

Effect of Blood Addition Tablet Consumption on the Potential of Children Born Stunted

Adinda Salwa Fadya^{a*}, Siti Nurah Farhah^b, Muhammad Iqbal Lutfi^c, Syifa Salsabila^d, Suciana Wijirahayu^{e*}

^aUniversitas Muhammadiyah Prof. DR. HAMKA, DK Jakarta, Indonesia

^bUniversitas Muhammadiyah Prof. DR. HAMKA, DK Jakarta, Indonesia, sitinurahfarhah79@gmail.com

^cUniversitas Muhammadiyah Prof. DR. HAMKA, DK Jakarta, Indonesia

^dUniversitas Muhammadiyah Prof. DR. HAMKA, DK Jakarta, Indonesia

^eUniversitas Muhammadiyah Prof. DR. HAMKA, DK Jakarta, Indonesia, sucianawijirahayu@uhamka.ac.id

*Correspondence: sitinurahfarhah79@gmail.com

Abstract

Stunting is a chronic nutritional problem that affects children's physical growth and cognitive development, often related to anemia in pregnant women. Blood supplementation tablets (TTD) are an important intervention to prevent anemia by meeting iron and folic acid requirements during pregnancy. This study reviewed the association of TTD consumption with stunting risk based on 2019-2024 literature. Results show that regular TTD consumption reduces anemia, improves maternal nutrition, and reduces the risk of stunting. Program success is influenced by knowledge, social support, and intervention effectiveness, with health education and program supervision as key enabling factors. This study emphasizes the importance of synergizing education, dietary improvements, and community support to increase TTD use, accelerate stunting reduction, and support maternal and child health.

Keywords:

Blood Addition Tablets;
Child Birth;
Stunting

1. Introduction

The iron tablet supplementation program in Indonesia is one of the strategic efforts launched by the government to address anemia, especially among adolescent girls and pregnant women. Blood supplement tablets (TTD) given in the form of iron folate tablets, which each tablet contains 60 mg of iron and 0.25 mg of folic acid or the equivalent of 200 mg of Ferrous Sulfate. (Anggraini et al., n.d.). TTD can prevent and treat anemia if consumed regularly and as directed. For adolescent girls, it is recommended to take TTD regularly, the recommended use is to take one tablet every week, while during menstruation, it is recommended to take one tablet every day regularly. (Muliasari et al., 2023). As for pregnant women, the government recommends a daily dose of one tablet containing 60 mg of iron and 0.25 mg of folic acid, taken consecutively for at least 90 days of pregnancy.. (Indah Purnama Eka Sari & Poltekkes Kemenkes Bengkulu, 2020).

The condition in which the level of hemoglobin in red blood cells (erythrocytes) decreases is called anemia, making it unable to meet the body's physiological needs. Hemoglobin is an important protein that contains iron. According to data from the World Health Organization (WHO), normal hemoglobin levels in women aged 15 years and above are more than 12.0 grams per deciliter (>7.5 millimoles). Anemia has a negative impact on adolescent girls, including a long-term decline in concentration while studying. This can increase the risk of maternal and infant mortality, as well as increase the likelihood of low birth weight (LBW) babies being born.

Anemia in adolescent girls showed an increase, from 37.1% based on the 2013 Riskesdas to 48.9% in the (*Laporan Riskesdas 2018 Nasional*, n.d.), This is often the case in the 15-24 year old and 25-34 year old age groups. According to the World Health Organization (WHO) in 2020, 40% of pregnant women worldwide are anemic. The prevalence of anemia among pregnant women in Indonesia is 48.9%, with the majority of cases found in the 15-24 years age group, which accounts for 84.6% of the total cases (Kementerian Kesehatan Republik Indonesia, 2022). The coverage of blood

supplementation tablets among pregnant women in Indonesia in 2023 only reached 64.0%, still far from the target set in the 2022 Strategic Plan, which is 98% (Kementerian Kesehatan Republik Indonesia, 2022). Therefore, prevention and treatment of anemia is very important, especially starting from adolescence.

