

Case Study

Analysis of Blood Supply Tablet Program Management in an Effort to Reduce the Prevalence of Anemia Among Female Students in Pesawaran District, Indonesia in 2025

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Article history

Received: 30 May 2025

Revised: 29 June 2025

Accepted: 29 June 2025

Published Online: 30 June 2025

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How to cite this article: Faradila MD, Adyas A, Karyus A, Noviansyah, Putri DUP. Analysis of Blood Supply Tablet Program Management in an Effort to Reduce the Prevalence of Anemia Among Female Students in Pesawaran District, Indonesia in 2025. *Health Dynamics*, 2025, 2(6), 262-266. <https://doi.org/10.33846/hd20607>



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ABSTRACT

The consumption of iron supplement tablets (TTD or “Tablet Tambah Darah”) is crucial for adolescent girls to prevent anemia. Irregular intake of these supplements can lead to increased rates of anemia. In Pesawaran District, the prevalence of TTD distribution among adolescent girls is 54.75%, which falls short of the national target of 75%. This study aimed to analyze the management of the TTD program as an effort to reduce the prevalence of anemia among junior and senior high school girls in Pesawaran District in 2025. This qualitative study was conducted in Pesawaran District, involving key informants such as nutrition program officers and junior and senior high school students. Data were collected through in-depth interviews conducted from March 3–25, 2025. The results indicate that while the Health Department shows strong commitment, regulatory frameworks have not yet been established. Planning has been carried out, including intervention design, hemoglobin screening, and logistics procurement. However, implementation faces challenges due to the absence of formal regulations and a lack of collaboration between the Health and Education Departments, resulting in limited school support. The involvement of teachers, particularly UKS (school health unit) teachers, remains low. In terms of evaluation, program monitoring has been conducted using checklists and pocketbooks to track student compliance. Follow-up actions include addressing implementation barriers through mini workshops aimed at formulating improvement plans. It is recommended that the Head of the Pesawaran Health Office initiate co-management of the TTD program. Overall, the TTD program in Pesawaran District demonstrates a strong commitment from the health sector but requires strengthened regulations and inter-sectoral collaboration to more effectively reduce anemia prevalence among adolescent girls.

Keywords: Dietary supplements; iron supplementation; adolescent

1. INTRODUCTION

Anemia is still a health problem in society, which plays a significant role in increasing stunting and other risks of illness. The short-term impact of anemia in adolescent girls causes fatigue and weakness, decreased endurance, inability to concentrate, while in the long term, such as impaired growth and development of reproductive health problems, such as infertility and complications during pregnancy, and chronic diseases.⁽¹⁾

In Indonesia, the prevalence of anemia among adolescent girls reached 32% in 2023. This indicates that it is

estimated that about 4 out of 10 adolescent girls suffer from anemia. The prevalence of anemia among adolescent girls in Lampung Province reached 24.3% in 2023. It did not reach the national target of 48.9%. The high prevalence of anemia in Pesawaran district of 52.61% causes iron deficiency and inhibited growth process in adolescent girls.⁽²⁾

The coverage of TTD ("Tablet Tambah Darah" or iron supplement tablets) administration in new adolescent girls nationally reached 78.9%. Lampung Province is one of the low areas where the achievement of TTD provision only reached 69.4%, this condition, although showing an increase, has not yet reached the target, where the target coverage of the Lampung Provincial Health Office is 75%.⁽³⁾ Data on the 2020-2024 Community Nutrition Performance Indicators of the Pesawaran District Health Office, it is known that the target coverage of adolescent girls getting blood supplement tablets, namely in 2020 only reached 50%, in 2021 it became 52%, in 2022 it reached 54%, in 2023 it became 56% and in 2024 it fell back to 54.75%. Based on the target, this percentage is still below the target of 75%. So far, related to the control of anemia in adolescent girls, the health office only distributes blood supplement tablets to health centers and does not provide monitoring for routine consumption, but there are several health centers that provide independent monitoring in the form of a checklis sheet for consumption of blood supplement tablets in adolescent girls.

Efforts to overcome anemia in adolescent girls are focused on health promotion and prevention activities, increasing consumption of iron-rich foods, Provision of Iron Supplement Tablets (TTD) to adolescent girls (rematri) is one of the nutritional services that must continue to be carried out, as one way to reduce the impact of anemia in adolescent girls can reduce immunity so that they are susceptible to infectious diseases, decreased fitness and thinking agility due to lack of oxygen to muscle cells and brain cells, decreased learning achievement.⁽⁴⁾

The behavior of consuming iron tablets is a form of action taken by adolescent girls in an effort to reduce the risk of anemia and other forms of health problems in adolescents. Sufficient iron consumption has the function of increasing hemoglobin formation. The behavior of consuming iron tablets is expected to prevent and reduce the prevalence of anemia in adolescent girls. The recommended tablet consumption is 1 tablet every week regularly (52 tablets in 1 year), which is balanced

with the consumption of balanced nutrition such as consuming foods rich in protein, iron, and vitamin C to increase iron absorption optimally.⁽⁵⁾

