



## Enhancing Ante Natal Care (ANC) Quality Through Interprofessional Collaboration (IPC) Among Health Workers

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**Abstract.** *The increased of Maternal Mortality Rate (MMR) can be lowered through by various efforts, one of them with quality Antenatal Care (ANC). Quality of ANC services can be given by several health workers who work together in giving services to patients through the Interprofessional Collaboration (IPC). IPC or interprofessional collaboration can improve health service quality. The purpose of this study is to find out an overview of the level of perception of health workers about IPC on ANC services in Lubuk Buaya Health Center. This study is descriptive research using crosssectional design. The study sample is 30 health workers who are determined by the total sampling method. Data collection use the Collaborative Practice Assessment Tools (CPAT) questionnaire. The results of the study can be found that all health workers (100%) have a high perception of IPC in ANC services with components of connection among members, coordination and division of roles, and missions, goals, and objectives have the highest percentage (100%) and decision-making and conflict management components have the lowest percentage (10%). All health professions consist of GPs, midwives, nurses, dentists, pharmacists, nutritionists, and ATLM have a high perception (100%) of IPC on ANC services. The dentist professions have a high perception of all eight components, meanwhile other professions have a high perception of the seven components of perception and have a moderate perception in one component of perception, that is the components of decision making and conflict management. In general, health workers have a high perception of IPC in ANC services, but there are still a moderate perception in one components of perception so efforts are needed to improve IPC competence in that component.*

**Keywords** ANC, IPC, Level of perception of health workers, MMR.

### 1. INTRODUCTION

Reduction the Maternal Mortality Rate (MMR) is one of the health development targets listed in the Millennium Development Goals (MDGs) document for the 1990-2015 period (World Health Organization, 2015). In 2016, the Sustainable Development Goals (SDGs) document officially ratified by the United Nations (UN) as a sustainable agenda of the MDGs (SDGs, 2015). The UN has set a target of reducing maternal mortality to 70 per 100,000 live births worldwide as a target that must be achieved by 2030. This determination was made because maternal health is something that really needs to be considered by the whole world (World Health Organization, 2016).

In 2020, the MMR in West Sumatra was 115 per 100,000 live births. West Sumatra is one of the provinces that included in the top 10 provinces with the highest number of maternal deaths in Indonesia (Kementerian Kesehatan RI, 2021). In addition, the number of maternal deaths in West Sumatra continued to increase from 2018 to 2020 compared to other provinces (Kementerian Kesehatan RI, 2020). In the same year, the MMR in Padang City was 152 per

100,000 live births with a maternal mortality rate of 21 people (Dinkes Kota Padang, 2021).. This shows an increase compared to 2019 of 16 people and Padang City has the highest number of maternal deaths in West Sumatra (Dinkes Kota Padang, 2020).

## **2. LITERATURE REVIEW**

Antenatal Care (ANC) which is stated in the “Four Pillars of Safe Motherhood” is one of the policies of the Ministry of Health in an effort to accelerate the reduction of MMR (Kementerian Kesehatan RI, 2014). According to the World Health Organization (WHO), ANC is a routine examination conducted on pregnant women as an effort to detect early whether or not there is a high risk to pregnancy and childbirth so that MMR can be reduced and the condition of the fetus can be monitored (World Health Organization, 2016).

In 2015, Fatalina et al. has conducted research on the perception and acceptance of Interprofessional Collaboration in the field of maternity among health workers. The results of his research showed that seven out of ten respondents still had the wrong perception about the definition of interprofessional collaboration (Fatalina F, Sunartini, Widyandana, Sedyowinarso M, 2015).

The Lubuk Buaya Health Center is one of the health centers in Koto Tengah District which has the largest population in Padang City with 186,485 people. In 2016, this health center had the highest MMR compared to other health center in Padang City. The number of maternal deaths at this health center reached 3 people, followed by Padang Pasir Health Center, Bungus Health Center, and Pauh Health Center, each with 1 person (Dinkes Kota Padang, 2018).