Hindering is the disabled development and advancement of children due to persistent dietary issues caused by long-term admissions shortages. In 2021, UNICEF detailed that more than 149 million children beneath the age of 5 were hindered. In Asia, the predominance of hindering is 21.8%, which compares to around 79 million children, whereas in Southeast Asia, the predominance is recorded at 27.4%, or around 15.3 million children. (UNICEF, WHO, 2021). Based on the Indonesian Nourishment Status Ponder (SSGI), the national hindering predominance has diminished from 27.7% in 2019 to 24.4% in 2021, which implies it appeared a diminish of 1.6%. Most of the 34 territories in Indonesia recorded a diminish in predominance in the event that compared to 2019, In spite of the fact that there were changes in five areas. This decrease reflects the adequacy of government approach usage in quickening hindering lessening. In any case, this figure still does not reach the National Medium-Term Advancement Arrange (RPJMN) target of 14% by 2024 (Ilmu Pemerintahan Suara Khatulistiwa Akreditasi Jurnal Nasional Sinta et al., 2023). In expansion, in Indonesia, frequency rates of persistent vitality insufficiency (CED) and frailty among pregnant ladies (Laporan Riskesdas 2018 Nasional, n.d.).

The French Government is working to prevent stunting by implementing the First 1000 Days of Life (HPK) programme, which covers the 270 days of pregnancy until the child reaches 2 years of age or 730 days of age. This period is critical because of its high potential as well as its vulnerability. The condition of the mother during pregnancy and the childcare arrangements directly affect the child's ability to grow and develop. Approximately 27.95% of pregnant women are provided with at least 90 iron tablets, which is one of the key steps to support maternal and child health, along with vitamin A supplementation to increase body weight, basic immunization, complementary feeding and growth monitoring. Nutrients are needed to support fetal cell growth, but dietary supplementation alone is often insufficient. Iron supplementation during pregnancy can increase hemoglobin levels and reduce the risk of low birth weight (LBW), which contributes to slow growth, so supplementation is a solution. (Nopitasari et al., 2018).

Adolescent girls and pregnant women are prone to iron deficiency anemia. Anemia in adolescents may have long-term consequences, such as pregnancy complications and the risk of low birth weight. Taking bleed-promoting tablets in tablet form plays an important role in preventing anemia, but anemia may indirectly affect the risk of stunting in future children. Therefore, this study aims to understand the relationship between the use of bleed-promoting tablets in adolescent girls and pregnant women and the possibility of growth retardation at birth. Therefore, the research questions to be answered in this discussion are: (1) Can the continued use of bleed-promoting tablets reduce the prevalence of anemia in adolescent girls and pregnant women and play a role in preventing stunting in children? (2) What is the relationship between anemia and stunting in children?

2. Method

This research method uses a computerized literature search through the Google Scholar electronic database. Selected articles were filtered based on publications between 2019 and 2024 (the last five years). The keywords used included: Blood supplement tablets, anemia in adolescent girls and pregnant women, stunting, and the relationship between blood supplement tablets and stunting. The inclusion criteria for article selection were: (1) studies published within the last five years, (2) studies focusing on blood supplementation tablets, anemia in adolescent girls and pregnant women, stunting, and the relationship between blood supplementation tablets and stunting, (3) studies written in English. Based on these criteria, 15 relevant studies were included in this review.

3. Results and Discussion

3.1 Results

Based on 16 research articles relevant to the research topic, it shows that various factors influence the consumption of iron supplements in adolescent girls and its relation to anemia. Motivation, support from family, friends, and school play an important role in improving iron tablet consumption,

which in turn helps prevent anemia and stunting. School-based programs with iron and folic acid supplementation have been shown to be effective in reducing the prevalence of anemia, although adherence rates need to be improved for optimal results. In addition, factors such as knowledge, positive attitudes, and support from health workers and parents also contribute to iron tablet consumption behavior. The risk of anemia is higher among adolescents who live in rural areas, have a low-diversity diet, or do not adhere to supplement consumption. For children, anemia and stunting had a significant association, with the risk of anemia increasing the likelihood of stunting, and vice versa. Multidisciplinary interventions and strengthening the role of institutions, such as schools and families, are needed to effectively address this issue.

