JKM Sai Wawai

Jurnal Kesehatan Metro Sai Wawai
Journal homepage https://ejurnal.poltekkes-tjk.ac.id/index.php/JKM

ISSN Onlin 2657-139
ISSN Prin 19779-469

Volume 17, No. 2, December 2024, 82-89. DOI: https://doi.org/10.26630/jkmsw.v17i2.4979 Original Article

Womb to Growth: How Maternal Anemia and Low Birth Weight Shape Toddler Stunting

Dari Rahim hingga Tumbuh Kembang: Bagaimana Anemia Ibu dan Berat Badan Lahir Rendah Mempengaruhi Stunting pada Balita

Dian Puspitasari[1], Dainty Maternity✉[2]
[1]Ahmad Yani University, Yogyakarta, Indonesia
[2]Universitas Malahayati, Bandar Lampung Indonesia

Article Info
Received December 12, 2024,
Revised December 20, 2024,
Accepted December 28, 2024

Keywords:
Boiled Chicken Egg whites,
Healing of Perineal Wounds

Abstract

Introduction: Stunting remains a serious health problem in Indonesia that requires attention from all sectors. One of the main factors influencing stunting is anemia during pregnancy. **Object:** Therefore, this study aimed to determine the relationship between a history of maternal anemia during pregnancy and stunting in toddlers in the Banjarsari Community Health Center, North Metro, in 2025. **Method:** This research used a quantitative case-control design. The population consisted of 622 mothers with toddlers aged 24–59 months in the Banjarsari area. The sample size, calculated using an unpaired categorical comparative formula, totaled 60 respondents (20 cases and 40 controls) with a 1:2 ratio. Sampling was done using stratified random sampling. Data collection involved observation, interviews, and documentation through checklists, stadiometers, and KIA books. **Results:** Data were analyzed using univariate and bivariate (chi-square) tests. The results showed that 33.3% of mothers experienced anemia during pregnancy. Statistical analysis indicated a significant relationship between maternal anemia during pregnancy and stunting in toddlers (p = 0.012, OR = 4.210, 95% CI = 1.331–13.320). **Conclusion:** The study concluded that maternal anemia is significantly associated with stunting. Health workers are advised to strengthen maternal and child health promotion and empower community cadres to provide nutritional education for pregnant women and toddlers.

Keywords:
Putih telur ayam rebus,
penyembuhan luka perineum

Corresponding Author:
✉ Dainty Maternity
Phone: +6281272545499
Email: denty.mf@gmail.com

Abstrak

Pendahuluan: Stunting masih menjadi masalah kesehatan serius di Indonesia yang memerlukan perhatian dari semua sektor. Salah satu faktor utama yang memengaruhi stunting adalah anemia selama kehamilan. **Objek**: Oleh karena itu, penelitian ini bertujuan untuk mengetahui hubungan antara riwayat anemia ibu selama kehamilan dengan stunting pada balita di Puskesmas Banjarsari, Metro Utara, pada tahun 2025. **Metode**: Penelitian ini menggunakan desain kasus-kontrol kuantitatif. Populasi terdiri dari 622 ibu dengan balita berusia 24–59 bulan di wilayah Banjarsari. Ukuran sampel, dihitung menggunakan rumus perbandingan kategoris tak berpasangan, berjumlah 60 responden (20 kasus dan 40 kontrol) dengan rasio 1:2. Pengambilan sampel dilakukan dengan menggunakan stratified random sampling. Pengumpulan data melibatkan observasi, wawancara, dan dokumentasi melalui daftar periksa, stadiometer, dan buku KIA. **Hasil**: Data dianalisis menggunakan uji univariat dan bivariat (chi-square). Hasil penelitian menunjukkan bahwa 33,3% ibu mengalami anemia selama kehamilan. Analisis statistik menunjukkan hubungan yang signifikan antara anemia ibu selama kehamilan dan stunting pada balita (p = 0,012, OR = 4,210, 95% CI = 1,331–13,320). **Kesimpulan**: Penelitian ini menyimpulkan bahwa anemia ibu berhubungan signifikan dengan stunting. Petugas kesehatan disarankan untuk memperkuat promosi kesehatan ibu dan anak dan memberdayakan kader masyarakat untuk memberikan pendidikan gizi bagi ibu hamil dan balita.

