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**ANALYSIS OF MATERNAL FACTORS ASSOCIATED
WITH LOW BIRTH WEIGHT AMONG STUNTED
CHILDREN IN BANYUWANGI REGENCY**

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ABSTRACT

Background: Indonesia is an agricultural country that produces a wide range of food sources; however, health problems, particularly malnutrition in toddlers, remain relatively high, including stunted growth. Stunting remains a significant public health problem in Indonesia, including in Banyuwangi Regency, East Java. Maternal health conditions during pregnancy play a crucial role in fetal growth and may increase the risk of low birth weight (LBW), which subsequently contributes to stunting. **Objective:** This study aimed to analyse maternal factors during pregnancy associated with the incidence of low birth weight among stunted children in Banyuwangi Regency. **Method:** A quantitative retrospective study was conducted using secondary data from the Banyuwangi District Health Office in 2022. The study included 4,371 stunted children aged 24–59 months from 45 community health centres. The analysed maternal variables were antenatal care (ANC) completeness, maternal anaemia, and chronic energy deficiency (CED) during pregnancy. Data were analysed using descriptive statistics and multiple logistic regression. **Result:** Inadequate ANC, maternal anaemia, and CED during pregnancy were significantly associated with the incidence of LBW among stunted children ($p < 0.001$). Mothers with CED had the highest risk of delivering LBW infants (OR = 4.076; 95% CI: 3.160–5.257). **Conclusion:** Maternal health status during pregnancy significantly influences birth outcomes. Strengthening ANC services, improving maternal nutritional status, and enhancing family-based support are essential strategies to prevent LBW and reduce the risk of stunting.

Keywords: antenatal care, anaemia, chronic energy deficiency, low birth weight, stunting

INTRODUCTION

Stunting is a form of malnutrition that remains a significant global health issue today (World Health Organization, 2022). In 2022, approximately 22.3% of children under the age of five worldwide experienced stunting (WHO, 2022). The Indonesian Nutritional Status Study (SSGI) reported a stunting prevalence of 21.6% nationally in

2022, with the province of East Java reaching 19.2% (Tim Penyusun SSGI 2024 Dalam Angka, 2025). In Banyuwangi Regency, data from the Banyuwangi District Health Office indicated that the prevalence of stunting still exceeds 15% in several priority sub-districts. One of the primary factors contributing to stunting is maternal health during pregnancy, particularly its impact on the occurrence of Low Birth Weight (LBW).

Various maternal health factors during pregnancy, such as compliance with antenatal care (ANC) examinations, nutritional status (assessed through Chronic Energy Deficiency), and anaemia status, play significant roles in determining fetal health. These three factors also directly contribute to the risk of delivering low-birth-weight infants. According to the Conceptual Framework on the Determinants of Maternal and Child Nutrition (2020) (White et al., 2023), stunting in children is influenced by both direct and indirect factors. Direct factors include maternal nutrition during pregnancy, dietary patterns, and a history of infectious diseases, while indirect factors encompass Water, Sanitation, and Hygiene (WASH) practices (United Nations Children's Fund [UNICEF], 2021). Additional influences on toddler nutrition and development include breastfeeding practices, complementary feeding (MP-ASI), employment status, maternal nutritional status during pregnancy, and maternal zinc and iron levels (Beal et al., 2018; Setiyaningsih et al., 2023; Susanto et al., 202; Hastuty et al., 2020; Ardiyah et al., 2015; Yuwanti et al., 2021). Nutritional needs during pregnancy increase to support maternal metabolism and fetal growth, including higher iron requirements (Pasalina et al., 2023).

Low nutritional status in pregnant women can lead to stunting in children. Maternal malnutrition, particularly iron deficiency anaemia, impairs blood supply—the transporter of nutrients and oxygen to the fetus—resulting in developmental and growth disturbances (Nasriyah & Ediyono, 2023). Anaemia is a condition characterised by decreased haemoglobin levels in blood, primarily caused by micronutrient deficiencies, especially Iron (McKee et al., 2017). All fetal nutrients originate from the mother, with physiological transfer occurring through the placenta via transferrin. Transferrin is bound to iron and directly transferred from maternal blood to the syncytiotrophoblasts of placental villi via transferrin receptor 1 (TFR1) (Zhao et al., 2024).

During pregnancy, maternal iron reserves gradually decline, with serum ferritin concentrations typically reaching their lowest point between weeks 35 and 38 (Vazquez et al., 2023). Iron deficiency is a significant risk factor for anaemia among women, and its failure is associated with anthropometric deficiencies such as stunting (Aboagye et al., 2022). According to data from the Ministry of Health, nearly half of pregnant women in Indonesia (approximately 48.9%) suffer from anaemia, impacting child growth and development (Margawati et al., 2023; Ministry of Health of the Republic of Indonesia, 2018).

Maternal nutrition, nutrition: during pregnancy, nutrition is the primary source of nutrients vital for embryonic growth and development in early life (Costaa et al., 2019). During pregnancy, anaemia hampers the transfer of nutrients and oxygen from the placenta to the fetus, leading to growth disturbances and developmental issues affecting the brain, bones, and other organs (Rahayu, 2021a). Furthermore, anaemia during pregnancy increases the risk of maternal and neonatal mortality, low birth weight, prematurity, and neurobehavioral deficits (Georgieff, 2020).

Low birth weight (LBW) has a significant impact on the occurrence of stunting within the first six months after birth and continues to affect growth up to 24 months of age (Windasari et al., 2020). LBW is considered an initial point of risk for stunting; infants born with low weight have limited nutritional reserves, are more susceptible to

infections, and often experience growth retardation during the critical first two years of life—the "golden period" of child growth.

Through family health studies, it is essential to understand how family roles influence the maintenance of nutritional and health status during pregnancy as a preventive measure against stunting. Therefore, research is needed to analyse the effect of maternal health factors during pregnancy—such as completeness of ANC, occurrence of CED, and anaemia—on the incidence of LBW in stunted toddlers.

METHOD

This study employed a descriptive-analytical design, which investigates the relationship between variables. Specifically, the researcher aimed to describe and analyse the influence of anaemia, the completeness of antenatal care (ANC), and the occurrence of chronic energy deficiency (CED) in mothers during pregnancy on the incidence of low birth weight (LBW) among stunted children aged 24-59 months within families in Banyuwangi Regency. This research employed a retrospective approach, utilising secondary data from the Banyuwangi Health Office. The population comprised all stunted children aged 24-59 months registered in Banyuwangi in 2022, totalling 4,371 children. The sample included all these registered stunted children within the same age range and location, employing a total sampling technique. The study was conducted across all health centres (puskesmas) in Banyuwangi Regency.

Before commencing the study, the researcher submitted a letter of ethical approval to the Academic Affairs Office of the Faculty of Dentistry at Jember University and subsequently obtained a research permit from the Doctoral Program in Public Health at Jember University. Subsequently, the researcher obtained permission from the Banyuwangi National Unity and Political Agency (Bakesbangpol) and then submitted a research proposal to the Banyuwangi Regency Health Office for approval to conduct research within the regency's jurisdiction. The data used in this study were secondary and provided in an Excel file. The coding for variables was as follows: 1 for complete ANC, 2 for incomplete ANC, and 3 for no ANC; 1 for LBW and 2 for normal birth weight; 1 for anaemia and 2 for no anaemia; 1 for CED and 2 for no CED, based on the data provided from the Banyuwangi Health Office.