The impact of irregularity in consuming iron tablets among adolescent girls results in a greater chance of anemia, this condition will reduce the immune system, making adolescent girls sensitive to infection. Adolescent girls will be susceptible to physical and mental health complaints, reduce learning ability and productivity and ultimately cause a high potential for anemia during pregnancy.⁽⁶⁾

2. CASE HISTORY

The research design is a case study, examining the implementation of the blood supplementation program for junior and senior high school girls in Pesawaran District in detail through a review of supporting documents, in-depth interviews and focus group discussions (FGDs). The type of research used in this study is qualitative. The research was conducted on March 3-25, 2025. The research was conducted in 4 working areas of Pesawaran Regency health centers, including Gedong Tataan, Tegineneng, Roworejo and Bernung Health Centers. On this occasion, the researcher focused on the implementation of the blood tablet supplementation program with a focus on process analysis (planning, implementation, monitoring and evaluation, follow-up).

3. CLINICAL MANAGEMENT AND OUTCOMES

3.1 Nutritional Status of Adolescent Girls

The prevalence of anemia among adolescent girls in Lampung Province reached 24.3% in 2022. This figure is quite high, where nationally the rate of anemia among adolescent girls reached 48.9%. Of this percentage, in Lampung Province, 1 in 4 adolescent girls in Lampung Province is anemic. The prevalence of anemia in Pesawaran Regency was 52.61% with the lowest coverage of adolescent girls receiving blood supplement tablets. The trend of coverage of adolescent girls receiving blood supplement tablets (TTD) in Lampung Province has tended to fluctuate since 2020. In 2020, the coverage was 59.28%, decreased again in 2021, amounting to 40.78%, in 2022 it increased to 48.21% and in 2023, amounting to 69.36%. There are districts that are still low and have not reached the target coverage of

adolescent girls getting blood supplement tablets, namely Pesawaran 52.61%.

3.2 Commitment in the Implementation of the Blood Tablet Program in Pesawaran District

In terms of policy, the Pesawaran Health Office has developed a plan in collaboration with relevant agencies, in this case the education office, to support nutritional activities in schools aimed at increasing compliance with tablet consumption and improving access to information and education for adolescent girls. Regarding the commitment aspect, in general, the policies and commitments of the leadership are adequate. However, in the implementation of the program, there are no specific regulations governing the implementation of the iron tablet distribution program for adolescent girls. Currently, the program still refers to Pesawaran Regent Regulation No. 20/IV. 07/HK/2023 on the formation of a stunting acceleration team in Pesawaran District, the absence of strong regulations has resulted in suboptimal implementation of activities at the health center level.

Relevance of the interview results with representatives of the Pesawaran District Health Office, in order to address anemia rates, the preventive measures already implemented for adolescent girls include the Pesawaran District Health Office (Dinkes) collaborated with health centers in the district's working area to initiate the implementation of the Nutritious Action of Taking Iron-Folic Acid Tablets (TTD) at Junior High Schools (SMP) and Senior High Schools (SMA) in the health center's working area. This Nutritious Action was carried out by providing education on the importance of consuming TTD in preventing anemia. As part of the activity, the female students also participated in group games designed to raise their awareness of the importance of nutrition in maintaining health.

3.3 Implementation of the iron Tablet Distribution Program in Pesawaran District

In the activities already carried out under the iron tablet distribution program for adolescent girls, these include the distribution of iron tablets at the junior high school and senior high school levels in 12 health centers, and the conduct of anemia screening for adolescent girls at 12 health centers every three months. Additionally, some health centers have begun providing education to adolescents on the importance of consuming iron tablets,

although this has not yet been uniformly implemented across all health centers.

In the implementation of the iron tablet distribution program, there are differences and problems in several community health centers. Information from the health office shows that there are still problems in the distribution of logistics in target schools, and not all community health centers conduct anemia screening in junior high and high schools every quarter. Additionally, education for adolescent girls on the importance of consuming the tablets has not been conducted in some health centers. Monitoring and evaluation of tablet distribution are also needed.

Based on interviews with nutrition program officers at the Roworejo Community Health Center, there are obstacles in the program planning process, particularly the lack of policies or regulations related to program planning. Only the RPK (activity implementation plan), the main program of the Community Health Center from the Indonesian Ministry of Health, and the SK/SOP specifically for the provision of TTD for adolescent girls are available, causing confusion among health workers.

