






# Exploring Challenges and Opportunities in Interprofessional Collaboration of Health Workers during COVID-19 Pandemic at the Public Health Center in Bantul Regency

Ari Susiana Wulandari<sup>1\*</sup>, Eva Nurinda<sup>1</sup>, Imram Radne Rimba Putri<sup>2</sup>, Erni Samutri<sup>3</sup>, Rahma Sakti Oktavia<sup>1</sup>, Najla Firsty Shofia Ahmad<sup>1</sup>, Vina Awallina Diroh<sup>1</sup>

<sup>1</sup>Department of Clinical Pharmacy, Faculty of Health Science, Alma Ata University, Kasihan, Yogyakarta, Indonesia; <sup>2</sup>Department of Hospital Administration, Faculty of Health Science, Alma Ata University, Kasihan, Yogyakarta, Indonesia; <sup>3</sup>Department of Nursing, Faculty of Health Science, University Alma Ata, Kasihan, Yogyakarta, Indonesia

## Abstract

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**\*Correspondence:** Ari Susiana Wulandari, Department of Clinical Pharmacy, Faculty of Health Science, Alma Ata University, Kasihan, Yogyakarta, Indonesia. E-mail: arisusianaw@almaata.ac.id  
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**BACKGROUND:** The coronavirus disease-19 (COVID-19) pandemic is of special concern in all parts of the world, including Indonesia. The number of active cases also continues to increase in most provinces in Indonesia, especially in the Special Region of Yogyakarta. This condition requires health workers to collaborate well in suppressing and handling COVID-19 patients.

**AIM:** The aims of this study were to find out how collaboration occurs between health workers in handling COVID-19. This study identifies opportunities and challenges for Interprofessional Collaboration (IPC) health workers at the Primary Health Center of Bantul Regency.

**METHODS:** The design of this study was a cross-sectional study. We used the purposive sampling method to recruit participants. This study was followed by 200 participants who were health workers at the Primary Health Center in Bantul Regency. We used a questionnaire as the instrument. The questionnaire consists of four dimensions of IPC such as knowledge, collaboration, service, and the role of a pharmacist. The data obtained were statistically analyzed using Chi-square and Spearman.

**RESULTS:** The result showed that IPC health worker at Health Primary Center of Bantul was categorized as good (45%). However, IPC at the Health Primary Center is still not optimal. There were top three obstacles in collaborating, namely, lack of time, perception of complicated bureaucracy, and lack of trust from health workers about their knowledge and skill. Based on spearman test p-value for age, gender, education level, years of service, occupation were 0.764; 0.732; 0.808; 0.189; 0.582; 0.746. This result showed that the sociodemographic characteristics of the participants did not significantly affect the IPC ( $P > 0.05$ ).

**CONCLUSIONS:** The main key in practicing IPC was building a good work team, good communication and relationship, responsibility for each other's, keep learning from each other and being critical, and maintaining the ethics of each profession. Thus, effective and efficient collaboration will be established.

## Introduction

Figure 1 presents an overview about the Interprofessional Collaboration (IPC) category at the public health center in Bantul Regency. All of the respondents at public health center of Bantul Regency were categorized as good, fair, and poor. Figure 2 describes the obstacles encountered by health workers in IPC implementation at public health center of Bantul.

Coronavirus disease 19 (COVID-19) has become a pandemic around the world, including in Indonesia. It is caused by the SARS-CoV-2 virus, which is transmitted from animals to humans, as well as from humans to humans through droplets or direct contact with the sufferers [1].

This pandemic has become a particular concern in Indonesia, with cases that continue to increase. The number of COVID-19 cases as of February 17, 2021,

reached 1.243.646 with 9.687 new cases added [2]. In the number of COVID-19 cases in Yogyakarta Province, in July 2021, the number of positive confirmed cases was 92.084. The number of confirmed positive cases in Bantul Regency is 8269 cases, Sleman is 7042 cases, Yogyakarta city is 5412 cases, Gunung Kidul is 4217 cases, and Kulon Progo is 2332 cases. These data show that Bantul Regency is the highest number of COVID-19 cases in the Special Region of Yogyakarta [3].

