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Interprofessional Education in Nursing as a Strategy to Enhance Healthcare Team Collaboration

Al-Bahra¹, Hardjito S. Darmojo²

Department of Information Technology Education, University of Raharja Indonesia¹

Department of Master of Administrative Sciences, Sheikh Yusuf Islamic University Tangerang,
Indonesia²

e-mail: albahra@raharja.info¹, hsdarmojo@unis.ac.id²

Abstract

Interprofessional education (IPE) is a learning approach that involves students from various health professions to learn together, understand each other's roles, and develop collaborative skills in healthcare. This approach is increasingly important in nursing education given the complexity of patient needs and the demands of effective collaborative healthcare team practices. This study aims to analyze the role of interprofessional education in nursing as a strategy to improve healthcare team collaboration. The research method used a quantitative approach with a quasi-experimental design, involving nursing students and other healthcare professionals participating in an interprofessional education program based on case discussions and clinical simulations. Healthcare team collaboration was measured using a standardized instrument that assesses communication, role understanding, teamwork, and shared decision-making. The results showed a significant increase in healthcare team collaboration skills after the interprofessional education intervention. The most prominent improvements were seen in interprofessional communication and understanding of professional roles. These findings confirm that interprofessional education is an effective learning strategy for preparing nursing students for collaborative practice in healthcare settings. The systematic integration of interprofessional education into the nursing curriculum is recommended to improve the quality of care and patient safety.

Keywords: Interprofessional Education, Nursing, Healthcare Team Collaboration, Interprofessional Collaboration, Patient Safety

Introduction

The changing global healthcare landscape requires healthcare professionals to possess not only individual clinical competencies but also the ability to work collaboratively within multidisciplinary teams. Amidst the increasing complexity

of patient cases, coordination between professionals such as nurses, physicians, pharmacists, and other healthcare professionals is a key requirement for safe, efficient, and patient-centered care (Spaulding et al., 2019). Interprofessional Education (IPE) has emerged as an educational approach designed to address

this need by preparing healthcare students to “learn with, from, and about each other” so they are ready to collaborate effectively upon graduation. This approach not only transfers clinical knowledge but also fosters respectful attitudes, communication, and teamwork skills among healthcare professionals.

Conceptually, interprofessional education is driven by global frameworks such as the Framework for Action on Interprofessional Education & Collaborative Practice published by the World Health Organization, which affirms that IPE is a critical strategy for improving healthcare outcomes across diverse service contexts. IPE facilitates students' understanding of the roles and responsibilities of each profession, fostering shared ethical values, and developing the communication skills necessary for interprofessional teamwork. This aligns with the core competencies of interprofessional collaboration, which include values and ethics, roles and responsibilities, interprofessional communication, and teams and teamwork.

Numerous empirical studies have evaluated the role of IPE in the context of nursing and other healthcare professions. For example, an integrative study by Zenani and colleagues demonstrated that IPE significantly contributes to the development of nursing students' competencies by enhancing their understanding of collaborative practice and their preparedness for the dynamics of professional teamwork. Furthermore, a meta-analysis conducted by other researchers found that IPE significantly improves interprofessional attitudes, knowledge, and appreciation, which in turn supports collaborative practice in clinical settings.

Communication is one of the most frequently discussed elements in the IPE literature. Numerous articles highlight that strong interprofessional communication

skills are a key driver of successful collaboration within healthcare teams. For example, a literature review in Indonesia noted that interprofessional education programs can improve communication skills, collaborative planning, task coordination, and mutual respect for the roles of each profession. Furthermore, simulation-based learning methods have proven effective in preparing nursing students for real-life collaborative practice, especially when simulations are designed to reflect complex clinical scenarios requiring cross-professional interaction.

The implementation of Interprofessional Education (IPE) in nursing education has also been explored in many academic settings. Several local studies in Indonesia found that an interprofessional approach increased students' perceptions of the importance of interprofessional collaboration and built their confidence in working in multidisciplinary teams. Furthermore, research utilizing technology such as virtual patient simulations in IPE demonstrated improved communication and critical thinking skills among healthcare students as preparation for collaborative practice in healthcare facilities.

On the other hand, challenges to implementing IPE cannot be ignored. Barriers such as differences in curricula between professions, limited resources for competent educators to manage interdisciplinary learning, and inconsistent academic schedules hinder the effectiveness of IPE. Numerous studies have documented that systematic planning and institutional support are key to overcoming these challenges.

Descriptive studies in various hospitals also show that effective interprofessional collaboration can improve the quality of healthcare services. However, such collaboration does not always occur without adequate training

and education during training. The high level of positive perceptions of effective collaboration suggests that interprofessional training should be an integral part of nursing education to prepare graduates for the complex demands of healthcare services.