Assessment of the implementation of health services for pregnant women can be assessed from the coverage of K1 and K4 at the health center. In 2019, the Lubuk Buaya Health Center was the community health center that had the second highest number of pregnant women after the Andalas Community Health Center, with 1,433 people. K1 coverage was 1,065 people (74.3%) and K4 coverage was 986 people (68.8%) which had not yet reached the target, indicating that the quality of ANC was not good enough (Dinkes Kota Padang, 2020).

Based on the description above, the researcher is interested in conducting a study on the description of the level of perception of health workers about Interprofessional Collaboration in Antenatal Care services at the Lubuk Buaya Health Center. This study was conducted by Nadyatul Husna in 2020 at the Andalas Health Center, but there were differences in the questionnaire used as a measuring tool for the study. In this study, the researcher used the Collaborative Practice Assessment Tools (CPAT) questionnaire which consisted of 8 components of perception, while Nadyatul Husna used the Interdisciplinary Education

Perception Scale (IEPS) questionnaire which consisted of 4 components of perception (Husna N, 2020).

Researchers chose the CPAT questionnaire in this study is because the CPAT questionnaire is more comprehensive than the IEPS questionnaire in assessing interprofessional collaboration or IPC and has been widely used by several countries in the world in assessing IPC practices (Yusra RY, Findyartini A, Soemantri, D, 2019). Therefore, researchers will use the questionnaire to assess how health workers perceive IPC in ANC services, both in general and based on the perception components of each profession.

### **3. METHODS**

This research is a quantitative descriptive study with a cross-sectional research design using primary data in the form of the Collaborative Practice Assessment Tool questionnaire (CPAT) which is filled out directly by all health workers who provide ANC services at Lubuk Buaya Health Center, Padang.

The population of this study was all health workers who provided ANC services at Lubuk Buaya Health Center, Padang, West Sumatra namely 30 people. The sample of this study is all populations that meet the inclusion and exclusion criteria. The sampling technique in this study was total sampling because the number of samples was the same as the population and the population was less than 100. The data analysis conducted is a univariate analysis that describes the frequency distribution of the variables studied. The data will later be presented in the form of a frequency distribution table.

The CPAT questionnaire used has 53 statement items consisting of 8 subscales measuring perceptions of IPC, namely 1) relationships between team members; 2) team barriers in collaboration; 3) team relationships with the community; 4) coordination and division of roles; 5) decision making and conflict management; 6) leadership; 7) mission, goals, and objectives; and 8) patient involvement.<sup>21</sup> The CPAT questionnaire from Schroder et al. has been translated into Indonesian by Yusra et al.<sup>21</sup> The questionnaire consisting of 53 items has been validated with a correlation coefficient value of 0.539 to 0.890, while the reliability value using the Cronbach Alpha formula was obtained at 0.916 (Findyartini A, et al., 2019).

This research has passed ethical review according to the certificate of passing ethical review with No 660/UN.16.2/KEP-FK/2022.

#### 4. RESULTS

The research activities were conducted on March 29, 2022 – April 02, 2022. The respondents of this study were health workers involved in ANC services at the Lubuk Buaya Health Center. The health workers consist of general practitioners, midwives, nurses, dentists, pharmacists, nutritionists, and labor worker. The total number of respondents was 30 people.

##### Sample Characteristics

**Table 1.** Respondent Characteristics

Characteristics		<i>f</i>	%
Sex			
	Male	4	13,3
	Female	26	86,7
Age			
	20 - ≤ 30 years old	7	23,3
	31 - ≤ 40 years old	13	43,3
	41 - ≤ 50 years old	7	23,3
	≥ 51 years old	3	10
Profession			
	GP	6	20
	Midwife	12	40
	Nurse	6	20
	Dentist	2	6,7
	Pharmacist	2	6,7
	Nutritionist	1	3,3
	Labor worker	1	3,3

Based on table 1, it is found that female respondents (86.7%) were more than male respondents (13.3%). In this study, most respondents (40%) came from the midwife profession. The characteristics of respondents based on age were mostly in the age range of 31 - 40 years (43.3%) and the least in the age range of 51 years (10%).

