Baseline Study of Compliance of Antenatal Care Visits in The Working Area of The Majalaya Health Center, Bandung Regency

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Abstract. Since 2021, service standards for pregnant women have been aligned with guidelines from the World Health Organization (WHO), which recommend six antenatal visits during pregnancy—two in the first trimester, one in the second trimester, and three in the third trimester. This provision has been regulated in the Regulation of the Minister of Health of the Republic of Indonesia Number 21 of 2021 concerning Health. This study aims to obtain a preliminary picture of the level of compliance of pregnant women in conducting pregnancy examination visits (Antenatal Care/ANC) in the working area of the Majalaya Health Center, Bandung Regency. This research used a descriptive method to describe the frequency distribution of compliance with ANC visits by pregnant women at the Majalaya Health Center. Based on the findings, the majority of pregnant women have not complied with the ANC visit schedule according to the recommended standards, with 31 respondents (58.5%) categorized as non-compliant. In terms of demographic characteristics, most respondents were in the age range of 20–35 years (49 respondents or 92.5%), had a secondary level of education (30 respondents or 56.6%), and had multigravida status (34 respondents or 64.2%). The level of compliance with ANC visits at the Majalaya Health Center is still relatively low, with more than half of the pregnant women failing to meet the standard number of visits. These findings suggest the need for targeted interventions to raise awareness of the importance of regular ANC visits for maternal and fetal health. Increasing education about the benefits of ANC, improving access to health facilities, and strengthening health workers' roles in providing counseling could help enhance compliance rates. Furthermore, collaborative efforts between healthcare providers, families, and communities are essential to ensure that pregnant women receive optimal monitoring and care throughout their pregnancy.

Keywords: Antenatal care; Antenatal Care Compliance; Bandung Regency; Majalaya Health Center; Pregnancy

1. INTRODUCTION

Maternal Mortality Rate (MMR) is one of the important indicators that reflects the quality and availability of health services (Wiratmo & Sopianah, 2020). Nationally, AKI in Indonesia shows a downward trend, from 305 deaths per 100,000 live births in 2015 to 189 per 100,000 live births in 2020, and recorded at 205 per 100,000 live births in 2022 (Mulati, 2022).

Maternal death can occur due to various complications that arise during pregnancy. These complications can actually be identified early through pregnancy check-ups or Antenatal Care (ANC) visits. Antenatal services themselves are a form of care provided by health professionals to pregnant women. Globally, about 85% of pregnant women have accessed ANC services at least once, but only about 58% have had at least four visits. This figure is even lower in regions with the highest maternal mortality rates, such as Sub-Saharan Africa and South Asia, where only 49% and 42% of women undergo four ANC visits (Basha, 2022). ANC services have an important role in maintaining the health and safety of the mother and fetus, both during pregnancy and during the delivery process (Simanjuntak et al., 2023).

Antenatal Care (ANC) is one of the prevention efforts against risks that can occur during pregnancy. This service is provided by health workers to pregnant women and must be carried out in accordance with obstetric practice standards (Sari Inda Rina & Harmanto, 2023). The ANC program is systematically designed through observation, education, and medical measures, with the main goal of maintaining the health and safety of the mother and fetus during pregnancy, childbirth, and postpartum (Muayah & Ani, 2021). ANC services need to be carried out regularly in every trimester of pregnancy. Since 2021, pregnant women's services have been adjusted to the standards of WHO, namely two visits in the first trimester (0–12 weeks), one visit in the second trimester (12–24 weeks), and three times in the third trimester (24 weeks until before childbirth), provided that two visits are made by doctors, respectively in the first and third trimesters (DINKES Palangka Raya City, 2022). This standard aims to ensure protection for pregnant women and fetuses, through early detection of pregnancy risks, prevention of complications, and treatment as early as possible in the event of a disorder (Simanjuntak et al., 2023).

The sustainability of health checks during pregnancy can be reviewed from the implementation of the initial visit (K1) to the fourth visit (K4) which is carried out according to the stages of the trimester of pregnancy. Nationally, the ideal coverage for K1 visits reached 81.6%, while for K4 visits it was 70.4%. The achievement of K4 visits is influenced by various factors, including the quality of service in accordance with standards, socio-cultural aspects, education level, type of work, income level, level of knowledge, attitude of pregnant women, number of previous pregnancies (parity), age of the mother, and geographical conditions of residence (Muayah & Ani, 2021).

