



Health Care Interns' Perception of Interprofessional Education: A Cross-Sectional Study

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KEYWORDS

Interprofessional education, collaborative practice, healthcare interns, infection control, teamwork

ABSTRACT:

Introduction: Interprofessional Education (IPE) plays a pivotal role in preparing healthcare interns for collaborative practice to improve patient outcomes, especially in areas like infection control.

Aim: To assess healthcare interns' perceptions of IPE and collaborative practice (CP), specifically in the context of infection control.

Methods: A cross-sectional study was conducted among MBBS, nursing, and paramedical interns at a tertiary care institute in South India. A structured questionnaire assessed their attitudes toward communication, teamwork, shared responsibility, and interprofessional learning. Data were analyzed for mean scores and professional group comparisons.

Results: Paramedical interns showed more positive attitudes in communication and teamwork domains compared to others ($p < 0.05$). A significant number of participants agreed that IPE improved their understanding of infection control and patient-centered care.

Conclusions: The study highlights the need for structured IPE modules within internship training, focusing on collaborative skills and infection prevention. This model can be instrumental in reducing healthcare-associated infections through a team-based approach.

1. Introduction

The complexities of modern healthcare demand effective collaboration across disciplines to ensure patient safety and optimal outcomes. Interprofessional Education (IPE), defined as learning that occurs when two or more professionals learn with, from, and about each other to improve collaboration and the quality of care, has emerged as a global priority in health professions education (1). Globally, IPE has been shown to improve team dynamics, communication, and patient-centered care (2,3). In infection control, interdisciplinary cooperation is essential for reducing healthcare-

associated infections (HAIs) (4,5). Yet, in many institutions across India, structured IPE is still not fully integrated into the undergraduate health curriculum (6). This study was designed to assess perceptions of IPE among healthcare interns—including doctors, nurses, and paramedics—at a South Indian medical college, particularly in the context of infection prevention and control.

2. Objectives

1. To evaluate the current perception of readiness in interprofessional learning aspects among



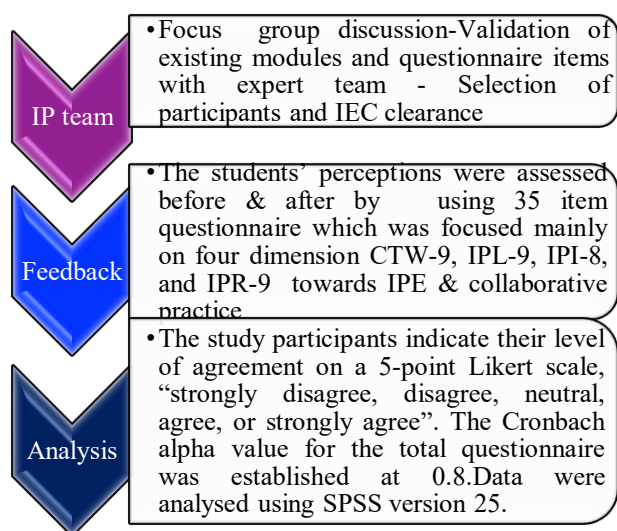
doctors, nurses and paramedical interns in infection control practices.

- To determine if there is any significant difference in the selected demography factors, mean and total scores between doctors, nurses and paramedical interns in self-assessment, attitude, and perceptions of IPL aspects.

3. Methods

Study Design and Setting

This was a cross-sectional, descriptive study conducted at Sri Lakshmi Narayana Institute of Medical Sciences (SLIMS), Puducherry, India. The study was carried out over a period of three months and focused on understanding the perceptions of healthcare interns toward interprofessional education (IPE) and collaborative practice (CP), specifically in the context of infection prevention and control. Ethical clearance was obtained from the Institutional Ethics Committee.



Participants and Sampling

The study population included interns from three health professions—MBBS, Nursing, and Paramedical sciences—who were undergoing clinical training at SLIMS during the study period. A total of 246 interns participated. Inclusion criteria included interns from any of the above three disciplines who were willing to participate voluntarily. Those who declined to participate or did not provide informed consent were excluded. Stratified sampling was used to ensure adequate representation from each professional group.