The high number of COVID-19 cases requires good collaboration from medical personnel or health workers in serving patients and handling these cases. If it is implemented properly, a collaboration between health workers will reduce the number of complications, reduce the spread of COVID-19, reduce mortality rates, and increase patient satisfaction [4].

Health workers are at the frontline of the COVID-19. This pandemic becomes a new challenge

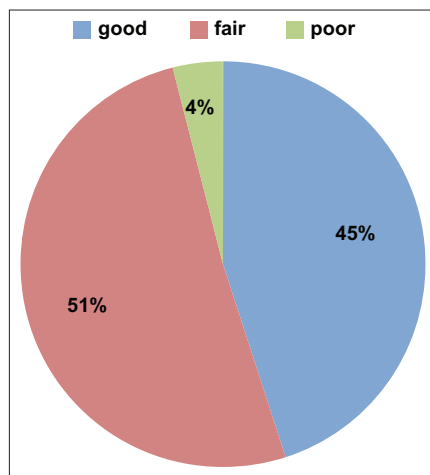


Figure 1: The Interprofessional Collaboration category at the public health center in Bantul Regency

for health workers to improve health services to the community by carrying out good coordination and cooperation to solve health problems during the COVID-19 pandemic. IPC is a collaborative practice that involves many health care workers from different professional backgrounds working closely with patients, families, caregivers, and communities to provide the highest quality care across the continuum [5].

Regular and continuous monitoring are the keys to achieve successful control of COVID-19. IPC is able to provide a more comprehensive approach to prevent the spread of COVID-19, identify causative factors, and provide the best alternative solutions for the patients. The performance of the health-care team can be optimized to achieve good quality and efficient patient care [6]. Primary Health Center is the first health service frequently visited by people to obtain health services. Health services can be considered good if the roles and function of the health workers with different professional backgrounds do not overlap [7]. Research conducted by Pamungkasari and Parwatiningsih proved that it is necessary to develop IPC around the globe, especially in the communication aspect [8]. This

pandemic becomes a new challenge for health workers to improve health services to the community by carrying out good coordination and cooperation to solve health problems during the COVID-19 pandemic. Therefore, a study on the IPC of health workers in handling the COVID-19 at the Primary Health Center needs to be carried out.

## Methods

This is non-experimental research which employed observation (survey) with cross-sectional study and empirical approach. This research has received ethical approval from the Research Ethics Commission of Alma Ata University Yogyakarta, Indonesia. The number of ethical clearance was KE/AA/VI/10490/EC/2021. The data used in this research are primary data taken directly from respondents using an instrument in the form of a questionnaire which was made using Google Forms. The sampling technique chosen was purposive sampling. The independent variable in this study was the sociodemographic characteristics of health workers respondents, while the dependent variable was the IPC. The samples were taken for 2 months from July to August 2021. There were 200 health workers used as respondents who work in public health centers in Bantul Regency, such as Kasihan District, Pleret District, Pajangan District, and Imogiri District. The inclusion criteria in this research were as follows: Willing to be respondents, working as health workers (doctors, dentists, clinical psychology staffs, nursing staffs, midwifery staffs, pharmacy staffs, community health workers, environmental health workers, nutritionists, medical records personnel, and physiotherapists), and aged 22–50 years. Meanwhile, the exclusion criteria were those who resigned, could not fill out the Google form, and did not complete the research questionnaire.

