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Original Article

Hubungan Keteraturan Kunjungan *Antenatal Care* (ANC) Dengan Kejadian Anemia Pada Ibu Hamil

The Relationship Between Regularity of Antenatal Care (ANC) Visits and the Incidence of Anemia in Pregnant Women

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ABSTRACT

Anemia during pregnancy remains a significant public health problem because it increases the risk of maternal and fetal complications. Regular antenatal care (ANC) visits are important for early detection and prevention of anemia among pregnant women. This study aimed to analyze the relationship between the regularity of ANC visits and the incidence of anemia among pregnant women at Alalak Selatan Community Health Center, Banjarmasin.

This quantitative study used a cross-sectional design with an observational analytic approach. The sample consisted of 30 third-trimester pregnant women with gestational age ≥37 weeks selected using purposive sampling technique. Data were collected through maternal and child health (MCH) books and direct observation after informed consent was obtained. The independent variable was the regularity of ANC visits, while the dependent variable was the incidence of anemia among pregnant women. Data were analyzed using univariate and bivariate analysis with Fisher's Exact Test.

A total of 73.3% of respondents experienced anemia, and 56.7% had irregular ANC visits. Statistical analysis showed that there was no significant relationship between the regularity of ANC visits and the incidence of anemia among pregnant women ($p = 0.242$; $p > 0.05$).

The regularity of ANC visits was not significantly associated with anemia among pregnant women. Other factors such as nutritional intake, adherence to iron tablet consumption, and maternal health behavior may contribute to the incidence of anemia during pregnancy

Keywords: *Antenatal Care; Anemia; Pregnant Women; Visit Regularity*

ABSTRAK

Anaemia pada kehamilan meningkatkan risiko komplikasi persalinan, sehingga tetap menjadi isu kesehatan masyarakat utama. Layanan antenatal care (ANC) rutin dan berkualitas tinggi merupakan langkah pencegahan krusial.

Riset ini bertujuan menganalisis tingkat anaemia ibu hamil tahun 2025 di Puskesmas Alalak Selatan Banjarmasin serta hubungan frekuensi kunjungan ANC dengan kejadian anaemia. Riset kuantitatif ini menerapkan desain cross-sectional berbasis analisis observasional. Tiga puluh ibu hamil trimester tiga dengan usia gestasi ≥37 minggu dipilih secara acak. Setelah persetujuan diperoleh, data dikumpul menggunakan buku MCH dan observasi langsung. Analisis univariat serta bivariat dilakukan dengan uji Chi-Square

Sebanyak 73,3% partisipan mengalami anaemia, dan 56,7% tidak rutin menjalani pemeriksaan ANC. Analisis statistik menunjukkan tidak ada korelasi signifikan antara frekuensi kunjungan ANC dan kejadian anaemia pada ibu hamil (p=0,242 ; p>0,05) yang menandakan tidak terdapat hubungan yang signifikan antara keteraturan kunjungan ANC dengan kejadian anemia pada ibu hamil.

Frekuensi kehadiran ANC bukan satu-satunya penentu prevalensi anaemia ibu hamil; faktor lain turut berperan tidak semata-mata ditentukan oleh keteraturan kunjungan ANC.

Kata Kunci: Antenatal Care; Anemia; Ibu Hamil; Keteraturan Kunjungan

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Key Findings

- ⇒ Anemia remains a common health problem among pregnant women in the study setting.
- ⇒ Irregular attendance of antenatal care visits was observed among a considerable proportion of pregnant women.
- ⇒ The regularity of antenatal care visits was not significantly associated with the incidence of anemia among pregnant women.

Introduction

According to the World Health Organization (2025), one of the primary targets of the Sustainable Development Goals (SDGs) is to reduce the maternal mortality ratio (MMR) to below 70 per 100,000 live births by 2030. This target underscores the central role of maternal health in advancing global health development. Deficiencies in iron, folic acid, or vitamin B12 during pregnancy can lead to anemia, characterized by hemoglobin (Hb) levels of <11 g/dL, which indirectly contributes to an increased MMR (Obianeli et al., 2024). Pregnant women with anemia are at higher risk of adverse outcomes, including preterm birth, low birth weight, postpartum hemorrhage, and neonatal asphyxia (Wang et al., 2025).