Data Collection Tool

Data were collected using a structured, pre-validated questionnaire adapted from established interprofessional education instruments such as the Readiness for Interprofessional Learning Scale (RIPLS) and Interprofessional Collaborative Competency Attainment Survey (ICCAS)(10,18). The questionnaire was divided into multiple sections, each assessing a specific domain:

- Communication and teamwork
- Mutual respect and shared responsibility
- Perceptions of interprofessional learning
- Confidence in collaborative infection control practices

Participants responded to statements on a five-point Likert scale ranging from "Strongly Disagree" to "Strongly Agree."

Procedure

The questionnaire was distributed during scheduled sessions, and participants were given adequate time and instructions for completion. Faculty members were available to clarify doubts, ensuring uniform understanding across participants. Data collection was anonymized to encourage honest and unbiased responses.

Data Analysis

Collected data were entered into Microsoft Excel and analyzed using IBM SPSS Version 22.0. Descriptive statistics such as frequency, percentage, mean, and standard deviation were used to summarize responses. One-way Analysis of Variance (ANOVA) was used to compare mean scores among MBBS, nursing, and paramedical interns across various domains. An independent t-test was used for gender-wise comparison. A p-value < 0.05 was considered statistically significant.

Demographics

Out of 246 participants, 62% were female and 38% male. The professional breakdown included 98 MBBS, 82 nursing, and 66 paramedical interns.

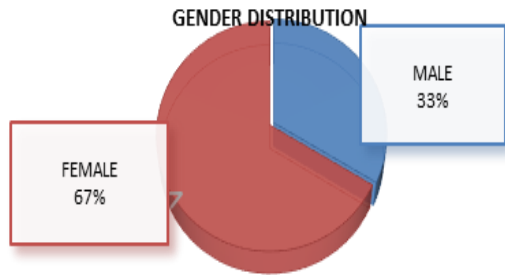


Figure 1: Distribution of participants according to gender

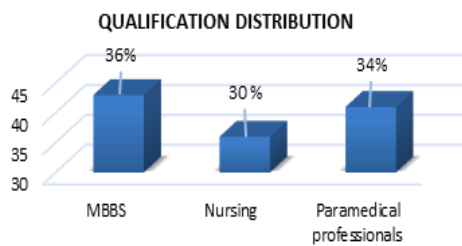


Figure 2: Distribution of participants according to professional characteristics

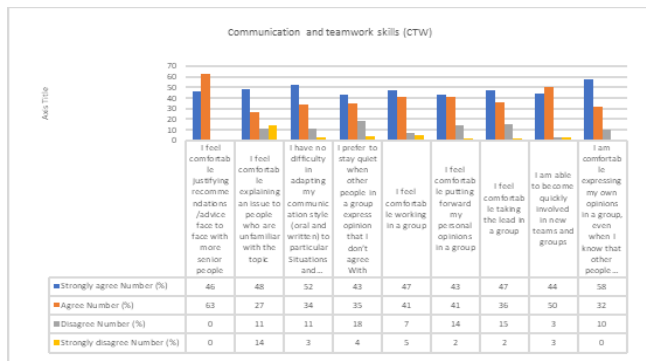


Figure 3: Communication and teamwork skills (CTW)

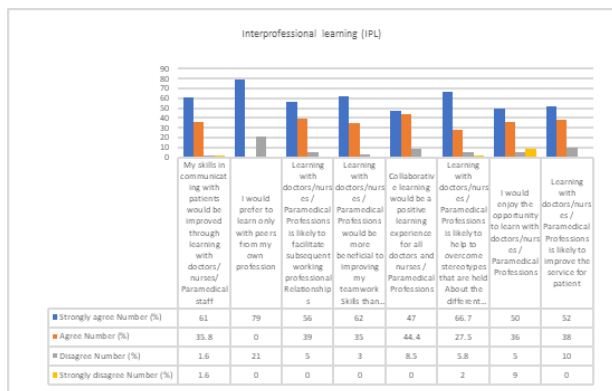


Figure 4: Interprofessional learning (IPL)