How to cite: Puspitasari, Dian., Dainty Maternity. (2024 Womb to Growth: How Maternal Anemia and Low Birth Weight Shape Toddler Stunting. *Jurnal Kesehatan Metro Sai Wawai. 17*(2), 102-107. DOI: https://doi.org/10.26630/jkmsw.v17i2.4979
Published by Tanjung Karang Health Polytechnic, Indonesia.

Introduction

Stunting in Indonesia remains a major problem that requires serious attention from all parties. The government's program to prevent stunting begins with a focus on the First 1,000 Days of Life (HPK) age group. According to the World Health Organization (WHO), the global prevalence was 22.3% in 2022, 22.9% in 2023, and increased to 23.2% in 2024, with the prevalence of stunting increasing to 24.4% in 2021. This decreased to 21.6% in 2022, then to 21.5% in 2023, and to 19.8% in 2024 (Ministry of Health, 2024). Based on the SSGI in 2021, the stunting prevalence rate in Lampung Province was 18.5%, in 2022 it decreased to 15.2%, in 2023 it decreased again to 14.9% and increased to 15.9% in 2024 (Stunting Reduction Acceleration Team, 2024). The percentage of stunted toddlers in Metro City in 2021 was 7.29%, then in 2022 the percentage of stunted toddlers in Metro City was 6.5%, in 2023 it decreased with the percentage of stunted toddlers at 3.5% and in 2024 it increased with the percentage of stunted toddlers at 14.8% (Yuningsih, 2022). The distribution of toddlers with the highest stunting category according to the Community Health Center is at Banjarsari Community Health Center at 6.08% and the lowest percentage of stunted toddlers is at Mulyojati Community Health Center at 1.15% (Metro City Health Profile, 2022).

Stunting can lead to various growth and developmental disorders in children, making them more susceptible or at risk of disease. Stunting in children has long-term impacts on their quality of life. The problem of stunting remains a challenge, as it affects not only children's physical development but also their brain development, which impacts their intelligence and future quality of life (Silaban, 2024). Some of the consequences of stunting include a weakened immune system, making the body susceptible to various infections such as pneumonia and diarrhea. Other consequences include decreased cognitive, psychomotor, and motor skills, and even reduced academic achievement (Kumalasari, 2024). Children with stunting have 12% lower cognitive abilities than children without stunting (Kerti, 2024).

The causes of stunting are complex, including chronic malnutrition, recurrent infections, inadequate psychosocial stimulation (lack of attention and poor parenting), socioeconomic factors, education, the environment, and maternal health during pregnancy. Stunting can occur in mothers with anemia during pregnancy and in toddlers with low birth weight (LBW) (Susianti, et all., 2024). Anemia can cause the placenta to develop improperly, resulting in lower placental weight and structural abnormalities. As a result, the fetus will experience stunted growth and development during pregnancy (Achadi, 2021). The WHO (2023) reported that the global prevalence of anemia in pregnant women is 37%. The 2023 Indonesian Health Survey (SKI) found that 27.7% of pregnant women in Indonesia experienced anemia (Ministry of Health, 2023). The prevalence of anemia in pregnant women in Lampung Province in 2023 was 6.46%.(Lampung Provincial Health Office, 2023). The prevalence of pregnant women with anemia in Metro City in 2023 was 6.47%.(Metro City Health Profile, 2023).