Descriptive analysis was performed to characterise each subject, utilising frequency distribution with percentage measures for the incidences of anaemia, CED, ANC routine examinations, and LBW among the stunted children. Inferential analysis was conducted using multiple logistic regression to assess the relationships between maternal factors (ANC, CED, and anaemia) and the incidence of LBW in stunted children. The study received ethical approval from the Faculty of Dentistry, Jember University, with certificate number 3384/UN25.8/KEPK/DL/2025, issued on September 16, 2025.

RESULTS

1. Frequency Distribution of ANC, CED, and Maternal Anaemia Incidence among Pregnant Women in Stunted Children

Table 1. Distribution of Maternal and Neonatal Variables in Banyuwangi (n=4,371)

Variable	Frequency (f)	Percentage (%)
Adequate ANC (≥ 4 visits)	3,689	84.4
Inadequate ANC (< 4 visits)	682	15.6
Maternal anemia (Hb < 11 g/dl)	398	9.1
No maternal anemia	3,973	90.9
CED during pregnancy	644	14.7
No CED during pregnancy	3,727	85.3
LBW (< 2500 g)	398	9.1

The data indicate that the majority of mothers (84.4%) received adequate antenatal care (ANC) services, with at least four visits. However, approximately 15.6% of mothers did not meet this standard. The prevalence of anaemia during pregnancy was 9.1%, and CED was observed in 14.7% of cases.

Table 2. Cross-tabulation of Low Birth Weight (LBW) Incidence Based on Anaemia Status, Chronic Energy Deficiency (CED), and Antenatal Care (ANC) Completeness among Stunted Children in Banyuwangi Regency

	LBW	Non-LBW	Total
a. Anemia Status			
Anemic	28	370	398
Non-anemic	370	3,602	3,971
b. Chronic Energy Deficiency (CED)			
Mother with CED	122	522	644
Mother without CED	276	3,450	3,726
c. ANC Completeness			
Complete ANC	368	3,321	3,689
Incomplete ANC	24	627	651
No ANC	6	25	31
Total	398	3,973	4,371

2. Inferential Analysis Results

a. Bivariate Selection

Variables with a p -value < 0.25 were included in the multivariate analysis.

1) Antenatal Care (ANC) Variable

Table 3. ANC in the Equation

Variable	B	S.E.	Wald	df	Sig.	Exp(B)	95% CI for Exp(B)
Antenatal Care	0.675	0.175	14.819	1	0.000	1.963	1.392–2.767
Constant	1.540	0.199	59.975	1	0.000	4.667	

2) Anemia Variable

Table 4. Anemia in the Equation

Variable	B	S.E.	Wald	df	Sig.	Exp(B)	95% CI for Exp(B)
Anemia during Pregnancy	-0.306	0.203	2.255	1	0.133	0.737	0.494–1.098
Constant	2.887	0.396	53.202	1	0.000	17.937	

3) Chronic Energy Deficiency (CED) Variable

Table 5. CED in the Equation

Variable	B	S.E.	Wald	df	Sig.	Exp(B)	95% CI for Exp(B)
CED	1.072	0.118	81.948	1	0.000	2.921	2.316–3.685
Constant	0.382	0.211	3.282	1	0.070	1.465	

Table 6. Candidate Variables for Multivariate Analysis

No	Variable	p-value	Description
1	Antenatal Care	<0.0001	Candidate
2	Anemia	<0.0001	Candidate
3	Chronic Energy Deficiency (CED)	<0.0001	Candidate

b. Multivariate Analysis

Statistical Test Results

Block 1: Method = Backward Stepwise (Likelihood Ratio)

Omnibus Tests of Model Coefficients

	Chi-square	df	Sig.
Step	121.972	3	0.000
Block	121.972	3	0.000
Model	121.972	3	0.000

Model Summary

Step	-2 Log Likelihood	Cox & Snell R ²	Nagelkerke R ²
1	2543.704	0.028	0.060

Total sample size = 4,731

Degrees of freedom (DF) = N – 1 = 4,730

Since the value of -2 Log Likelihood (2543.704) is lower than the Chi-square table value, the null hypothesis (H₀) is accepted, indicating that the model including the independent variables is fit.

Variables in the Equation (Final Model)

Variable	B	S.E.	Wald	df	Sig.	Exp(B)	95% CI for Exp(B)
Antenatal Care	0.662	0.178	13.772	1	0.000	1.938	1.367–2.750
Anemia during Pregnancy	1.052	0.223	22.279	1	0.000	0.349	0.226–0.540

Variable	B	S.E.	Wald	df	Sig.	Exp(B)	95% CI for Exp(B)
Chronic Energy Deficiency (CED)	1.405	0.130	117.137	1	0.000	4.076	3.160–5.257
Constant	1.055	0.471	5.007	1	0.025	2.871	

Logistic Regression Equation

$$\text{LBW} = 2.871 + 1.938 (\text{ANC}) + 0.349 (\text{Anemia}) + 4.076 (\text{CED})$$

The highest odds ratio (OR) was observed for Chronic Energy Deficiency (CED) with OR = 4.076.

Interpretation of Odds Ratios

- Antenatal Care (ANC): OR = 1.938, indicating that mothers who had incomplete or no ANC were 1.94 times more likely to deliver LBW infants compared to those with complete ANC.
- Anaemia during pregnancy: OR = 0.349, suggesting that mothers diagnosed with anaemia had a 65% lower risk of LBW. This counterintuitive finding suggests a complex relationship and requires further interpretation, possibly related to the effects of intervention.
- Chronic Energy Deficiency (CED): OR = 4.076, indicating that mothers with CED were more than four times as likely to deliver LBW infants.

The analysis concludes that:

- Adequate antenatal care acts as a protective factor against low birth weight.
- Chronic energy deficiency is the most influential risk factor for LBW.
- Maternal anemia during pregnancy shows a statistically significant association with LBW; however, the odds ratio below 1 suggests a complex relationship potentially influenced by treatment or confounding factors.
- The highest odds ratio was observed for chronic energy deficiency (OR = 4.076), indicating that CED is the strongest risk factor for LBW in this model.

DISCUSSION

The findings of this study demonstrate that maternal health factors during pregnancy—namely antenatal care (ANC) utilisation, chronic energy deficiency (CED), and maternal anaemia—are significantly associated with the incidence of low birth weight (LBW) among stunted children in Banyuwangi Regency. These results reinforce existing evidence that maternal conditions during pregnancy play a critical role in fetal growth and are key determinants of both birth outcomes and subsequent child growth trajectories.

Adequate antenatal care was significantly associated with a lower likelihood of LBW. This finding aligns with recent evidence indicating that ANC is not merely a procedural requirement but a comprehensive intervention platform for early detection and management of pregnancy-related complications, including anaemia, inadequate gestational weight gain, and maternal undernutrition. This aligns with theories asserting that direct factors—such as maternal nutritional status and infections—during pregnancy

directly influence fetal growth (Conceptual Framework on the Determinants of Maternal and Child Nutrition, 2020).

