Association between Knowledge, Motivation and Utilization of Integrated Antenatal Care Services among Pregnant Women at Plaosan Community Health Center in 2024

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ABSTRACT

Antenatal care (ANC) is an important component in maternal health services to reduce maternal and infant mortality rates in Indonesia, which are still high. Every pregnancy in its development has a risk of complications, therefore ANC services must be carried out routinely, integrated, and according to quality antenatal service standards. In fact, not all pregnant women make regular ANC visits, so the coverage of K1, K4 and K6 is low, including at the Plaosan Health Center. The general objective of this study was to determine the relationship between knowledge and motivation of pregnant women with the implementation of Integrated ANC at UPTD Puskesmas Plaosan in 2024. The type of research used in this study was an analytic survey with a cross sectional design. Data analysis using primary data. The number of samples used was 37 pregnant women using purposive sampling technique. The independent variables in this study were knowledge and motivation while the dependent variable in this study was the implementation of integrated ANC. Data analysis was performed with chi-square test. The results showed that the variable of knowledge with the implementation of integrated ANC obtained significance with a p value = 0.014 while the motivation variable obtained a p value = 0.001 so that there is a significant relationship between knowledge and motivation with the implementation of integrated ANC. Therefore, knowledge and motivation need to be considered to be a reference in the implementation of integrated ANC.

INDEX TERMS

Knowledge, motivation, ANC.

I. INTRODUCTION

Antenatal care (ANC) is an important component of maternal health services to reduce maternal and infant mortality rates. According to the 2022 Indonesian Health Profile, the maternal mortality rate (MMR) in Indonesia is still high, reaching 189 per 100,000 live births, while the SDGs target is 70 per 100,000 live births by 2030. This is a significant health issue, prompting questions about why this goal has not yet been achieved.

One government effort to reduce MMR is Integrated ANC. Integrated ANC is a comprehensive and quality antenatal service provided to all pregnant women. Each pregnancy carries the risk of complications, so ANC services must be performed regularly, in an integrated manner, and according to quality antenatal service standards. To ensure high-quality ANC, it includes examinations by general practitioners, dental check-ups, laboratory tests, and counseling [1].

The coverage of antenatal services can be measured through K1, K4, and K6 coverage. K1 coverage refers to the number of pregnant women receiving antenatal services for the first time, regardless of gestational age. K4 coverage refers to the percentage of pregnant women who have received antenatal services at least four times (once in the first trimester, twice in the second trimester, and three times in the third trimester). Meanwhile, K6 refers to pregnant women’s contact with healthcare professionals who have the clinical competence to provide integrated and comprehensive services six times, with two contacts involving a doctor [1].

In reality, not all pregnant women attend regular ANC visits, resulting in low K1, K4, and K6 coverage. The coverage of ANC visits was 88.13% of the 85% target. According to Local Area Monitoring (PWS) data in East Java Province in 2022, K1 coverage was 98.20%. Meanwhile, K4 coverage was 88.2%. The K4 indicator has not
yet reached the target, as it is a Minimum Service Standard (SPM) indicator with a 100% target. According to the Minimum Service Standards (SPM) data from the Magetan District Health Office in 2023, the number of new pregnant women visits reached 85.27%. Meanwhile, in Plaosan Health Center in 2023, K4 coverage was 90.58% and K6 coverage was 85.54% of the 100% target [2].

Factors influencing ANC visits among pregnant women include predisposing factors (age, education level, occupation, parity, knowledge, motivation, and attitude of pregnant women), enabling factors (distance to the health facility, family income), and health factors [3]. Based on a preliminary study conducted on December 10, 2023, at UPTD Puskesmas Plaosan with 12 pregnant women, 67% had low knowledge, and 65% had low motivation. Research by Palupi and colleagues [4] found that people with good knowledge are more likely to seek ANC. [5]. Pregnant women with high motivation tend to have more regular ANC visits. Low K1 and K4 coverage results in undetected risk factors for pregnant women early on, leading to delayed treatment, which can result in maternal and infant mortality [1].

