Original Article

Journal of Advances in Medical Education & Professionalism

Factors Influencing the Implementation of Interprofessional Collaborative Practice in Teaching Hospital Setting: A Mixed-Method Study

IRAWATY DJAHARUDDIN[1,2,3*], MD, PhD; IRWIN ARAS[1], MD, PhD; RINA MASADAH[1], MD, PhD; IRAWAN YUSUF[1], MD, PhD; IRFAN IDRIS[1], MD, PhD; HAERANI RASYID[1], MD, PhD; BERTY NELWAN[1], MD, PhD

[1]*Department of Medical Education, Faculty of Medicine, Hasanuddin University, Makassar, Indonesia;* [2]*Department of Pulmonology and Respiratory Medicine, Faculty of Medicine, Hasanuddin University, Makassar, Indonesia;* [3]*Dr. Wahidin Sudirohusodo General Hospital, Makassar, Indonesia*

Introduction: Health service in the current global era requires health workers to provide qualified service, this also applies to teaching hospitals. Collaboration between several professions involved (doctors, nurses, and pharmacists) in an interprofessional collaboration system is needed in providing such service. Factors influencing interprofessional collaboration is unique to each health care center. The purpose of this study was to determine the factors that influence the implementation of interprofessional collaborative practice among health workers in Dr. Wahidin Sudirohusodo General Hospital.

Methods: This is a mixed-method explanatory sequential design study, utilizing quantitative and qualitative data. Quantitative data were obtained from the Indonesian-validated Collaborative Practice Assessment Tool (CPAT) questionnaire. CPAT in Indonesian language has been validated in previous research by Findyartini, et al. in 2019 in Indonesian population. The questionnaire was internally validated with the study population with Cronbach alpha of 0.812. All health care professionals meeting the selection criteria were enrolled for the quantitative study. The questionnaire was given to 152 health professionals enrolled as research subjects, including nutritionists, nurses, doctors, pharmacists, and medical rehabilitation specialists serving in Dr. Wahidin Sudirohusodo Hospital for >3 years. Five participants with highest and lowest CPAT score from each profession were invited for FGD entitled "Exploring factors involved in interprofessional collaboration in Wahidin Sudirohusodo General Hospital" and divided into 2 groups according to the CPAT score. The score from each subscale in the questionnaire is obtained for each research subjects and the median is compared among each profession group using Kruskall-Wallis test significant to a p value of <0.05. Qualitative data as recording transcript is acquired from FGD; the transcript was then coded into several general themes by 2 of the authors and was discussed using thematic analysis using MaxQDA.

Results: Research subjects were predominantly women (121 respondents (79.6%)), 32.9% were nurses, and most of the healthcare professional (81 subjects (55.1%)) have been working for >10 years. Among profession groups (Doctors, Pharmacists, Medical Rehabilitation Specialists, Nutritionists, and Nurses), difference in score distribution (P<0.05) was found in relationships among team members (40 vs 39 vs 39.5 vs 36 vs 42, P<0.001), barriers to team collaboration (10 vs 18.5 vs 14 vs 18 vs 10, P<0.001), and leadership (20 vs 20 vs 23 vs 20 vs 20, p 0.045). From the FGD, factors influencing interpersonal collaborative practice are leadership factors, system/rule factors, and personal factors.

*Corresponding author:
Irawaty Djaharuddin, MD;
Perintis Kemerdekaan KM 11
Tamanlarea,
Postal code: 90231
Makassar, Indonesia
Tel: +628 11447082
Email: irawatydjaharuddin@unhas.ac.id

Please cite this paper as:
Djaharuddin I, Aras I, Yusuf I, Idris I, Masadah R, Rasyid H, Nelwan B. Factors Influencing the Implementation of Interprofessional Collaborative Practice in Teaching Hospital Setting: A Mixed-Method Study. J Adv MedEducProf.2023;11(4):213-221. DOI: 10.30476/JAMP.2023.98987.1821.

Received: 27 May 2023
Accepted: 29 July 2023

Conclusion: This research showed that personal, system/organizational and leadership factors influence the implementation of interprofessional collaboration. In this study, there is a different perception regarding relationships among team members, barriers to team collaboration, and leadership among profession group.