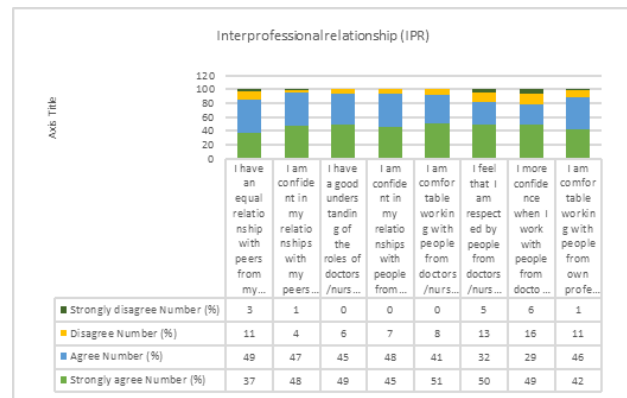


Figure 5: Interprofessional relationship (IPR)

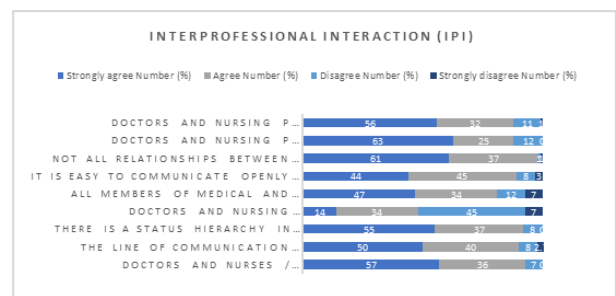


Figure 6: Interprofessional interaction (IPI)

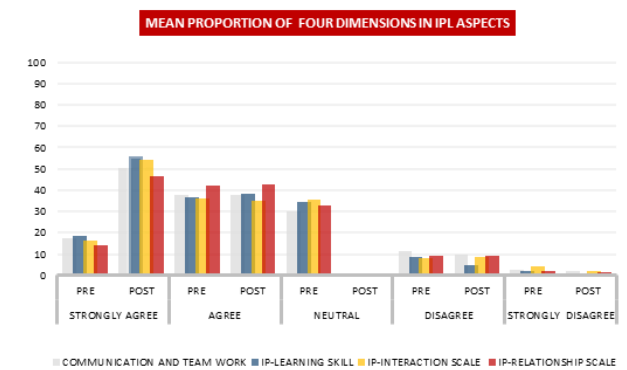


Figure 7: MEAN PROPORTION OF FOUR DIMENSIONS IN IPL ASPECTS

Table 1: Comparison of mean in aspects on interprofessional learning dimensions among health care interns

DIMENSIONS	PRE MEAN±SD	POST MEAN±SD
Communication and Teamwork (CTW)	31±5.31	37.4±4.71
Interprofessional Learning (IPL)	26.63±5.13	39.82±4.15
Interprofessional Interaction (IPI)	28.11±4.53	34.63±4.58
Interprofessional Relationship (IPR)	28.47±5.28	33.69±5.29



Perceptions of Interprofessional Learning

Table 1 presents the comparison of mean scores across professional groups. Paramedical interns scored highest in communication and teamwork domains (Mean \pm SD: 4.3 ± 0.6), followed by nursing and MBBS interns. These findings align with earlier studies highlighting better IPE perception among allied health students(11–13).

Feedback on Collaborative Practice

Over 70% of participants agreed that IPE improved their understanding of team roles in infection control. About 65% felt more confident participating in multidisciplinary ward rounds and case discussions.

Gender-wise Distribution

Female participants showed slightly higher agreement with statements related to shared accountability and mutual respect ($p = 0.04$), consistent with literature showing gender-based differences in communication perception(14–16).

4. Discussion

Our findings reaffirm the positive impact of IPE on communication, collaboration, and professional identity formation among interns(17,18). Paramedical interns demonstrated a stronger perception of teamwork, possibly due to their frequent involvement in hands-on procedural roles and infection control teams(19).