3.2 Discussion

Based on relevant studies, consumption of blood supplement tablets (TTD) has a significant association with the incidence of anemia and the potential for stunting in both children and adolescent girls. Several key findings suggest that anemia, often caused by iron deficiency, is one of the risk factors contributing to stunting. The topic of iron supplementation consumption and its association with the potential for stunting is interesting to analyze because it links specific interventions for adolescent girls and pregnant women with long-term health impacts on children.

Adherence rate in taking Blood Additive Tablets (TTD)

Adherence to taking blood supplement tablets is an important element in the prevention of anemia and stunting, especially among adolescent girls and pregnant women. Research by Feriyanti et al., (2022) showed that individual motivation as well as support from family, friends, and institutions such as schools greatly influenced adolescents' adherence to taking iron tablets. For this reason, continuous health education and institutional strengthening are needed for this program to be effective. Gosdin et al., (2021) proving the success of school-based supplementation programs in reducing anemia, but low compliance is a barrier to achieving maximum results.

Gosdin et al., (2021) found that the level of compliance with the weekly program reached 67.7%, but intensive supervision is still needed from the school and educators. Research Dartha et al., (2024) added that institutional support, especially schools, had a significant impact on improving adherence (OR = 10.27), while side effects of supplements were the main inhibiting factor (OR = 10.76). This is reinforced by the findings Silitonga et al., (2023), which stated that intervention strategies, such as monitoring and psychosocial support, were able to increase compliance from low levels (26.2%) to more than 80%. Overall, adherence can be improved with a combination of education-based interventions, social support, and efforts to reduce barriers such as side effects.

Adherence to taking blood supplement tablets was also discussed in a study by Farah Yanisah & Widati, (2023). This study found that health education on anemia was highly effective in increasing adolescent girls' awareness and adherence to iron supplement consumption, which in turn had a positive impact on improving their hemoglobin levels. Educational approaches that focus on anemia risk awareness can be a powerful strategy to improve well-being. In addition, research Sari et al., (2022) showed that the protein intake factor significantly influenced the prevention of anemia in rural adolescent girls. Improving diet by increasing protein consumption reduces positively on the fulfillment of iron supplement consumption, which can reduce the prevalence of anemia in the region.

The Association Between Anemia And Stunting In Children

The relationship between anemia and stunting is complex and mutually influential, forming a cycle that is difficult to break without comprehensive interventions. Research by Utami dkk. (2023) showed that iron anemia deficiency increased the risk of stunting by 1.35 times, and stunting increased the risk of anemia by 1.30 times. This relationship reflects the physiological impact of anemia on child growth, including a lack of oxygen to tissues that affects development. Oktarina et al., (2024) the meta-analysis showed that children with iron deficiency anemia had a 2.27 times higher risk of stunting, emphasizing the need for simultaneous treatment of both conditions. Handayani et al., n.d. also revealed that adolescents who are non-compliant with Fe tablet consumption are more at risk of anemia, which then negatively affects their nutritional status and increases the likelihood of stunting.

Meanwhile, Ma'rifati Ilma et al., (2021) it showed that pregnant women who did not adhere to taking Fe tablets had a 2.44 times higher risk of anemia, which can affect fetal health conditions and

increase the risk of stunting. In addition, research Khadija et al., (2022) found that poor diets in stunted and wasted children were closely linked to their mothers' anemia, demonstrating the importance of improving maternal and child diets. In research Habtegiorgis et al., (2022), anemia prevalence of 23.02% among adolescent girls in Ethiopia suggests that risk factors such as rural residence and low dietary diversity scores contribute to the high rate of anemia. These conditions indirectly affect the potential risk of stunting, as iron deficiency in adolescent girls may affect their future reproductive health.

Meanwhile, Dessie et al., (2024) identified that the comorbidity of anemia and the prevalence of stunting in children under the age of five reached 19.47%. This study highlights the importance of interventions that address micronutrient deficiencies such as vitamin A, iodine and iron, which are major risk factors. In research Meika Sari et al., (2023), found that the habit of taking blood supplement tablets in adolescent girls is strongly influenced by factors of knowledge, attitude, and support from health workers and parents. Good knowledge increases the chance of blood tablet consumption behavior by 7.5 times, which in turn can effectively prevent stunting.