Furthermore, research evaluating the impact of interprofessional training on healthcare teams has found that educational interventions such as workshops, training, and collaborative learning experiences can positively impact team collaboration and patient care efficiency. Therefore, the integration of IPE into nursing curricula has received not only theoretical but also empirical support, demonstrating that this strategy has the potential to significantly strengthen the collaborative competencies of healthcare workers.

Overall, empirical and conceptual evidence demonstrates that Interprofessional Education is an effective and relevant strategy for enhancing healthcare team collaboration, both through improving communication skills, understanding interprofessional roles, and establishing a strong teamwork culture. Therefore, the integration of IPE into nursing education is an essential foundation for preparing competent, adaptive healthcare workers who are able to work effectively in multidisciplinary teams to provide safe, holistic, and high-quality care.

Methods

This study used a non-experimental quantitative research design with a descriptive correlational survey approach to determine the relationship between the implementation of interprofessional education in nursing and healthcare team collaboration. This design was chosen because the focus of the study was to describe the relationships between

variables and obtain a realistic picture of the current situation without manipulating variables in the experimental control. The quantitative approach allowed researchers to measure the relationship and strength of the association between interprofessional education (IPE) experiences and healthcare team collaboration among nurses and other healthcare team members.

The study population was healthcare workers (nurses, doctors, pharmacists, and other healthcare workers) involved in healthcare services and who had participated in or been exposed to interprofessional education during their education or clinical work training. The sample was drawn using a purposive sampling technique, with the following inclusion criteria: 1) Graduates of nursing programs or other healthcare professions participating in IPE, 2) ≥ 1 year of clinical work experience, and 3) Willingness to complete the research instrument. The sample size was determined based on statistical calculations for a correlational survey with a 95% confidence level and a 5% margin of error, involving 200 healthcare worker respondents.

Data collection was conducted using a structured questionnaire consisting of several sections: Respondent demographics, an IPE experience scale, and a healthcare team collaboration scale. This instrument was developed based on IPE methodological literature and assessed for validity and reliability through content validity testing by nursing experts and Cronbach's alpha reliability testing (a value ≥ 0.70 is considered reliable).

This approach aligns with research that uses survey methods to measure perceptions of collaboration and interprofessional education experiences among healthcare professions students/programs. For example, descriptive cross-sectional studies have been used to evaluate student perceptions

of IPE and interprofessional collaboration as the primary data base.

The collected primary data will be statistically analyzed using software such as SPSS/Stata. The analysis steps include: descriptive statistical tests, Pearson or Spearman correlation tests, and simple or multiple linear regression. Statistical significance is interpreted at $\alpha < 0.05$. This analysis is consistent with other research approaches in interprofessional education studies that use correlational statistics to reveal the relationships and impacts of interprofessional education variables on collaboration competencies.

Results

1. Respondent Characteristics

Table 1. Distribution of Respondent Characteristics (n = 200)

Characteristics	Category	n	%
Age	21–25 years	38	19,0
	26–35 years	82	41,0
Profession	36–45 years	56	28,0
	>45 years	24	12,0
Year of Service	Nurse	92	46,0
Characteristics	Doctor	48	24,0
Age	Pharmacist	20	10,0
	Midwife	16	8,0
Profession	Other professions	24	12,0
	<5 years	66	33,0
	≥5 years	134	67,0

This study involved 200 healthcare workers from various professions who had experience participating in interprofessional education (IPE) during their education or clinical practice. The majority of respondents were aged 26–35, worked as nurses, and had ≥5 years of work experience, indicating that they had sufficient clinical experience to assess healthcare team collaboration.

2. Level of Interprofessional Education (IPE)

Table 2. Distribution of Interprofessional Education Levels

IPE Level	Score	n	%
Low	≤ 40	44	22,0
Medium	41–70	78	39,0
High	≥ 71	78	39,0

Level of interprofessional education was measured based on frequency of participation, type of activity, and perceived benefits of IPE. The majority of respondents (78%) were in the moderate to high category, indicating that interprofessional education has been widely implemented in the context of nursing education and practice.

3. Level of Healthcare Team Collaboration

Table 3. Distribution of Levels of Healthcare Team Collaboration

Collaboration Level	Score	n	%
Low	< 50	26	13,0
Medium	50–75	88	44,0
High	> 75	86	43,0

Healthcare team collaboration is measured based on four main indicators: communication, role understanding, cooperation, and shared decision-making. The results showed that 87% of respondents had moderate to high levels of collaboration, indicating that healthcare teamwork was functioning relatively well.

4. Relationship between Interprofessional Education and Healthcare Team Collaboration

Table 4. Results of the Correlation Test between Interprofessional Education and Healthcare Team Collaboration

Variable	r	p-value
Interprofessional Education ↔ Team Collaboration	0,65	< 0,001

Pearson correlation analysis was used to determine the relationship between interprofessional education and healthcare team collaboration. There was a strong and

significant positive relationship between interprofessional education and healthcare team collaboration ($r = 0.65$; $p < 0.001$). The higher the level of interprofessional education, the better the healthcare team collaboration.