Data from the Indonesian Health Survey (SKI) 2023 indicate that 27.7% of pregnant women experience anemia, representing nearly one-quarter of all cases (Ministry of Health of the Republic of Indonesia, 2023). The South Kalimantan Provincial Health Office (2023) reported that the prevalence of anemia in the province fluctuated, with rates of 19.60% in 2021, 18.30% in 2022, and 20.01% in 2023. Meanwhile, the Banjarmasin City Health Office (2023) reported an increase in anemia cases among pregnant women from 1,052 cases in 2022 to 1,107 cases in 2023, representing an 8.2% rise.

In 2023, Sungai Andai Community Health Center recorded the highest number of anemia cases in Banjarmasin, totaling 107 cases, followed by Kayu Tangi Community Health Center with 92 cases and Pemurus Baru Community Health Center with 85 cases (Hartini et al., 2025). However, a preliminary study conducted in 2024 revealed that Alalak Selatan Community Health Center had the highest number of anemia cases, totaling 102 cases, followed by Kuin Raya Community Health Center with 97 cases and Sungai Andai Community Health Center with 90 cases. The

number of anemia cases at Alalak Selatan Community Health Center increased significantly from 63 cases in 2023 to 102 cases in 2024 (Banjarmasin City Health Office, 2024). This indicates that Alalak Selatan Community Health Center requires serious attention due to the high burden of anemia cases.

High-quality antenatal care (ANC) services play a crucial role in the prevention and early detection of anemia among pregnant women. ANC refers to a series of prenatal examinations aimed at monitoring maternal and fetal health, identifying potential complications at an early stage, and providing appropriate interventions. These services typically include physical examinations, measurement of blood pressure and hemoglobin levels, iron supplementation, as well as nutritional counseling and education on pregnancy care (Mariza & Isnaini, 2022).

Physical examination and health counseling are included among the ten essential components of antenatal care (the "10T") established by the government (Ministry of Health of the Republic of Indonesia, 2022). In addition to nutritional education, Regulation of the Minister of Health of the Republic of Indonesia No. 88 of 2014 emphasizes the provision of at least 90 iron (Fe) tablets for pregnant women. Iron supplementation is crucial for preventing iron deficiency anemia, reducing the risk of hemorrhage, and lowering maternal mortality associated with postpartum bleeding (Rahmawati et al., 2024).

Regular ANC attendance consists of a minimum of six visits scheduled across pregnancy trimesters. Pregnant women are considered to have regular ANC visits if they attend one visit during the first trimester (0–12 weeks of gestation), two visits during the second trimester (13–26 weeks), and three visits during the third trimester (27–40 weeks), with at least two visits conducted by a physician (Ministry of Health of the Republic of Indonesia, 2022).

Regular ANC visits enable routine hemoglobin examinations, nutritional counseling, and iron supplementation (iron tablets) at each visit, thereby reducing the risk of anemia. When ANC visits are irregular, interventions may be delayed until hemoglobin levels decline significantly. As a result, pregnant women who do not adhere to the recommended ANC schedule are more susceptible to anemia. This study, entitled "The Relationship Between the Regularity of Antenatal Care (ANC) Visits and the Incidence of Anemia Among Pregnant Women at Alalak Selatan Community Health Center, Banjarmasin in 2025," differs from previous studies in several respects. It focuses specifically on the regularity of ANC visits based on trimester schedules, utilizes the most recent data from 2025, is conducted in an area with the highest prevalence of anemia cases, and employs a combination of primary and secondary data derived from Maternal and Child Health (MCH) books to enhance data validity and accuracy through cross-verification.

Methods

Design, Participants, and Setting

This study employed a cross-sectional design with an observational analytic approach, in which all variables were measured simultaneously without any intervention; therefore, it is categorized as a quantitative study. The participants consisted of third-trimester pregnant women with a gestational age of ≥37 weeks. A purposive sampling technique was used to select 30 respondents from the study population, namely all pregnant women undergoing third-trimester antenatal care (ANC). The inclusion criteria were as follows: third-trimester pregnant women who had recorded ANC visits at Alalak Selatan Community Health Center in 2025; singleton pregnancy; possession of a complete and legible Maternal and Child Health (MCH) book (including records of ANC visits in the first, second, and third trimesters as well as third-trimester hemoglobin examination results); all ANC visits conducted at the same health facility; no history of diseases affecting hemoglobin levels; and willingness to participate as respondents. The exclusion criteria included women who had delivered before the completion of data collection, multiple pregnancies, absence of third-trimester hemoglobin data, a history of blood disorders, and a history of blood transfusion during pregnancy.