Furthermore, this research confirms that mothers experiencing CED and anaemia during pregnancy are at higher risk of delivering LBW infants. This aligns with the literature, which indicates that deficiencies in Iron and CED contribute to fetal growth disturbances due to the fetus's suboptimal oxygen and nutrient supply (Rahayu et al., 2022; Nasriyah & Ediyono, 2023). Infants born with LBW have limited nutritional reserves and are more susceptible to infections, which further increases the risk of subsequent stunting. This study emphasises the crucial roles of family and healthcare providers in ensuring that pregnant women receive adequate prenatal care and proper nutritional management. Family education regarding the importance of routine ANC, iron supplementation, and a balanced diet is crucial to minimise the risks of anaemia and CED. Such approaches constitute key preventive strategies to reduce the incidence of LBW and stunting. CED (Chronic Energy Deficiency) has an upper arm circumference (LILA) of less than 23.5 cm. Mothers with CED are at increased risk of delivering low birth weight infants and experiencing fetal growth restrictions (Rahayu et al., 2022). Family economic status, dietary patterns, and lack of familial support influence maternal nutritional status.

ANC (Antenatal Care) aims to ensure maternal and fetal health, as well as the early detection of pregnancy complications. Recent studies emphasise that both the quantity and quality of ANC visits are essential in reducing adverse birth outcomes. Women who receive comprehensive ANC services benefit from nutritional counselling, iron–folic acid supplementation, monitoring of fetal growth, and timely referral, all of which contribute to optimal fetal development (Neupane et al., 2023; Engdaw et al., 2023). Inadequate ANC attendance has consistently been linked to increased risks of LBW and subsequent stunting, particularly in low- and middle-income settings (WHO, 2023). The results of this study support the need to strengthen ANC coverage and service quality at the primary healthcare level, particularly through public health centres (Puskesmas).

Chronic energy deficiency emerged as the strongest predictor of LBW in this study. Mothers experiencing CED during pregnancy were substantially more likely to deliver LBW infants. CED reflects long-term maternal undernutrition, often measured using mid-upper arm circumference (MUAC/LILA), and indicates inadequate energy and protein intake to support pregnancy demands. Maternal energy deficiency compromises placental development and nutrient transfer, leading to intrauterine growth restriction (IUGR) and LBW (Mansor et al., 2024). Recent cohort and systematic studies confirm that insufficient maternal energy and protein intake during pregnancy significantly increases the risk of LBW, small-for-gestational-age infants, and poor neonatal outcomes (Marshall et al., 2022). From a family nursing perspective, CED is closely related to household food security, dietary diversity, cultural food practices, and family support systems. Therefore, addressing CED requires not only clinical interventions but also family-centred nutritional support and education.

Maternal anaemia during pregnancy is widely recognised as a major public health problem and a significant risk factor for LBW. Biologically, anaemia reduces the oxygen-carrying capacity of maternal blood, impairing oxygen and nutrient delivery to the fetus and disrupting normal growth and organ development. Numerous recent meta-analyses and cohort studies have demonstrated that maternal anaemia, particularly in early and late pregnancy, increases the risk of LBW, preterm birth, and neonatal morbidity (Chen et al., 2024; Zhao et al., 2024). In this study, the observed statistical association between anaemia and LBW must be interpreted cautiously, as secondary data may reflect the

effects of clinical interventions. Pregnant women diagnosed with anaemia are more likely to receive iron supplementation and closer monitoring through ANC services, which may mitigate adverse outcomes. This highlights the importance of early screening and effective management of anaemia during pregnancy rather than contradicting the established biological relationship.

Low birth weight represents a critical early-life risk factor for stunting. Infants born with LBW have limited nutrient reserves, a weakened immune system, and a higher susceptibility to infections, which can impair linear growth during the first 1,000 days of life. Several longitudinal studies have confirmed that LBW significantly increases the risk of stunting in infancy and early childhood (Aryastami et al., 2017; Namiiro et al., 2023). Thus, preventing LBW through improved maternal health is a strategic entry point for stunting prevention. Interventions targeting maternal Nutrition and ANC utilisation have long-term benefits that extend beyond birth outcomes to child growth, cognitive development, and future health.

From a family health nursing perspective, the study's findings underscore the pivotal role of the family in supporting maternal health during pregnancy. Family health tasks—such as recognising health problems, making appropriate healthcare decisions, providing daily care, modifying the home environment, and utilising health services—are crucial determinants of maternal nutritional status and ANC adherence. Family support influences dietary practices, compliance with iron supplementation, healthcare-seeking behaviour, and emotional well-being of pregnant women (Susanto, 2021). Family-centred nursing interventions that empower families with knowledge, skills, and motivation can effectively improve maternal nutrition, increase ANC attendance, and reduce the risk of CED and anaemia. Evidence from community-based interventions suggests that involving family members, particularly spouses, can enhance maternal health behaviours and improve pregnancy outcomes (Saleh et al., 2021).

This study underscores the need for integrated maternal health strategies that combine high-quality ANC services, nutritional interventions, and family-centred nursing approaches. Strengthening routine screening for CED and anaemia, ensuring adequate supplementation, and engaging families in maternal care are essential components of stunting prevention programs.

However, this study has limitations. The use of secondary data restricts the availability of detailed clinical information, such as trimester-specific haemoglobin levels, gestational weight gain, and adherence to supplementation regimens. Future studies should employ prospective designs to capture causal relationships better and evaluate the effectiveness of family-based interventions on maternal and child health outcomes.

CONCLUSION

This study concludes that maternal health factors during pregnancy—specifically, the completeness of antenatal care (ANC), the presence of CED (Chronic Energy Deficiency), and maternal anaemia—significantly influence the incidence of Low Birth Weight (LBW) among children who are stunted in Banyuwangi Regency. Mothers who do not complete the recommended ANC visits, experience CED, or suffer from anaemia during pregnancy are at a higher risk of delivering LBW infants, which subsequently increases the likelihood of childhood stunting.

These findings underscore the importance of ensuring comprehensive prenatal care, nutritional support, and health education for pregnant women. Addressing CED and

anaemia through routine screening, nutritional supplementation, and family support can effectively reduce the incidence of LBW and, consequently, mitigate the risk of stunting in early childhood.

It is recommended that health authorities and policymakers prioritise interventions aimed at improving ANC attendance, maternal nutritional status, and anaemia management. Additionally, empowering families with knowledge about proper nutrition and health practices during pregnancy is vital to breaking the cycle of maternal malnutrition and childhood stunting.