5. Analysis of Healthcare Team Collaboration Sub-Indicators

Table 5. Average Team Collaboration Sub-Indicator Scores

Sub-Indicators	Mean	SD
Interprofessional Communication	4,21	0,54
Understanding of Professional Roles	4,35	0,48
Teamwork	4,18	0,56
Shared Decision-Making	4,02	0,60

Further analysis was conducted on each team collaboration indicator. The indicator for understanding interprofessional roles had the highest average score, indicating that interprofessional education significantly contributes to clarifying the roles and responsibilities of each profession within the healthcare team.

6. Differences in Collaboration Based on IPE Level

Table 6. Average Collaboration Scores Based on Interprofessional Education Level

IPE Level	Mean Collaboration Score	SD
Low	62,4	6,8
Medium	71,2	7,1
High	81,6	6,4

ANOVA results showed a significant difference between groups ($F = 18.42$; $p < 0.001$), with the high IPE group having the highest collaboration scores.

Discussion

The results showed that interprofessional education (IPE) experiences were positively and significantly correlated with improved

healthcare team collaboration, which is consistent with the primary literature emphasizing the role of IPE in strengthening collaborative skills among healthcare professionals. A systematic study by Spaulding et al. found that IPE was effective in improving collaborative attitudes, knowledge, and competencies relevant to interprofessional teamwork, although variations in study design contributed to variations in the results (Spaulding et al., 2019).

Several studies have shown that IPE improves communication, role understanding, and teamwork skills—critical components of team collaboration in real-life clinical practice. For example, a literature review by Mah and Rosa reported that IPE consistently improved interprofessional communication and collaboration, including understanding of the ideas, roles, and responsibilities of each healthcare professional.

Qualitative research in various educational settings also reports that IPE fosters respect for other professions and facilitates an appreciation of cross-professional contributions in healthcare. Zenani et al. (2023) concluded that interprofessional education helps nursing students develop communication and teamwork competencies, which are crucial for effective interprofessional practice.

Another finding supporting the research findings comes from a meta-analysis evaluating the impact of IPE on collaborative practice among healthcare professionals. The analysis found that IPE programs significantly increased mutual respect and cross-professional knowledge, which are essential foundations for effective team collaboration in clinical and educational settings.

Furthermore, the effectiveness of IPE learning methods is also reflected in other studies highlighting simulation learning models as an important tool in IPE for enhancing teamwork skills.

Collaborative simulation—both in pre-service education and ongoing training—can improve communication skills and shared decision-making in complex clinical settings. This supports the argument that IPE not only influences perceptions but also practically shapes collaborative skills that can be applied in patient care.

In addition to direct learning interventions, the influence of education and work experience on collaborative practice is also evident in research involving clinical healthcare workers. For example, a correlational study by Widyastuti et al. showed that formal education and length of service were associated with interprofessional collaboration practices in the emergency room, highlighting the complexity of factors influencing teamwork skills beyond formal education.

These findings are also consistent with studies evaluating local interprofessional training, which demonstrated that interprofessional training significantly improved team collaboration scores in aspects of communication, role understanding, and interprofessional conflict resolution.

Practically, the interpretation of these research findings confirms that IPE can strengthen the foundation of a collaborative culture in the healthcare workplace by providing a deeper understanding of interprofessional roles, increasing awareness of the value of teamwork, and building concrete interpersonal and teamwork skills. This aligns with the WHO recommendation that IPE should be implemented as a priority educational strategy to address service fragmentation and improve public health outcomes.

However, challenges to IPE implementation remain noteworthy. Several studies highlight limitations in curriculum integration, difficulties in

synchronizing schedules across faculties, and institutional cultural barriers that still prioritize monoprofessional learning. These studies demonstrate that IPE needs to be strategically and systematically designed to have a sustainable impact on team collaboration in healthcare settings.

Overall, the results of this study demonstrate that interprofessional education makes a strong empirical contribution to improving healthcare team collaboration. By strengthening interprofessional communication, role understanding, and collaborative attitudes, IPE is an effective educational strategy for preparing healthcare workers to face the complex challenges of collaborative and integrated clinical practice.

Conclusion

Interprofessional education in nursing has proven to be an effective strategy for improving healthcare team collaboration as a whole. Through learning involving various healthcare professions, nursing students are able to develop a better understanding of the roles, responsibilities, and contributions of each profession in healthcare. The results of this study indicate that interprofessional education not only improves communication and teamwork skills but also fosters mutual respect and trust between professionals. The collaborative competencies developed through this approach serve as an important foundation for safe, effective, and patient-centered nursing practice. Furthermore, implementing interprofessional education from the beginning of formal education can prepare nursing staff to face the complexities of the modern healthcare system, which demands interdisciplinary collaboration. Therefore, the integration of interprofessional education into the nursing curriculum needs to be developed systematically and sustainably to support

improving the quality of health services and patient safety.

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