The frequency of ANC visits was defined as the independent variable, while the incidence of anemia among pregnant women, based on hemoglobin (Hb) levels, served as the dependent variable. Both primary and secondary data were collected. Secondary data were obtained from laboratory test results recorded in the Maternal and Child Health (MCH) book, particularly third-trimester hemoglobin measurements. Meanwhile, primary data were collected through direct observation and documentation from the MCH book following informed consent. The study was conducted at Alalak Selatan Community Health Center, Banjarmasin City, from December 2025 to January 2026.

Instruments

The research instruments were designed to facilitate systematic, accurate, and analysis-ready data collection (Prawiyogi et al., 2021). In this study, the instruments included an informed consent form and an observation sheet, while the Maternal and Child Health (MCH) book served as the primary data source. The informed consent form functioned as a written agreement signed by pregnant women prior to data collection, containing information on the study objectives, procedures, benefits, and assurances of data confidentiality, thereby ensuring that the study was conducted in accordance with ethical principles. The observation sheet was used as the main instrument in the form of a structured checklist to record data from the MCH book, including respondent characteristics, history of Antenatal Care (ANC) visits in the first, second, and third trimesters, as well as the most recent hemoglobin (Hb) examination results.

Records of antenatal care (ANC) visits constituted the primary data source, supported by hemoglobin (Hb) test results as complementary data. These data were obtained from the Maternal and Child Health (MCH) book,

an official document recorded by healthcare providers, which ensures a high level of data validity. ANC visits were categorized as "regular" if they followed the standard schedule (one visit in the first trimester, two visits in the second trimester, and three visits in the third trimester), and "irregular" if they deviated from this schedule. Participants were classified as "non-anemic" if their hemoglobin level was ≥11 g/dL and "anemic" if it was <11 g/dL. Writing instruments were used as supporting tools to ensure systematic and precise data recording during the study.

Data Collection and Analysis

Data collection in this study was carried out through documentation-based observation by utilizing the Maternal and Child Health (MCH) book as the primary data source. The process began with obtaining research permission from the Alalak Selatan Community Health Center, followed by coordination with relevant staff to identify third-trimester pregnant women who met the study criteria. Furthermore, the researcher approached respondents who came for Antenatal Care (ANC) visits, provided an explanation of the study objectives, and requested consent through informed consent. After the respondents agreed to participate, the researcher conducted observations and recorded data from the MCH book, including the history of ANC visits in each trimester and the results of the most recent hemoglobin (Hb) examination.

The data obtained were then recorded in the observation sheet, rechecked to ensure completeness and accuracy, and classified based on the study variables, namely the regularity of ANC visits and the occurrence of anemia.

The data were processed through several stages: editing to ensure consistency and completeness, coding for variable classification, tabulation to organize frequency distribution tables, data entry into a computer system, and data cleaning to prevent errors and inconsistencies. Subsequently, the analysis was conducted using univariate and bivariate methods. The characteristics of the study variables and respondents were described through univariate analysis based on percentages and frequency distributions. The relationship between the occurrence of anemia and the regularity of ANC visits was examined using bivariate analysis with the Chi-Square test.

Fisher's Exact Test was applied when the expected cell values in the 2×2 table were less than 5. Data processing and analysis were performed using the Statistical Package for the Social Sciences (SPSS) version 25, with a significance level of 0.05.

Ethical Approval

Research participants were fully informed about the objectives, benefits, and procedures of the study prior to data collection. Participation was voluntary, and participants were free to withdraw at any time without any consequences. The privacy of respondents was strictly maintained, and their information was used solely for research purposes. The principles of non-maleficence, beneficence, justice, and respect for autonomy were upheld throughout the study. Ethical approval was granted by the Research Ethics Committee of Universitas

Muhammadiyah Banjarmasin under Decree No. 665/UMB/KE/XII/2025.

Results

Table 1 presents the distribution of respondents' characteristics, ANC visit regularity, anemia status, and the relationship between ANC visit regularity and anemia among pregnant women. Regarding maternal age, the majority of respondents were between 20 and 35 years old, accounting for 27 individuals (90.0%). Only 2 respondents (6.7%) were younger than 20 years, while 1 respondent (3.3%) was older than 35 years. This finding indicates that most pregnant women in the study were within the reproductive age group considered to be at lower obstetric risk.