REFERENCES

- Abas, A. H., Ahmed, A. T., Farah, A. E., & Wedajo, G. T. (2020). Barriers to Optimal Maternal and Child Feeding Practices in Pastoralist Areas of Somali Region, Eastern Ethiopia: A Qualitative Study. *Food and Nutrition Sciences*, 11(06), 540–561. <https://doi.org/10.4236/fns.2020.116038>
- Aboagye, R. G., Ahinkorah, B. O., Seidu, A. A., Frimpong, J. B., Archer, A. G., Adu, C., Hagan, J. E., Amu, H., & Yaya, S. (2022). Birth weight and nutritional status of children under five in sub-Saharan Africa. *PLoS ONE*, 17(6 June), 1–19. <https://doi.org/10.1371/journal.pone.0269279>
- Adilah, L. H., Syafiq, A., & Sukoso, S. (2023). Correlation of Anemia in Pregnant Women with Stunting Incidence: A Review. *Indonesian Journal of Multidisciplinary Science*, 2(9), 3155–3169. <https://doi.org/10.55324/ijoms.v2i9.545>
- Aguree, S., & Gernand, A. D. (2019). Plasma volume expansion across healthy pregnancy: a systematic review and meta-analysis of longitudinal studies. *BMC Pregnancy and Childbirth*, 19(1), 508. <https://doi.org/10.1186/s12884-019-2619-6>
- Alemu, F. T., Desta, A. A., & Tola, A. G. (2024). Dietary diversity and associated factors among pregnant women attending antenatal care at public hospitals in North Shewa, Oromia, Ethiopia, 2023. *Frontiers in Nutrition*, 11. <https://doi.org/10.3389/fnut.2024.1400813>
- Alligood, R. (2017). Pakar Teori Keperawatan Edisi Indonesia. In *Karya Medika*.
- Amriviana, M. P., Khairunnisa, C., & Sasongko, T. H. (2023). Parental stature as a risk factor for stunting in Indonesia: A systematic review and meta-analysis. *Narra J*, 3(2), e144. <https://doi.org/10.52225/narra.v3i2.144>
- Ani Margawati, Ahmad Syauqy, Aras Utami, & Dea Amarilisa Adespin. (2023). Prevalence of Anemia and Associated Risk Factors among Pregnant Women in Semarang, Indonesia, during COVID-19 Pandemic. *Ethiopian Journal of Health Sciences*, 33(3). <https://doi.org/10.4314/ejhs.v33i3.8>
- Anwar, S., Winarti, E., & Sunardi, S. (2022). Systematic Review Faktor Risiko, Penyebab Dan Dampak Stunting Pada Anak. *Jurnal Ilmu Kesehatan*, 11(1), 88. <https://doi.org/10.32831/jik.v11i1.445>
- Anyanwu, O. A., Naumova, E. N., Chomitz, V. R., Zhang, F.-F., Chui, K., Kartasurya, M. I., & Folta, S. C. (2022). The Socio-Ecological Context of the Nutrition Transition in Indonesia: A Qualitative Investigation of Perspectives

- from Multi-Disciplinary Stakeholders. Nutrients, 15(1).
<https://doi.org/10.3390/nu15010025>
- Ariani, M. (2020). Determinan Penyebab Kejadian Stunting Pada Balita: Tinjauan Literatur. *Dinamika Kesehatan: Jurnal Kebidanan Dan Keperawatan*, 11(1), 172–186. <https://doi.org/10.33859/dksm.v11i1.559>
- Aryastami, N. K., Shankar, A., Kusumawardani, N., Besral, B., Jahari, A. B., & Achadi, E. (2017). Low birth weight was the most dominant predictor associated with stunting among children aged 12–23 months in Indonesia. *BMC Nutrition*, 3(1), 16. <https://doi.org/10.1186/s40795-017-0130-x>
- Beal, T., Tumilowicz, A., Sutrisna, A., Izwardy, D., & Neufeld, L. M. (2018b). A review of child stunting determinants in Indonesia. *Maternal and Child Nutrition*, 14(4), 1–10. <https://doi.org/10.1111/mcn.12617>
- Black, R. E., & Heidkamp, R. (2018). Causes of Stunting and Preventive Dietary Interventions in Pregnancy and Early Childhood (pp. 105–113). <https://doi.org/10.1159/000486496>
- Calek, E., Binder, J., Palmrich, P., Eibensteiner, F., Thajer, A., Kainz, T., Harreiter, K., Berger, A., & Binder, C. (2023). Effects of Intrauterine Growth Restriction (IUGR) on Growth and Body Composition Compared to Constitutionally Small Infants. *Nutrients*, 15(19), 4158. <https://doi.org/10.3390/nu15194158>
- Chen, Y., et al. (2024). Maternal anemia during early pregnancy and the risk of low birth weight and preterm birth. *BMJ Paediatrics Open*, 8(1), e001931. <https://doi.org/10.1136/bmjpo-2023-001931>
- Cochrane, K. M., Hutcheon, J. A., & Karakochuk, C. D. (2022). Iron-Deficiency Prevalence and Supplementation Practices Among Pregnant Women: A Secondary Data Analysis From a Clinical Trial in Vancouver, Canada. *The Journal of Nutrition*, 152(10), 2238–2244. <https://doi.org/10.1093/jn/nxac135>
- Costaa, K. A., Marquesa, D. B. D., Camposa, C. F. de, Saraivaa, A., Guimarãesb, Facioni, J. D., & Simone Eliza Guimarães. (2019). Nutrition in fl uence on sow reproductive performance and conceptuses development and survival: A review about L -arginine supplementation. *Livestock Science*, 228(August), 97–103. <https://doi.org/10.1016/j.livsci.2019.08.010>
- Damayanti, F. N., Mulyanti, L., Anggraini, N. N., Ulvie, Y. N. S., Sulistyowati, E., Khiaokham, L., Thummarattanakul, K., Riafisari, A. A., & Aryani, H. T. (2023). Psychoeducation Effectiveness of Parenting Patterns in Stunting Prevention: A Literature Review (Vol. 1). Atlantis Press International BV. https://doi.org/10.2991/978-94-6463-132-6_9
- De Sanctis, V., Soliman, A., Alaaraj, N., Ahmed, S., Alyafei, F., & Hamed, N. (2021). Early and Long-term Consequences of Nutritional Stunting: From Childhood to Adulthood. *Acta Bio-Medica: Atenei Parmensis*, 92(1), e2021168. <https://doi.org/10.23750/abm.v92i1.11346>
- Detlefs, S. E., Jochum, M. D., Salmanian, B., McKinney, J. R., & Aagaard, K. M. (2022). The impact of response to iron therapy on maternal and neonatal outcomes among pregnant women with anemia. *American Journal of Obstetrics*