Based on research conducted by Butar (2024) entitled The Relationship between Low Birth Weight (LBW) and Stunting in Children Aged 1-5 Years in Dusun III Riau, it was stated that based on the results of the Chi-Square test with a continuity correction value, a p-value of 0.00 <α = 0.05 was obtained. This research is also in accordance with research conducted by Yanuaringsih(2023) entitled The Relationship between Low Birth Weight (LBW) and Stunting Incidence in the Dradah Health Center Working Area, the results of the Chi-Square test with a significance level of 5% (α = 0.05) showed that the p-value = 0.022 (p <0.05). In relation to the description above, the researcher is interested in conducting research on the relationship between the history of anemia during pregnancy and stunted toddlers in the Banjarsari Metro Utara Community Health Center area. Stunting in Indonesia remains a major problem that requires serious attention from all parties. The government's program to prevent stunting begins with a focus on the First 1,000 Days of Life (HPK) age group. According to the World Health Organization (WHO), the global prevalence was 22.3% in 2022, 22.9% in 2023, and increased to 23.2% in 2024, with the prevalence of stunting increasing to 24.4% in 2021. This decreased to 21.6% in 2022, then to 21.5% in 2023, and to 19.8% in 2024 (Ministry of Health, 2024).

Based on the SSGI in 2021, the stunting prevalence rate in Lampung Province was 18.5%, in

2022 it decreased to 15.2%, in 2023 it decreased again to 14.9% and increased to 15.9% in 2024 (Lampung Provincial Health Office, 2024). The percentage of stunted toddlers in Metro City in 2021 was 7.29%, then in 2022 the percentage of stunted toddlers in Metro City was 6.5%, in 2023 it decreased with the percentage of stunted toddlers at 3.5% and in 2024 it increased with the percentage of stunted toddlers at 14.8% (SSGI, 2024). The distribution of toddlers with the highest stunting category according to the Community Health Center is at Banjarsari Community Health Center at 6.08% and the lowest percentage of stunted toddlers is at Mulyojati Community Health Center at 1.15% (Ministry of Health of the Republic of Indonesia. (2022).

Stunting can lead to various growth and developmental disorders in children, making them more susceptible or at risk of disease. Stunting in children has long-term impacts on their quality of life. The problem of stunting remains a challenge, as it affects not only children's physical development but also their brain development, which impacts their intelligence and future quality of life (Rahman, 2023). Some of the consequences of stunting include a weakened immune system, making the body susceptible to various infections such as pneumonia and diarrhea. Other consequences include decreased cognitive, psychomotor, and motor skills, and even reduced academic achievement (Kumalasari, 2024). Children with stunting have 12% lower cognitive abilities than children without stunting (Kerti, 2024).

The causes of stunting are complex, including chronic malnutrition, recurrent infections, inadequate psychosocial stimulation (lack of attention and poor parenting), socioeconomic factors, education, the environment, and maternal health during pregnancy. Stunting can occur in mothers with anemia during pregnancy and in toddlers with low birth weight (LBW). Anemia can cause the placenta to develop improperly, resulting in lower placental weight and structural abnormalities. As a result, the fetus will experience stunted growth and development during pregnancy (Achadi, 2021). The WHO (2024) reported that the global prevalence of anemia in pregnant women is 37%. The 2023 Indonesian Health Survey (SKI) found that 27.7% of pregnant women in Indonesia experienced anemia (Ministry of Health, 2023). The prevalence of anemia in pregnant women in Lampung Province in 2023 was 6.46%.(Lampung Provincial Health Office, 2023)The prevalence of pregnant women with anemia in Metro City in 2023 was 6.47%.(Metro City Health Profile, 2022).

Based on research conducted by Butar (2024) entitled The Relationship between Low Birth Weight (LBW) and Stunting in Children Aged 1-5 Years in Dusun III Riau, it was stated that based on the results of the Chi-Square test with a continuity correction value, a p-value of 0.00 <α = 0.05 was obtained. This research is also in accordance with research conducted by Sholihah (2023) entitled The Relationship between Low Birth Weight (LBW) and Stunting Incidence in the Dradah Health Center Working Area, the results of the Chi-Square test with a significance level of 5% (α = 0.05) showed that the p-value = 0.022 (p <0.05). In relation to the description above, the researcher is interested in conducting research on the relationship between the history of anemia during pregnancy and stunted toddlers in the Banjarsari Metro Utara Community Health Center area.