Research by Rufiah Salhah et al., (2024) found a significant relationship between the level of knowledge and adherence of adolescent girls in taking blood supplement tablets ($p = 0.020$), although the association was weak. With a low compliance rate (96.1% non-adherent), this result suggests that improved knowledge may contribute to compliance. Thus, anemia and stunting have a synergistic relationship that requires special attention through a multidisciplinary approach, ranging from improving nutrition education to empowering communities to support good.

4. Conclusion

Based on a literature review, the routine use of blood supplementation tablets (TTD) in adolescent girls and pregnant women has been shown to help reduce the risk of anemia, which indirectly affects the prevention of stunting in children. The main factors that influence the success of this program include knowledge, social support, and health education. Adherence to TTD use can be improved through continuous education and guidance. A multidisciplinary approach can effectively prevent anemia and stunting and help achieve the national goal of reducing stunting.

5. References

- Anggraini, N., Lisnawati, L., Juita, D., Hariyanti, E. T., Abdi, S., & Jakarta, N. (n.d.). *Compliance To Blood Supplement Tablets Consumption Among Teenagers High School As An Effort To Prevent Anemia In Indonesia*.
- Dartha, A., Riskiyani, S., & Thaha, R. M. (2024). Determinants of adolescent girls' adherence to weekly iron supplementation. In *International Journal of Chemical and Biochemical Sciences (IJCBS)* (Vol. 25, Issue 16). www.iscientific.org/Journal.html
- Dessie, G., Li, J., Nghiem, S., & Doan, T. (2024). Prevalence and Determinants of Stunting-Anemia and Wasting-Anemia Comorbidities and Micronutrient Deficiencies in Children Under 5 in the Least-Developed Countries: A Systematic Review and Meta-analysis. *Nutrition Reviews*. <https://doi.org/10.1093/nutrit/nuae063>
- Farah Yanisah, B., & Widati, S. (2023). Is Health Education on Anemia Increasing Iron Supplementation Consumption in Adolescent Girls?: A Systematic Review. *Jurnal Promkes: The Indonesian Journal of Health Promotion and Health Education*, 11, 46–51. <https://doi.org/10.20473/jpk.V11.I1SP.2023.46-51>
- Feriyanti, A., Deviatin, N. S., Nurmala, I., Widati, S., & Atmaka, D. R. (2022). Determinant of Adherence to iron supplementation in Adolescent Girl In Spesific Intervention For Stunting Prevention: Systematic Review. *Media Gizi Indonesia*, 17(1SP), 90–96. <https://doi.org/10.20473/mgi.v17i1sp.90-96>
- Gosdin, L., Sharma, A. J., Tripp, K., Amoafu, E. F., Mahama, A. B., Selenje, L., Jefferds, M. E., Martorell, R., Ramakrishnan, U., & Addo, O. Y. (2021). A School-Based Weekly Iron and Folic Acid Supplementation Program Effectively Reduces Anemia in a Prospective Cohort of Ghanaian Adolescent Girls. *Journal of Nutrition*, 151(6), 1646–1655. <https://doi.org/10.1093/jn/nxab024>