& Gynecology MFM, 4(2), 100569.
<https://doi.org/10.1016/j.ajogmf.2022.100569>

- Devaguru, A., Gada, S., Potpalle, D., Dinesh Eshwar, M., & Purwar, D. (2023). The Prevalence of Low Birth Weight Among Newborn Babies and Its Associated Maternal Risk Factors: A Hospital-Based Cross-Sectional Study. *Cureus*. <https://doi.org/10.7759/cureus.38587>
- Engdaw, G. T., et al. (2023). Effect of antenatal care on low birth weight: A systematic review and meta-analysis. *Frontiers in Public Health*, 11, 1158809. <https://doi.org/10.3389/fpubh.2023.1158809>
- Engla Pasalina, P., Fil Ihsan, H., & Devita, H. (2023). Hubungan Riwayat Anemia Kehamilan dengan Kejadian Stunting pada Balita Relationship Between a History of Pregnancy Anemia and The Incidence of Stunting in Toddlers. *Jurnal Kesehatan*, 12(2), 267–279.
- Eriyani, T., Shalahuddin, I., & Witdiawati, W. (2018). Fungsi Perawatan Kesehatan Keluarga Ibu Hamil dengan Anemia di Poliklinik Kebidanan RSUD Kabupaten Garut. *Indonesian Journal of Nursing Research (IJNR)*, 1(1), 67–75. <https://doi.org/10.35473/ijnr.v1i1.9>
- Farias, P. M., Marcelino, G., Santana, L. F., de Almeida, E. B., Guimarães, R. de C. A., Pott, A., Hiane, P. A., & Freitas, K. de C. (2020). Minerals in Pregnancy and Their Impact on Child Growth and Development. *Molecules*, 25(23), 5630. <https://doi.org/10.3390/molecules25235630>
- Feleke, B. E., & Feleke, T. E. (2020). The Effect of Pregnancy in the Hemoglobin Concentration of Pregnant Women: A Longitudinal Study. *Journal of Pregnancy*, 2020, 1–6. <https://doi.org/10.1155/2020/2789536>
- Figueiredo, A. C. M. G., Gomes-Filho, I. S., Silva, R. B., Pereira, P. P. S., Mata, F. A. F. Da, Lyrio, A. O., Souza, E. S., Cruz, S. S., & Pereira, M. G. (2018). Maternal Anemia and Low Birth Weight: A Systematic Review and Meta-Analysis. *Nutrients*, 10(5), 601. <https://doi.org/10.3390/nu10050601>
- Fitriany, J., & Saputri, A. I. (2018). Anemia Defisiensi Besi. *Jurnal. Kesehatan Masyarakat*, 4(1202005126), 1–30.
- Floridha, R., Ekasari, T., & Zakiyyah, M. (2023). Hubungan Status Gizi dengan Kejadian Anemia Pada Ibu Hamil di Puskesmas Labruk Kecamatan Sumbersuko Kabupaten Lumajang. *Nursing Update*, 14(3), 407–413.
- Friedman & Marilyn M. (2010). Buku ajar keperawatan dan keluarga : riset, teori dan praktik. EGC.
- Friedman, M. ., Bowden, V. ., & Jones, E. G. (2010). Buku Ajar Keperawatan Keluarga (Riset, teori, dan praktik) (5th ed.).
- Gebremichael, M. A., & Belachew Lema, T. (2023). Dietary Diversity, Nutritional Status, and Associated Factors Among Pregnant Women in Their First Trimester of Pregnancy in Ambo District, Western Ethiopia. *Nutrition and Metabolic Insights*, 16. <https://doi.org/10.1177/11786388231190515>

- Georgieff, M. K. (2020). Iron deficiency in pregnancy. *American Journal of Obstetrics and Gynecology*, 223(4), 516–524. <https://doi.org/10.1016/j.ajog.2020.03.006>
- Hardaniyati, H., Setyawati, I., Riezqy Ariendha, D. S., & Zulfiana, Y. (2023). Penyuluhan Dan Pemeriksaan Kadar Hemoglobin Sebagai Salah Satu Upaya Deteksi Dini Anemia Pada Ibu Hamil. *Jurnal LENTERA*, 2(2), 219–225. <https://doi.org/10.57267/lentera.v2i2.199>
- Hastuty, M., Pahlawan, U., & Tambusai, T. (2020). Hubungan Anemia Ibu Hamil Dengan Kejadian Stunting Pada Balita Di Uptd Puskesmas Kampar Tahun 2018. *Journal Doopler*, 4(2), 112–116.
- Hidayaturrohkim, R., Susanto, T., Rasni, H., & Bahtiar, S. (2023). Study of The Caregivers Role Strain in Fulfilling Nutrition for Stunting Toddlers In Public Health Center of Rambipuji, Jember regency. *Caring : Jurnal Keperawatan*, 11(2), 73–86. <https://doi.org/10.29238/caring.v11i2.1476>
- Juwita, R. (2018). Hubungan Konseling dan Dukungan Keluarga Terhadap Kepatuhan Ibu Hamil Mengonsumsi Tablet Fe Ratna. 3(1), 112–120. <https://doi.org/http://doi.org/10.22216/jen.v3i1.2383>
- Kazma, J. M., van den Anker, J., Allegaert, K., Dallmann, A., & Ahmadzia, H. K. (2020). Anatomical and physiological alterations of pregnancy. *Journal of Pharmacokinetics and Pharmacodynamics*, 47(4), 271–285. <https://doi.org/10.1007/s10928-020-09677-1>
- Kemendes RI. (2020). Pedoman Pemberian Tablet Tambah Darah (TTD) Bagi Ibu Hamil. Kementerian Kesehatan Republik Indonesia, 24. https://promkes.kemkes.go.id/pub/files/files99516TTD_BUMIL_OK2.pdf
- Kemendes RI. (2022). Kemendes RI no HK.01.07/MENKES/1928/2022 Tentang Pedoman Nasional Pelayanan Kedokteran Tata Laksana Stunting. Kementerian Kesehatan Republik Indonesia, 1–52.
- Kemendes Kesehatan Republik Indonesia. (2018). RISKESDAS 2018. In Badan Penelitian dan Pengembangan Kesehatan (p. 198).
- Kemendes Kesehatan RI. (2022). Hasil Survei Status Gizi Indonesia (SSGI) 2022. Kemendes, 1–150.
- Kepley, J. M., Bates, K., & Mohiuddin, S. S. (2024). Physiology, Maternal Changes. In StatPearls.
- Keputusan Bupati Jember. (2024). Keputusan Bupati Jember Tentang Penetapan Desa/Kelurahan Lokasi Percepatan Penurunan Stunting Tahun 2025. 12–15.
- Lestari, E., Siregar, A., Hidayat, A. K., & Yusuf, A. A. (2024). Stunting and its association with education and cognitive outcomes in adulthood: A longitudinal study in Indonesia. *PloS One*, 19(5), e0295380. <https://doi.org/10.1371/journal.pone.0295380>
- Lestari, P. I., & Aslikah, W. (2024). Riwayat Anemia Selama Kehamilan Dengan Kejadian Stunting Pada Balita di Kabupaten Cirebon. 2(1), 1–7.