Method

This research is a quantitative research using an Analytical Survey design with a case-control design. The population in this study was mothers who have toddlers aged 24-59 months in the Banjarsari Metro Utara Community Health Center area, with a total of 622. The sample of this study was mothers with stunted toddlers aged 24-59 months in the Banjarsari Metro Utara Community Health Center area. The calculation of the sample size using the unpaired categorical analytical formula obtained a sample size of 20 with a ratio of 1:2 between the case group (stunting) and the control group (not stunting), so that the total number of samples was 60 people. The sampling technique used was stratified random sampling. This study has been submitted for ethical clearance at the Tanjung Karang Polytechnic Research Ethics Committee and has been approved on March 10, 2025, with No. 03.

Results

Respondent Characteristics

The characteristics of the respondents used for the 60 respondents in this study can be seen in the table as follows:

Table 1.
Distribution of Respondent Characteristics

Characteristics	Category	N	%
Toddler Gender	Woman	34	56.7%
	Man	26	43.3%
Parity	>3	2	3.3%
	1-3	58	96.7%
Mother's Age	20-35 years	39	65%
	>35 years	21	35%
Mother's Education	Low (elementary/middle school)	18	30%
	Middle School (SMA)	33	55%
	High (D3/S1)	9	15%
Mother's Job	Not working (housewife)	51	85%
	Work	9	15%
Mother's Height	Short (<150 cm)	8	13.3%
	Height (≥150 cm)	52	86.7%
Father's Height	Short (<165 cm)	7	11.7%
	Height (≥165 cm)	53	88.3%
Parents' Income	Not UMR (<2,903,301)	31	51.7%
	Minimum Wage (≥2,903,301)	29	48.3%

Based on table 1, of the 60 respondents, it is known that respondents with the gender of female toddlers are 56.7% (34 respondents), parity >3 is 3.3% (2 respondents), mother's age >35 years is 35% (21 respondents), mother's education is mostly high school, namely 55% (33 respondents), working mothers are 15% (9 respondents), mother's height <150 cm is 13.3% (8 respondents), father's height <165 cm is 11.7% (7 respondents), and parents' monthly income is mostly not UMR (<2,903,301) namely 51.7% (31 respondents).

Univariate Analysis

Table 2.
Proportion of History of Pregnancy Anemia in the Work Area of the Banjarsari Metro Utara Community Health Center

Variables	Category	n	%
History of anemia during pregnancy	Anemia of pregnancy	20	33.3%
	No anemia during pregnancy	40	66.7%

Based on Table 2, it is known that of the 60 respondents, 33.3% (20 respondents) were mothers with a history of anemia during pregnancy, and 66.7% (40 respondents) were mothers who did not have a history of anemia during pregnancy.

Bivariate analysis

Based on Table 3, it turns out that out of 60 respondents, there were 33.3% (20 respondents) of mothers with a history of pregnancy anemia, and there were 66.7% (40 respondents) of mothers who did not have a history of pregnancy anemia. It was found that out of 20 respondents in the case group (stunting) there were 55% (7 respondents) with mothers who had a history of pregnancy anemia and there were 45% (13 respondents) with mothers who did not have a history of pregnancy anemia, while out of 40 respondents in the control group (not stunting) there were 22.5% (13 respondents) with mothers who had a history of pregnancy anemia and there were 77.5% (27 respondents) with mothers who did not have a history of pregnancy anemia.

Analysis test results chi-square obtained p value = 0.012 <0.05, meaning Ho is rejected and Ha is accepted, meaning there is a relationship between a history of pregnancy anemia and stunting in toddlers in the Banjarsari Metro Utara community health center area. The Odds Ratio (OR) value = 4.210 (95% CI = 1.331-13.320) means that toddlers born to mothers with a history of pregnancy anemia have a 4.210 times greater risk of experiencing stunting compared to toddlers born to mothers who do not have a history of anemia.