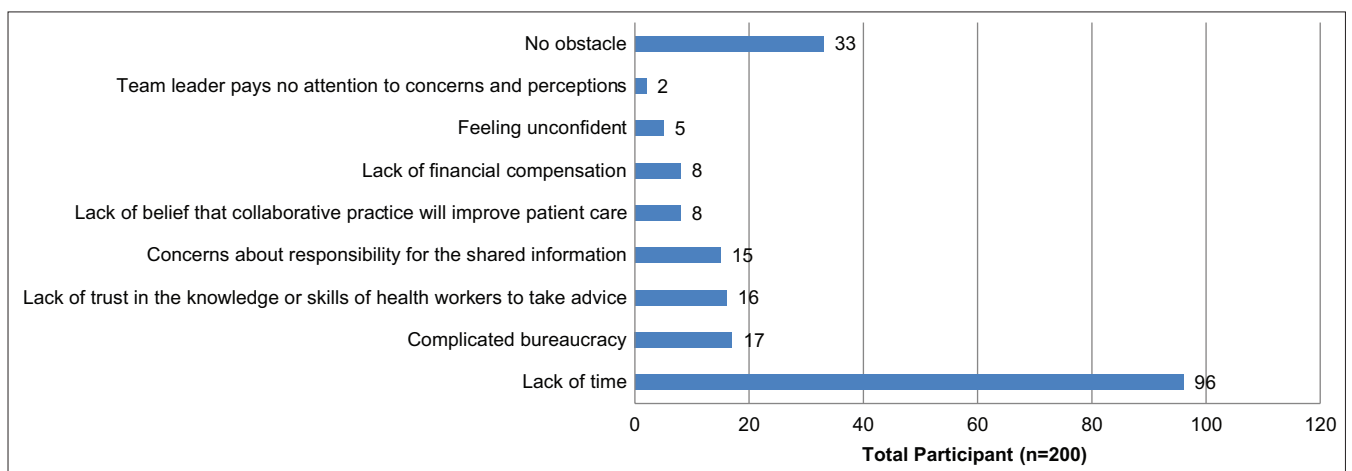


Figure 2: The obstacles of implementation Interprofessional Collaboration health workers at the public health center in Bantul Regency

This research utilized a questionnaire modified from the previous studies, which had been validated and tested for its reliability to 30 people. Based on the validity test result, all questions were considered valid because the  $r$ -count value  $>0.361$ . The reliability test was carried out using Cronbach's analysis technique and with significance level of 5%. The reliability of  $r > 0.666$  was obtained. Thus, it can be concluded that all questions used were reliable.

The IPC questionnaire consists of the respondent's identity such as age, gender, education level, and occupation. The questionnaire contains several dimensions of IPC, including knowledge dimension, collaboration dimension, service dimension, and pharmaceutical role dimension. The design of the questionnaire used a dichotomous scale with yes or no options. The data obtained were then analyzed using a statistical processing application, using the Spearman and Chi-square tests.

## Results

The characteristics of the respondents are shown in Table 1, which contains gender, age, education, occupation, employment status, and years of service.

**Table 1: Characteristics of sociodemographic respondents in conducting interprofessional collaboration of health workers at the public health center in Bantul Regency**

Sociodemographic variables	Number of respondents (n = 200), (percentage)	p-value	
Gender			
Man	25 (12.5)	0.764	
Woman	175 (87.5)		
Age			
Young adult (18–40 years old)	125 (62.5)	0.732	
Middle age (41–<60 years old)	75 (37.5)		
Education			
D3 (Diploma 3)	101 (50.5)	0.808	
D4 (Diploma 4)	22 (11.0)		
S1 (Bachelor's degree)	56 (28.0)		
S2 (Master's degree)	8 (4.0)		
Etc.	13 (6.5)		
Etc.	13 (6.5)		
Years of service			
0–1 years	17 (8.5)	0.189	
2–3 years	14 (7.0)		
3–4 years	3 (1.5)		
4–5 years	5 (2.5)		
>5 years	161 (80.5)		
Etc.	161 (80.5)		
Occupation			
Doctors	24 (12.0)	0.582	
Dentists	10 (5.0)		
Nurses	47 (23.5)		
Midwives	53 (26.5)		
Pharmacists	6 (3.0)		
Pharmacist assistants	10 (5.0)		
Environmental health clerks	7 (3.5)		
Medical record clerks	2 (1.0)		
Physiotherapists	5 (2.55)		
Nutritionists	10 (5.0)		
Public health workers	7 (3.5)		
Etc.	19 (9.5)		
Employment status			
Non-civil servants	37 (18.5)		0.746
Civil servants	163 (81.5)		

In the education information, “others” in the table above refer to professional education and doctoral degrees, while “other occupations” mentioned above

are occupations other than those mentioned. Analysis of the relationship between sociodemographic variables and IPC quality was conducted using Spearman test. Based on the results of the research on the quality of IPC, the respondents at public health center of Bantul Regency were categorized as good, fair, and poor. The distribution of IPC criteria assessment is shown in Table 2.

