



Behavior of Adolescent Girls in Taking Blood Supplement Tablet

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ABSTRACT

Anemia remains a significant health challenge for adolescent girls in Indonesia. Although a nationwide blood supplementation program has been implemented, the compliance rate of blood supplement consumption is still low. This study aimed to describe the behavior of adolescent girls in consuming TTD at SMA NU Gresik and MAN Sidoarjo, and identify supporting and inhibiting factors, including the role of schools and health centers. This study used a qualitative approach with interviews, questionnaires, and Focus Group Discussion (FGD) methods. The results showed that differences in school policies, inaccurate understanding, negative perceptions, and unhealthy lifestyles were the main factors for low TTD consumption compliance. An attractive and consistent educational approach, as well as collaboration between schools, health centers, and parents are needed to increase awareness and compliance of adolescent girls in consuming TTD regularly.

KEYWORDS

Anemia, Adolescent Girls, Blood Supplement Tablets Adherence, School

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INTRODUCTION

Nutrition problems in school-age children, especially adolescent girls, are an important issue that can affect the quality of human resources. According to Kulsum and Astuti (2020), adolescent girls have a ten times higher risk of anemia compared to adolescent boys. This risk is caused by the monthly menstrual cycle which increases the body's need for iron, especially when they are in their growth period. In addition, anemia in adolescent girls can also occur due to an unbalanced diet and lack of adequate nutritional intake. Anemia is one of the main obstacles that impact learning achievement, productivity, and reproductive health. In addition, anemia can also increase the risk of various diseases in adulthood and potentially give birth to a generation that experiences





nutritional problems (Septina, 2025).

Based on the 2018 Basic Health Research (Riskesdas), the prevalence of anemia reached 26.8% in children aged 5-14 years and 32% in adolescents 15-24 years. Therefore, the Indonesian government is trying to overcome the problem of anemia through school and adolescent health programs listed in the 2015-2019 RPJMN, one of which is the provision of Blood Addition Tablets (TTD) to adolescent girls (Fitriana and Pramardika 2019). Adolescent girls are required to consume TTD to replace iron lost during menstruation. However, in reality, 8.3 million out of 12.1 million adolescent girls do not consume it regularly. The TTD supplementation program has been implemented nationally since 1996, which was then strengthened by the National Movement for Nutritious Action in 2022, which involves education units in increasing adolescent girls' awareness of TTD consumption.

This program is part of 11 interventions to accelerate stunting reduction in accordance with Presidential Regulation No. 72 of 2021. In East Java, despite significant progress such as the reduction of stunting from 32.81% in 2013 to 17.7%, TTD consumption coverage which reached 71.20% exceeding the national target of 50% and anemia screening which reached 81.32% higher than the national target of 70%, there are still 28.4% or as many as 128,552 adolescent girls who are still anemic. This shows that despite positive achievements, efforts are still needed to optimize adolescent health services such as monitoring and evaluation in each program. Various efforts have also been implemented such as the Nutritious Action program, Healthy Schools/Madrassas, and Trias UKS/M have been carried out. This program is also supported by Circular Letters of the Regional Secretary of East Java Province Number 440/23259/012.4/2022 and Number 440/12404/012/2023 concerning Strengthening Efforts to Accelerate TTD Consumption for Rematriates in East Java to the East Java Provincial Education Office and the Regional Office of the Ministry of Religious Affairs of East Java. Previous research conducted by Nabila (2024) showed that monitoring and evaluation can motivate adolescent girls to consume TTD.

Meanwhile, according to Qodar (2020), emphasizes that the important role of health workers at the Puskesmas and UKS teachers in increasing the knowledge of female students about anemia and its prevention through the consumption of TTD. Therefore, the monitoring and evaluation conducted is expected to describe the success of TTD supplementation in schools/madrasas in East Java, as well as identify the role of UKS/M and puskesmas in supporting TTD consumption. The results of this paper are expected to serve as a policy basis for improving adolescent nutrition interventions in cities/districts to achieve optimal health status in and support the teaching and learning process in schools/madrasas.

MATERIALS AND METHODS

Research Design.

This study utilized qualitative descriptive design to explore the behavior of adolescent girls in consuming Blood Additive Tablets. Data collection methods included questionnaires, in-depth interviews, and Focus Group Discussions (FGDs) to capture both individual perspective and group dynamics. The qualitative approach enabled a comprehensive understanding of internal and external factors influencing TTD consumption and the collaborative role between UKS/M (School Health Units) and the local health center.

Eligibility Criteria





Participants were selected using purposive sampling. The sample included 10 female students for GFDs, 1 UKS/M manager, and 1 manager of the School Age and Adolescent Health Program at the Health Center. The selection criteria focused on individuals directly involved in or affected by the implementation of adolescent health programs related to iron supplementation.

