Implementation of Interprofessional Collaboration in Patient Care: A Literature Review

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Abstract
Interprofessional collaboration (IPC) in healthcare is a dynamic process in which healthcare professionals from various disciplines work together to provide patient-centred care. The main goal of IPC is to improve patient outcomes through coordinated and comprehensive care that addresses the patient's physical, emotional, and social needs. Effective IPC requires effective communication, mutual respect, and a shared understanding of roles and responsibilities among team members. A collaborative team approach enables healthcare professionals to utilise their unique expertise to make appropriate decisions to enhance patient care, reduce healthcare costs, and increase patient satisfaction. The benefits of implementing IPC include improved patient safety, increased job satisfaction for healthcare professionals, and improved healthcare outcomes. Barriers to IPC include cultural differences, hierarchical structures, lack of communication, and inadequate training. To overcome these barriers, healthcare organisations need to invest in education, training, and support for IPC. Overall, IPC is a vital component of high-quality patient care and requires commitment and ongoing efforts from all members of the healthcare team.

Keywords: Interprofessional collaboration, interprofessional education, interprofessional collaborative practice, patient care.

INTRODUCTION

Collaborative practice in the healthcare system can be developed through Interprofessional Education (IPE). This approach promotes cooperation by facilitating participants to examine the relationships between their professions, better understand each other's roles, and work together to enhance service delivery, patient safety, and care quality. The advantages of IPE and interprofessional collaborative practice (IPCP) have been extensively documented, and they include a clear definition of roles, improved team functioning, better conflict resolution, and collaborative leadership, efficient access to and coordination of care, appropriate utilization of specialist clinical resources, provision of optimal care, improved health outcomes, reduced adverse effects, minimized service duplication, overcoming gaps in service delivery, increased health worker productivity, improved intersectoral efficiency, and enhanced community cohesion [1,2].

D'amour and Oandasan have introduced a framework named Interprofessional Education for Collaborative Patient-Centered Practice (IECPCP) that can be used to classify and comprehend educational factors. The framework divides education factors into three categories: micro or teaching factors, institutional factors, and macro or systemic factors. Micro or teaching factors consist of learner and educator professional and cultural beliefs and attitudes, learning context, and faculty development. Institutional factors involve leadership and resources, and administrative processes. Macro or systemic factors encompass education system accreditation

and institutional structures, as well as social and cultural values that impact professional and cultural beliefs and attitudes [1].

Collaboration among healthcare professionals can speed up the achievement of healthcare system goals, but defining collaboration is difficult because various terms like communication, coordination, and teamwork are used. The aim of interprofessional collaboration is for healthcare teams involving professionals and patients to jointly decide on patient health issues, which can improve patient quality of life and determine the goals of care [3,4]. The World Health Organization highlights the importance of interprofessional collaboration in reducing complications, hospital stays, conflict among caregivers, mortality rates, treatment duration, and cost of care, while increasing patient and caregiver satisfaction. Poor interprofessional collaboration, particularly among clinical staff such as nurses and physicians, worsens existing healthcare challenges, disregards patient needs, and leads to inaccurate and delayed diagnoses [5].

Interprofessional collaboration has become an essential element of both education and healthcare, as recognized by the World Health Organization in 2010 [2]. Research has demonstrated that collaborative practice among interprofessional healthcare teams can significantly enhance person-centered care delivery and result in better patient and health systems outcomes. To foster interprofessional collaboration and train healthcare professionals (HCPs), various competency frameworks have been established [3–5]. Although there are multiple existing competency frameworks for interprofessional collaboration, the most commonly cited frameworks define individual competencies that establish the characteristics, knowledge, and skills of individual HCPs required for collaborative practice [3,5].