Keywords: Interprofessional relations; Practice; Teaching hospital; Leadership

Introduction

Whereas qualified healthcare service is required in global era, fragmentation in health service delivery is still a global problem in health development in almost all countries. Healthcare professionals are required to provide a comprehensive and patient-centered care as healthcare problems become increasingly more complex. Interprofessional collaboration practices is required in implementing effective collaboration among healthcare professional (1). Interprofessional collaboration (IPC) is a partnership between health workers with different professional backgrounds who work together to solve problems, provide healthcare services, and achieve common goals. IPC is implemented to achieve goals and provide mutual benefits for all professions involved (2).

Healthcare workers must apply satisfactory collaborative practices resulting in comprehensive healthcare service that could improve patient safety in the hospital (3). Quality service is a result of interprofessional collaboration among doctors, nurses, and pharmacists (4). Several factors can affect the implementation of interprofessional collaboration. Traditional IPC is implemented under the assumption that doctors are the sole leaders and nurses, pharmacists and other professions act under doctors' order. However, current concept of IPC requires an equivalent and interconnected role between professions. Adequate interpersonal communication skills resulting in effective communication is vital in conveying important information. Different educational background and limited understanding of individual profession could negatively affect communication (5). Ineffective communication, stereotyping, and professional domination are indicators of inequalities in IPC and should be overcame in order to avoid negative impacts to the patients (6).

Objective assessment of collaborative practice using a validated questionnaire and the exploration of factors involved is important in improving healthcare service. The aim of this study is to know the factors influencing implementation of IPC practice in teaching hospital setting.

Methods

The research was conducted in Dr. Wahidin Sudirohusodo Hospital during January–March 2023. The study population of quantitative study consisted of healthcare professionals, including nutritionists, nurses, doctors, pharmacists, and medical rehabilitation specialists serving for more than 3 years in Dr. Wahidin Sudirohusodo Hospital.

This research uses a mixed-method explanatory sequential design, with quantitative and qualitative approaches. Quantitative study is carried out using the Validated Indonesian Version of Collaborative Practice Assessment Tool (CPAT) questionnaire, including 8 subscales consisting of 53 questions. CPAT in Indonesian language has been previously validated by Findyartini, et al. (7, 8) to Indonesian respondents, and internally validated in study population with a Cronbach alpha of 0.813. The questionnaires were given to research subjects to assess their perception of health professionals' attitudes towards IPC. Each question is marked 1-5 according to the participant's response (1 for strongly disagree-5 for strongly agree, except for negative questions; Items 10, 11, 12, 13, 14, 33, and 34 were reversibly marked (1 for strongly agree-5 for strongly disagree) and central distribution being calculated and subsequently analysed using IBM® *Statistical Package for Social Science* (SPSS)® version 25 for Windows. Normality test for data was performed using Kolmogorov-Smirnov test and normally distributed data was presented as mean and not normally distributed data was presented as median. Score difference among profession groups is analysed for each subscale using Kruskal-Wallis test. The difference is considered significant to a $P<0.05$.

The research was then continued with qualitative study with Focused Group Discussion (FGD) entitled "Exploring factors involved in interprofessional collaboration in Wahidin Sudirohusodo General Hospital". Minimum sample size is determined as 12. The sample was taken until saturation was achieved. Five people with highest and lowest CPAT score from each profession were invited for FGD and divided into 2 groups according to the CPAT score. FGD were

carried out in 60-90 minute-duration to deeply explore the implementation and obstacles of collaborative practice.

Data Analysis

Numerical data obtained from CPAT questionnaires were analyzed in univariate and bivariate analysis using IBM® SPSS® version 25 for Windows software. Normality of the quantitative data was determined using Kolmogorov-Smirnov test. Univariate analysis was performed to identify the characteristics of the respondents, while bivariate analysis was used to compare values obtained for each subscale between groups of respondents.

Recording acquired from the FGD was translated into an interview transcript by independent third-party data collector and the accuracy was ensured by FGD facilitator. The transcript was then coded into several general themes independently by two authors and was analyzed using thematic analysis with MaxQDA.

Ethical Consideration

This study was done by the ethical standards of The Council for International Organization of Medical Science (CIOMS) Geneva and approved by Hasanuddin University Institutional Review Board with the code of 79/UN4.6.45.31/PP36/2023. Participants were informed about the objectives and purpose of the study. They were invited to sign an informed consent if they agreed to participate in the study. The participants were assured that participation in the study was voluntary, and they could withdraw from the study whenever they wished.