Search Strategy

The search strategy in this qualitative field study involved identifying relevant participants and research sites based on predefined inclusion criteria. Schools were selected purposively to represent diverse settings in East Java, specifically MAN Sidoarjo and SMA NU Gresik. Informants were chosen through purposive sampling, targeting individuals with direct experience or involvement in the implementation of iron tablet supplementation programs. Coordination with school authorities and health center staff facilitated access to informants and ensured data relevance. Key stakeholders, including UKS/M managers and adolescent health program officers at health center, were identified through institutional referrals.

Study Setting and Timeline

The research was conducted in two high schools : MAN Sidoarjo on November 15, 2024 and SMA NU Gresik on November 22, 2024. These locations were chosen to represent different geographical and institutional contexts within East Java.

Data Collection Methods

Three main techniques were used to gather data :

1. Questionnaires distributed to capture baseline knowledge and behaviors.
2. Semi-structured interviews conducted with UKS/M and health center staff to gain institutional perspective.
3. Focus Group Discussion (FGDs) with students to explore share experiences, beliefs and barriers in consuming TTD.

Data Analysis

The data were analyzed using the triangulation method, combining the results of questionnaire, interviews, and FGDs to ensure validity and reliability. This method allowed cross-verification of information and increased the depth of understanding regarding adolescent behavior and interinstitutional collaboration.

RESULTS

Informant Characteristics

In this study, 12 people from MAN Sidoarjo and 12 people from SMANU Gresik were determined to be informants in the study. The characteristics of the informants can be seen in the table below.





Table 1. Characteristics of informants from MAN Sidoarjo and SMANU Gresik

No.	Code	Gender	Status	Data Collection Method
1	S1	Female	Student	FGD
2	S2	Female	Student	FGD
3	S3	Female	Girl	FGD
4	S4	Female	Girl	FGD
5	S5	Female	Girl	FGD
6	S6	Female	Girl	FGD
7	S7	Female	Girl	FGD
8	S8	Female	Girl	FGD
9	S9	Female	Girl	FGD
10	S10	Female	Girl	FGD
11	S11	Female	UKS/M Manager	In-depth Interview
12	S12	Female	Health Center Officer	In-depth Interview

No.	Code	Gender	Status	Data Collection Method
1	G1	Female	Student	FGD
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4	G4	Female	Girl	FGD
5	G5	Female	Girl	FGD
6	G6	Female	Girl	FGD
7	G7	Female	Girl	FGD
8	G8	Female	Girl	FGD
9	G9	Female	Girl	FGD
10	G10	Female	Girl	FGD
11	G11	Female	UKS/M Manager	In-depth Interview
12	G12	Female	Health Center Officer	In-depth Interview

Behavior of Adolescent Girls Taking Blood Addition Tablets

MAN Sidoarjo	SMANU Gresik
"Once ... given by the school on Wednesdays, but if there is an activity on Wednesdays, it is replaced by the next Wednesday" (Informant Female Teenager MAN Sidoarjo, FGD).	"Once... given by the school once a month, one trip" (Informant of SMANU Gresik, FGD).
"Some drink and some don't..." (Female adolescent informant MAN Sidoarjo, FGD).	<ul style="list-style-type: none"> - "I only drink it during menstruation" (Informant G1, FGD). - "I don't drink, but I give it to friends who have anemia" (Informant G2, FGD) - "Sometimes, if I feel weak or dizzy" (Informant G5, FGD) - "I always take TTD routinely once a week, but if I have my period, I take it every day" (Informant G6, FGD) - "I don't take TTD, I intentionally leave it in my locker until I lose it" (Informant G11, FGD).

Table 3. Administration of Blood Addition Tablets (TTD) among Adolescent Girls of MAN





Sidoarjo and SMANU Gresik Overall, the distribution of blood supplement tablets has been well distributed, this is also confirmed by Informant S11 who said that the blood supplement tablets that have been given by the puskesmas have been given to female students. However, there are still gaps in consuming blood supplement tablets. Some of them have consumed blood-added tablets regularly as recommended, but there are still many of them who still do not do it. This was also reinforced by informants from the UKS Manager and Health Center Officers from both schools who stated that there were still misperceptions from students regarding the consumption of blood supplement tablets.

MAN Sidoarjo	SMANU Gresik
<p><i>"Even though some of the children are anemic, they still difficult to drink because it smells fishy"</i> (Informant S11, In-depth Interview)</p>	<p><i>"They are already nauseous before trying it," she said, and the packaging used to say it was for pregnant women. so they think it's for pregnant women and there are still</i></p>
<p><i>"A t that time ... right because the tablets were red, they said it was some kind of frozen blood like that lo... sometimes there are also parents who advise not to drink later tensions go up."</i> (Informant S12, In-depth Interview).</p>	<p><i>many do not drink."</i> (Informant G12, In-depth Interview).</p>

Table 4. In-depth Interview with Informants S11, S12, and G12

Adherence program for blood test consumption

All informants at MAN Sidoarjo said that there was no special regulation from the school to require young women to take blood tablets, but the school still routinely organizes the consumption of blood tablets.