METHODS

Interprofessional Collaborative Practice

According to the World Health Organization, collaborative practice takes place when various health workers from different professional backgrounds work together to provide comprehensive care services to patients, their families, caregivers, and communities, ensuring the highest quality of care in various settings [2]. This definition aligns with the Relationship-Centered Collaborative Care (RCC) model, which emphasizes the importance of three fundamental relationships for effective patient care: patient-practitioner, practitioner-practitioner, and community-practitioner [6].

The patient-practitioner dimension emphasizes the essential role of the patient as a partner in the interprofessional care process. The practitioner-practitioner dimension stresses the importance of collaboration among healthcare providers. In the community-practitioner dimension, consideration of the patient's community, including their family situation and available community resources to support health goals, is highlighted. The role of the practitioner in enhancing community relationships and health is emphasized at a higher level. The RCC model serves as the foundation for ICP in the framework, as these relationships are fundamental to comprehensive patient care in any setting. The consequences of ICP include patient and organizational outcomes [2], as well as a change in work behaviors and attitudes that are both personal and team oriented. Effective ICP leads to work satisfaction among professionals [7–9], and ultimately, increasing their intent to stay in their jobs [8,10].

Framework for interprofessional team collaboration

The Sunnybrook model is a framework consisting of six core competencies designed to enhance collaboration among interprofessional healthcare teams. These competencies are designed as collective competencies to be applied to teams and come with definitions for each and associated behaviors. The main objective of the framework is to support interprofessional collaboration, which is placed at the center of the model. The competencies are further extended to four domains, including clinical and professional practice and care, education, research and quality improvement, and approach to leadership. The model defines interprofessional care as

working together to provide the best possible care, while interprofessional education is defined as learning from and with each other [2].

Interprofessional research and quality improvement involve the collaboration of professionals from different fields to combine their knowledge and perspectives to tackle a shared research problem or address quality concerns [7]. The Sunnybrook framework defines interprofessional leadership as leveraging the strengths and abilities of team members across all professions and roles. It recognizes that the involvement of multiple perspectives and voices is critical to achieving cultural and organizational change in a complex environment [11,12]. **Figure 1** illustrates the core competencies of the interprofessional team collaboration framework [11].

Figure 1. The Sunnybrook framework of the core competencies for interprofessional team collaboration [11].

The six core competencies, accompanying definitions for each, and associated behaviors for interprofessional team collaboration are presented below. The six competencies include shared decision-making, interprofessional values and ethics, role clarification, communication, interprofessional conflict resolution, and reflection. Each competency and associated behavior seeks to leverage the expertise of all team members and to create and achieve mutual goals. The phrasing of the associated behaviors refers to "the team" and provides actionable activities that together foster and create the right structures and supports for collaborative innovations and partnerships in practice, education, research, and leadership at all levels of a healthcare organization [11,12].

RESULTS

Implementation of the competencies across hospital settings

By utilizing a participatory approach and gathering feedback from stakeholders, several implementation strategies were developed to integrate the interprofessional competencies into hospital settings. The implementation process was designed to avoid a top-down approach and aimed to encourage ownership and adoption of the framework by both formal and informal leaders, both clinical and non-clinical. For instance, staff from various clinical areas familiarized themselves with the competencies through small group sessions, which included interactive games. Together with members of the interprofessional education committee, unit staff participated in these games by rolling a die and discussing the competencies, while also describing examples of how their team could put them into action to win a prize. Another implementation strategy involved incorporating the competencies into the organization's onboarding and orientation program for new staff, as well as the leadership development program and student interprofessional education. This ensured that the competencies were embedded throughout the organization and across different levels of leadership.

The researcher conducted a thorough review of 17 articles from various regions and countries to investigate interprofessional competencies. The majority of studies (eight out of 17) were from developed countries, with four from the USA and four from Australia, while only one was conducted in Iran. Most of the studies were qualitative, and the researcher examined the details of each article, including the year, type of qualitative study, sample, and data collection tools used. Table 1 summarizes the findings of each article with regards to interprofessional competencies. Based on the results of the review, the researcher was able to provide insights into how different healthcare sectors approach interprofessional competencies [13].