Table 3.
The Relationship Between History of Pregnancy Anemia and Stunting in Toddlers in the Banjarsari Metro Utara Community Health Center Work Area

History of Pregnancy Anemia	Stunting				Total		*p-value*	OR (95% CI)
	Stunting (Cases)		No Stunting (Control)					
	n	%	n	%	N	%		
Pregnancy Anemia	7	55%	13	22.5%	20	33.3%		
No Pregnancy Anemia	13	45%	27	77.5%	40	66.7%	0.012	4,210 (1,331-13,320)
Total	20	100%	40	100%	60	100%		

Discussion

Proportion of History of Pregnancy Anemia in the Banjarsari Community Health Center Area, North Metro

A history of anemia in pregnancy was found to show that of the 60 respondents, 33.3% (20 respondents) had a history of anemia in pregnancy, and 66.7% (40 respondents) had no history of anemia in pregnancy. Anemia in pregnant women is mostly caused by iron deficiency, which is needed for hemoglobin formation. Anemia occurs relatively frequently during pregnancy because pregnant women experience hemodilution (dilution) with an increase in volume of 30%-40% and an increase of around 1000 ml, which peaks at 32-34 weeks of pregnancy (Butar, 2024). Iron deficiency in pregnant women will cause disturbances or obstacles in the growth of both body cells and fetal brain cells (Kenti, 2024). During pregnancy, a woman's iron needs increase because not only does she need iron, but her baby does too. A large portion of the mother's iron reserves is channeled to the fetus's needs, including the formation of fetal red blood cells. If iron intake from food or supplements is insufficient, the mother will experience a deficiency, which will result in decreased hemoglobin levels (Achadi, 2021). Iron plays a vital role in various cellular mechanisms, including oxygen delivery. During pregnancy, the mother's blood volume increases, and the growing fetus requires a significant increase in iron (Kumalasari, 2024). Fetal growth that requires a lot of iron can cause pregnant women potentially experience anemia, although during pregnancy, iron absorption increases and iron supplements are also given, anemia can still occur in pregnant women if the mother has low iron reserves in her body (Tendean, 2025: 141). Age is a risk factor for anemia in pregnant women. A mother's age is related to a woman's reproductive organs (Yuningsih, 2022). The results of the study showed that of the 60 respondents, it was known that the mother's age was >35 years, there were 35% (21 respondents). Research conducted by Silaban (2024) with the title of the relationship between maternal age, gestational age, and adherence to consuming iron tablets with the incidence of anemia in pregnant women showed results of 33.3% (27 respondents) with maternal age at risk (<20 years and >35 years).

At the age of >35 years, the mother's health condition begins to decline, uterine function begins to decline, and medical complications during pregnancy until delivery increase. (Hayati, 2024:280). Age >35 is considered old because at this age, the body has entered the early degenerative phase, so that body functions do not develop optimally and will experience various health problems. In addition, the influence of decreased immunity is a factor that causes anemia in older pregnant women (Silaban, 2024). Pregnancy at age >35 is considered advanced maternal age and carries a high risk of anemia, associated with the onset of decline in reproductive system function and various

diseases that may arise with increasing age, such as bone marrow failure syndrome and chronic kidney disease, and from nutritional deficiencies to inflammatory processes, including inflammation in immunosenescence. In this age group, there are also variations in hormone levels in the body, menstrual disorders that increase the risk of heavy bleeding (Assegaf, 2023:36). In general, women lose between 30-40 ml of blood during menstruation (Nwadike, 2018).

The results of this study show that of the 60 respondents, 3.3% (2 respondents) of mothers gave birth >3 times. Research conducted by Yuliawati (2024) showed that 31.6% (31 respondents) of pregnant women with high parity tend to have lower iron reserves due to previous pregnancies and deliveries. Each pregnancy requires a large amount of iron to support fetal growth and increase maternal blood volume (Susianti, 2024). Previous pregnancies and deliveries use up the body's iron reserves, causing the body to lose iron, which helps form hemoglobin, leading to anemia. Repeated pregnancies with short spacing also result in suboptimal reproductive function and insufficient iron reserves to meet the needs of the new fetus (Sofiyati, 2024).

Frequent or repeated pregnancies can damage blood vessels, impeding blood flow and the uterine wall. This affects nutrient circulation and increases the risk of anemia in pregnant women with parity greater than three times the normal weight due to inadequate iron intake. Furthermore, iron stores decrease by approximately 250 mg with each birth. The more frequently a woman experiences pregnancies and deliveries, the more iron is lost or used during previous pregnancies. If the body's iron stores are low, they will be depleted with each pregnancy. An inability to meet the body's iron needs for hemoglobin production will result in anemia during pregnancy (Yanuariningsih, 2023).