- Habtegiorgis, S. D., Petrucka, P., Telayneh, A. T., Shitu Getahun, D., Getacher, L., Alemu, S., & Birhanu, M. Y. (2022). Prevalence and associated factors of anemia among adolescent girls in Ethiopia: A systematic review and meta-analysis. In *PLoS ONE* (Vol. 17, Issue 3 March). Public Library of Science. <https://doi.org/10.1371/journal.pone.0264063>
- Handayani, Y., Arif Budiman, I., Studi DIII Kebidanan Fakultas Ilmu Kesehatan Universitas dr Soebandi, P., & Studi Profesi Keperawatan Fakultas Ilmu Kesehatan Universitas dr Soebandi, P. (n.d.). Hubungan Kepatuhan Konsumsi Tablet Fe Terhadap Kejadian Anemia Correlation Fe Tablet Consumption Compliance with Anemia. In *Jurnal Ilmiah Kebidanan* (Vol. 9, Issue 2).
- Ilmu Pemerintahan Suara Khatulistiwa Akreditasi Jurnal Nasional Sinta, J., Bibliometrik dan Analisis Konten Author, A., Rahman, H., Rahmah, M., Saribulan Affiliasi Program Studi Studi Kebijakan Publik, N., Politik Pemerintahan, F., & Rahman Institut Pemerintahan Dalam Negeri, H. (2023). *Upaya Penanganan Stunting Di Indonesia. 01*.
- Indah Purnama Eka Sari, W., & Poltekkes Kemenkes Bengkulu, D. (2020). The Effect Of Giving Iron Tablet And Green Bean Ekstract On Hemoglobin Levels In Pregnant Women. In *Medikes (Media Informasi Kesehatan)* (Vol. 7, Issue 2).
- Kementerian Kesehatan Republik Indonesia Pedoman Pemberian Tablet Tambah Darah (TTD) Bagi Remaja Putri Pada Masa Pandemi Covid-19 T E N A G A K E S E H A T A N. (n.d.-a).
- Khadija, U., Mahmood, S., Ainee, A., Quddoos, M. Y., Ahmad, H., Khadija, A., Zahra, S. M., & Hussain, A. (2022). Nutritional health status: association of stunted and wasted children and their mothers. *BMC Pediatrics*, 22(1). <https://doi.org/10.1186/s12887-022-03309-y>
- Laporan Riskesdas 2018 Nasional. (n.d.).
- Ma'rifati Ilma, M., Panghiyangani, R., & Kania, N. (2021). Meta-Analysis: The Relationship of Fe Tablet Consumption Adherence and Anemia Prevalence in Pregnant Women. *International Journal of Science and Healthcare Research*, 6(4), 23–35. <https://doi.org/10.52403/ijshr.20211005>
- Meika Sari, I. M., Yanti, D. E., Aryastuti, N., & Amirus, K. (2023). Behavioral Factor Analysis of Blood Supplement Tablet Consumption in Adolescent Girls as an Effort to Prevent Stunting. *Jurnal Penelitian Pendidikan IPA*, 9(6), 4294–4302. <https://doi.org/10.29303/jppipa.v9i6.3532>
- Muliasari, I., Sunarsih, S., & Nurmiaty, N. (2023). Effect of Tablet Fe on Improvement Hemoglobin in Adolescent Women Region Mining Morosi District. *Waluya The International Science of Health Journal*, 2(3), 163–171. <https://doi.org/10.54883/28292278.v2i3.429>
- Nopitasari, D., Maghfiroh, T., Kebidanan, A., & Husada, W. (2018). Pengaruh Pemberian Suplemen Pada Ibu Hamil Terhadap Bayi Berat Lahir Rendah Di Klinik Pasutri. In *Jurnal Ilmiah Wijaya* (Vol. 10). www.jurnalwijaya.com;
- Oktarina, C., Dilantika, C., Sitorus, N. L., & Basrowi, R. W. (2024). Relationship Between Iron Deficiency Anemia and Stunting in Pediatric Populations in Developing Countries: A Systematic Review and Meta-Analysis. In *Children* (Vol. 11, Issue 10). Multidisciplinary Digital Publishing Institute (MDPI). <https://doi.org/10.3390/children11101268>
- Rufiah Salhah, S., Anam, K., & Meihartati, T. (2024). Science Midwifery The relationship between knowledge level and compliance to blood supplement tablets consumption in adolescent girls. In *Science Midwifery* (Vol. 12, Issue 1). Online. www.midwifery.iocspublisher.orgJournalhomepage:www.midwifery.iocspublisher.org
- Sari, P., Judistiani, R. T. D., Hilmanto, D., Herawati, D. M. D., & Dhamayanti, M. (2022). Iron Deficiency Anemia and Associated Factors Among Adolescent Girls and Women in a Rural Area of Jatinangor, Indonesia. *International Journal of Women's Health*, 14, 1137–1147. <https://doi.org/10.2147/IJWH.S376023>
- Silitonga, H. T. H., Salim, L. A., Nurmala, I., & Wartiningsih, M. (2023). Compliance of Iron Supplementation and Determinants among Adolescent Girls: A Systematic Review. In *Iranian Journal of Public Health* (Vol. 52, Issue 1, pp. 37–48). Tehran University of Medical Sciences. <https://doi.org/10.18502/ijph.v52i1.11664>
- Unicef., WHO. (2021). *Levels and trends in child malnutrition*. (n.d.).
- Utami. (2023). *15.+ENG+RS+34919_Mia+Mustika+Hutria+(120-130)*. (n.d.).
- Wangaskar, S., Sahu, S., Majella, M., & Rajaa, S. (2021). Prevalence of anaemia and compliance to weekly iron-folic acid supplementation programme amongst adolescents in selected schools of