Antenatal care (ANC) visits are still not a top priority for most pregnant women. According to the theory developed by Green in the model described by Notoatmodjo, there are three groups of factors that affect an individual's behavior in conducting an ANC examination, namely predisposing factors, enabling factors, and reinforcing factors. Predisposing factors include characteristics such as age, education level, occupation, level of knowledge, number of pregnancies (parity), and maternal attitudes towards pregnancy. Enabling factors are related to the conditions that allow a person to act, such as the distance between residence and health facilities, family income, and access to information through the media. Meanwhile, the reinforcing factor involves the support provided by the closest people, especially the husband and other family members (Simanjuntak et al., 2023).

Based on data from the Bandung Regency Health Office in 2022, the number of K1 coverage is 98% and the number of K4 coverage is 88.8% (DINKES Bandung Regency, 2022). In Majalaya District, the lowest antenatal care service coverage is the Majalaya health center with K1 coverage of 99.03% and K4 coverage of 98.13%. Meanwhile, antenatal care services are included at the Wangisagara Health Center with 97.3% K1 coverage and 96.76% K4 coverage.

2. PRELIMINARIES OR RELATED WORK OR LITERATURE REVIEW

A. Pregnancy

Pregnancy is a physiological process that occurs in women due to fertilization between male and female sex cells. In other words, pregnancy is the fertilization of an ovum by spermatozoa, so that it experiences nidation in the uterus and develops until the birth of the fetus (Pratiwi and Fatimah, 2019).

Pregnancy is from ovulation to partus, lasting 280 days (40 weeks) and no more than 300 days (43 weeks). The division of pregnancy is divided into 3 trimesters: the first trimester, starting from conception to three months (0-12 weeks); the second trimester, starting from the fourth month to six months (13-28 weeks); the third trimester from seven to nine months (29-42 weeks) (Fatimah and Nuryaningsih, 2017).

B. Antenatal Care

Antenatal Care is a preventive care service for individuals to prevent a problem that is not good for the individual to prevent a problem that is not good for the mother and fetus (Ministry of Health, 2017).

Antenatal Care is a program of obstetric health services that has preventive efforts to optimize maternal and neonatal outcomes through monitoring activities that are carried out regularly during pregnancy (Prawirohardjo, 2014).

Antenatal Care is a planned program in the form of observation, education and medical treatment carried out on pregnant women, childbirth and postpartum with the aim of maintaining the pregnancy so that the mother is healthy and trying to make the baby she gives birth also healthy, pregnancy and delivery process that is safe and satisfactory, monitoring the risks that occur during pregnancy, reducing the morbidity and mortality rate in the mother and fetus, and plan optimal implementation in high-risk pregnancies (Syamsiah, 2016) :

a) Purpose of ANC Service

The purpose of antenatal care services is pregnancy surveillance to get early enforcement of diseases related to pregnancy, early enforcement of pregnancy

complications, preparing childbirth towards a wellborn baby and good health mother, preparing to take care of the baby (Kapita Selekta Routine Implementation of Obstetrics and Family Planning, 2016). Promote and maintain the physical and mental health of mothers and babies by providing nutrition, personal hygiene and the birth process of babies and helping to convey mothers to breastfeed successfully, run normal puerperium, and take care of children physically, psychologically and socially (Mufdlilah, 2016).

b) ANC Service Standards

Integrated antenatal examination and monitoring standards are pregnancy service standards that aim to monitor pregnancy progress to ensure general health and fetal growth and development, early detection of abnormalities or complications that may occur during pregnancy, detection of high risk, (anemia, malnutrition, hypertension, sexually transmitted diseases). Providing health education and preparing for full-term delivery, safe delivery, mothers and babies with minimal trauma (Ministry of Health of the Republic of Indonesia, 2017).

The latest Antenatal Care examination is in accordance with service standards, namely a minimum of 6 examinations during pregnancy, and a minimum of 2 times in the trimester by a doctor in the first and third trimester. 2 times in the second trimester (pregnancy up to 12 weeks), 1 time in the second trimester (pregnancy above 12 weeks to 26 weeks), 3 times in the third trimester (pregnancy above 24 weeks to 40 weeks). (KIA BOOK Latest Revision in 2020).

3. PROPOSED METHOD

This type of research is a quantitative descriptive research. In this descriptive research, it is directed to describe or describe a situation in a community or society to find out the picture of Antenatal Care Visit Compliance in the form of numbers.

The population in this study is pregnant women who conduct ANC examinations in the working area of the Majalaya Health Center, Majalaya district, Bandung Regency. In this study, there were 53 periods of May – June of pregnant women who carried out Antenatal Care examinations in the third trimester. The sampling technique in this study is Total sampling. This technique is a sampling technique where the number of populations.

Instruments in this study Questionnaire and secondary data with medical records or KIA books. With the Frequency Distribution Data Analysis Technique in the form of tables and percentages.