The results of the study showed that out of 60 respondents, it was known that the majority of mothers' education was high school, namely 55% (33 respondents). This study was lower due to differences in time, place, and number of research samples from Susianti (2024) study entitled Analysis of Factors Related to the Incidence of Anemia in Pregnant Women in the Alalak Selatan Community Health Center Work Area, which showed that 56.1% (55 respondents) of mothers had secondary education. Maternal education is a crucial factor in pregnancy, as a well-educated mother can absorb all kinds of external information, thus improving her thinking skills. A person with a higher education is more likely to make more rational decisions and is generally more open to change or new experiences than someone with a lower education (Rahayu, 2018). Those with secondary education may have difficulty understanding and absorbing information quickly. The higher the education, the better the ability to absorb information (Susianti, 2024).

The results of the study showed that 51.7% (31 respondents) had a monthly income below the minimum wage (UMR). This study is lower than Yuliawati (2024) study entitled "The Relationship between Socio-Cultural, Dietary Patterns, Income, and Knowledge with the Incidence of Anemia in Pregnant Women," which showed that 60.9% (53 respondents) had family income below the minimum wage. This can occur because it is influenced by the purchasing power of food consumed by the family, as the family's income is spent on purchasing food. This condition can cause mothers from low-income families to not receive adequate nutrition (Rahayu, 2018). Low family income leads to reduced access to food and daily food purchases, thus reducing the quantity and quality of a mother's daily diet, which impacts nutritional status. Anemia is a common nutritional disorder in pregnant women. The food sources needed to prevent anemia generally come from more expensive protein sources and are difficult for those with low incomes to afford. This deficiency increases the risk of anemia in pregnant women and accelerates the risk of maternal morbidity (Yuliawati, 2024).

The Relationship Between History of Pregnancy Anemia and Low Birth Weight (LBW) with Stunting in Toddlers in the Banjarsari Community Health Center Area, North Metro

Iron is a necessary component in the formation of hemoglobin. This substance functions as a protein in red blood cells that transports oxygen to all body tissues. Iron deficiency can cause the fetus's metabolism to be impaired, ultimately disrupting intrauterine growth and development and increasing the risk of stunting in children. A lack of hemoglobin due to anemia can reduce the amount of oxygen carried by the blood, thus affecting the growth of body and brain cells, as well as fetal development. The placenta plays a vital role in maintaining the balance of the fetus, but maternal

anemia can disrupt its function, potentially leading to growth retardation in the baby (Rahayu, 2018).

Anemia in pregnant women can cause the baby to experience oxygen and nutrient deprivation, resulting in stunted growth and development, potentially leading to stunting at birth. Anemia in mothers also causes a lack of appetite, which reduces the nutritional intake of the fetus, potentially leading to stunting at birth (Rahmawati, 2025). This research was also found in the research of Sofiyati et al. (2024) with the title The Relationship of Pregnancy Anemia, Economic Status, and Feeding Patterns with the Incidence of Stunting in Children at Pemenang Health Center, North Lombok Regency obtained a p-value = 0.002. The Prevalence Ratio figure of 2.33 (with a 95% confidence interval between 1.343 and 4.070) indicates that mothers who have experienced anemia during pregnancy have a 2.33 times higher risk of giving birth to children with stunting compared to mothers without a history of anemia (Lubis, 2024: 1352). Another study by Yuliawati et al. (2024) with the title Analysis of Stunting Determinants in the Yosomulyo Health Center area of Metro City also supports these results with a p-value = 0.005 <0.05, so it is concluded that there is a significant relationship between anemia in mothers and stunting.

Conclusions

Based on research on the relationship between a history of anemia during pregnancy and low birth weight (LBW) with stunting in toddlers in the Banjarsari Metro Utara Community Health Center in 2025, with a total of 60 respondents, 20 cases, and 40 controls. The proportion of 33.3% had a history of anemia during pregnancy. There was a relationship between a history of anemia during pregnancy and stunting in toddlers, with a p-value of 0.012, indicating that this relationship was statistically significant with an OR value of 4.210 (95% CI 1.331-13.320).