Results

From the study population, 152 subjects met the inclusion criteria. Table 1 shows baseline characteristic of research respondents.

Most of the research participants were female (n:121, 79.6%). Fifty participants (32.9%) were nurses, 29 participants (19.1%) were doctors, 29 participants (19.1%) were nutritionists, 24 (15.8%) were nurses, and 20 (13.2%) were medical rehabilitation specialists. Most of the respondents had been working over 10 years (n: 81, 55.1%), 36 (24.5%) respondents had been working for 5–10 years, and 30 respondents (20.4%) had been working for 1–5 years.

Table 2 shows the results of the assessment based on the results of the CPAT questionnaire. There were significant differences among professions in 3 subscales; relationship between team members (P<0.001), barriers in team collaboration (P<0.001), and leadership (P=0.045). In the first subscale, relationship among team members with max subscale score of 45, there was a significant difference of subscale score distribution among profession groups, with the nurses having the highest median score of 42.00 (37.75-45.00), followed by doctors 40.00 (36.50-45.00), medical rehabilitation specialists 39.50 (36.00-44.00), pharmacists 39.00 (36.00-44.75), and nutritionists 36.00 (35.00-41.00), P=0.007. In the second subscale, barriers to team collaboration, doctors and nurses perceived lower barrier to collaboration with median score of 10.00 (7.00-13.00) for doctors and 10.00 (9.00-13.00) for nurses, and pharmacist perceived more barrier to team collaboration with median score of 39.00 (36.00-44.75), P<0.001. In subscale 6, leadership, doctors had a median score of 20.00 (16.00-21.50), pharmacists 20.00 (19.25-21.75), medical rehabilitation specialists 23.00 (20.00-24.00), nutritionists 20.00 (20.00-24.50), and nurses 20.00 (20.00-24.25), with a P=0.045.

From the FGD, several healthcare workers feel that they are not working in a collaborative team. In the FGD, several opinions surfaced:

"But the problem is that the collaborative team

Table 1: Characteristics of research respondents

Characteristics	Total	Percentage
Gender		
Male	31	20.4%
Female	121	79,6%
Profession		
Nutritionist	29	19,1%
Nurse	50	32,9%
Doctor	29	19,1%
Pharmacists	24	15,8%
Medical rehabilitation	20	13,2%
Working duration		
1-5 years	30	20,4%
5-10 years	36	24,5%
>10 years	81	55,1%
Total	152	100%

Table 2: Quantitative analysis of 8 subscales in Indonesian CPAT Questionnaire

Subscale	Median (Q1-Q3)					
	Doctor (n=29)	Pharmacist (n=24)	Medical Rehab (n=20)	Nutritionist (n=29)	Nurses (n=50)	P
Relationships among team members (max score 45)	40.00 (36.50-45.00)	39.00 (36.00-44.75)	39.50 (36.00-44.00)	36.00 (35.00-41.00)	42.00 (37.75-45.00)	0.007*
Barriers to team collaboration (max score 25)	10.00 (7.00-13.00)	18.50 (13.25-20.00)	14.00 (11.25-23.25)	18.00 (10.50-22.00)	10.00 (9.00-13.00)	<0.001*
Team relationships within the community (max score 25)	15.00 (10.50-16.50)	16.00 (16.00-17.75)	17.00 (15.00-18.00)	16.00 (14.00-18.50)	15.50 (13.75-19.00)	0.173
Team coordination and organization (max score 70)	58.00 (54.00-67.00)	56.00 (56.00-62.50)	60.00 (56.00-66.50)	56.00 (51.00-64.00)	62.00 (56.00-68.25)	0.066
Decision making and conflict management (max score 10)	7.00 (6.00-9.00)	8.00 (8.00-9.00)	8.00 (7.25-9.00)	8.00 (7.00-9.50)	8.00 (6.75-9.25)	0.123
Leadership (max score 25)	20.00 (16.00-21.50)	20.00 (19.25-21.75)	23.00 (20.00-24.00)	20.00 (20.00-24.50)	20.00 (20.00-24.25)	0.045*
Missions, goals, and objectives (max score 45)	37.00 (36.00-41.00)	36.00 (36.00-40.00)	41.00 (36.00-43.00)	36.00 (34.00-42.50)	39.50 (36.00-44.00)	0.306
Patient involvement, responsibility, and autonomy (max score 25)	20.00 (19.00-24.00)	20.00 (19.25-21.00)	21.00 (20.00-24.00)	20.00 (19.50-24.00)	21.00 (20.00-24.00)	0.378

*Significant if P<0.05

discussed doesn't occur in practice, I don't feel like working in a collaboration" (FGD: Group 2 Health Care Wahidin; Position: 566).