- Mansor, E., et al. (2024). Incidence and determinants of low birth weight: A prospective cohort study. *PLOS ONE*, e0306387. <https://doi.org/10.1371/journal.pone.0306387>
- Mariyani. (2021). Faktor yang Berhubungan dengan Kejadian Stunting pada Balita. *Jurnal Antara Kebidanan*, 4(2), 1177–1186. <https://doi.org/10.37063/jurnalantarakebidanan.v4i2.302>
- Marshall, N. E., Abrams, B., Barbour, L. A., Catalano, P., Christian, P., Friedman, J. E., Hay, W. W., Hernandez, T. L., Krebs, N. F., Oken, E., Purnell, J. Q., Roberts, J. M., Soltani, H., Wallace, J., & Thornburg, K. L. (2022). The importance of nutrition in pregnancy and lactation: lifelong consequences. *American Journal of Obstetrics and Gynecology*, 226(5), 607–632. <https://doi.org/10.1016/j.ajog.2021.12.035>
- Martiani, M., Margawati, A., Mexitalia, M., Rahmadi, F. A., Noer, E. R., Syauqy, A., Gizi, D. I., Martiani, M., Margawati, A., Mexitalia, M., Rahmadi, F. A., Noer, E. R., & Syauqy, A. (2021). Asupan Zat Besi Berhubungan dengan Perkembangan Anak. *Sari Pediatri*, 23(2), 95–102.
- Maxfield, L., Shukla, S., & Crane, J. S. (2024). Zinc Deficiency. In StatPearls. Marshall, N. E., et al. (2022). The importance of nutrition in pregnancy and lactation: Lifelong consequences. *American Journal of Obstetrics and Gynecology*, 226(5), 607–632. <https://doi.org/10.1016/j.ajog.2021.12.035>
- McKee, S. G., Close, R., & Lowenthal, E. (2017). Evaluation of Iron Deficiency Anemia in a Pediatric Clinic in the Dominican Republic. *Annals of Global Health*, 83(3–4), 550–556. <https://doi.org/10.1016/j.aogh.2017.07.004>
- Meikawati, W., Rahayu, D. P. K., & Purwanti, I. A. (2021). Berat Badan Lahir Rendah Dan Anemia Ibu Sebagai Prediktor Stunting Pada Anak Usia 12–24 Bulan Di Wilayah Puskesmas Genuk Kota Semarang. *Media Gizi Mikro Indonesia*, 13(1), 37–50. <https://doi.org/10.22435/mgmi.v13i1.5207>
- Melaku, L. (2022). Physiological Changes in the Pregnancy and Anesthetic Implication during Labor, Delivery, and Postpartum. *The Open Anesthesia Journal*, 16(1). <https://doi.org/10.2174/25896458-v16-e2207130>
- Minasi, A., Susaldi, S., Nurhalimah, I., Imas, N., Gresica, S., & Candra, Y. (2021). Faktor yang Mempengaruhi Kejadian Anemia pada Ibu Hamil. *Open Access Jakarta Journal of Health Sciences*, 1(2), 57–63. <https://doi.org/10.53801/oajjhs.v1i3.21>
- Mogi, J. G., Premikha, M., Nabila, O., Sanjaya, A., Prihartono, I., & Gittelsohn, J. (2024). Formative research to understand food beliefs and practices relating to pregnancy on Kei Besar Island, Eastern Indonesia. *BMC Nutrition*, 10(1), 97. <https://doi.org/10.1186/s40795-024-00905-2>
- Morales, F., Montserrat-de la Paz, S., Leon, M. J., & Rivero-Pino, F. (2023). Effects of Malnutrition on the Immune System and Infection and the Role of Nutritional Strategies Regarding Improvements in Children's Health Status: A Literature Review. *Nutrients*, 16(1), 1. <https://doi.org/10.3390/nu16010001>

- Moreno-Fernandez, J., Ochoa, J. J., Lopez-Frias, M., & Diaz-Castro, J. (2020). Impact of Early Nutrition, Physical Activity and Sleep on the Fetal Programming of Disease in the Pregnancy: A Narrative Review. *Nutrients*, 12(12), 3900. <https://doi.org/10.3390/nu12123900>
- Muche, A., & Dewau, R. (2021). Severe stunting and its associated factors among children aged 6–59 months in Ethiopia. *Italian Journal of Pediatrics*, 47(1), 1–10.
- Mujahadatuljannah, M., & Rabiattunnisa, R. (2024). Analisis Karakteristik Kadar Hemoglobin pada Ibu Hamil di DAS. *Jurnal Surya Medika*, 10(2), 232–235. <https://doi.org/10.33084/jsm.v10i2.7747>
- Mutiara, E. S., Manalu, L., Klise, R. E., Aginta, S., Aini, F., & Rusmalawaty, R. (2023). Analisis Pemberian Tablet Tambah Darah pada Ibu Hamil di Puskesmas: Studi Literature Review. *Media Kesehatan Masyarakat Indonesia*, 22(2), 125–135. <https://doi.org/10.14710/mkmi.22.2.125-135>
- Nadhiroh, S. R., Micheala, F., Tung, S. E. H., & Kustiawan, T. C. (2023). Association between maternal anemia and stunting in infants and children aged 0–60 months: A systematic literature review. *Nutrition*, 115, 112094. <https://doi.org/10.1016/j.nut.2023.112094>
- Namiro, F. B., Batte, A., Rujumba, J., Nabukeera-Barungi, N., Kayom, V. O., Munabi, I. G., Serunjogi, R., & Kiguli, S. (2023). Nutritional status of young children born with low birthweight in a low resource setting: an observational study. *BMC Pediatrics*, 23(1), 520. <https://doi.org/10.1186/s12887-023-04356-9>
- Neupane, S., et al. (2023). More is not enough: Quantity and quality of antenatal care and low birth weight. *PLOS Global Public Health*, 3(6), e0001991. <https://doi.org/10.1371/journal.pgph.0001991>
- Nasriyah, N., & Ediyono, S. (2023). Dampak Kurangnya Nutrisi Pada Ibu Hamil Terhadap Risiko Stunting Pada Bayi Yang Dilahirkan. *Jurnal Ilmu Keperawatan Dan Kebidanan*, 14(1), 161–170. <https://doi.org/10.26751/jikk.v14i1.1627>
- Nugraheni, D., Nuryanto, N., Wijayanti, H. S., Panunggal, B., & Syauqy, A. (2020). Asi Eksklusif Dan Asupan Energi Berhubungan Dengan Kejadian Stunting Pada Usia 6 – 24 Bulan Di Jawa Tengah. *Journal of Nutrition College*, 9(2), 106–113. <https://doi.org/10.14710/jnc.v9i2.27126>
- Nuraeni, I., Novryanthi, D., & Saepul, M. (2024). Hubungan Pola Makan Dengan Kejadian Anemia Pada Ibu Hamil Di Wilayah Kerja Puskesmas Nanggaleng Kota Sukabumi. *Jurnal Ilmu Kedokteran Dan Kesehatan Indonesia*, 4(1), 130–148. <https://doi.org/10.55606/jikki.v4i1.2963>
- Nurhidayati, N., Herodya L Fesmia, Lendi Leskia Putri, & Ni Kadek Mega Suryantini. (2023). Nutrisi Pada 1000 Hari Pertama Kehidupan (HPK) Sebagai Dasar Perkembangan Kognitif: Sebuah Kajian Pustaka. *Unram Medical Journal*, 12(3). <https://doi.org/10.29303/jku.v12i3.987>
- O'Toole, F., Sheane, R., Reynaud, N., McAuliffe, F. M., & Walsh, J. M. (2024). Screening and treatment of iron deficiency anemia in pregnancy: A review and