To help accelerate the achievement of health degrees before pregnancy, during pregnancy, childbirth, and postpartum, as well as optimal contraceptive and sexual health services, community empowerment is necessary. Community empowerment includes Posyandu, youth Posyandu, Posbindu, labor and complication prevention planning programs, the use of the Maternal and Child Health Book, mother class organization, family planning program promotion, birth waiting homes, and the empowerment of traditional birth attendants or cadres in assisting mothers and newborns [1]. The Magetan District Government continues to make efforts to reduce the Maternal Mortality Rate (MMR). One of the ongoing initiatives is the introduction of transportation and special assistance services for pregnant women called Ojek Ibu Hamil, or JekMil. JekMil has now been replicated in all health centers, including Plaosan Health Center. Based on this data, researchers are interested in analyzing the "Relationship between the knowledge and motivation of pregnant women with the implementation of Integrated ANC at UPTD Puskesmas Plaosan." This study aims to describe the extent of pregnant women's knowledge and motivation in implementing Integrated ANC at the health center. Therefore, the findings of this study are expected to be a reference for educating pregnant women and as a basis for policy-making by health centers in Magetan to reduce maternal mortality rates.

II. METHODS

This study is a quantitative research. The type of research used is an analytical survey with a cross-sectional research design. The research was conducted at UPTD Puskesmas Plaosan. Data collection took place from April 1 to May 10, 2024, followed by the preparation of the research report in May 2024.

The population in this study is the average number of K1 and K4 visits by pregnant women in 1 year who came to Puskesmas Plaosan in 2023, totaling 40 pregnant women. The sample in this study was determined based on inclusion and exclusion criteria, with a sample size of 37 respondents. The sampling technique used in this research is purposive sampling, with the independent variables being knowledge and motivation, and the dependent variable being the implementation of integrated ANC. This study uses a questionnaire as the instrument, with data analysis involving univariate analysis using frequency distribution on the dependent variable, and bivariate analysis using chi-square with a significance level of 0.05 and a follow-up Fisher's exact test. Before the questionnaire was used as a research instrument, validity and reliability tests were conducted. The validity test aimed to determine the validity of the questionnaire used in the study for measuring and obtaining research data from respondents. In this study, each item of the knowledge, motivation, and integrated ANC implementation questionnaires had a significance value of < 0.05, indicating they were valid. Meanwhile, the reliability test aimed to determine the consistency level of the questionnaire used by the researcher so that the questionnaire could be reliable even if the research was repeated with the same questionnaire at different times. The knowledge questionnaire had a Cronbach's alpha value of 0.747, the motivation questionnaire had a Cronbach's alpha value of 0.869, and the integrated ANC implementation completeness questionnaire had a Cronbach's alpha value of 0.859, indicating they were reliable.

III. RESULTS

This study was conducted at Puskesmas Plaosan. Puskesmas Plaosan is one of the community health centers in Magetan Regency, East Java Province, located precisely at Jalan Raya Sarangan No. 138, Plaosan District, Magetan Regency, approximately 10 km from the center of Magetan.

The working area of Puskesmas Plaosan covers 9,433.281 hectares, which is divided into 2 urban villages and 6 rural villages: Plaosan Urban Village, Sarangan Urban Village, Ngancar Village, Dadi Village, Bulugunung Village, Plumpung Village, Puntukdoro Village, and Pacalan Village. The working area of Puskesmas Plaosan is predominantly hilly and lies in the valleys of Mount Lawu. However, all areas within the working area of Puskesmas Plaosan are accessible by land vehicles. In the working area of UPTD Puskesmas Plaosan, the majority of pregnant women attending their first (K1) and fourth (K4) antenatal care visits have an educational background of elementary school (SD) and junior high school (SMP). Consequently, this has resulted in a lower level of knowledge among these women.
A. CHARACTERISTICS OF AGE, EDUCATION, OCCUPATION, PARITY, AND GESTATIONAL AGE