The interview transcript acquired from the FGD was coded into several general theme thought to influence interprofessional collaborative practice as follow:

Leader factor

In a collaboration, each team has a leader. In an effective collaboration, team members should understand each other's role and instructions given by the leader. However, sometimes the leaders don't give direct, clear instructions or are not directly involved in field practice. Like the comments below:

"The leaders are not directly involved in patients' service" (FGD: Group 1, Health Care Wahidin; Position: 451).

System/rule factors

Systems or rules have a role in a collaborative team. A team works in accordance with the system and rules that apply. The system governs the health professionals' roles in IPC.

"There is a new rule in computer system in which nutritional screening has to be filled in less than 24 hours. However, the nutritionists have no shift duties on Saturday and Sundays. So, the system also makes it difficult for us to collaborate with other healthcare workers." (FGD: Group 1, Health Care Wahidin; Position: 641).

Personal factor

Every person has different personal values and personalities. Understanding each other in collaborative practice is important for a collaborative team. Open-mindedness and willingness to accept opinions in teamwork can improve the quality of patient care. Moreover, a strong commitment from each profession is vital in an inter-professional collaborative team. There are several responses from respondents related to personal factors, including:

- Active communication

Communication is important. There are several opinions regarding communication in teamwork:

"Well, in terms of communication, communication among doctors, nurses, pharmacists, and nutritionists are good" (FGD: Group 1 Health Care Wahidin; Position: 100).

"That's why, indeed, the communication is necessary if, for example, the doctor is unable to directly examine the patients, he should notify the nurses and delegate the duty to somebody else." (FGD: Group 1 Health Care Wahidin; Position: 369).

"Communication among us and other professions is good. It's just a matter of how each profession performs its own roles." (FGD: Group 1 Health Care Wahidin; Position: 170).

"If there are problems, the most important thing is that we are eager to try to do it better next time. It's okay if the attending physician could not directly examine the patient, but we as the nurse should try to communicate and remind the attending" (FGD: Group 1 Health Care Wahidin; Position: 188).

- Not faultfinding

In a collaborative team, members should not focus on accusing other members or finding who to blame when problem occurred. This can lead to elevated egos between each profession of health workers, an obstruction to cooperative

relationship within the team. Opinion concerning this matter is as follow:

"[Blaming others] is not correct. Well, so if we collaborate, we have to be able to accept that problem occurred and solved. It finishes there. Focus on looking for the solution, not on finding who to blame." (FGD: Group 2 Health Care Wahidin; Position: 413).

● Health workers must humbly receive opinions from other team members.

In a collaborative team, receiving input and criticism leading to self-introspection is important to improve service quality.

"At times we got confused on whom to follow, and the instruction to keep on changing. [In a collaboration], we should be patient; and [all the efforts] we do is for the patients' sake. And, we have to be able to admit when we're wrong and receive feedback and corrections." (FGD: Group 2 Health Care Wahidin; Position: 475).

● Strong commitment to collaboration

In a collaborative team, commitment from each profession to work together in order to achieve a common goal in terms of providing the best service at the hospital is essential. Opinion concerning this matter is as follow:

"*I think we need a meeting to ensure we have the same understanding and perception; once a month is enough." (FGD: Group 2 Health Care Wahidin; Position: 356).*

"Commitment [to work together in a team] is important, but it differs in each individual] 4" (FGD: Group 1 Health Care Wahidin; Position: 446).

"We actually should start with a strong commitment to coordinate, collaborate, and communicate [with other team members] to make it work. Interprofessional collaboration is important especially in problematic patients" (FGD: Group 1 Health Care Wahidin; Position: 497).