##### Overview of Health Workers' Perception Levels of IPC in ANC services in General

**Table 2.** Frequency Distribution of Health Workers' Perception Levels of IPC in ANC Services in General

Perception	<i>f</i>	%
High	30	100
Moderate	0	0
Low	0	0

Based on table 2, in general health workers have a high perception of IPC in ANC services (100%).

## Overview of Health Workers' Perception Levels of IPC in ANC Services Based on Profession

**Table 3. Frequency Distribution of Health Workers' Perception Levels of IPC in ANC Services Based on Profession**

Profession	Perception					
	High		Moderate		Low	
	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
GP	6	100	0	0	0	0
Midwifery	12	100	0	0	0	0
Nurse	6	100	0	0	0	0
Dentist	2	100	0	0	0	0
Pharmacist	2	100	0	0	0	0
Nutritionist	1	100	0	0	0	0
Labor worker	1	100	0	0	0	0

Based on table 3 above, the perception of health workers of IPC in ANC services based on profession is in the high category (100%).

## Overview of Health Workers' Perception Levels of IPC in ANC services Based on Perception Components

**Table 4. Frequency Distribution of Health Workers' Perception Levels of IPC in ANC Services Based on Perception Components**

Perception Components	High		Moderate		Low	
	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Relationships Between Team Members Team	30	100	0	0	0	0
Barriers in Collaboration	26	86,7	4	13,3	0	0
Team Relationships with the Community	28	93,3	1	3,3	1	3,3
Coordination and Division of Roles Decision	30	100	0	0	0	0
Making and Conflict Management	3	10	23	76,7	4	13,3
Leadership	29	96,7	0	0	1	3,3
Mission, Goals, and Objectives	30	100	0	0	0	0
Patient Involvement	29	96,7	1	3,3	0	0

The results of this study show that in general health workers have a high perception of IPC in ANC services in each perception component. All health workers have a high perception of 100% in three of the 8 perception components. These three components include the perception of relationships between members, coordination and division of roles, as well as mission, goals and objectives.

The decision making and conflict management components have the highest percentage of medium and low perceptions among the other 8 components. This is likely to occur because most respondents think that the medical profession has the highest position to make service decisions for patients or when handling conflicts within the team.



## Overview of Health Workers' Perception Levels of IPC in ANC services Based on Perception Components of Each Profession

**Table 5. Frequency Distribution of Health Workers' Perception Levels of IPC in ANC Services Based on The Perception Components of Each Profession**

