals during their early careers: a non-randomised trial with 4-year outcomes. *BMJ Open*, 12. <https://doi.org/10.1136/bmjopen-2021-060066>.
- [10] Falguera, C. (2025). Readiness, Perception, and Attitude toward Interprofessional Education among Students in a Stepladder and Community-based Health Science Tertiary Institution: A Cross-sectional Study. *Acta Medica Philippina*, 59, 90 - 97. <https://doi.org/10.47895/amp.vi0.10717>.
- [11] Foushee, J., Everhart, K., Stoner, A., Tjiattas-Saleski, L., & Redden, D. (2025). Student correlates with interprofessional attitudes within undergraduate medical education. *BMC Medical Education*, 25. <https://doi.org/10.1186/s12909-024-06480-1>.
- [12] Fox, L., Onders, R., Hermansen-Kobulnicky, C. J., Nguyen, T. N., Myran, L., Linn, B., & Hornecker, J. (2018). Teaching interprofessional teamwork skills to health professional students: A scoping review. *Journal of interprofessional care*, 32(2), 127-135.
- [13] Hammick, M., Freeth, D., Koppel, I., Reeves, S., & Barr, H. (2007). A best evidence systematic review of interprofessional education: BEME Guide no. 9. *Medical teacher*, 29(8), 735-751.
- [14] Huyen, N., Tam, N., Wens, J., Tsakitzidis, G., Van Chi, L., Anh, L., Len, C., Van Chuong, H., Huy, N., & Valcke, M. (2023). Comparison of students' readiness from six health education programs for interprofessional learning in Vietnam: a cross-sectional study. *BMC Medical Education*, 23. <https://doi.org/10.1186/s12909-023-04776-2>.
- [15] Maharajan, M., Rajiah, K., Khoo, S., Chellappan, D., De Alwis, R., Chui, H., Tan, L., Tan, Y., & Lau, S. (2017). Attitudes and Readiness of Students of Healthcare Professions towards Interprofessional Learning. *PLoS ONE*, 12. <https://doi.org/10.1371/journal.pone.0168863>.
- [16] Mathew, R., George, S., & Dsouza, E. (2023). Attitude and Readiness of Nursing Students Regarding Interprofessional Collaboration in Healthcare Practice. *International Journal of Science and Healthcare Research*. <https://doi.org/10.52403/ijshr.20230347>.
- [17] Mohammed, C. A., Anand, R., & Ummer, V. S. (2021). Interprofessional Education (IPE): A framework for introducing teamwork and collaboration in health professions curriculum. *Medical Journal, Armed Forces India*, 77(Suppl 1), S16.
- [18] Prakoeswa, F., Prayitno, H., Hidayat, S., Pramuningtyas, R., & Risanti, E. (2025). Factors Associated with Medical Students' Readiness of Interprofessional Education Implementation: Findings from A Medical School in Indonesia. *Jurnal Penelitian Pendidikan IPA*. <https://doi.org/10.29303/jppipa.v11i4.10745>.
- [19] Rajiah, K., & Maharajan, M. (2016). Framework for Action to Implement Interprofessional Education and Collaborative Practice in Pharmacy and Allied health Sciences Programs in India. *Indian Journal of Pharmaceutical Education and Research*, 50.
- [20] Reeves, S., Fletcher, S., Barr, H., Birch, I., Boet, S., Davies, N., ... & Kitto, S. (2016). A BEME systematic review of the effects of interprofessional education: BEME Guide No. 39. *Medical teacher*, 38(7), 656-668.

- [21] Sakr, C., Fakih, L., DeJong, J., Yazbick-Dumit, N., Soueidan, H., Haidar, W., Boufarhat, E., & Akl, I. (2022). Can interprofessional education change students' attitudes? A case study from Lebanon. *BMC Medical Education*, 22. <https://doi.org/10.1186/s12909-022-03608-z>.
- [22] Shah, S., Sethi, A., Khattak, A., & Junaid, S. (2025). Readiness for inter-professional education among healthcare professions students in Balochistan, Pakistan. *Pakistan Journal of Medical Sciences*, 41, 1098 - 1104. <https://doi.org/10.12669/pjms.41.4.10850>.
- [23] Spaulding, E. M., Marvel, F. A., Jacob, E., Rahman, A., Hansen, B. R., Hanyok, L. A., ... & Han, H. R. (2021). Interprofessional education and collaboration among healthcare students and professionals: a systematic review and call for action. *Journal of interprofessional care*, 35(4), 612-621.
- [24] Sulaiman, N., Rishmawy, Y., Hussein, A., Saber-Ayad, M., Alzubaidi, H., Kawas, S., Hasan, H., & Guraya, S. (2021). A mixed methods approach to determine the climate of interprofessional education among medical and health sciences students. *BMC Medical Education*, 21. <https://doi.org/10.1186/s12909-021-02645-4>.
- [25] Vermeulen, J., Buyl, R., Hubloue, I., Pauwels, S., Diltor, M., Stas, L., Ouelhadj, M., Moortgat, E., & Fobelets, M. (2025). A quasi-experimental study on the impact of interprofessional education on collaborative attitudes among midwifery, nursing, and medicine students in Brussels, Belgium. *European Journal of Midwifery*, 9. <https://doi.org/10.18332/ejm/204273.s>
- [26] Visser, C., Ket, J., Croiset, G., & Kusurkar, R. (2017). Perceptions of residents, medical and nursing students about Interprofessional education: a systematic review of the quantitative and qualitative literature. *BMC Medical Education*, 17. <https://doi.org/10.1186/s12909-017-0909-0>.
- [27] World Health Organization. (2010). *Framework for action on interprofessional education and collaborative practice* (No. WHO/HRH/HPN/10.3). World Health Organization.
- [28] Yu, J., Lee, W., Kim, M., Choi, S., Lee, S., Kim, S., Jung, Y., Kwak, D., Jung, H., Lee, S., Lee, Y., Hyun, S., Kang, Y., Kim, S., & Lee, J. (2020). Effectiveness of simulation-based interprofessional education for medical and nursing students in South Korea: a pre-post survey. *BMC Medical Education*, 20. <https://doi.org/10.1186/s12909-020-02395-9>.
- [29] Zaher, S., Otaki, F., Zary, N., Marzouqi, A., & Radhakrishnan, R. (2022). Effect of introducing interprofessional education concepts on students of various healthcare disciplines: a pre-post study in the United Arab Emirates. *BMC Medical Education*, 22. <https://doi.org/10.1186/s12909-022-03571-9>.
- [30] Zhang, C., Wang, X., Xing, Y., Luan, W., & Jin, T. (2024). Correlation between learning styles and attitudes toward interprofessional education among medical students: a cross-sectional study. *BMC Medical Education*, 24. <https://doi.org/10.1186/s12909-024-05710-w>.