urban Puducherry, India. *Nigerian Postgraduate Medical Journal*, 28(1), 44–50.
https://doi.org/10.4103/npmj.npmj_336_20



Attachment

Table 1. Research Articles Relevant to the Topic of the Effect of Blood Addition Tablet Consumption on the Potential of Children Born Stunted

No	author & year	Research title	Research purpose	Method	Population & sample
1.	Feriyanti et al., (2022)	Determinants of Adherence to Iron Supplementation in Adolescent Girls in Specific Interventions for Stunting Prevention: Systematic Review	Analyzing factors that influence adolescent girls' adherence to iron supplementation as a specific intervention to prevent stunting.	Systematic review using PRISMA approach with 10 articles from 5 electronic databases (2018-2022).	Adolescent girls (15-18 years) in a study addressing iron tablet consumption adherence.
2.	Gosdin et al., (2021)	A School-Based Weekly Iron and Folic Acid Supplementation Program Effectively Reduces Anemia in a Prospective Cohort of Ghanaian Adolescent Girls	Evaluate the efficacy of an iron and folic acid supplementation program implemented in schools to reduce adolescent anemia in Ghana.	A pre-post longitudinal study with a linear mixed-effects model to analyze the association of IFA tablet consumption and changes in hemoglobin (Hb) levels.	1387 adolescent girls (10-19 years old) from 60 schools.
3.	Utami dkk. (2023)	Risk Factors of Stunting, Iron Deficiency Anemia, and Their Coexistence among Children Aged 6-9 Years in Indonesia	Risk factors for stunting, namely iron deficiency anemia (ADB) and its coexistence, both conditions can be analyzed in children aged 6-9 years in Indonesia.	A cross-sectional study using Indonesian Family Life Survey (IFLS-5) survey data with 1,986 children. Logistic regression analysis was used to determine risk factors.	Children aged 6-9 years from 13 provinces in Indonesia.
4.	Oktarina et al., (2024)	Relationship Between Iron Deficiency Anemia and Stunting in Pediatric Populations in Developing Countries: A Systematic Review and Meta-Analysis	Analyzing the link between iron deficiency anemia (ADB) and stunting in children in developing countries.	A systematic review and meta-analysis of 15 studies (4 for meta-analysis), involving 21,936 children aged 0-12 years. Data were retrieved from several databases such as PubMed and EMBASE.	Children from Asia, Africa and South America
5.	Habtegiorgis et al., (2022)	Prevalence and Associated Factors of Anemia among Adolescent Girls in Ethiopia: A Systematic Review and Meta-Analysis	Assessing the prevalence of anemia and associated factors among adolescent girls in Ethiopia.	Systematic review and meta-analysis of 10 studies, with meta-regression analysis to identify pooled prevalence.	Adolescent girls from different regions of Ethiopia. Total sample of 5,547 participants.