3.4 Monitoring/Evaluation of the Iron Tablet Distribution Program in Pesawaran District

Based on the research results, the researchers concluded that some health centers had conducted monitoring and evaluation of the iron tablet administration process, while others had not conducted any monitoring or evaluation at all. The evaluation information collected by the health centers included: female students were required to fill out a checklist provided by the health center each time they took the iron tablets, if a student is suspected of having anemia, the student's iron tablet consumption is monitored weekly, and follow-up checks are conducted until hemoglobin levels return to normal, school health teachers are evaluated based on weekly and monthly reports through checklists provided by the health center, and school health teachers conduct monitoring every month regarding any obstacles encountered in the distribution process of iron tablets.

3.5 Follow-Up Actions of the Iron Tablet Distribution Program in Pesawaran District

Based on the interview results, the researchers concluded that some of the health center samples had developed follow-up plans based on the evaluation

results that were disseminated and received feedback from their superiors for improvement and enhancement efforts. The improvement efforts undertaken include: efforts carried out by the program coordinator of the puskesmas, such as conducting education sessions once a year, though these were not evenly distributed across all grades 7, 8, and 9, but only implemented in grade 7 regarding the importance of TTD consumption and the dangers of anemia. The improvement plans include: monitoring teachers regarding existing issues, conducting evaluations at schools related to TTD distribution to students, and conducting TTD education every quarter or at the recommended times of consumption as advised by the puskesmas to enhance students' knowledge about the importance of TTD.

4. DISCUSSION

Based on the results of in-depth interviews, the researchers concluded that the commitment of leaders has been very good in supporting the implementation of the TTD program for adolescent girls in Pesawaran District, but policies related to specific rules or regulations have not yet been established, thereby affecting the implementation of the program in the field. Regulations specifically governing the implementation of TTD for adolescent girls are not yet available. From a planning perspective, based on the sample of health centers examined, the health centers have developed program plans effectively, such as submitting schedules for TTD implementation to the target health center's Regional Office of Health (ROA) and requesting logistics from the department for anemia screening. In implementation, there are challenges, particularly the absence of specific regulations, limited school support, and the low role of school teachers or UKS in monitoring students' compliance with TTD consumption. From an evaluation perspective, most health centers in the study area have conducted monitoring, particularly in tracking TTD consumption by providing checklists or pocketbooks to each student. The evaluation results have been reported and discussed in a mini workshop involving cross-program collaboration at the health centers. In terms of follow-up actions, some health centers have developed Action Plans (RTL) to improve adolescent health services, particularly in reporting, advocating to school teachers, and involving teachers as educators at schools.

5. RECOMMENDATION

Based on the results of the research and discussions that have been conducted, the researchers recommend the following suggestions to the Head of the Pesawaran District Health Office, heads of community health centers, and school principals, with a view to improving collaboration in supporting the provision of iron tablets: Through the Head of the Health Office of Pesawaran District, advocate and socialize with the local government regarding policy proposals and regulations focused on the distribution of iron tablets for adolescent girls. Coordinate the proposed SK with relevant government agencies to establish support for policy implementation. Collaborate with school teachers and parents in monitoring the consumption of iron tablets. Draft a Memorandum of Understanding (MOU) with schools and universities. For schools, to support the distribution of medication (tablets), while for universities, to empower students as community health center educators to improve access to health information for every female student in the community health center's service area in Pesawaran District.

6. CONCLUSION

The commitment of leaders in Pesawaran District to supporting the implementation of the Weekly Iron Supplementation (TTD) program for adolescent girls has been very strong; however, it is not yet supported by specific policies or regulations that directly govern its implementation, which affects the effectiveness of the program in the field. In terms of planning, health centers have developed good strategies, such as submitting TTD implementation schedules to the Health Office and requesting logistics for anemia screening. Nevertheless, the implementation phase faces challenges, including the absence of specific regulations, limited school support, and the minimal role of teachers and school health units (UKS) in monitoring students' compliance. Most health centers have conducted evaluations by monitoring TTD consumption using checklists or pocketbooks, and the results have been discussed in cross-program mini workshops. Additionally, several health centers have prepared Action Plans (RTL) to strengthen adolescent health services, particularly in reporting, advocating to teachers, and involving teachers as school-based health educators.

Ethical Approval

This study has received ethical approval from the Komite Etik Penelitian Kesehatan (KEPK), Rumah Sakit Umum Daerah Jend. A. Yani Metro, with reference no.: 370/575/KEPK-LE/LL-02/2025.

Acknowledgement

The author would like to express his gratitude to the Academic Community of Universitas Mitra Indonesia for providing opportunities and support so that this research can be carried out. Thank you to all parties who have directly or indirectly helped each stage of this research. May Allah SWT repay with a better one.

Competing Interests

All the authors declare that there are no conflicts of interest.

Funding Information

No funds were received for this study.

Underlying Data

Derived data supporting the findings of this study are available from the corresponding author on request.

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