● Understanding and completing ones' responsibilities or tasks

In a collaborative team, each member has responsibilities and duties to implement in accordance with their respective professional standards such that there is no overlapping in providing patients' care. Opinion concerning this matter is as follows:

"If each of us does their main task and function and mind their authority [the collaboration will work out well]. Furthermore, [everyone should] work according to standards, whether it's the nurses, residents, or attending physicians" (FGD: Group 1 Health Care Wahidin; Position: 100).

"There should be [a practice called] clinical pharmacy that explains every drug given to the patients, it does not work out in the practice." (FGD: Group 1 Health Care Wahidin; Position: 126).

"There are standards that we must carry out in a profession. For example, as a nurse, I have to do patients' assessment, I have to put an IV line, and I do it according to the standards. Yet, there are no certain standards governing [each profession's] authority" (FGD: Group 1 Health Care Wahidin; Position: 133).

● Proactively help each other

A collaborative team must work together and help each other among members of other health professions. Mutual support and assistance between health professionals in order to provide the best service at the hospital is needed. Opinion concerning this matter is as follows:

"[Resident] Doctors should stay at the nurse station and not only come when called. It is difficult for us to call and wait for the doctors to come and examine the patients. Collaborative team means several professions work together, therefore all professions, including doctors, nurses, and pharmacists should stay and do not leave the shift's post" (FGD: Group 1 Health Care Wahidin; Position: 112).

Discussion

Most of the research respondents were female. This is consistent with research conducted by Yusra, et al., which reported that the majority of the respondents were female (7). The research subjects in Findyartini, et al. was also dominated by females (8) and so were the majority of the respondents in a study by Patima, et al. (9) and Bradley, et al. (10).

The majority of respondents had served in Dr. Wahidin Sudirohusodo Hospital for more than 10 years. This is in line with a study conducted by Findyartini, et al. which found that most of the respondents had a working period of >10 years. The authors also stated that the length of working period influences the respondents' perception towards IPC practice (8).

The results of this study shows the scores for each subscale of the CPAT questionnaire adjusted for the health worker profession. The data shows that the 3 subscales: the relationship among team members, barriers to teamwork, and leadership were perceived differently in the different professions. Relationship among team members become an important factor in collaboration between health worker professions. Research conducted by Meradiana found that the relationship between team members is an important factor in the perception of health workers about collaboration between professions.

Each profession must understand its roles, duties, and responsibilities. This is one of the prerequisites for creating mutual trust and being able to build good relationships between health professionals, in accordance with the hierarchy of interprofessional collaboration practices, namely patient-centered, while still understanding the roles, duties, and responsibilities of each health worker in a work team (11). Research by Wiethholer, et al., states that interprofessional relationships in an inter-professional collaboration can improve patient services, and prevent errors that might occur (12). Another study by Köberlein-Neu, et al., stated that the relationship between team members, including interprofessional coordination and collaboration, for example, between doctors and pharmacists, can improve treatment safety. Working in a multidisciplinary team can reduce problems related to treatment and also reduce problems related to the provision of services by several professions (13).

There was a difference of perception among professions regarding barriers to teamwork, with a value of P=0.001. This is consistent with research conducted by Yusra, et al., which obtained a statistically significant difference in perception in barriers to teamwork subscale between doctors and nurses. Nurses perceived more barriers compared to doctors in collaborative practice. In Indonesian culture and medical education, hierarchical structure and socio-cultural factors strongly influence interprofessional collaborative practices. Unfamiliarity regarding nurses' profession and role might also cause this perception, as well as a lack of support from professional organizations in contributing to improving the quality of services in hospitals (14). Barriers to collaboration between professions can occur at the system level, the organizational level, and the level between individuals (15). At the system level, the most frequently reported bottlenecks are funding/ financial (e.g., lack of long-term funding costs or inadequate reimbursement). The organizational level, namely limited human resources, for example, a lack of skilled professionals, causes a higher workload. Lack of professional training in the implementation and support of professional organizations at the inter-individual level, namely the imbalance of leadership between professions due to hierarchical factors between disciplines, especially between doctors and other professional staff at the structural level, and the lack of clarity regarding the functions and roles of each profession within the scope of work. Poor communication is also an obstacle to interprofessional collaboration (11, 16).