Competencies of interprofessional collaboration

The six areas of "patient-centered care," "interprofessional communication," "participatory leadership," "conflict resolution," "transparency of duties and responsibilities," and "teamwork" were used to group the competencies discovered for interprofessional collaboration. One of the two key competencies is providing patient-centered care. In models and frameworks of interprofessional collaboration, patient-centered healthcare services, one of the main axes of the healthcare system, guarantee the safety and quality of healthcare [14,15]. The second key competency is interprofessional communication ability. Communication between different healthcare professionals is made possible by this competency, which also makes it easier to share knowledge, opinions, and moral principles about patients, clients, their families, and the community. Studies have examined and stressed the competency of communication from both intra- and extra-professional perspectives [16]. This competence fosters a safe working atmosphere that encourages healthcare professionals to participate, promotes interprofessional connections, and facilitates information sharing [17]. The ability to investigate other employees' perceptions, behaviors, emotions, and values as well as the experience of enhanced collaboration are provided by conflict resolution [16].

When employees are competent, it helps them comprehend the team and its strengths and makes it possible for interprofessional collaboration to be successful [18]. Employees that possess this competency are better able to utilize one another's knowledge and abilities to complete the proper task, as well as their own and others' tasks [16]. Interviews with members of the healthcare team and expert engagement at the clinical, educational, and policy levels can be used to identify interprofessional competences. Another approach is to use readily available standard questionnaires, such as the Jefferson Scale of Attitudes Towards Physician-Nurse Collaboration (JSAPNC) and the Readiness for Interprofessional Learning Scale (RIPLS), to analyze the variables influencing participation and team activities, as well as willingness to participate [19]. Interprofessional competences can be developed and strengthened through educational initiatives like curricula and in-service training [3]. In research, the interprofessional skill of

"transparency of duties and responsibilities" was most frequently mentioned, followed by "teamwork" [13].

While the lack of the leadership and teamwork abilities required of healthcare professionals leads to many issues, many medical standards for teamwork place a heavy emphasis on clinical competencies. Additionally, coordination between several sectors of clinical, health, and social workers is required for the transition from acute disease treatment to chronic disease care, accountability, and responsive care. The health requirements of communities cannot be met by employees who have attained their professional competencies because this is insufficient on its own. The goal of defining interprofessional skills, it should be highlighted, is to carry out efficient interprofessional collaboration in order to uphold standards for safety, quality, and patient-centered healthcare. Interprofessional activity is thus a tactic that supports the objectives of healthcare services [13].

Another noteworthy point is the importance of educational programs in the field of interprofessional collaboration and related competencies. Healthcare professionals learn new concepts about healthcare through integrating interdisciplinary training programs based on competency in knowledge, attitude, and interacting with others and the community. Lackluster interprofessional competency training integration may make it harder to put what has been learnt into practice [20,21].

A previous study shows that the determinants factors associated with the implementation of IPC are competencies ($p<0.001$), trust and respect ($p=0.017$), administrative support ($p<0.001$), culture ($p<0.001$), law and regulations ($p=0.001$), and finance ($p<0.001$). When health experts from different disciplines collaborate to deliver patient-centered care, this is known as interprofessional collaboration. The biggest contributing factor to patient service errors may be poor communication. All health professionals must be aware of the contributions made by each profession, maintain mutual respect for each other's knowledge, communicate clearly, and look for opportunities for continuing education training to improve professional collaboration [22].

Positive outcomes for efficient and secure healthcare services are the result of effective communication partnerships for interprofessional teamwork. This is in line with the premise that interprofessional care can be provided in a complex healthcare system while maintaining high standards of quality, safety, effectiveness, and efficiency. There have been numerous initiatives to enhance IPC, including by putting in place an integrated patient record system. IPC can improve patient security [23]. To combine safe and effective care for patients and other healthcare professionals, all health professionals must be able to interact effectively with other healthcare team [5].