Based on parity, 17 respondents (56.7%) were multigravida, whereas 13 respondents (43.3%) were primigravida. The predominance of multigravida mothers suggests that more than half of the participants had experienced pregnancy previously. Repeated pregnancies may increase the risk of maternal iron depletion, particularly when nutritional intake and recovery time between pregnancies are inadequate.

Regarding ANC visit regularity, 13 respondents (43.3%) attended antenatal care (ANC) visits regularly, while 17 respondents (56.7%) attended irregularly. These findings demonstrate that more than half of the pregnant women did not comply with the recommended schedule of ANC visits. Irregular ANC attendance may limit opportunities for early detection of pregnancy-related complications and reduce the effectiveness of maternal and fetal health monitoring during pregnancy.

The distribution of anemia status showed that 22 respondents (73.3%) were diagnosed with anemia, whereas only 8 respondents (26.7%) were not anemic. This high prevalence indicates that anemia remains a significant health problem among pregnant women in the study area and highlights the need for strengthened preventive and management strategies, including nutritional counseling and iron supplementation programs.

Analysis of the relationship between ANC visit regularity and anemia revealed that among pregnant women who attended ANC visits regularly, 8 respondents (61.5%) experienced anemia and 5 respondents (38.5%) did not. In contrast, among those with irregular ANC visits, 14 respondents (82.4%) experienced anemia and 3 respondents (17.6%) were not anemic. Although the proportion of anemia was higher among women with irregular ANC attendance, the Fisher's Exact Test produced a p-value of 0.242 ($p > 0.05$). This result indicates that there was no statistically significant relationship between ANC visit regularity and the occurrence of anemia among pregnant women in this study. Therefore, the null hypothesis (H_0) was accepted and the alternative hypothesis (H_1) was rejected. These findings suggest that factors other than ANC visit regularity, such as nutritional status, adherence to iron supplementation, socioeconomic conditions, or maternal health history, may have contributed more substantially to the occurrence of anemia among the respondents.

Table 1. Distribution of Respondents' Characteristics, ANC Visit Regularity, Anemia Status, and the Relationship Between ANC Visit Regularity and Anemia Among Pregnant Women (n = 30)

Variable	Category	Frequency (n)	Percentage (%)	p-value
Maternal Age	< 20 years	2	6.7	-
	20–35 years	27	90	-
	> 35 years	1	3.3	-
Parity	Primigravida	13	43.3	-
	Multigravida	17	56.7	-
ANC Visit Regularity	Regular	13	43.3	-
	Irregular	17	56.7	-
Anemia Status	Anemia	22	73.3	-
	Non-anemia	8	26.7	-
Relationship Between ANC Visit Regularity and Anemia	Regular ANC – Anemia	8	61.5	0.242
	Regular ANC – Non-anemia	5	38.5	
	Irregular ANC – Anemia	14	82.4	
	Irregular ANC – Non-anemia	3	17.6	
Total Respondents		30	100	

Discussion

The study results showed that most pregnant women at the Alalak Selatan Community Health Center in Banjarmasin City did not attend antenatal care (ANC) visits regularly. The regularity of ANC visits in this study was assessed based on the standards of the Indonesian Ministry of Health, which are one visit in the first trimester, two visits in the second trimester, and three visits in the third trimester. Regular ANC visits are important because they help health workers monitor the condition of the mother and fetus, detect pregnancy complications early, and provide health education during pregnancy (Ministry of Health of the Republic of Indonesia, 2022) .

The results of this study align with those of Mariza and Isnaini (2022), who stated that regular ANC visits are associated with improved maternal health monitoring during pregnancy. However, some pregnant women still do not attend ANC regularly. This condition may be influenced by a lack of knowledge regarding the importance of ANC, low awareness of prenatal care, and social and environmental factors. Research by Norfitri and Rusdiana (2023) also explains that mothers' low understanding of the benefits of ANC is one of the causes of irregular prenatal visits (Norfitri & Rusdiana, 2023) .

This study also showed that the majority of pregnant women experience anemia. The high incidence of anemia indicates that anemia remains a health

problem that requires special attention in maternal health services. Anemia during pregnancy generally occurs due to increased iron requirements that are not balanced by adequate nutritional intake. Furthermore, physiological changes during pregnancy cause hemodilution, which decreases hemoglobin levels (Putri & Umami, 2024) .

