
Overview Of The Level Of Knowledge About Anemia Among Pregnant Women In The Coastal Area Of Bengkulu City

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Abstract

Anemia among pregnant women remains a significant health problem that can increase the risk of complications for both the mother and the fetus. One of the factors influencing the occurrence of anemia is the level of knowledge possessed by pregnant women. This study aimed to describe the level of knowledge about anemia among pregnant women in the coastal area of Bengkulu City. This research employed a quantitative descriptive design with a cross-sectional approach. The population consisted of all pregnant women in the first, second, and third trimesters who were registered in the working areas of Kandang Health Center, Padang Serai Health Center, and Pasar Ikan Health Center, totaling 738 individuals. A sample of 89 respondents was selected using purposive sampling. Data were collected through questionnaires and analyzed using univariate analysis presented in the form of frequency distributions. The results showed that most respondents were aged 20–35 years. The level of knowledge regarding anemia among pregnant women was predominantly in the good category, with 81 respondents (64.8%), followed by the moderate category with 41 respondents (32.8%), and the poor category with 3 respondents (2.4%). In conclusion, the level of knowledge about anemia among pregnant women in the coastal area of Bengkulu City was predominantly categorized as good.

Keywords: Anemia, Pregnant Women, Knowledge.

INTRODUCTION

Anemia in pregnancy is still one of the main public health problems because it can affect both the mother and the fetus. It is defined as a condition in which the hemoglobin (Hb) level is below 11 g/dL during pregnancy, reducing the blood's ability to carry oxygen throughout the body (Herien et al., 2024). According to the World Health Organization (WHO), the global prevalence of anemia among pregnant women reached 35.5% in 2023. Around 80% of countries still experience moderate to severe anemia problems, especially in Africa and South Asia, where most cases occur among women of reproductive age, including pregnant women (WHO, 2025). In Indonesia, anemia during pregnancy also remains a major health concern. Based on the Indonesia Health Survey (SKI) 2023, the prevalence of anemia among pregnant women was 27.7%. The highest prevalence was reported among women aged 35–44 years (39.6%), followed by those aged 25–34 years (31.4%) (Ministry of Health of the Republic of Indonesia, 2023). In Bengkulu Province, anemia among pregnant women is still reported. Data from the Bengkulu Provincial Health Office showed that only 22,322 out of 32,552 pregnant women (69%) received hemoglobin examinations. The proportion of pregnant women with anemia also increased from 4.2% in 2022 to 5.9% in 2023 (Bengkulu Provincial Health Office, 2024).

Anemia is mainly caused by iron deficiency, but it may also result from deficiencies in folate, vitamin B12, and vitamin A. Other contributing factors include poor iron absorption, blood loss, chronic diseases, and poor nutritional status. Normal red blood cell production depends on healthy kidney function, bone marrow activity, and adequate nutrient intake (Syahrial, 2021; Eliagita & Absari, 2024). Anemia during pregnancy may cause miscarriage, preterm birth, fetal growth restriction, premature rupture of membranes, infection, and postpartum hemorrhage. These complications can increase the health risks for both mothers and newborns (Andarwulan et al., 2022). Prevention of anemia requires adequate nutritional intake, especially iron-rich foods and regular consumption of iron supplements. The Ministry of Health of Indonesia recommends that pregnant women consume at least 90 iron tablets during pregnancy. Good nutritional status before and during

pregnancy is also important because fetal growth depends on the mother's nutritional reserves (Ministry of Health of the Republic of Indonesia, 2021; Andarwulan et al., 2022). In addition, health education and balanced nutrition play an important role in preventing iron deficiency anemia (Mentari & Nugraha, 2023).