TABLE 1 Frequency Distribution of Respondents Based on Age, Education, Occupation, Parity, and Gestational Age in the Working Area of Puskesmas Plaosan Magetan in 2024

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Frequency (f)</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td></td>
<td></td>
</tr>
<tr>
<td>20-25 years old</td>
<td>7</td>
<td>18.9</td>
</tr>
<tr>
<td>26-30 years old</td>
<td>14</td>
<td>37.8</td>
</tr>
<tr>
<td>31-35 years old</td>
<td>10</td>
<td>27.0</td>
</tr>
<tr>
<td>36-40 years old</td>
<td>6</td>
<td>16.2</td>
</tr>
<tr>
<td>Total</td>
<td>37</td>
<td>100.0</td>
</tr>
<tr>
<td>Education</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Basic (SD-SMP)</td>
<td>22</td>
<td>59.5</td>
</tr>
<tr>
<td>Intermediate (SMA/SMK)</td>
<td>12</td>
<td>32.4</td>
</tr>
<tr>
<td>High (Perguruan Tinggi)</td>
<td>3</td>
<td>8.1</td>
</tr>
<tr>
<td>Total</td>
<td>37</td>
<td>100.0</td>
</tr>
<tr>
<td>Occupation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Housewife</td>
<td>13</td>
<td>35.1</td>
</tr>
<tr>
<td>ASN</td>
<td>1</td>
<td>2.7</td>
</tr>
<tr>
<td>Entrepreneur</td>
<td>12</td>
<td>32.4</td>
</tr>
<tr>
<td>Farmer</td>
<td>10</td>
<td>27.0</td>
</tr>
<tr>
<td>Laborer</td>
<td>1</td>
<td>2.7</td>
</tr>
<tr>
<td>Total</td>
<td>37</td>
<td>100.0</td>
</tr>
<tr>
<td>Parity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primipara</td>
<td>16</td>
<td>43.2</td>
</tr>
<tr>
<td>Multipara</td>
<td>21</td>
<td>56.8</td>
</tr>
<tr>
<td>Total</td>
<td>37</td>
<td>100.0</td>
</tr>
<tr>
<td>Gestational Age</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trimester 1</td>
<td>17</td>
<td>45.9</td>
</tr>
<tr>
<td>Trimester 2</td>
<td>5</td>
<td>13.5</td>
</tr>
<tr>
<td>Trimester 3</td>
<td>15</td>
<td>40.5</td>
</tr>
<tr>
<td>Total</td>
<td>37</td>
<td>100.0</td>
</tr>
</tbody>
</table>

The smallest group, 16 respondents (43.2%), are primiparous. Regarding the respondents’ gestational age, 17 respondents (45.9%) are in the first trimester, while 5 respondents (13.5%) are in the second trimester.

B. CHARACTERISTICS OF KNOWLEDGE LEVELS

Figure 1. Frequency Distribution of Respondents Based on Knowledge Levels in the Working Area of Puskesmas Plaosan Magetan in 2024.

FIGURE 1. The characteristics of respondents’ knowledge levels show that the largest group has a moderate level of knowledge, with 21 respondents (56.8%). Meanwhile, the smallest group with a good level of knowledge consists of 5 respondents (13.5%).

each (2.7%) who are civil servants (ASN) and laborers. In terms of parity, 21 respondents (56.8%) are multiparous, while

C. FREQUENCY DISTRIBUTION BASED MOTIVATION

Figure 2. Frequency Distribution of Respondents Based on Motivation Levels in the Working Area of Puskesmas Plaosan Magetan in 2024.

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The characteristics of respondents' motivation levels show that the largest group has a moderate level of motivation, with 23 respondents (62.2%). Meanwhile, the smallest group with a strong level of motivation consists of 5 respondents (13.5%).