There is a statistically significant difference among professions in leadership subscale, with a p value of 0.045. This is in line with the research conducted by Findyartini et al., which found score difference in leadership subscale (8). Another study by Patima et al. stated that leadership has a significant value, as a determining factor in interprofessional collaboration (9). Leadership as an interpersonal element, as well as the attitudes and competencies of health workers, influence forms of interprofessional collaboration. Health professions must consider role boundaries according to cultural and social interactions (17). An effective interprofessional team also requires a skilled leader. Leader competence is multi-determinate. Effective leaders have high levels of emotional intelligence and excel in communication skills. Emotional intelligence contributes to 80% of the success of a leader (18).

One study believes that this concept is highly relevant to leadership in primary health care settings, particularly regarding the division of roles and responsibilities among health professionals according to the needs of individual or community-based health services (19). In a collaborative team, of course, there are members who may have different interests, goals, and experiences, so it becomes a challenge in team collaboration. The team leader must be able to manage these differences and make them a common goal, namely patient safety in the hospital (20). According to Chreim and Bourgeault's role construction theory, the role of health professionals in hospitals is differentiated based on the competence and authority of their respective professions, especially in individual patient services so that within a health care team there must be consensus on leadership and decision-making mechanisms so as to achieve a goal together in terms of patient care in hospitals (17).

Qualitative analysis result showed that personal characteristic of health professionals, such as communication is a determining factor in IPC quality in Dr. Wahidin Sudirohusodo Hospital. This result is in line with Mattesich and Monsey mentioning that there are six factors determining the quality of collaboration, one of which is personal characteristic, mutual respect, mutual belief, and communication (21). Furthermore, Herbert et al. stated that personal quality and skill, such as ability to listen, communicate respect, modesty, and open mindedness (12). Bidwel and Thompson, Dey, et al. and Hashemian, et al. also stated that openness to communication plays a crucial role in the implementation of collaboration (22-24). Furthermore, Degu, et al. also found that interpersonal factor strongly

affect the implementation of interprofessional collaboration (25).

Loffler, et al., Varela, et al., and Zilich, et al. stated that mutual belief and respect are determining factors in IPC (26-28). Hughes and McCann and Pottie, et al., found that eagerness of health professional to help each other is a crucial factor in IPC. Above-mentioned studies showed that collaboration depends on personal quality of each individual involved (29, 30)

That the personal characteristic is the main determinant to IPC in FGD could be explained by collectivistic-individualistic culture theory. The subjects involved in the FGD lived in collectivistic cultural background. People live in collectivistic cultural background put the quality of interpersonal relation first. Collectivistic culture is a culture focusing on group, quality of relationship, and community needs, aiming at achieving common goals (31, 32).

Leader and rule and system factors were also mentioned in qualitative study to play a role in IPC in our hospital. Rieck, et al. and Weissenborn, et al. also stated that IPC is determined by the leader's quality (33, 34). Furthermore, Rubio-Valero, et al. and Tan, et al. elaborated that the rule/system factor that is employed in an organization is significant in IPC quality. If the system and rule applies, then healthy collaboration could potentially occur (35, 36).

Effective communication is vital in every collaborative practice. Ineffective communication might lead to misunderstandings, affecting outcomes that become a goal in collaborative practice. Effective communication could result in a greater understanding of each profession's role guidelines, and perceptions toward reaching common goals.

This study also showed that the effective distribution of roles in an organization is crucial in interprofessional collaborative practices. Regarding the mechanism for coordinating and managing human resources, the availability of clear work guidelines and/or written SOPs that are known to all parties will facilitate coordination and teamwork, because each task that needs to be carried out by each individual/profession could be easily accessed in the above-mentioned documents. This will ultimately lead to an organizational culture that supports collaboration. Therefore, apart from improving communication skills and maintaining appropriate interpersonal attitudes and behavior, a clear understanding of the role of each health profession is very important for IPCP. The earlier a person is introduced to their own roles and the roles of others, the easier it is to avoid misunderstandings between health professionals. Any ongoing interprofessional education program has the potential to apply current system settings so that it refers to the ultimate goal of improving the quality of patient care with clear measurable indicators such as patient safety (37).

Limitation

This study used total sampling involving all medical care workers in Dr. Wahidin Sudirohusodo General Hospital meeting the inclusion criteria; however, the sample size is inadequate for regression analysis. A study with a bigger population enabling regression analysis might better explain the factors involved in interprofessional collaboration.