These findings are consistent with Thangarajoo et al., who observed similar attitudes in Malaysian hospitals among nurses(20). In contrast, Keshtkaran et al. reported lower IPE readiness among Iranian medical students(21), highlighting the cultural and institutional influence on IPE adoption.

Hammick et al. (2007) conducted a best evidence review and found that early interprofessional education positively influences attitudes toward teamwork and collaboration, which are foundational to safe clinical practice and infection control(22).**Palaganas et al. (2014)** highlighted the historical development and effectiveness of simulation-based IPE in promoting early exposure to team-based decision-making and collaborative problem-solving in real-life clinical scenarios(23).

Hall (2005) discussed how differences in professional cultures can act as barriers to teamwork and emphasized

the need for early interprofessional learning to break down hierarchical boundaries and foster mutual respect(24).

Darlow et al. (2015) demonstrated that students who participated in structured early IPE programs reported improved understanding of team roles and responsibilities, leading to enhanced collaborative behavior during clinical placements(25).

Early exposure allows interns to develop collaborative skills in real clinical settings, promoting a culture of communication and accountability. To successfully implement such programs, faculty development, continuous mentorship, and thoughtful curriculum restructuring are essential to ensure alignment with interprofessional competencies and clinical relevance(26,27).

Conclusion

This study demonstrates a clear need and opportunity for structured interprofessional education during internship. By fostering teamwork, communication, and a shared responsibility mindset, IPE contributes directly to improved infection control practices and patient safety.

Limitations

This study was limited to a single institution and relied on self-reported data, which may not reflect actual behavior. The cross-sectional design did not allow for assessment of long-term impact. Additionally, objective tools to measure interprofessional skills were not used.

Recommendations

Structured interprofessional education should be integrated into internship training through joint activities like case discussions, simulations, and collaborative projects. Faculty development and institutional support are essential to sustain and scale IPE initiatives. Future studies should assess long-term outcomes and include objective evaluation tools.

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References

1. World Health Organization. Framework for Action on Interprofessional Education & Collaborative Practice. Geneva: WHO Press; 2010.
2. Reeves S, Perrier L, Goldman J, Freeth D, Zwarenstein M. Interprofessional education: effects on professional practice and healthcare outcomes. *Cochrane Database Syst Rev*. 2013 Mar 28;2013(3):CD002213.
3. Frenk J, Chen L, Bhutta ZA, Cohen J, Crisp N, Evans T, et al. Health professionals for a new century: transforming education to strengthen health systems in an interdependent world. *Lancet*. 2010 Dec 4;376(9756):1923–58.
4. West CP, Huschka MM, Novotny PJ, Sloan JA, Kolars JC, Habermann TM, et al. Association of perceived medical errors with resident distress and empathy: a prospective longitudinal study. *Acad Med*. 2006 Mar;81(3):281–8.
5. Okuda Y, Bryson EO, DeMaria S Jr, Jacobson L, Quinones J, Shen B, et al. The utility of simulation in medical education: what is the evidence? *Mt Sinai J Med*. 2009 Aug;76(4):330–43.
6. Interprofessional Education Collaborative. Core Competencies for Interprofessional Collaborative Practice: 2016 Update. Washington, DC: IPEC; 2016.
7. Lairamore C, Morris D, Schreiber J, Hart J, Inman M, Hinck J. Perceptions of interprofessional education in an academic setting. *J Allied Health*. 2013 Winter;42(4):e61–5.
8. Al-Eisa E, Alderaa A, AlSayyad A, AlHosawi F, AlAmoudi S, AlTaib S, et al. The perceptions and readiness toward interprofessional education among female undergraduate healthcare students at King Saud University. *J Phys Ther Sci*. 2016 Apr;28(4):1142–6.
9. Curran VR, Sharpe D, Flynn K, Button P. A longitudinal study of the effect of an interprofessional education curriculum on student satisfaction and attitudes towards interprofessional teamwork and education. *J Interprof Care*. 2010 Jan;24(1):41–52.
10. Parsell G, Bligh J. The development of a questionnaire to assess the readiness of healthcare students for interprofessional learning (RIPLS). *Med Educ*. 1999 Feb;33(2):95–100.
11. Abu-Rish E, Kim S, Choe L, Varpio L, Malik E, White AA, et al. Current trends in interprofessional education of health sciences students: a literature review. *J Interprof Care*. 2012 Mar;26(2):128–34.
12. Lapkin S, Levett-Jones T, Gilligan C. A systematic review of the effectiveness of interprofessional education in health professional programs. *Nurse Educ Today*. 2013 Feb;33(2):90–102.
13. Titzer JL, Swenty CF, Hoehn WG. An interprofessional simulation promoting collaboration and problem solving among nursing and allied health professional students. *Clin Simul Nurs*. 2012 May;8(8):e325–33.
14. Arenson C, Umland EM, Collins L, Kern SB, Hewston LA, Jerpbak CM. The interprofessional clinical experience: introduction to a novel interprofessional care team experience. *J Interprof Care*. 2015 Nov;29(6):581–3.
15. van Soeren M, Devlin-Cop S, MacMillan K, Baker L, Egan-Lee E, Reeves S. Simulated interprofessional education: an analysis of teaching and learning processes. *J Interprof Care*. 2011 Mar;25(2):98–104.
16. Oandasan I, Reeves S. Key elements for interprofessional education. Part 1: The learner, the educator and the learning context. *J Interprof Care*. 2005 May;19 Suppl 1:21–38.
17. Olson R, Bialocerkowski A. Interprofessional education in allied health: a systematic review. *Med Educ*. 2014 Mar;48(3):236–46.
18. Williams B, Brown T, Boyle M. Construct validation of the readiness for interprofessional