**D. IMPLEMENTATION OF INTEGRATED ANC**


**IMPLEMENTATION OF INTEGRATED ANC**

<table>
<thead>
<tr>
<th>Complete</th>
<th>Not Completed</th>
</tr>
</thead>
<tbody>
<tr>
<td>59.5%</td>
<td>40.5%</td>
</tr>
</tbody>
</table>

**Figure 3** Based on Figure 3, the characteristics of the implementation of integrated ANC (Antenatal Care) among the respondents show that the majority of respondents, 22 (59.5%), completed the integrated ANC. Meanwhile, the remaining 15 respondents (40.5%) did not complete the integrated ANC.

**E. ANALYSIS RESULTS**

**TABLE 2** Intervariable Analysis Results

<table>
<thead>
<tr>
<th>No.</th>
<th>Relationship Between Variables</th>
<th>Value</th>
<th>Df</th>
<th>Significance</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Knowledge and the Implementation of Integrated ANC.</td>
<td>8,589</td>
<td>2</td>
<td>0.014</td>
<td>Significant</td>
</tr>
<tr>
<td>2.</td>
<td>Motivation and the Implementation of Integrated ANC.</td>
<td>13,111</td>
<td>2</td>
<td>0.001</td>
<td>Significant</td>
</tr>
</tbody>
</table>

Table 2. The research results show a significant relationship between knowledge and the implementation of Integrated ANC with a Chi-Square test yielding a value of \( p = 0.014 \), which is \( p < 0.05 \). Therefore, there is a significant relationship between knowledge and the implementation of Integrated ANC at UPTD Puskesmas Plaosan.

Similarly, there is a significant relationship between motivation and the implementation of Integrated ANC, as indicated by a Chi-Square test yielding a value of \( p = 0.001 \), which is \( p < 0.05 \). Hence, there is a significant relationship between motivation and the implementation of Integrated ANC at UPTD Puskesmas Plaosan.

**IV. DISCUSSION**

Based on the research conducted in the working area of Puskesmas Plaosan, in this section, the researcher elaborates in detail on the research findings regarding the relationship between maternal knowledge and motivation with the implementation of Integrated ANC using primary data from UPTD Puskesmas Plaosan in 2024. Here are the details:

**A. KNOWLEDGE**

The research results indicate that the majority of the 37 respondents have a sufficient level of knowledge. Knowledge is the result of knowing, which occurs after individuals perceive specific objects through their five human senses: sight, hearing, smell, taste, and touch. Most human knowledge is obtained through sight and hearing. Functionally, knowledge serves as a fundamental drive for curiosity, reasoning, and organizing experiences. When there are experiences that initially do not align with what an individual knows, they are rearranged, reorganized, or altered to achieve consistency [6]. Factors influencing knowledge include education level, information, environment, and age. Education level impacts knowledge by enhancing an individual's ability to remember, understand, and apply learned material [7]. The education level of pregnant women affects their understanding of Integrated ANC. The higher someone's education level, the higher their understanding of Integrated ANC. Pregnant women with high knowledge about ANC are more likely to attend ANC visits regularly and according to standards, thereby reducing the risk of pregnancy complications and improving the health of both mother and baby. According to Inayah's research, pregnant women with higher levels of education will have their pregnancies tested more frequently because they have a strong desire to learn about their pregnancies and to voice any issues they may be experiencing. This is consistent with the study's findings, which indicate that respondents with secondary to postsecondary education had a similar proportion of respondents who routinely performed ANC [8]. Another study showed that age, knowledge, attitudes, work, and family support are related factors influencing the frequency of antenatal care visits [9].
B. MOTIVATION