Knowledge is one of the important factors influencing anemia prevention among pregnant women. Women with good knowledge are more likely to understand the causes, symptoms, and prevention of anemia, including the importance of taking iron tablets and consuming nutritious foods. On the other hand, poor knowledge may increase the risk of anemia during pregnancy (Maharani et al., 2021). Previous studies have shown the importance of maternal knowledge. Aldania and Masruroh (2022) found a significant relationship between knowledge level and anemia among pregnant women. Women with lower knowledge had a higher risk of developing anemia. Similarly, Agustin et al. (2024) reported that pregnant women with poor knowledge were 2.556 times more likely to experience anemia than those with good knowledge. Initial data from the Bengkulu City Health Office showed that the largest numbers of pregnant women in the coastal area were recorded at Kandang Health Center (478 women), Padang Serai Health Center (420 women), and Pasar Ikan Health Center (357 women) in 2024. Data from January 2025 to January 2026 also indicated that anemia cases were still found in these coastal health centers, with 31 cases at Padang Serai and 19 cases at Pasar Ikan, while data from Kandang Health Center were still being updated.

A preliminary survey involving 10 pregnant women in the coastal area of Bengkulu City found that three women (30%) had good knowledge about anemia, three (30%) had moderate knowledge, and four (40%) had poor knowledge. These findings suggest that many pregnant women still have insufficient knowledge about anemia and highlight the need for further research. Therefore, this study aims to describe the level of knowledge about anemia among pregnant women in the coastal area of Bengkulu City. The findings are expected to provide useful information for improving health education programs and supporting anemia prevention during pregnancy.

RESEARCH METHODS

This study used a quantitative descriptive design to describe the level of knowledge about anemia among pregnant women in the coastal area of Bengkulu City. The study was conducted from April to May 2026 at three public health centers: Kandang Health Center, Padang Serai Health Center, and Pasar Ikan Health Center. The study population consisted of 738 pregnant women in the first, second, and third trimesters who were registered at these health centers. The sample size was calculated using the Slovin formula, resulting in 89 respondents. The sample from each health center was selected proportionally according to the population size, and participants were recruited using purposive sampling based on the inclusion and exclusion criteria. The inclusion criteria were pregnant women in the first, second, or third trimester who agreed to participate, were able to communicate well, and could read, write, and complete the questionnaire. Women who were unable to read, were hospitalized or seriously ill, or did not live in the study area were excluded (Abubakar, 2021; Iba & Wardhana, 2023; Sahir, 2021).

Data were collected using a structured questionnaire consisting of respondents' characteristics (age, education, occupation, and parity) and questions about knowledge of anemia during pregnancy. The knowledge questionnaire was adapted from Sholihatin (2023) and had been tested for validity and reliability, with a reliability coefficient of 0.798. Before data collection, all respondents received an explanation of the study and signed an informed consent form. The questionnaire was completed independently, while the researcher provided assistance when respondents needed clarification.

The collected data were processed through editing, coding, scoring, data entry, and tabulation, and then analyzed using IBM SPSS software. Univariate analysis was used to describe the frequency distribution of respondents' characteristics and their level of knowledge about anemia. Knowledge

scores were classified into three categories: good (76–100%), fair (56–75%), and poor (<56%). The results are presented as frequencies and percentages.

This study received ethical approval from the Health Research Ethics Committee, Faculty of Dentistry, University of Jember, Approval Number 3962/UN25.8/KEPK/DL/2026, dated 26 May 2026. The study followed ethical principles, including voluntary participation, anonymity, confidentiality, justice, and beneficence to protect the rights and privacy of all participants (Hildawati et al., 2024).

RESULTS AND DISCUSSION

Results

This study was conducted in three public health centers located in the coastal area of Bengkulu City, namely Kandang Health Center, Padang Serai Health Center, and Pasar Ikan Health Center. A total of 89 pregnant women participated in the study. Based on health center records from January 2025 to January 2026, anemia cases were still reported, with 36 cases in Kandang Health Center, 32 cases in Padang Serai Health Center, and 19 cases in Pasar Ikan Health Center.

Table 1. Characteristics of Respondents and Knowledge Level About Anemia (n = 89)

Variable	Category	n	%
Age	<20 years	3	3.4
	20–35 years	71	79.8
	>35 years	15	16.9
Parity	Primipara	30	33.7
	Multipara	58	65.2
	Grand multipara	1	1.1
Education	Primary	21	23.6
	Secondary	45	50.6
	Higher education	23	25.8
Occupation	Not working	66	74.2
	Working	23	25.8
Knowledge about anemia	Good	64	71.9
	Fair	22	24.7
	Poor	3	3.4

The results showed that most respondents were 20–35 years old (79.8%), multiparous (65.2%), had secondary education (50.6%), and were not employed (74.2%). Regarding knowledge about anemia, the majority of pregnant women had a good level of knowledge (71.9%), while 24.7% had a fair level and only 3.4% had poor knowledge. These findings indicate that most pregnant women in the coastal area of Bengkulu City have a good understanding of anemia during pregnancy.