A. Algorithm/Pseudocode

Algorithm 1. Algorithm Title

INPUT: xxx, yyy

OUTPUT: zzz

1: Step 1 Definition of Research Objectives and Questions** START Input: General topics (ANC compliance), baseline data needs. Output: Research Objective: To measure the level of compliance of pregnant women with the ANC visit schedule according to the standards applicable in the research area. Research Questions: 1. What is the average number of ANC visits made by pregnant women during pregnancy at this time? 2. What percentage of pregnant women meet the minimum standard of ANC visits (e.g., 4 visits)? 3. What demographic or socio-economic factors are related to ANC compliance?

2: Step 2 Study Methodology Design** START Input: Research Objectives and Questions. Outputs: Quantitative descriptive study plan, cross-sectional survey. PROCESS: Tipe_Studi = Kuantitatif_Deskriptif_Cross_Sectional Population = Ibu_Hamil_di_Wilayah_Studi (e.g., Puskesmas X or Regency Y) Metode_Sampling = Total Sampling_ Variabel_Penelitian: Variabel_Dependen = ANC Compliance (measured by the number of visits, timeliness, completeness of service) Demographic and Socioeconomic Independent Variables = Maternal Age, Parity, Maternal Education, Data Collection Instrument = Structured Questionnaire (contains closed-ended questions about pregnancy history, number and time of ANC visits) and demographic data). Can be equipped with a KMS check for pregnant women or medical records if allowed.

3: Step 3 Data Collection** START Input: Data Collection Plan, Questionnaire, Sample List. Output: Raw data from the questionnaire

4: Step 4 Data Preparation and Pre-processing** START Input: Raw data. Output: Data is clean and ready for analysis

5: Step 5 START Input: Data is clean and ready for analysis. Output: Results of statistical analysis (frequency table, percentage

B. Subsubsection

a) Operational Definition:,"ANC visit compliance is defined as the number of visits by pregnant women to health care facilities for pregnancy check-ups according to the minimum standards set by the Ministry of Health, which is a minimum of six times during pregnancy."

b) Measurement Indicators: Number of Visits: Quantitative data on the total ANC visits made by pregnant women during pregnancy. Time of Visit: Whether the visit was made in the appropriate trimester (e.g., the first visit in the 1st trimester, two visits in the 2nd trimester, and one visit in the 3rd trimester).Completeness of Service: these aspects if data are available (e.g., whether all 10T service standards are met: Weight, Blood Pressure, Uterine Fundus Height, etc.).

c) Data Source: Specify where this compliance data will be obtained from (e.g., KIA books, medical records, or pregnant women's self-reports through questionnaires).

d) Categorization of Compliance: If you're going to group compliance, explain the categories:

    1) Full Compliance: Pregnant women who make ≥6 visits according to the trimester's schedule.

    2) Non-Compliant: Pregnant women who do not have ANC visits at all or very little outside of the minimum standard.Demographic and Socio-economic Characteristics of Respondents

e) Mention the demographic and socio-economic variables to be collected, such as:

    1) Mother's Age: (e.g., categorized as <20 years, 20−35 years, >35 years)

    2) Mother's Education Level: (e.g., out of school, elementary, junior high, high school, college)

    3) Parity (Number of Pregnancies/Births): (e.g., primigravida, multigravida)

C. Formatting of Mathematical Components

Calculated by the formula:

$$P = \frac{f}{n} \times 100\%$$

Information:

P = percentage of respondents' answers

f = number of correct answers n = number of all questions (Notoatmodjo, 2018).

the majority of pregnant women have not complied with the ANC visit schedule according to the standards, namely 31 respondents (58.5%). Judging from the characteristics, most of the respondents were in the age range of 20-35 years as many as 49 people (92.5%), the highest level of education was at the secondary level (high school or equivalent) as many as 30 people, and most of them had multigravity status as many as 34 people (64.2%)

4. RESULTS AND DISCUSSION

Based on the results of research conducted at the Majalaya Health Center, it was found that the most ANC visits were irregular with 31 respondents (58.5%) and regular visits with 22 respondents (41.5%).

This is in accordance with research conducted by Pongsibidang, that there is a relationship between the level of maternal knowledge and the regularity of antenatal care visits (p value 0.042). From the field research, it was found that out of 90 respondents, 32 respondents (35.6%) were respondents with a lack of knowledge consisting of 29 respondents making visits according to standards and 3 respondents 8 making visits that did not meet standards. Meanwhile, as many as 58 respondents (64.4%) were respondents with a good level of knowledge consisting of 87 respondents who made visits according to standards and no respondents who made visits that did not meet standards. The Relationship between Attitude and Antenatal Care (ANC) Visits in Surakarta City (Pongsibidang, 2013).