The research results indicate that the majority of the 37 respondents have a moderate level of motivation. Motivation can be described as an inner drive within individuals to engage in specific activities to achieve a goal. Strong motivation increases the compliance of pregnant women to undergo Integrated ANC checks. This aligns with the study conducted by [10] which shows a significant relationship between motivation and ANC visits. This means that the motivation possessed by mothers impacts the regularity of ANC visits during pregnancy in the working area of Puskesmas Muara Pinang, Kabupaten Empat Lawang. This is also consistent with the research by [5] on the influence of motivation and perception of services on the regularity of antenatal care among pregnant women in Puskesmas Ngemplak, Simongan, Kota Semarang, during the first quarter, indicating that higher motivation leads to more regular antenatal care visits. The motivation of pregnant women influences their compliance in undergoing Integrated ANC. Good knowledge, high motivation, as well as internal and external factors, can enhance the motivation of pregnant women to undergo Integrated ANC regularly.

C. IMPLEMENTATION OF INTEGRATED ANC

The research results indicate that the majority of the 37 respondents received complete Integrated Antenatal Care (ANC). Integrated Antenatal Care is a comprehensive and quality prenatal service provided to all pregnant women from conception until just before delivery [1]. The implementation of Integrated ANC is crucial as it has several significant goals and benefits for the health of pregnant women and babies. Here are some reasons why Integrated ANC is crucial: Improving Maternal Health: In Integrated ANC, the health of the mother is monitored throughout pregnancy, ensuring that pregnant women remain healthy and deliver safely. Reducing Maternal and Infant Mortality: Integrated ANC helps in lowering the rates of maternal and infant mortality by providing timely interventions and care. Enhancing Maternal Knowledge: Integrated ANC offers information and education related to pregnancy and childbirth, empowering pregnant women with the knowledge to adopt healthy behaviors and recognize various pregnancy complications. Preventing Pregnancy Complications: Integrated ANC aims to prevent severe complications or deaths related to pregnancy by early detection and management of potential issues. Improving Quality of Life and Nutritional Status: It is essential for prospective mothers to have good nutritional status before pregnancy, avoiding underweight or overweight conditions, to reduce the risk of pregnancy complications.

Therefore, the implementation of Integrated ANC is crucial for improving the health of pregnant women and babies, reducing mortality rates, increasing knowledge, preventing complications, improving quality of life, enhancing satisfaction, and improving nutritional status.

D. RELATIONSHIP BETWEEN KNOWLEDGE AND IMPLEMENTATION OF INTEGRATED ANC

The relationship between knowledge and the implementation of Integrated ANC was analyzed using the chi-square test, resulting in a significant relationship between knowledge and the implementation of Integrated ANC in the UPTD Puskesmas Plaosan.

An expectant mother needs to know, understand, and realize that during her pregnancy, she must take proper care of her health. Understanding pregnancy, the risks involved, childbirth, and postpartum care, as well as the efforts that can be made to ensure a safe pregnancy, are essential for mothers to know [11]. Behavior based on knowledge tends to be more enduring than behavior that lacks knowledge [12].

One's knowledge is acquired from various sources such as teachers, parents, friends, mass media, electronic media, instructional books, and healthcare professionals. Additionally, there are other factors such as experiences, influence from parents, friends, mass media, and healthcare providers. All these factors can influence a mother's knowledge about the importance of pregnancy check-ups [13]. Mothers with good knowledge, whose understanding of pregnancy check-ups is usually acquired through health education or information from mass media, are still in the adoption phase. In this phase, mothers realize the meaning of the stimulus, which is the intention without a change in behavior and attitude. Trust in healthcare utilization is influenced by knowledge about health and healthcare services, which can affect the need for and utilization of healthcare services. This is supported by the theory of adopting new behavior, which involves a sequential process starting from Awareness, Interest, Evaluation, Trial, and Adoption [14]. Someone with good knowledge about something tends to make more appropriate decisions regarding that issue compared to those with low knowledge.

In a study conducted by [15] titled "The Relationship between Knowledge and Attitude of Mothers with Antenatal Care Visits in the Lambuya Health Center Working Area, Konawe Regency in 2017," it was found that pregnant women had good knowledge about ANC (71.06%). Pregnant women also had a positive attitude toward ANC, which was 57.9%.