The concept developed in hospitals for healthcare settings is collaboration among health workers and efficient interprofessional collaborative practices [24]. Collaboration between healthcare providers is a powerful tool for stabilizing care, reducing overuse of the healthcare system, increasing the delivery of health services, and lowering the cost of care [25]. Positive interprofessional collaboration practices can be facilitated by interprofessional teamwork, which is a highly beneficial factor [26].

A study by Soemantri *et al.* used the mixed methods design by blending qualitative and quantitative approaches. To gauge the levels of collaboration according to the perspectives of the health professions, the Indonesian CPAT was administered. Focus group discussions (FGDs) were then conducted to delve deeper into participant perceptions of the current collaborative practice in their workplace, as well as its enabling and obstructing factors. The UNS teaching hospital's medical staff is included in the sample population. Since there are not many medical staff members at the hospital, the whole population sampling was employed to gather responses from everyone who met the inclusion criteria (i.e., medical staff with IPCP expertise). 236 health professionals in all were invited to take part in the first stage. FGDs were then conducted with 28 respondents of those who have completed the CPAT [27].

In their study, the level of interprofessional collaborative practice at UNS teaching hospital was also reported. A total of 168 health professionals (71.2%) completed the CPAT. Of this group, 77.4% are female and more than 50% are nurses. Most of the respondents (86.3%) had been working in the hospital for less than five years. They found no significant differences in CPAT

scores based on age group and length of work experience; however, significant differences occurred between professions [27]. The respondents who participated in the FGDs were comprised of a balanced sample of individuals who differed in age, gender, profession, and years of work experience. All themes describe how the UNS hospital staff perceived the IPCP of the UNS teaching hospital. The number of mentions represents the importance of the subthemes based on the respondents' perspectives [27]. In addition, the majority of research participants believed that collaborative practice was the process of coordination and communication among healthcare professionals on the delivery of healthcare services. In order to deliver appropriate and comprehensive care in accordance with the competencies of each health professional, direct contact and coordination between professions are essential [27]. This is because many health professions may be involved in patient treatment. Interprofessional collaboration is beneficial in many facets of the healthcare industry. Patient care is provided more precisely and quickly because to IPCP.

DISCUSSION

Factors Inhibiting the collaborative practice

Ineffective communication is the main barrier to collaboration. Communication barriers including misinterpretations of messages and sluggish reactions after receiving a message seriously hindered teamwork. Conflicts between people from different professions were shown to be the second biggest barrier to collaboration. Interpersonal conflict is a possibility because IPCP involves people who are not only experts in their disciplines but also unique human beings. The ambiguous role distribution is another obstacle. The tasks and responsibilities of each profession in the workplace are still unclear, despite the fact that each has already been defined by a set of basic abilities.

Interprofessional collaboration is also hindered by systemic aspects of hospital management, such as ineffective task scheduling and a lack of human resources. Collaboration with other health professionals might be made more difficult by a lack of awareness of the standard operating procedure (SOP). A hospital management system and SOP that supports the practice of interprofessional collaboration is also crucial. The SOP and pertinent legislation establish the framework for IPCP, which legitimizes its execution and offers instructions on productive teamwork.

The IPCP practice is further aided by a sense of community. The personal interpersonal approach is crucial in encouraging teamwork among the healthcare providers. Collaboration is strengthened by placing a high priority on patient safety and raising everyone's level of awareness of it. Infrastructures that are helpful, task distribution based on authority and competence, and constructive leadership are further supporting aspects [27].

Collaborative practice in the era of universal health coverage

According to a study by Soemantri *et al.,* the National Health Insurance program does not cover all of a respondent's medical expenses, which may limit their ability to collaborate on healthcare-related projects. This results in some referral appointments or medical exams not being completed even though they are requested by doctors. Health professionals now view working with the National Health Insurance scheme as a learning opportunity despite these obstacles. Opportunities to coordinate and work together were made possible by their discussion of the issues they faced [27].