Conclusion

Several important factors play a role in a collaborative team. In this study, there was different perceptions regarding relationships among team members, barriers to team collaboration, and leadership among profession group. Further exploration through FGD supports that IPC practice in our hospital is not yet optimal and leadership factors, system/rule factors, and personal factors hinder the effective IPC. IPC needs to be socialized and its importance needs to be underlined in every healthcare centers.

Authors' Contributions

All authors contributed to the discussion, read and approved the manuscript and agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated resolved.

Conflicts of Interest: None declared.

References

1. WHO. World health statistics 2010. USA: OCHA; 2010.
2. Morgan S, Pullon S, McKinlay E. Observation of interprofessional collaborative practice in primary care teams: an integrative literature review. International journal of nursing studies. 2015;52(7):1217-30.
3. Green BN, Johnson CD. Interprofessional collaboration in research, education, and clinical practice: working together for a better future. Journal of Chiropractic Education. 2015;29(1):1-10.
4. Keith KM, Askin DF. Effective collaboration: the key to better health care. Canadian Journal of Nursing Leadership. 2008;21(2):51-61
5. Lucyda H, Vionalisa, Yecy A. Collaboration of Nurses and Doctor in the Inpatient Room at Arifin Achmad General Hospital of Riau Province. Journal Health Community. 2019;5(3):235-40.
6. Bollen A, Harrison R, Aslani P, van Haastregt JCM. Factors influencing interprofessional collaboration