Discussion

This study was conducted among 89 pregnant women from three public health centers in the coastal area of Bengkulu City: Kandang Health Center, Padang Serai Health Center, and Pasar Ikan Health Center.

Most respondents were 20–35 years old (79.8%), indicating that the majority were in the healthy reproductive age group. Age may influence knowledge because it is related to maturity, life experience, and the ability to understand health information. Women in this age group are generally more able to receive health education during antenatal care (ANC) visits and from other information sources (Syalfina et al., 2019). This finding is consistent with the study by Farhan et al. (2024), which reported that most pregnant women were 26–35 years old and had better knowledge than younger women. Therefore, the high proportion of women of reproductive age may have contributed to the good level of knowledge about anemia found in this study.

Most respondents were multiparous (65.2%), meaning they had experienced pregnancy before. Previous pregnancy experience may help mothers better understand antenatal care, iron supplementation, and anemia prevention. Women who have been pregnant before usually receive more health information during previous pregnancies, which can improve their knowledge (Natalia et al., 2022). This result is similar to the findings of Farhan et al. (2024), who reported that women with higher parity tended to have better knowledge about anemia. Thus, previous pregnancy experience may have supported the good knowledge level observed in this study.

Regarding education, 50.6% of respondents had completed secondary education. Education is an important factor affecting health knowledge because people with higher education generally find it easier to understand health information. Women with secondary or higher education are more likely to understand the causes, symptoms, effects, and prevention of anemia during pregnancy (Retno et al., 2023). This finding agrees with Diana (2023), who reported that higher educational attainment was associated with better health knowledge among pregnant women.

Most respondents (74.2%) were not employed and were classified as housewives. Although employment may increase access to information through the workplace and social interactions, the findings showed that respondents still had good knowledge about anemia. This suggests that health information can also be obtained through antenatal care services, health education programs, the Maternal and Child Health (MCH) handbook, mass media, and social media (Retno et al., 2023). Similar findings were reported by Ama and Fajarwati (2024), who noted that employment is only one of several factors influencing maternal knowledge.

The results also showed that 71.9% of respondents had good knowledge about anemia, while 24.7% had fair knowledge and 3.4% had poor knowledge. These findings indicate that most pregnant women in the coastal area of Bengkulu City have a good understanding of anemia during pregnancy. This result is in line with Oktaviani et al. (2025), who found that most pregnant women had good knowledge and that better knowledge was associated with a lower risk of anemia. Women with good knowledge are more likely to take iron tablets regularly, eat iron-rich foods, and attend routine antenatal care visits.

The high level of knowledge found in this study may be related to several factors, including the respondents' reproductive age, secondary education, and previous pregnancy experience. These factors may help pregnant women receive and understand health information more effectively. Continuous health education through counseling, health promotion, and regular antenatal care is still needed to improve knowledge and support the prevention of anemia during pregnancy.

CONCLUSIONS

Most pregnant women in the coastal area of Bengkulu City were 20–35 years old, multiparous, had completed secondary education, and were not employed. The findings also showed that the majority of respondents had a good level of knowledge about anemia during pregnancy, while a smaller proportion had fair or poor knowledge. These results suggest that pregnant women in the study area generally have a good understanding of anemia and its prevention, although some women still need additional health education.

The findings of this study may be useful for future research and maternal health services. Future studies are recommended to include other factors related to anemia, such as nutritional status, dietary intake, adherence to iron tablet consumption, and the frequency of antenatal care (ANC) visits. Health education institutions may use these findings as learning material, while health workers are encouraged to strengthen health education, counseling, and monitoring of iron tablet use among pregnant women. Pregnant women should also continue attending regular ANC visits, maintain a balanced diet, and take iron tablets as recommended to help prevent anemia during pregnancy.

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