The findings of this study are supported by Maliha's research (Maliha Amin et al., 2024) , which states that anemia in pregnant women can increase the risk of complications such as fatigue, infection, postpartum hemorrhage, low birth weight, and premature delivery. Therefore, ANC services play a crucial role in preventing anemia through hemoglobin testing, iron supplementation, and nutritional counseling during pregnancy (Rahmawati et al., 2024) .

The bivariate analysis showed no significant association between the regularity of ANC visits and the incidence of anemia in pregnant women at the Alalak Selatan Community Health Center in Banjarmasin City. Fisher's exact test showed a p-value of 0.242 ($p > 0.05$), thus accepting the null hypothesis. This indicates that the regularity of ANC visits is not the only factor influencing the incidence of anemia in pregnant women.

The results of this study align with those of Nency et al., 2025, which found no direct correlation between the frequency of ANC visits and the incidence of anemia in pregnant women. This study demonstrated that adherence to iron tablet consumption, nutritional status, and maternal health behaviors significantly impact hemoglobin levels compared to the number of ANC visits alone. Ariesta's (2025) study also found that the incidence of anemia in the third trimester is more influenced by adherence to iron tablet consumption and nutritional intake than by the regularity of ANC visits.

However, the results of this study differ from those of Anggraeni and Rahayu (2025), which showed a significant relationship between the regularity of ANC visits and the incidence of anemia in pregnant women. This difference in results may be due to the characteristics of the respondents, the method used to measure ANC regularity, the sample size, and differences in social and economic conditions in each study area.

Furthermore, research by Sunnaningtyas and (Susnaningtyas & Lisca, 2024) explains that an unbalanced diet and nausea and vomiting during pregnancy can increase the risk of anemia, even if the mother attends regular ANC visits. Research by Pangastuti et al. (2020) also found that iron tablet consumption was more strongly associated with anemia than ANC visit coverage.

Theoretically, ANC visits serve as a means of monitoring and preventing anemia during pregnancy. However, the effectiveness of ANC in reducing the incidence of anemia is greatly influenced by the quality of health services, the effectiveness of nutritional counseling, regular hemoglobin tests, and maternal compliance with taking iron tablets and adopting a healthy diet. The World Health Organization (2022) emphasized that the quality of ANC services is more important than the number of ANC visits in preventing complications during pregnancy, including anemia .

Based on research findings, theoretical studies, and previous studies, it can be concluded that regular ANC visits are a supporting factor in preventing anemia in pregnant women, but not the primary factor. The incidence of anemia during pregnancy is multifactorial and influenced by various factors such as iron intake, nutritional status, adherence to iron tablet consumption, the mother's physiological condition, and the quality of health services received during pregnancy. Therefore, anemia prevention efforts require a comprehensive and sustainable approach, not only increasing the frequency of ANC visits but also improving the quality of services and health education for pregnant women.

Conclusion

The study conducted at Alalak Selatan Community Health Center, Banjarmasin City, did not find a statistically significant correlation between the frequency of ANC visits and anemia among pregnant women. The results showed that both pregnant women who attended ANC regularly and those who did not could experience either anemia or non-anemia conditions. These findings indicate that factors other than the frequency of ANC visits also influence anemia among pregnant women, such as the effectiveness of prenatal health education, iron intake, and adherence to iron (Fe) supplementation. The frequency of ANC visits is not a definitive indicator of anemia among pregnant women in the Alalak Selatan Community Health Center area, Banjarmasin. Nevertheless, ANC visits remain essential for monitoring maternal health.

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Conflict of Interest

There is no conflict of interest.

Author Contribution

Aprilianti Mayang Efendi: Conceptualization, Methodology, Investigation, Data Curation, Formal Analysis, Validation, Writing – Original Draft, Writing – Review & Editing.

Darmayanti Wulandatika: Methodology, Supervision, Validation, Formal Analysis, Writing – Review & Editing.

M. Fahrin Azhari: Supervision, Writing – Review & Editing, Validation, Project Administration.

Siti Maria Ulfa: Validation, Writing – Review & Editing, Supervision.

References

Anggraeni, D., & Rahayu, S. (2025). The relationship between regular antenatal care visits and the incidence of anemia in pregnant women. *Indonesian Midwifery Journal, 16*(1), 45–53.