Reference

Butar-butar, FM, Sembiring, DRS, Sembiring, NMP (2024). The Relationship between Low Birth Weight (LBW) and Stunting in Children Aged 1-5 in Dusun III, Riau. *Journal Healthy Purpose, 3*(1), 145-149. https://doi.org/10.56854/jhp.v3i1.362

Achadi, EL (2021). *Stunting Prevention: The Importance of the Role of the First 1000 Days of Life.* Depok: PT Raja Grafindo Persada

Kerti, FMC, Abdullah, MA (2024). The Potential Role of Stunting in Influencing the Success of the Demographic Bonus. *SABANA Journal (Sociology, Anthropology, and Indonesian Culture),* 3(1), 25-32. https://doi.org/10.55123/sabana.v3i1.3304

Kumalasari, D., Wulandari, UR (2024). Eating Habits of Stunting Toddlers in Grogol District, Kediri Regency. *Pioneer Health Journal, 11*(1), 28-34. https://doi.org/10.33653/jkp.v11i1.1075

Lampung Provincial Health Office. (2023). *Profile of the Lampung Provincial Health Office.* Lampung.

Metro City Health Profile 2021. (2022). *Metro City Health Profile 2021.* Metro: Metro City Health Office

Ministry of Health of the Republic of Indonesia. (2022*). Anemia in Pregnancy*. Jakarta.

Ministry of Health of the Republic of Indonesia. (2022). *Guidelines for the Implementation of Stimulation, Detection, and Early Intervention of Child Growth and Development at the Primary Health Care Level.* Jakarta: Ministry of Health of the Republic of Indonesia

Ministry of Health of the Republic of Indonesia. (2024). *Maternal and Child Health KIA Book.* Jakarta: Ministry of Health of the Republic of Indonesia.

Rahayu, A., Yulidasari, F., Putri, AO, & Anggraini, L. (2018). *Stunting and Its Prevention Efforts.* Yogyakarta: CV Mine Publisher

Silaban, VF, Masniar., Masna., et al. (2024). The Relationship between Gestational Age, Pregnancy Spacing, and Pregnancy Complications, Antenatal Care with the Incidence of Low Birth Weight (LBW) Babies. *Malahayati Health Student Journal, 4*(6), 2344-2353. https://ejurnalmalahayati.ac.id/index.php/MAHESA/article/view/14497

Sofiyati. (2024). Exclusive Breastfeeding Counseling with Stunting in Toddlers (1-5 Years) in Kalikoa Village, Kedawung District, Cirebon Regency. *Journal of Community Service Implementation. 2*(1), 17-35. https://doi.org/10.61132/natural.v2i1.207

Susianti., Irawati, A., Usman, A. (2024). The Relationship between History of Anemia and Chronic Energy Deficiency with the Incidence of Stunting in Toddlers Aged 24-59 Months in the Kulo Community Health Center Work Area. *Lentera Acitya Health Journal, 11*(1), 57-65. https://doi.org/10.36858/fejom.v1i1.5

World Health Organization. (2024). *Joint Child Malnutrition Estimates.* https://www.who.int/data/gho/data/themes/topics/joint-child-malnutrition-estimates-unicef-who-wb

Yanuaringsih, GP, Aminah, S., Jayani, I. et al. (2023). Relationship between histotheory of anemia in pregnant women and incidence of stunting in children. *Smart Midwife Journal, 4*(2), 466-473. https://ijoms.internationaljournallabs.com/index.php/ijoms/article/view/545

Yuliawati, Y., Anggraini, Y., Lestariningsih, S., Aghniya, R., & Yustiza, NR (2024). The Role of Exclusive Breastfeeding, Low Birth Weight, and Immunization in Stunting Among Children Under Five. *Jurnal Kesehatan Metro Sai Wawai, 18*(1), 10-19. https://www.ejurnal.poltekkes-tjk.ac.id/index.php/JKM/article/view/5004

Yuningsih. (2022). The Relationship between Nutritional Status and Stunting in Toddlers. Scientific *Journal of Midwifery, 9*(2), 102-109. https://doi.org/10.35335/midwifery.v10i4.753