Establishing an interprofessional collaborative practice in a hospital

Studies have demonstrated the advantages of IPCP for the provision of healthcare services, both in hospitals and in the community. Despite the high perceived level of collaboration at a hospital, the results of this study nonetheless point to three key areas that must be taken care of when developing an interprofessional collaborative practice.

Collaboration issues arise as a result of communication challenges because it is quite possible that messages will not get delivered or there will be misunderstandings. Through

communication, different professions will have more chances to comprehend one another's roles, harmonize their perceptions of the objectives and values of healthcare services, and regularly communicate the standards of practice for each profession. It appears that health professionals understand the value of excellent communication. For better patient care integration and interprofessional communication, the SOP of various professions may need to be reviewed at the organizational level.

Interpersonal skills

Conflicts between individuals and between professionals are another barrier to IPCP. The interpersonal behaviors of a person may also influence how the healthcare team collaborates. In IPE and IPCP, Oandasan (2005) and Freeth and Reeves (2004) suggested that the main components of success are the individual's readiness to participate in teamwork, awareness of the responsibilities and expectations of other health professions, as well as passion and drive. Roles distribution [28,29].

In the context of healthcare services, IPCP refers to a procedure where experts from many fields work together to deliver comprehensive and integrated healthcare services. One form of IPCP that was observed more frequently in the current study was advising patients to see another doctor or health professional; however, this was only done when it was necessary to refer a patient to a physiotherapist, dietician, or other specialist. Additionally, the FGD results do not provide any light on whether healthcare providers work together to create discharge plans for their patients. Direct communication between medical experts is essential for avoiding situations when drugs are prescribed twice or discharge plans are different.

Purnasiwi *et al.* conducted a systematic review on the implementation of patient services and the effects of interprofessional collaboration. Their meta-analysis demonstrates the advantages of interprofessional cooperation. In comparison to a single profession in service provision, interprofessional education improves better collaboration between care professional specialists. The use of interprofessional collaboration has a number of advantages, including improving patient safety, quality of life, lowering the risk of falls, avoiding medication errors, and improving the patient's functional status. geriatric patients. In comparison to the control group, the intervention group received patient care using an interdisciplinary team paradigm, which resulted in higher quality of life scores across all physical, mental, and social domains. The investigation revealed that fostering effective professional collaboration requires three factors: regular meetings, effective professional communication, and leadership support. Regular gatherings, competent leadership, and good communication can encourage productive teamwork and boost patient satisfaction [30].

Improved patient care is another advantage of interprofessional collaboration, according to a study by Wietholter *et al.* In this study, practicing nurses who responded to a survey before participating in a simulation involving an adult medicine patient with pain and functional status concerns are used to test the strategy. The simulation had nurses performing a patient evaluation, interprofessional clinical rounds with a doctor and a pharmacist, and then a debriefing session. Then they discovered that just one IPCP simulation-based encounter could have a favorable impact on nurses' views toward interprofessional care and the responsibilities that other disciplines play in the provision of patient care [31]. A previous study also concluded that interprofessional collaboration can increase the safety of the treatment. Working in a multidisciplinary team can allow for a decrease in drug-related problems and also reduce problems related to the provision of services by several professions [32,33].

The study by Irajpor et al. showed that, in contrast to single-profession education, in which people learn solely in their profession, interprofessional education increases interprofessional collaboration by promoting various health professions. Therefore, interprofessional education in medication safety programs can lower medication errors and increase patient safety in ICUs [34]. **Table 1** summarizes the recent literature on interprofessional collaboration in patients care.