- appraisal of current international guidelines. *International Journal of Gynecology & Obstetrics*, 166(1), 214–227. <https://doi.org/10.1002/ijgo.15270>
- Paramesti, K. F., Balgis, B., & Putri, A. A. A. K. E. N. (2024). Hubungan Inisiasi Menyusui Dini, ASI Eksklusif, dan Pengetahuan Ibu terkait Nutrisi dengan Kejadian Stunting. *Jurnal Kesehatan Masyarakat Indonesia*, 19(1), 21. <https://doi.org/10.26714/jkmi.19.1.2024.21-27>
- Pasalina, P. E., Fil Ihsan, H., & Devita, H. (2023). Hubungan Riwayat Anemia Kehamilan dengan Kejadian Stunting pada Balita. *Jurnal Kesehatan*, 12(2), 267–279. <https://doi.org/10.46815/jk.v12i2.178>
- Pasaribu Lamtiar, Agustina, G. E., Wahyu, S., Arta, H., Nainggolan, Biomed, B. M. M., & Sembiring, I. S. (2025). Anemia Sedang Pada Kehamilan Trimester III. 3(1), 209–214.
- Pasaribu, R. D., Aritonang, E., Sudaryati, E., & Zuska, F. (2024). Anemia in Pregnancy: Study Phenomenology. *Portuguese Journal of Public Health*, 42(1), 6–14. <https://doi.org/10.1159/000534708>
- Pascual, Z. N., & Langaker, M. D. (2024). Physiology, Pregnancy. In StatPearls.
- Prentice, A., Schoenmakers, I., Laskey, M. A., Bono, S. de, Ginty, F., & Goldberg, G. R. (2024). Symposium on ‘Nutrition and health in children and adolescents’ Session 1: Nutrition in growth and development: Nutrition and bone growth and development Ann. Europe PMC Funders Group, 65(4), 348–360. <https://doi.org/https://doi.org/10.1017%2Fs0029665106005192>
- Purba, A. (2020). Hubungan Perilaku Tentang Tablet Zat Besi Dengan Anemia Ibu Hamil Di Wilayah Kerja Puskesmas Batang Kuis. *Jurnal Health Reproductive*, 5(2), 61–65. <https://doi.org/10.51544/jrh.v5i2.1973>
- Purnamasari, M., & Rahmawati, T. (2021). Hubungan Pemberian Asi Eksklusif dengan Kejadian Stunting Pada Balita Umur 24-59 Bulan. *Jurnal Ilmiah Kesehatan Sandi Husada*, 10(1), 290–299. <https://doi.org/10.35816/jiskh.v10i1.490>
- Rahadinda, A., Utami, K. D., & Reski, S. (2022). Hubungan Anemia pada Ibu Hamil dengan Kejadian BBLR di RSUD Abdul Wahab Sjahranie Samarinda. *Formosa Journal of Science and Technology*, 1(5), 421–434. <https://doi.org/10.55927/fjst.v1i5.1219>
- Rahayu, D. T. (2021a). Anemia Pada Kehamilan Dengan Kejadian Stunting Di Desa Gayam Kecamatan Gurah Kabupaten Kediri. *Jurnal Kebidanan-ISSN*, 7(1). <https://doi.org/10.21070/midwiferia.v>
- Rahmadhita, K. (2020). Permasalahan Stunting dan Pencegahannya. *Jurnal Ilmiah Kesehatan Sandi Husada*, 11(1), 225–229. <https://doi.org/10.35816/jiskh.v11i1.253>
- Rahmannia, S., Diana, A., Luftimas, D. E., Gurnida, D. A., Herawati, D. M. D., Houghton, L. A., & Gibson, R. S. (2019). Poor dietary diversity and low adequacy of micronutrient intakes among rural Indonesian lactating women from Sumedang district, West Java. *PLOS ONE*, 14(7), e0219675. <https://doi.org/10.1371/journal.pone.0219675>

- Rahmawati, L. A., Hardy, F. R., Anggraeni, A., & Purbasari, D. (2020). Faktor-Faktor yang Berhubungan dengan Stunting Sangat Pendek dan Pendek pada Anak Usia 24-59 Bulan di Kecamatan Sawah Besar Related Factors of Very Short and Short Stunting In Children Aged 24 - 59 Months in Kecamatan Sawah Besar. *Jurnal Ilmiah Kesehatan Masyarakat*, 12(2), 68–78.
- Raut, A. K., & Hiwale, K. M. (2022). Iron Deficiency Anemia in Pregnancy. *Cureus*. <https://doi.org/10.7759/cureus.28918>
- Rhodes, C. E., Denault, D., & Varacallo, M. (2022). Physiology, Oxygen Transport. In *StatPearls* [Internet].
- Rismayana, & Sunarti, A. (2024). Gambaran Kekurangan Energi Kronis (KEK) Dan Anemia Pada Ibu Yang Mempunyai Baduta Stunting Usia 6-23 Bulan di Wilayah Kerja Puskesmas Marawola Periode 2020. *Innovative: Journal Of Social Science Research*, 4(1), 1992–1998.
- Salakory, G. T. J., & Wija, I. B. E. U. (2021). Hubungan Anemia Pada Ibu Hamil Terhadap Kejadian Stunting di RS Marthen Indey Jayapura Tahun 2018-2019. *Majalah Kedokteran UKI*, 37(1), 9–12. <https://doi.org/10.33541/mk.v37i1.3365>
- Saleh, A., Syahrul, S., Hadju, V., Andriani, I., & Restika, I. (2021). Role of Maternal in Preventing Stunting: a Systematic Review. *Gaceta Sanitaria*, 35, S576–S582. <https://doi.org/10.1016/j.gaceta.2021.10.087>
- Schnettler, B., Lobos, G., Miranda-Zapata, E., Denegri, M., Ares, G., & Hueche, C. (2017). Diet Quality and Satisfaction with Life, Family Life, and Food-Related Life across Families: A Cross-Sectional Pilot Study with Mother-Father-Adolescent Triads. *International Journal of Environmental Research and Public Health*, 14(11). <https://doi.org/10.3390/ijerph14111313>
- Shabrina, A., Santoso, C., Putra, D. P. P., Wicaksono, R. R. A., Haq, A. I., Valeria, A. H., Rusyda, A. K., Varansia, B. V., Susanto, S. H. H., & Qurratulaini, S. (2025). Edukasi dengan Booklet sebagai Upaya Pendampingan Ibu Hamil untuk Cegah Anemia dan KEK di Boyolali. *Smart Society Empowerment Journal*, 5(1), 27. <https://doi.org/10.20961/ssej.v5i1.100685>
- Sharma, D., Shastri, S., & Sharma, P. (2016). Intrauterine Growth Restriction: Antenatal and Postnatal Aspects. *Clinical Medicine Insights: Pediatrics*, 10. <https://doi.org/10.4137/CMPed.S40070>
- Sharma, N. (2020). Risk Factors for Anemia in Pregnancy: a Case Control Study. *Int.J.Med.Sci.Educ*, 7(4), 35–38. www.ijmse.com
- Soliman, A. T., De Sanctis, V., Yassin, M., & Adel, A. (2017). Growth and Growth hormone - Insulin Like Growth Factor -I (GH-IGF-I) Axis in Chronic Anemias. *Acta Bio-Medica: Atenei Parmensis*, 88(1), 101–111. <https://doi.org/10.23750/abm.v88i1.5744>
- Soma-Pillay, P., Nelson-Piercy, C., Tolppanen, H., & Mebazaa, A. (2016). Physiological changes in pregnancy. *Cardiovascular Journal of Africa*, 27(2), 89–94. <https://doi.org/10.5830/CVJA-2016-021>