**Table 2: The distribution of interprofessional collaboration criteria assessment health workers at the public health center in Bantul regency**

Health center	Number of respondents (n = 200)	Categories		
		Good (n)	Fair (n)	Poor (n)
Pleret	20	8	11	1
Kasihani I	17	8	7	2
Kasihani II	13	3	10	0
Jetis II	30	12	16	2
Pajangan	25	10	15	0
Srandakan	15	11	3	1
Imogiri II	25	17	8	0
Bantul II	20	7	13	0
Dlingo II	20	8	10	2
Banguntapan II	15	6	9	0
Total	200	90	102	8

Based on Table 2, it indicated that of the 200 respondents spread across 10 health centers in Bantul Regency, 90 respondents were categorized as good in understanding IPC (45%), 102 respondents were categorized as fair (51%), and 8 respondents were categorized as poor (4%). The IPC questionnaire contains four dimensions: The dimensions of knowledge, collaboration, service, and the role of pharmacy. The Table 3 describes respondent's answers regarding the IPC dimensions of health workers at the Public Health Center of Bantul Regency.

**Table 3: The Distribution of Respondent's Answers Regarding IPC Dimensions of Health Workers at the Public Health Center of Bantul Regency**

IPC dimensions in the questionnaire	Respondents' answer (100%)	
	Correct (%)	Incorrect (%)
Knowledge dimension		
The definition of IPC	96	4
The benefit of IPC	93.5	6.5
Responsibility of IPC	94.5	5.5
Collaboration dimension		
Discussing patient management	32.5	67.5
Understanding	68	32
Overlapping responsibilities	100	0
Health workers know the patient's medical actions	52	48
Service dimension		
Education about COVID-19	6	94
Special room	34	66
Avoiding tasks	23.5	76.5
Limitation on the number of health workers	52	48
Pharmaceutical dimension		
Pharmacy helps in managing side effects	94.5	5.5
Pharmacy chooses drugs	95.5	4.5
Drug dosage adjustment	96	4
Therapy decision-making	98	2

IPC: Interprofessional Collaboration.

IPC at the public health centers has various obstacles in its implementation. Among 200 respondents, 167 respondents (83.5%) encountered obstacles, while the other 33 respondents (16.5%) did not encounter any obstacles in handling COVID-19. Obstacles in collaboration between health workers can lead to actions that will cause harm and danger such as medical errors, unexpected events, and can even threaten the safety of the patients. Table 4 presents the obstacles of health workers regarding the barriers to collaborative practice.

**Table 4: Obstacles encountered by health workers in IPC implementation**

No.	IPC implementation obstacles	Total	Percentage
1	Lack of time	96	48
2	Complicated bureaucracy	17	8.5
3	Lack of trust in the knowledge or skills of health workers to take advice	16	8
4	Concerns about responsibility for the shared information	15	7.5
5	Lack of belief that collaborative practice will improve patient care	8	4
6	Lack of financial compensation	8	4
7	Feeling unconfident	5	2.5
8	Team leader pays no attention to concerns and perceptions	2	1
9	No obstacle	33	16.5
	Total	200	100

IPC: Interprofessional Collaboration.

Based on The Table 4, it can be seen that the biggest obstacle in implementing IPC is lack of time. This condition indicates that each health worker is too busy at work so they don't focus on doing IPC. Communication is an essential key in the implementation of IPC. Communication of health workers at the public health center of Bantul Regency can be carried out in various ways. The most preferred method of communication by health workers can be seen in The Table 5.

## Discussion

Over 200 respondents agreed to IPC identified in Table 1. The sociodemographic variables such as gender, age, education, occupation, employment status, and years of service have no correlation with each p-values of sociodemographic were 0.764; 0.732; 0.808; 0.582; 0.746; and 0.189 ( $p < 0.05$ ). In consequence, there is no significant relationship between the sociodemographic characteristics of the respondents and the quality of IPC health workers at the public health center of Bantul Regency.