between community pharmacists and general practitioners - A systematic review. Health sac care community. 2019;27:e189-e212
7. Yusra RY, Findyartini A, Soemantri D. Healthcare professionals' perceptions regarding interprofessional collaborative practice in Indonesia. Journal of Interprofessional Education Practice. 2019;15:24-9.
8. Findyartini A, Kambey DR, Yusra RY, Timor AB, Khairani CD, Setyorini D, et al. Interprofessional collaborative practice in primary healthcare settings in Indonesia: A mixed-methods study. Journal of Interprofessional Education Practice. 2019;17:100279.
9. Patima P, Ridwan Amiruddin R, Pasinring SA, Salmah AU, Saleh A, Rivai F, et al. Determinant factors of interprofessional collaboration in Labuang Baji General Hospital. Medico Legal Update. 2020;20(4):2117-20.
10. Bradley F, Elvey R, Ashcroft DM, Hassell K, Kendall J, Sibbald B, et al. The challenge of integrating community pharmacists into the primary health care team: a case study of local pharmaceutical services (LPS) pilots and interprofessional collaboration. Journal of interprofessional care. 2008;22(4):387-98.
11. Supper I, Catala O, Lustman M, Chemla C, Bourgueil Y, Letrilliart L. Interprofessional collaboration in primary health care: a review of facilitators and barriers perceived by involved actors. Journal of public health. 2015;37(4):716-27.
12. Reeves S, Pelone F, Harrison R, Goldman J, Zwarenstein M. Interprofessional collaboration to improve professional practice and healthcare outcomes. Cochrane database of systematic reviews. 2017;6(6):CD000072.
13. Köberlein-Neu J, Mennemann H, Hamacher S, Waltering I, Jaehde U, Schaffert C, et al. Interprofessional medication management in patients with multiple morbidities: a cluster-randomized trial (the WestGem Study). Deutsches Ärzteblatt International. 2016;113(44):741.
14. Hojat M, Gonnella JS, Nasca TJ, Fields SK, Cicchetti A, Scalzo AL, et al. Comparisons of American, Israeli, Italian and Mexican physicians and nurses on the total and factor scores of the Jefferson scale of attitudes toward physician–nurse collaborative relationships. International Journal of Nursing Studies. 2003;40(4):427-35.
15. Rawlinson C, Carron T, Cohidon C, Arditi C, Hong QN, Pluye P, et al. An overview of reviews on interprofessional collaboration in primary care: barriers and facilitators. International Journal of Integrated Care. 2021;21(2):32.
16. Sangaleti C, Schveitzer MC, Peduzzi M, Zoboli ELCP, Soares CB. Experiences and shared meaning of teamwork and interprofessional collaboration among health care professionals in primary health care settings: a systematic review. JBI Evidence Synthesis. 2017;15(11):2723-88.
17. MacNaughton K, Chreim S, Bourgeault IL. Role construction and boundaries in interprofessional primary health care teams: a qualitative study. BMC Health Services Research. 2013;13(1):1-13.
18. Shrivastava S, Martinez J, Coletti DJ, Fornari A. Interprofessional Leadership Development: Role of Emotional Intelligence and Communication Skills Training. MedEdPORTAL. 2022;18:11247.
19. Cameron A. Impermeable boundaries? Developments in professional and inter-professional practice. Journal of Interprofessional Care. 2011;25(1):53-8.
20. Morley L, Cashell A. Collaboration in health care. Journal of Medical Imaging Radiation Sciences. 2017;48(2):207-16.
21. Mattessich PW, Monsey BR. Collaboration: what makes it work. A review of research literature on factors influencing successful collaboration. USA: ERIC; 1992.
22. Thompson L, Bidwell S. Space, time, and emotion in the community pharmacy. Health Place. 2015;34:251-6
23. Dey RM, de Vries MJ, Bosnic-Anticevich S. Collaboration in chronic care: unpacking the relationship of pharmacists and general medical practitioners in primary care. International Journal of Pharmacy Practice. 2011;19(1):21-9
24. Hashemian F, Emadi F, Roohi E. Collaboration between pharmacists and general practitioners in the health care system in the Islamic Republic of Iran. East Mediterr Health J. 2016;22(6):375-82.
25. Degu T, Amsalu E, Kebede A, Adal O. Inter-professional collaboration and associated factors among nurses and physicians in specialized public hospitals, the northwest, Ethiopia: mixed method multi-centered cross-sectional study. BMC Health Services Research. 2023:23(1):286.
26. Löffler C, Koudmani C, Böhmer F, Paschka SD, Höck J, Drewelow E, et al. Perceptions of interprofessional collaboration of general practitioners and community pharmacists-a qualitative study. BMC health services research. 2017;17:1-7.
27. Dupotey Varela NM, Oliveira DRd, Sedeño Argilagos C, Oliveros Castro K, Mosqueda Pérez E, Hidalgo Clavel Y, et al. What is the role of the pharmacist?: physicians' and nurses' perspectives in community and hospital settings of Santiago de Cuba. Brazilian Journal of Pharmaceutical Sciences. 2011;47:709-18.
28. Zillich AJ, McDonough RP, Carter BL, Doucette WR. Influential characteristics of physician/pharmacist collaborative relationships. Annals of pharmacotherapy. 2004;38(5):764-70.
29. Hughes CM, McCann S. Perceived interprofessional barriers between community pharmacists and general practitioners: a qualitative assessment. British Journal of General Practice. 2003;53(493):600-6.
30. Pottie K, Farrell B, Haydt S, Dolovich L, Sellors C, Kennie N, et al. Integrating pharmacists into family practice teams: physicians' perspectives on collaborative care. Canadian Family Physician. 2008;54(12):1714-7.
31. Cherry K. Individualistic cultures and behavior. USA: VeryWellMind Awards. 2017.
32. Erdogan B, Bauer TN. Differentiated leader–member exchanges: The buffering role of justice climate. Journal of Applied Psychology. 2010;95(6):1104.
33. Rieck AM. Exploring the nature of power distance on general practitioner and community pharmacist relations in a chronic disease management context. Journal of interprofessional care. 2014;28(5):440-6.
34. Weissenborn M, Haefeli WE, Peters-Klimm F, Seidling HM. Interprofessional communication between

community pharmacists and general practitioners: a qualitative study. International Journal of Clinical Pharmacy. 2017;39:495-506.
35. Rubio-Valera M, Jové AM, Hughes CM, Guillen-Solà M, Rovira M, Fernández A. Factors affecting collaboration between general practitioners and community pharmacists: a qualitative study. BMC Health Services Research. 2012;12:1-10.
36. Tan KT, Adzhahar FBB, Lim I, Chan M, Lim WS. Transactive memory system as a measure of collaborative practice in a geriatrics team: implications for continuing interprofessional education. Journal of Interprofessional Care. 2014;28(3):239-45.
37. Soemantri D, Kambey DR, Yusra RY, Timor AB, Khairani CD, Setyorini D, et al. The supporting and inhibiting factors of interprofessional collaborative practice in a newly established teaching hospital. Journal of Interprofessional Education Practice. 2019;15:149-56.