- learning scale: a Rasch and factor analysis. *J Interprof Care*. 2012 Jul;26(4):326–32.
19. Reinders JJ, Krijnen WP, van Offenbeek MA, van der Schans CP. Prevention of clinical deterioration: the impact of a simulation-based interprofessional training program on teamwork in a surgical ward. *Med Educ*. 2008 Oct;42(10):1003–10.
 20. Thangarajoo S, Rosliza AM, Nalliah S, Karim J, Shohaimi S, Ramasamy S, et al. Self-assessment, attitude and perception of interprofessional learning in hospital-acquired infection control practices among health professionals in Klang Valley, Malaysia. *BMC Med Educ*. 2021 Dec;21(1):243.
 21. Keshtkaran Z, Sharif F, Khademian Z, Kalantari S. Readiness for interprofessional education among healthcare students at Shiraz University of Medical Sciences, Iran. *J Adv Med Educ Prof*. 2014 Oct;2(4):162–7.
 22. Hammick M, Freeth D, Koppel I, Reeves S, Barr H. A best evidence systematic review of interprofessional education: BEME Guide no. 9. *Med Teach*. 2007 Sep;29(8):735–51.
 23. Palaganas JC, Epps C, Raemer DB. A history of simulation-enhanced interprofessional education. *J Interprof Care*. 2014 Nov;28(5):386–91.
 24. Hall P. Interprofessional teamwork: professional cultures as barriers. *J Interprof Care*. 2005 May;19 Suppl 1:188–96.
 25. Darlow B, Coleman K, McKinlay E, Donovan S, Beckingsale L, Gray B, et al. The positive impact of interprofessional education: a controlled trial to evaluate a program for health professional students. *BMC Med Educ*. 2015 Apr;15:98.
 26. MacDonald CJ, Stodel EJ, Thompson TL. W(e)Learn: a framework for designing and evaluating online interprofessional education. *Med Teach*. 2009 Feb;31(2):e76–83.
 27. Wilhelmsson M, Pelling S, Ludvigsson J, Hammar M, Dahlgren LO, Faresjö T. Twenty years experiences of interprofessional education in Linköping—ground-breaking and sustainable. *J Interprof Care*. 2011 Dec;25(6):451–6.