Table 1. Previous Studies and Reviews On Interprofessional Collaboration In Patients Care

First author, Year, Country	Study Type	Aim of study	Main findings
Carradore, *et al.* 2021, Italy [36]	A questionnaire-based cross-sectional study	To measure the level of collaboration between different healthcare workers.	According to the IPC scale, doctors exhibit the highest level of professional collaboration, which is consistent with the findings of other research in the literature.
Patima, *et al.* 2020, Indonesia [22]	Cross-sectional	To analyze the most determinant factors associated with the implementation of Interprofessional Collaboration (IPC) at Labuang Baji General Hospital.	The findings show that communication, trust and respect, administrative support, culture, law and regulations, and budget are the key determinants influencing the implementation of IPC.
Bollen A, *et al.* 2019, Australia [37]	Systematic review and meta-analysis	The aim of this study is to identify the factors that influence interprofessional collaboration between general practitioners (GPs) and community pharmacists (CPs).	Encourage GPs and CPs to collaborate with other professionals by encouraging co-location, co-education to better understand each group's professional capabilities, and the use of suitable technologies to improve communication between the two groups of professionals.
Fathya, *et al.* 2021, Indonesia [38]	Mixed methods-sequential explanatory design	To determine the implementation of IPCP and various factors related to IPCP in teaching hospitals.	A poor knowledge of IPCP may be the cause of the perception that it has been applied effectively. Regarding stereotypes, hierarchical culture, interprofessional communication, and regulation, we still discovered obstacles to implementing IPCP.
Soemantri, *et al.* 2019, Indonesia [27]	Mixed-methods design with qualitative and quantitative approaches	To measure interprofessional collaborative practice (IPCP) and explore the factors associated with its implementation in a newly established teaching hospital in Indonesia.	In this hospital, the significance of IPCP has been acknowledged, with impacting variables like leadership, interpersonal/ interprofessional interactions, and

			written policies on staff job distribution. This study recommends that an IPCP system must be implemented as soon as possible in a hospital, ideally before power differentials become too significant.
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Purnasiwi, *et al.* 2021, Indonesia [30]	Literature review	To find out about the effect of implementing interprofessional collaboration on patients	Interprofessional Collaboration (IPC) is a partnership between individuals with various professional backgrounds who work together to address patient health issues and implement patient-centered professional healthcare services.
Irajpour, *et al.* 2019, Iran [34]	Quasi-experimental method (single group, before and after)	To investigate the effect of interprofessional education of medication safety programs on medication errors specifically among	Patient safety in intensive care units can be improved through interprofessional education in drug safety programs.

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		physicians and nurses working in Intensive Care Units (ICUs).	
Köberlein-Neu, *et al.* 2016, Germany [33]	The cluster-randomized trial using a stepped wedge design	The aim of the study is to evaluate the effectiveness of interprofessional medication management for multimorbid patients.	Collaboration between healthcare professionals improved pharmaceutical safety. Working across disciplinary lines helped to reduce drug-related issues and raised issues that weren't under the primary care doctor's attention.
Findyartini A, *et al.* 2019, Indonesia [39]	Mixed-methods - explanatory sequential design, with instrument CPAT.	To identify the perceptions of the current workforce towards IPCP and explore the challenges and barriers associated with socio-cultural values and other factors that could potentially affect the implementation of IPCP.	Some differences could be attributed to professional background, length of work experience, and age. Factors at the organizational group and individual levels contributed to IPCP in the primary care setting. They include socio-cultural factors such as uncertainty avoidance tendency, power differentials, and collectivist culture.

CONCLUSIONS

In summary, interprofessional collaboration plays a crucial role in healthcare by promoting comprehensive, patient-centred care. Effective IPC requires open communication, mutual respect, and a shared understanding of roles. Its implementation brings numerous benefits, such as improved patient safety and outcomes, as well as increased job satisfaction among healthcare professionals. However, barriers exist that need to be addressed through education, training, and organisational support. Overall, IPC is a vital component of high-quality patient care and requires continuous commitment from all team members.

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