6.	Wangaskar et al., (2021)	Prevalence of anemia and compliance to weekly iron-folic acid supplementation programme amongst adolescents in selected schools of urban Puducherry, India	Determine the prevalence of anemia, adherence to the weekly iron-folate supplementation (WIFS) program, and sociodemographic clinical factors associated with anemia as well as adherence to the WIFS program.	Cross-sectional analytical study, using questionnaires and hemoglobin measurements in 499 school adolescents in Puducherry	Teens aged 10–18 in government schools. A sample of 499 adolescents
7.	Farah Yanisah & Widati, (2023)	Is Health Education on Anemia Increasing Iron Supplementation Consumption in Adolescent Girls?: A Systematic Review	Analyzing the effects of health education and iron supplementation on anemia in adolescent girls	A systematic review of inclusion criteria of studies involving health education and iron supplementation in adolescents	Adolescent girls in secondary school (a multi-country study)
8.	Handayani et al., n.d.	The Relationship of Fe Tablet Consumption Compliance to the Incidence of Anemia	To analyze the relationship between Fe tablet consumption compliance and reduce the incidence of anemia in adolescent girls.	Analytic correlational study with a cross-sectional approach	A total of 50 adolescent girls who live in Mumbulsari Subdistrict, Jember Regency, using purposive sampling techniques
9.	Dessie et al., (2024)	Prevalence and Determinants of Stunting-Anemia and Wasting-Anemia Comorbidities and Micronutrient Deficiencies in Children Under 5	To assess the prevalence and determinants of malnutrition and morbidity of stunting-anemia and wasting-anemia in children in underdeveloped countries.	Systematic review and meta-analysis; Data collection from observational studies in 2000–2024.	Children under the age of 5 from 46 underdeveloped countries; The total sample is 181,605.
10.	Silitonga et al., (2023)	Compliance of Iron Supplementation and Determinants among Adolescent Girls	Assess the level of adherence to iron supplement consumption in adolescent girls and identify inhibiting and supporting factors.	Systematic review using the PRISMA method; Data analysis from 20 studies.	Young women, especially the age group of early to middle adolescence.
11.	Meika Sari et al., (2023)	Behavioral Factor Analysis of Blood Supplement Tablet Consumption in Adolescent Girls as an Effort to Prevent Stunting	Analyzing the behavioral factors of consuming blood-boosting tablets (TTD) in adolescent girls to prevent stunting.	Analytical observational research with cross-sectional design; The analysis uses the Chi-Square test.	Menstruating adolescents (adolescent girls) at SMP Negeri 2 Bumi Ratu Nuban, with 117 respondents.
12.	Ma'rifati Ilma et al., (2021)	The Relationship between Fe Tablet Consumption Compliance and the Incidence of Anemia in Pregnant Women	To analyze the association between adherence to taking Fe tablets and the prevalence of anemia among pregnant women.	The meta-analysis study using RevMan 5.3 is based on data from an online journal.	Studies were conducted on pregnant women who were samples in various studies.

13.	Dartha et al., (2024)	Determinants of Adolescent Women's Adherence to Weekly Iron Supplements	Identify factors that influence adherence to iron supplementation among adolescent girls.	Cross-sectional design, data analysis using univariate, bivariate, and multivariate methods.	270 young women at SMA Negeri 1 Tarakan, North Kalimantan.
14.	Sari et al., (2022)	Iron Deficiency Anemia and Related Factors in Adolescent Girls and Women in Rural Areas of Jatinangor	Explore the prevalence of iron deficiency anemia and factors affecting the incidence of anemia among adolescent girls and women in rural areas.	Cross-sectional study with multivariate logistic regression analysis	95 young women and 85 women from seven villages in Jatinangor.
15.	Khadija et al., (2022)	Nutritional health status: association of stunted and wasted children and their mothers	Evaluate the diet of children and their mothers. Analyzing the nutritional status of stunted and wasted children and their mothers. Determining the prevalence of stunting and wasting among the study respondents.	The study used a randomized controlled clinical trial design. Data were collected through questionnaires, biomarkers, anthropometric measurements, and food frequency questionnaires (FFQ).	Population: Children aged 6-60 months and their mothers. Samples: 57 stunted children and 25 wasting children and their mothers living in the Hafizabad region, Pakistan.
16	Rufiah Salhah et al., (2024)	The relationship between knowledge level and compliance to blood supplement tablets consumption in adolescent girls	To determine the relationship between the level of knowledge and adherence of adolescent girls in consuming blood supplement tablets (TTD) at SMPN 4 Tanjung Redeb, Berau Regency.	Descriptive analytical research with quantitative approach and cross-sectional method.	Population: 219 girls from classes VII, VIII, and IX at SMPN 4 Tanjung Redeb. Sample: 76 adolescent girls who were part of this study..