Based on the analysis of the data obtained, it can be seen that the IPC at the public health center of Bantul Regency is categorized as good (45%), indicating that the application of IPC is still not optimal. This research was similar with Elis Mawarni, Dachriyanus, Estika Ariany Maisa, and Jufri Al Fajri. Their research entitled "Explanation of Knowledge of IPC in Professional Care Providers at Specialized Hospitals in Jambi Province: A Study." It showed that most of the health worker partnerships were categorized in the good category (55.6%), the cooperation of respondents in conducting IPC in the poor category (50.8%), coordination in the good category (53%), and most of the shared decision-making in the good category (51.7%) [9], [10].

In IPC, the awareness of professional health workers has a main contribution so that IPC can run well. Table 4 shows that the biggest obstacle in implementing IPC is lack of time. Health workers have a workload every day, therefore, they are not optimal to implement IPC. There is a relationship between workload and the completeness of documentation of nursing care that supports the quality of health services [11]. With limited

**Table 5: Various communication methods in IPC implementation**

Communication methods in IPC implementation	Total	Percentage
Face to face	157	78.5
Social media (WhatsApp, Instagram, Facebook, and Twitter)	29	14.5
Paper (letters and documents)	3	1.5
Google Meet, Zoom	3	1.5
Combination of offline and online meetings	8	4

time, the opportunity for health workers to conduct routine meetings between professions is becoming less so that the implementation of IPC is less than optimal. If each health worker is intense in communicating, then there will be no more obstacles, even though their time to meet is very limited. In hospitals, nurses not only provide services to patients but they also expect attention from the hospital management where they work to motivate their work, to create optimal performance [12].

According to qualitative research at DR. Sardjito Hospital, the implementation of IPC is still lacking and has not been implemented properly because most health workers do not have the correct perception of the definition of collaboration interprofessional. Furthermore, communication between the workers in the hospital is also still lacking [13]. Poor communication is one of the factors inhibiting the implementation of IPC in health facilities [14]. Even communication in IPC is the most significant element in the quality of care and patient safety [15].

Another study explained that there are three ways to overcome gaps in collaborative practice, namely, by bridging various types of gaps, by negotiating overlaps in roles and tasks, and by creating space to do. The data provide some evidence that collaborating requires different efforts by professionals involved within either teams or network settings, as well as within different subsectors [16].

The challenges in conducting IPC that will be encountered today are overlapping roles, unequal positions, excessive workload, communication skills, and differences between professions [16]. This research persuades to change the behavior of the health workforce and the community. Therefore, in the process of education and service, it is necessary to reorient thinking in serving, reformulate the education system, reformulate service standards, and transform approaches. Applying IPE in learning will guide faculty/organizations to lead students as candidates for health workers in providing safe and quality care to improve patient clinical outcomes [17]. The results of this study provide baseline quantitative data that are useful in assisting the government in designing policies in the future. According to the results of this research, the researchers expect that the government will provide training to health workers related to IPC. The training can improve the quality of Indonesian health workers to be better in collaborating, especially during the COVID-19 pandemic. We hope that there will be similar research by adding other variables such as the perception of health workers on IPC for



example perception between pharmacist and doctor, pharmacist and nurse, pharmacist and nutritionist, correlation between IPC and health service.

As the evolution and implications of the COVID-19 crisis are still ongoing, we believe that exploring the challenges and opportunities is one way to combat COVID-19 for the country. In this paper, we emphasize the importance of resilience, setting the strategy for implementing IPC in the fight against COVID-19.

## Conclusions

Based on the analysis of the data obtained, it can be seen that the IPC of the Bantul Regency Health Center is categorized as good (45%), indicating that the application of collaboration in health facilities is still not optimal. The results of the Spearman test showed that there was no significant correlation between sociodemographic variables and IPC of health workers at the public health center of Bantul Regency ( $p > 0.050$ ).

The primary keys in collaborating to build a good work team include good communication and relationships, responsibility for the role of each profession, learning from each other and being critical, and maintaining the ethics of each profession. Thus, effective and efficient cooperation will be established.

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