This is in line with the research conducted by Indah Rahayu, complete as much as 4.3% and there are mothers who are well-informed and do not make complete ANC visits as much as 3.1%. there are mothers who are knowledgeable enough and do complete ANC visits 0.0% and mothers who are knowledgeable enough and incomplete as many as 0.05%, and mothers who are less knowledgeable and do complete ANC visits as much as 40.3%. and mothers who are less knowledgeable and do not make incomplete ANC visits as much as 36.8%. Based on Bivariate Analysis, statistically the level of knowledge has a meaningful relationship with the completeness of the ANC visit, This can be seen from the p-value of 0.001<0.005. It can be concluded that there is a meaningful relationship between pregnant women's knowledge of integrated ANC and the frequency of ANC visits in the Ciparay Health Center Working Area, Ciparay District, Bandung Regency, with poor knowledge having 6 opportunities to have a complete pregnancy check-up (Indah Rahayu, 2022).

Antenatal Care services are health services provided periodically by health professionals to improve the health status of pregnant women and the fetuses they conceive. The importance of pregnant women's knowledge about Antenatal Care so that they can make regular pregnancy visits at least 6 times during pregnancy. (Ministry of Health of the Republic of Indonesia, 2020).

A. Figures And Tables

Distribution of the Frequency of ANC (*Antenatal Care*) Visits at the Majalaya Health Center in 2024

Table 1 Distribution of ANC (*Antenatal Care*) Frequency of Visits.

Category	Frequency	%
Non-compliant	31	58,5
Obedient	22	41,5
Total	53	100.0

The results of table 1 show that the most ANC visits were Non-Compliant as many as 31 respondents (58.5%) while those who visited regularly were 22 respondents (41.5%).

Distribution of Frequency of Age of Pregnant Women at the Majalaya Health Center in 2024

Table 2 Distribution of Age Frequencies of Pregnant Women.

No.	Category	Frequency	Presentation
1.	< 20 years old	1	1,9%
2.	20–35 years old	49	92,5%
3.	> 35 years old	3	5,7%
	Total	53	100%

Based on the table above, the majority of pregnant women in the third trimester are in the age category of 20-35 years, which is 49 people (92.5%), which is a healthy reproductive age range. A total of 3 people (5.7%) were in the age category over 35 years old, while only 1 person (1.9%) was under 20 years old. This shows that most pregnant women are in the age group that is relatively safe for pregnancy, but there are still a small number who fall into the risk category, either because they are too young or too old.

Distribution of Frequency of Education for Pregnant Women at the Majalaya Health Center in 2024

Table 3 Parity Frequency Distribution of Pregnant Women.

No.	Category	Frequency	Presentation
1.	Elementary Education (Elementary–Junior High School/equivalent)	10	18,9%

No.	Category	Frequency	Presentation
2.	Secondary Education (High School/Vocational/equivalent)	30	56,6%
3.	Higher Education (Diploma & Master's)	13	24,5%
	Total	53	100%

From the table above, it can be seen that the majority of pregnant women in the third trimester have a secondary education level (high school/equivalent) of 30 people (56.6%). A total of 13 people (24.5%) have pursued higher education (diploma or bachelor's), while 10 people (18.9%) are still at the basic education level (elementary-junior high/equivalent). This shows that most of the pregnant women in this study have completed a minimum of secondary education.

Distribution of Parity Frequency of Pregnant Women at the Majalaya Health Center in 2024

Table 4 Distribution of Frequency of Education for Pregnant Women

No.	Category	Frequency	Presentation
1.	Primigravida	17	32,1%
2.	Multigravida (2–4 kali)	34	64,2%
3.	Grande multipara (≥5)	2	3,7%
	Total	53	100%

Based on the table above, most of the third trimester pregnant women fall into the multigravity category as many as 34 people (64.2%), which indicates that they have experienced 2 to 4 previous pregnancies. A total of 17 people (32.1%) were primigravida, or mothers who were undergoing their first pregnancy. Meanwhile, only 2 people (3.7%) are classified as grande multipara, i.e. those who have experienced five or more pregnancies. This shows that the majority of pregnant women are in the parity group that is not at high risk.

5. CONCLUSIONS

Based on the results of the study taken with the title "The Relationship between Pregnant Women's Knowledge and ANC (Antenatal Care) Visits at the Majalaya Health Center", it can be concluded that ANC (Antenatal Care) visits at the Majalaya Health Center were more than

half of them with non-compliant visits of 31 respondents (58.5%). With the characteristics in the age category The majority of pregnant women are in the age category of 20-35 years old (92.5%), the Education category Most respondents have a secondary education level (high school/equivalent) of 56.6%, and in the parity category the majority of pregnant women are classified as multigravida (64.2%)..

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