- Suhrawardi. (2022). Analisis Pemberian ASI Eksklusif dengan Kejadian Stunting. 3(7), 7153–7160.
- Simamora, S R., & Kresnawati, P. (2021). Pemenuhan Pola Makan Gizi Seimbang Dalam Penanganan Stunting Pada Balita Di Wilayah Puskesmas Kecamatan Rawalumbu Bekasi. *Jurnal Bidang Ilmu Kesehatan*, 11(1), 34–45. <https://doi.org/10.52643/jbik.v11i1.1345>
- Susanti, Y., Sugesti, R., & Magdalena, M. (2023). Hubungan Persepsi, Sikap Keteraturan Dalam Minum Tablet Fe Dan Dukungan Keluarga Terhadap Kejadian Anemia Pada Ibu Hamil Trimester Iii Di Puskesmas Karangpawitan Kabupaten Garut Tahun 2023. *SENTRI: Jurnal Riset Ilmiah*, 2(10), 4414–4427. <https://doi.org/10.55681/sentri.v2i10.1680>
- Susanto, T. (2021). *Buku Ajar Keperawatan Keluarga* (2nd ed.). Trans Info Media.
- Susanto, T., Ade, G. V. A. K., & Rasni, H. (2023). Validitas Kuesioner Kesadaran Gizi Keluarga Pada Ibu Dengan Anak Stunting di Kabupaten Jember. *Madago Nursing Journal*, 4(1), 1–17. <https://doi.org/10.33860/mnj.v4i1.2072>
- Susanto, T., Rasni, H., & Susumaningrum, L. A. (2021). Prevalence of malnutrition and stunting among under-five children: A cross-sectional study family of quality of life in agricultural areas of Indonesia. *Mediterranean Journal of Nutrition and Metabolism*, 14(2), 147–161. <https://doi.org/https://doi.org/10.3233/MNM-200492>
- Susanto, T., Rasni, H., Susumaningrum, L. A., & Kurdi, F. (2022). Perawatan Keluarga dalam Pemenuhan Kebutuhan Nutrisi Balita.
- Susanto, T., Yunanto, R. A., Rasny, H., Susumaningrum, L. A., & Nur, K. R. M. (2019). Promoting Children Growth and Development: A community-based cluster randomized controlled trial in rural areas of Indonesia. *Public Health Nursing*, 36(4), 514–524. <https://doi.org/https://doi.org/10.1111/phn.12620>
- Sutriyawan, A., Kurniawati, R. D., Rahayu, S., & Habibi, J. (2020). Hubungan Status Imunisasi Dan Riwayat Penyakit Infeksi Dengan Kejadian Stunting Pada Balita: Studi Retrospektif. *Journal Of Midwifery*, 8(2), 1–9. <https://doi.org/10.37676/jm.v8i2.1197>
- Tim Penyusun SSGI 2024 Dalam Angka. (2025). *Survei Status Gizi Indonesia 2024: Dalam Angka*.
- Trisasmata, L., Sudiarti, T., Dewi Sartika, R. A., & Setiarini, A. (2020). Identification of dietary diversity associated with stunting in Indonesia. *Malaysian Journal of Nutrition*, 26(1), 085–092. <https://doi.org/10.31246/mjn-2019-0128>
- Triswati, M., Mardhiyah, D., & Maulidya Sari, S. (2021). Hubungan Riwayat Bblr (Berat Badan Lahir Rendah) Dengan Kejadian Stunting Di Kabupaten Pandeglang. *Majalah Sainstekes*, 8(2), 061–070. <https://doi.org/10.33476/ms.v8i2.2096>
- UNICEF. (2021). *UNICEF Conceptual Framework on Maternal and Child Nutrition*. Nutrition and Child Development Section, Programme Group 3 United Nations Plaza New York, NY 10017, USA, 2–3.

www.unicef.org/nutrition%0Afile:///C:/Users/HP/Documents/KULIAH/S E M E S T E R - 6/Proposal Skripsi/Jurnal Pola Makan & Status Gizi/Bagan UNICEF Conceptual Framework.pdf

- Vazquez, L. I., Voltas, N., Martínez, C. H. J. C., Coronel, P., Gimeno, M., Basora, J., & Arija, V. (2023). Importance of Maternal Iron Status on the Improvement of Cognitive Function in Children After Prenatal Iron Supplementation. *American Journal of Preventive Medicine*, 65(3), 395–405. <https://doi.org/10.1016/j.amepre.2023.02.006>
- Wahyuningsih, E., Hartati, L., & Puspita, W. D. (2023). Analisis Resiko Kejadian Anemia pada Ibu Hamil. *Professional Health Journal*, 4(2), 303–313. <https://doi.org/10.54832/phj.v4i2.388>
- Wakwoya, E. B., Belachew, T., & Girma, T. (2022). Determinants of nutritional status among pregnant women in East Shoa zone, Central Ethiopia. *Frontiers in Nutrition*, 9. <https://doi.org/10.3389/fnut.2022.958591>
- White, J., Drummond, E., Bijalwan, V., Singhkumarwong, A., Betigeri, A., Blankenship, J., Badham, J., Cade, J., Cashin, J., Cosenza, L., Kupka, R., Morpeth, A., Mulder, A., Nasser, N., Nguyen, T., Pries, A., de Silva, A., Sweet, L., Threapleton, D., ... Zehner, E. (2023). UNICEF East Asia and the Pacific Regional Office, and World Food Programme Asia Pacific Regional Office.
- WHO. (2019). Malnutrition is a world health crisis. <https://www.who.int/news/item/26-09-2019-malnutrition-is-a-world-health-crisis>
- WHO. (2022). Early Essential Newborn Care Clinical practice pocket guide Second edition. <http://www.wipo.int/amc/en/mediation/rules>
- World Health Organization. (2022). WHO Recommendations on Maternal and Newborn Care For a Positive Postnatal. www.who.int/data/maternal-newborn-child-adolescent-ageing/maternal-and-newborn-data/maternal-and-newborn---coverage.
- WHO. (2023). Nutrition counselling during pregnancy.
- Woldehanna, T., Behrman, J. R., & Araya, M. W. (2017). The effect of early childhood stunting on children's cognitive achievements: Evidence from young lives Ethiopia. *The Ethiopian Journal of Health Development = Ya'Ityopya Tena Lemat Mashet*, 31(2), 75–84.
- Woldesenbet, B., Tolcha, A., & Tsegaye, B. (2023). Water, hygiene and sanitation practices are associated with stunting among children of age 24-59 months in Lemo district, South Ethiopia, in 2021: community based cross sectional study. *BMC Nutrition*, 9(1), 17. <https://doi.org/10.1186/s40795-023-00677-1>
- World Health Organization. (2023). Levels and trends in child malnutrition. In *The BMJ*, a.
- Yuwanti, Y., Mulyaningrum, F. M., & Susanti, M. M. (2021). Faktor – Faktor Yang Mempengaruhi Stunting Pada Balita Di Kabupaten Grobogan. *Jurnal Keperawatan Dan Kesehatan Masyarakat Cendekia Utama*, 10(1), 74. <https://doi.org/10.31596/jcu.v10i1.704>

- Zhao, B., Sun, M., Wu, T., Li, J., Shi, H., & Wei, Y. (2024). The association between maternal anemia and neonatal anemia : a systematic review and meta - analysis. *BMC Pregnancy and Childbirth*, 1–12. <https://doi.org/10.1186/s12884-024-06832-1>
- Zinga, J., McKay, F. H., Lindberg, R., & van der Pligt, P. (2022). Experiences of Food-Insecure Pregnant Women and Factors Influencing Their Food Choices. *Maternal and Child Health Journal*, 26(7), 1434–1441. <https://doi.org/10.1007/s10995-022-03440-3>