Perception Components			Relationships Between Team Members	Team Barriers in Collaboration	Team Relationships with The Community	Coordination and Division of Roles	Decision Making and Conflict Management	Leadership	Mission, Goals, and Objectives	Patient Involvement
GP	High	f (%)	<b>6 (100)</b>	5 (83,3)	<b>6 (100)</b>	<b>6 (100)</b>	0 (0)	5 (83,3)	<b>6 (100)</b>	<b>6 (100)</b>
	Moderate	f (%)	0 (0)	1 (16,7)	0 (0)	0 (0)	<b>6 (100)</b>	0 (0)	0 (0)	0 (0)
	Low	f (%)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	<b>1 (16,7)</b>	0 (0)	0 (0)
Midwife	High	f (%)	<b>12 (100)</b>	9 (75)	10 (83,3)	<b>12 (100)</b>	0 (0)	<b>12 (100)</b>	<b>12 (100)</b>	<b>12 (100)</b>
	Moderate	f (%)	0 (0)	3 (25)	1 (8,3)	0 (0)	<b>10 (83,3)</b>	0 (0)	0 (0)	0 (0)
	Low	f (%)	0 (0)	0 (0)	1 (8,3)	0 (0)	<b>2 (16,7)</b>	0 (0)	0 (0)	0 (0)
Nurse	High	f (%)	<b>6 (100)</b>	<b>6 (100)</b>	<b>6 (100)</b>	<b>6 (100)</b>	2 (33,3)	<b>6 (100)</b>	<b>6 (100)</b>	<b>6 (100)</b>
	Moderate	f (%)	0 (0)	0 (0)	0 (0)	0 (0)	<b>3 (50)</b>	0 (0)	0 (0)	0 (0)
	Low	f (%)	0 (0)	0 (0)	0 (0)	0 (0)	<b>1 (16,7)</b>	0 (0)	0 (0)	0 (0)
Dentist	High	f (%)	<b>2 (100)</b>	<b>2 (100)</b>	<b>2 (100)</b>	<b>2 (100)</b>	1 (50)	<b>2 (100)</b>	<b>2 (100)</b>	<b>2 (100)</b>
	Moderate	f (%)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
	Low	f (%)	0 (0)	0 (0)	0 (0)	0 (0)	<b>1 (50)</b>	0 (0)	0 (0)	0 (0)
Pharmacist	High	f (%)	<b>2 (100)</b>	<b>2 (100)</b>	<b>2 (100)</b>	<b>2 (100)</b>	0 (0)	<b>2 (100)</b>	<b>2 (100)</b>	1 (50)
	Moderate	f (%)	0 (0)	0 (0)	0 (0)	0 (0)	<b>2 (100)</b>	0 (0)	0 (0)	1 (50)
	Low	f (%)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
Nutritionist	High	f (%)	<b>1 (100)</b>	<b>1 (100)</b>	<b>1 (100)</b>	<b>1 (100)</b>	0 (0)	<b>1 (100)</b>	<b>1 (100)</b>	<b>1 (100)</b>
	Moderate	f (%)	0 (0)	0 (0)	0 (0)	0 (0)	<b>1 (100)</b>	0 (0)	0 (0)	0 (0)
	Low	f (%)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
Labor worker	High	f (%)	<b>1 (100)</b>	<b>1 (100)</b>	<b>1 (100)</b>	<b>1 (100)</b>	0 (0)	<b>1 (100)</b>	<b>1 (100)</b>	<b>1 (100)</b>
	Moderate	f (%)	0 (0)	0 (0)	0 (0)	0 (0)	<b>1 (100)</b>	0 (0)	0 (0)	0 (0)
	Low	f (%)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)

Based on table 5, the majority of health workers have high and medium perceptions on each component of perception regarding IPC in ANC services. The general practitioner profession has a high perception percentage of 100% in five perception components, namely the perception component of relationships between members, team relationships with the community, coordination and division of roles, mission, goals and objectives, and patient involvement. Low perception is only found in the leadership perception component with a percentage of 16.7%.

The midwife profession has a high perception percentage of 100% in five perception components. Medium and low perceptions are found in the perception components of decision making and conflict management with percentages of 83.3% and 16.7% respectively.

The nursing and dentist professions have a high perception percentage of 100% on seven perception components. In the decision making and conflict management components, the nursing and dentist professions have low perceptions with a percentage of 16.7% for nurses and 50% for dentists respectively.

The pharmacist profession has a high perception percentage of 100% on six perception components. Medium perception is found in the perception component of decision making and conflict management and the patient involvement component. The high perception that the

pharmacist profession has regarding the patient involvement perception component is only 50%.

The nutritionist and labor workers have a high perception percentage of 100% each on seven perception components. However, the percentage of moderate perceptions of 100% respectively is only found in the perception components of decision making and conflict management.

## **5. DISCUSSION**

### **Sample Characteristics**

The large number of female health workers compared to male health workers is in accordance with the WHO statement that 67% of all health workers in the world are currently female (World Health Organization, 2017). Most of the respondents of the study came from the midwife profession with a percentage of 40%. This is because most of the ANC services at the Lubuk Buaya Health Center are carried out by midwives. This is in line with research conducted by Fandika that most of the professions that provide services ANC comes from the midwife profession with a percentage of 54.4% (Fandika BAP, 2017).

### **Overview of Health Workers' Perception Levels of IPC in ANC services in General**

The results of this study indicate that the perception of health workers regarding IPC in ANC services is generally in the high category. This is in line with research conducted by Fandika that health workers at Datu Beru Pressuregon General Hospital have a good perception (100%) of IPC in ANC services (Fandika BAP, 2017).