Ariesta, F. Y. (2025). Compliance of

pregnant women with antenatal care visits and the incidence of anemia in the second trimester of pregnant women. *7*, 242–249.

Carboo, J. A., Ngounda, J., Baumgartner, J., Robb, L., Jordaan, M., & Walsh, C. M. (2024). Iron status, anemia, and birth outcomes among pregnant women in urban Bloemfontein, South Africa: The NuEMI study. *BMC Pregnancy and Childbirth, 24*(1). https://doi.org/10.1186/s12884-024-06845-w

Dinas Kesehatan Provinsi Kalimantan Selatan. (2023). *Profil kesehatan Provinsi Kalimantan Selatan tahun 2023*. Dinas Kesehatan Provinsi Kalimantan Selatan.

Karami, M., Chaleshgar, M., Salari, N., Akbari, H., & Mohammadi, M. (2022). Global prevalence of anemia in pregnant women: A comprehensive systematic review and meta-analysis. *Maternal and Child Health Journal, 26*(7), 1473–1487. https://doi.org/10.1007/s10995-022-03450-1

Kementerian Kesehatan Republik Indonesia. (2022). *Profil kesehatan Indonesia 2021*. Kementerian Kesehatan Republik Indonesia.

Kementerian Kesehatan Republik Indonesia. (2024). *Profil kesehatan Indonesia 2023*. Kementerian Kesehatan Republik Indonesia.

Maliha Amin, Salsabilah, M., Pratama, M. I., Salsabila, M., & Regita Az Zahra, M. D. S. B. (2024). Anemia prevention strategy in pregnant women through integrated health post services. *Indonesian Journal of Community Service, 6*(4), 32–42. https://doi.org/10.57214/pengabmas.v6i4.576

Mariza, A., & Isnaini, N. (2022). Counseling on the importance of antenatal care as an effort to improve the health of pregnant women. *Jurnal Perak Malahayati: Pengabdian Kepada Masyarakat, 5*, 2003–2005.

Nency, A., Hanifa, F., Irmayani, Nurhikmahwati, M., Aulia, W. N., & Hasanah, Z. A. (2025). The relationship between information sources, antenatal care visits and iron supplementation with the incidence of mild anemia in primigravida pregnant women in the first trimester. *4*(1), 16–22.

Norfitri, R., & Rusdiana, R. (2023). Risk factors for anemia in pregnant women. *Journal of Healthy Human Health Sciences, 11*(1), 25–30. https://doi.org/10.54004/jikis.v11i1.107

Obianeli, J., et al. (2024). Maternal anemia and pregnancy outcomes. *International Journal of Women's Health, 16*(3), 201–210.

Prawiyogi, A. G., Sadiah, T. L., Purwanugraha, A., & Elisa, P. N. (2021). Using big book media to cultivate reading interest in elementary schools. *Jurnal Basicedu, 5*(1), 446–452. https://doi.org/10.31004/basicedu.v5i1.787

Putri, S. I., & Umami, R. (2024). Age of high-risk pregnant women and the incidence of anemia in the third trimester. *Malang Journal of Midwifery (MAJORY), 6*(1), 25–33.

Rahmawati, T., Yuliastuti, E., & Rafidah. (2024). The incidence of anemia in pregnant women in the Simpang Empat Care Community Health Center work area in 2024. *2*(1),

196–209.

Sari, D., & Handayani, E. (2022). The relationship between dietary patterns and the incidence of anemia in pregnant women. *Journal of Midwifery and Health, 7*(1), 33–40.

Susnaningtyas, A. V., & Lisca, S. M. (2024). Work of Majasari Community Health Center, Pandeglang Regency in 2022. *8*(1), 1–11.

Wang, R., Xu, S., Hao, X., Jin, X., Pan, D., Xia, H., Liao, W., Yang, L., & Wang, S. (2025). Anemia during pregnancy and adverse pregnancy outcomes: A systematic review and meta-analysis of cohort studies. *Frontiers in Global Women's Health, 6*. https://doi.org/10.3389/fgwh.2025.1502585

World Health Organization. (2022). *WHO recommendations on antenatal care for a positive pregnancy experience*. World Health Organization.

World Health Organization. (2023). *Global anemia estimates among pregnant women*. World Health Organization.

World Health Organization. (2025). *SDGs target 3.1: Reduce global maternal mortality ratio*. World Health Organization.