Visits for ANC among pregnant women are only a small portion that is regular, at 44.73%. Meanwhile, in a study by Adnan (2020) titled "The Relationship between Pregnant Women's Knowledge of ANC and the Behavior of Pregnancy Examination Visits (Antenatal Care) at Satiti Prima Husada Hospital, Tulungagung," it was found that
there is a relationship between the level of pregnant women's knowledge and visits for pregnancy examinations at Satiti Prima Husada Hospital, Tulungagung.

Based on Lawrence Green's theory, which states that health behavior can be influenced by several factors including predisposition factors like knowledge, behavior based on knowledge is far better than behavior not based on knowledge. Pregnant women's knowledge about Antenatal Care (ANC) affects ANC visits. Knowledge among pregnant women about the implementation of ANC is crucial as it can help reduce maternal and infant mortality rates [16].

E. RELATIONSHIP BETWEEN MOTIVATION AND IMPLEMENTATION OF INTEGRATED ANC

The relationship between motivation and the implementation of Integrated ANC was analyzed using the chi-square test, which yielded significant results showing a relationship between motivation and the implementation of Integrated ANC in UPTD Puskesmas Plaosan. Winardi (2016) asserts that motivation is a potential force within a person that can be developed by oneself or influenced by external factors, primarily revolving around monetary and non-monetary rewards, which can positively or negatively impact their performance outcomes. The higher the motivation of pregnant women to utilize antenatal care services, the higher the attendance at antenatal care visits. This motivation stems from pregnant women desiring to receive good healthcare services during their pregnancy and ensuring the health and safety of their child upon delivery. This aligns with research conducted by Alberth M. Baumali which showed a meaningful relationship between pregnant women's motivation to undergo Antenatal Care. Pregnant women with strong motivation will increase their awareness and desire to engage in Integrated ANC. Additionally, strong motivation will enhance pregnant women's compliance with Integrated ANC examinations, thus reducing the risks associated with pregnancy and improving the health of both mother and baby. Two factors primarily influence pregnant women's behavior: internal ones like knowledge (intelligence), emotional stability, attitude, and motivation, and external ones like surroundings and access to healthcare [17].

A comprehensive health education program for pregnant women can significantly improve their understanding, attitude, and adherence to folic acid supplementation (18). Pregnant women's conduct has an impact on antenatal care (ANC) examinations as well. [19]assert that pregnant women's actions in providing for their children are also influenced by their knowledge of and attitudes around pregnancy. Pregnant women's positive attitudes will lead to beneficial behavioral changes, preventing them from having misconceptions about the significance of ANC visits. If pregnant women have a favorable attitude toward ANC, they will frequently visit the health center to have their pregnancies monitored. In contrast, if they have a negative attitude toward ANC, pregnant women are less likely to regularly visit each month. This means that while the stimulus may be the same for some people, the response will differ for everyone [19]).

The limitations of this study include the restricted research period, which only covered the year 2023 (one year), and the small number of respondents, totaling only 37 individuals. This study was conducted solely at Puskesmas Plaosan, which means the results may not be generalizable to other Puskesmas.
V. CONCLUSION
Based on the research results and discussions conducted on the knowledge and motivation with the implementation of Integrated ANC in pregnant women at UPTD Puskesmas Plaosan, the following conclusions can be drawn:

1. The majority of pregnant women have a sufficient level of knowledge.
2. The level of motivation among pregnant women is mostly moderate.
3. The implementation of Integrated ANC is mostly complete.
4. There is a relationship between the knowledge of pregnant women and the implementation of Integrated ANC at UPTD Puskesmas Plaosan.
5. There is a relationship between the motivation of pregnant women and the implementation of Integrated ANC at UPTD Puskesmas Plaosan.

REFERENCES