### **Overview of Health Workers' Perception Levels of IPC in ANC Services Based on Profession**

The results of this study indicate that the level of perception of health workers regarding IPC in ANC services based on profession is in the high category. There are several possibilities that cause all professions to have a high perception of IPC in ANC services. The first factor is understanding the role and scope of other health professions. In line with research conducted by Soemantri et al. which states that understanding the role and scope of other health professions is the main supporting factor in IPC practice (Soemantri D, et al., 2019).

The second factor is the existence of a service management system and SOP. In line with research by Soemantri et al. which stated that the existence of service regulations and



SOPs had a positive impact on the implementation of IPC at Sebelas Maret University Hospital (Soemantri D, et al., 2019).

The third factor is good interpersonal communication (Soemantri D, et al., 2019). In line with research conducted by Rokhmah et al. which states that good communication between health professionals is very important in collaborating and also influences the quality of patient care (Rokhmah NA, Anggorowati, 2017).

### **Overview of Health Workers' Perception Levels of IPC in ANC services Based on Perception Components**

The results of this study show that in general health workers have a high perception of IPC in ANC services in each perception component. A similar thing was also found in research conducted by Nadyatul Husna at the Andalas Health Center where health workers had good perceptions of each component of perception of IPC in ANC services (Husna N, 2020).

### **Overview of Health Workers' Perception Levels of IPC in ANC services Based on Perception Components of Each Profession**

The general practitioner profession has a high perception of five components, namely the perception of relationships between members, team relationships with the community, coordination and division of roles, mission, goals and objectives, and patient involvement. This is in line with research conducted by Gloria et al. that doctors have a good perception and understanding regarding teamwork and have the same goals as other health professions in providing services to patients, as well as understanding the roles and responsibilities of each health profession in interprofessional collaboration (Gloria F, Pristianty L, Rahem A, 2021).

The midwife profession has a high perception of five components too same as general practitioner profession. This is in line with research conducted by Warmelink et al. that the midwife profession feels that it has collaborated with other health professions who treat pregnant women in primary health care centers (Warmelink JC, et al., 2017).

The nurse profession still has low perception on perception component of decision making and conflict management. This is in line with research by Karima et al. which states that the contribution of nurses is still low in making service decisions for patients (Karima A, Sayed EL, Waffa F. Sleem, 2011).

The dentist profession stiiil has low perception on perception component of decision making and conflict management too. Research conducted by George et al. regarding the evaluation of the knowledge, attitudes and habits of dentists, obgyn specialists, general

practitioners and midwives stated that the lack of knowledge of health workers about dental and oral health problems has an impact on the diagnosis of dental and oral diseases in pregnant women. This is because health workers often forget to take an anamnesis of dental and oral health problems in pregnant women so that patient care decisions are rarely made that involve the dentist profession (George A, et al., 2012).

The high perception that the pharmacist profession has regarding the patient involvement perception component is only 50%. The percentage that is still low in this perception component is probably because pharmacists rarely play a role in providing health service plans for patients. In research conducted by Cipolle et al. shows that the competence and involvement of pharmacists in implementing interprofessional collaboration is still low (Cipolle RJ, Strand LM, Morley PC, 2004).

The nutritionist profession has a moderate perception on the perception components of decision making and conflict management. This is in line with the research results of Kusuma et al. which shows that the involvement of the nutritionist profession in making patient care decisions is still low so this can be an obstacle for the nutritionist profession in interprofessional collaborative practice (Kusuma MW, Herawati F, Setiasih, Yulia R, 2021).

## **6. CONCLUSION**

In this study, it can be concluded that in general health workers have a high perception of IPC in ANC services at the Lubuk Buaya Health Center, both based on profession and perception components. All professions have high perceptions on seven perception components and have moderate perceptions on one perception component, it is the decision-making and conflict management components, except for the dentist profession which has a low perception towards one of these components.

## **7. LIMITATION**

This research still has several limitations, this research has not analyzed other variables that can give impact to interprofessional collaboration on the quality of ANC services. Therefore, further researchers is required in order to develop research at Lubuk Buaya Health Center and other health centers about relationships characteristics of respondents with components of perception and impact interprofessional collaboration on the quality of ANC services.

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