"There is no special regulation." (Informant S8, FGD).

"Routinely held once a week at school " (Informant S8, FGD). *Never forget."* (Informant S1, FGD).

This is reinforced by the informant of the UKS Officer of MAN Sidoarjo who said that MAN Sidoarjo students drink TTD every Wednesday.

"Students here drink TTD every Wednesday.... Supervised by PMR members... Drink it on Wednesdays at 10 o'clock too. " (Informant S11, In-depth Interview).

However, in contrast to the female teenage informants at SMANU Gresik, they stated that there was a regulation from the school to require students to routinely consume blood supplement tablets.





"There is... Drinking together every Friday..." (Informant G9, FGD).

This is also reinforced by the informant from the Health Center Officer of Alun-Alun, Gresik who said that there is a regulation from the Gresik District Health Office that requires school students to take Blood Addition Tablets.

"... from the health department...there is a term for a blessed Friday, a blessed Friday, it's called a blessed Friday. drinking tablets on Friday together..." (Informant G12, In-depth Interview).

Knowledge of Blood Addition Tablets

All informants of adolescent girls had heard about anemia and Blood Additive Tablets (TTD), how to consume TTD, but some still did not have a strong enough understanding of these two things. This is reinforced by the eating patterns of adolescent girls who are still irregular and tend to be careless, irregular sleep patterns.

"Anemia is a lack of red blood cells... Low blood..." (Female adolescent informant, FGD). "Drink TTD to avoid anemia...Healthy lifestyle... Eat foods that contain iron." (Female adolescent informant, FGD).

This is also supported by the results of in-depth interviews with UKS and Puskesmas Officers regarding the knowledge of anemia and TTD of schoolgirls.

"Understand that TTD prevents anemia, understand drinking TTD once a week, menstruation drinking TTD but back again, ..because some of them have difficulty drinking TTD, some have difficulty drinking at school, some have to use food, crushed." (Informant G12, In-depth Interview). "It is quite good, asked during Hb checks and nutritious action activities by the puskesmas... But there are students who have a perception of TTD as frozen blood. There are parents of schoolgirls who forbid drinking TTD and have straightened out the wrong understanding." (Informant S12, In-depth Interview). In addition, some adolescent girls do not know the causes of anemia and still have an unhealthy lifestyle

MAN Sidoarjo	SMANU Gresik
- <i>"I often eat seblak with mustard greens" (Informant S3, FGD).</i>	- <i>"Pentol... Ice cream...." (Informant S2 and S3, FGDs) Cilung. Seblak (once a week, once every two weeks, 3 times a week..." (Informant Teenage Daughter of SMANU Gresik, FGD).</i>
- <i>"Sleep at 11, 12" (Informants S2 and S3, FGDs).</i>	- <i>"Sleep at 1 o'clock, mostly do assignments on Monday to Thursday, especially when approaching the exam," (Informant G3, FGD).</i>





- "Sleep at 11 to 12 because I just finished doing my assignments," (Informant G4, FGD).

DISCUSSION

Anemia is still a serious problem among adolescent girls, although the government has launched various Blood Addition Tablet (TTD) supplementation programs to overcome this problem. This study explains that the consumption behavior of Blood Additive Tablets in SMA NU Gresik and MAN Sidoarjo has not fully met the target or as expected. Although the distribution of Blood Additive Tablets has been running smoothly and joint TTD drinking activities have been carried out, the compliance of adolescent girls in consuming TTD is still uneven.

School-to-school policies

Differences in policies between schools appear to affect the behavior of schoolgirls in consuming Blood Additive Tablets (TTD). This is in line with research conducted by Rahayuningtyas et al. (2021; 311), which states that the implementation of consumption of blood supplement tablets depends on the policies of each school. At MAN Sidoarjo, TTD consumption activities are carried out every Wednesday, but are not accompanied by mandatory rules. Meanwhile, at SMA NU Gresik, there is a strict rule requiring the consumption of TTD every Friday in the "Jumat Barokah" program. Schools that set written rules and structured supervision tend to be successful in increasing the compliance of female students in consuming Blood Additive Tablets (TTD) (Fatharani et al., 2024).

Challenges

There are several challenges that can hinder the success of the Blood Additive Tablet consumption compliance program, among others:

1. Some schoolgirls expressed reluctance to consume Blood Additive Tablets (TTD) because the tablets have an odor that is considered fishy and has side effects after consumption.
2. Misunderstandings in thinking that Blood Addition Tablets (TTD) are only for pregnant women and fear that blood pressure will rise when consuming them, and there are also students who avoid consuming Blood Addition Tablets because they are influenced by parents.

In terms of understanding, although most students have heard about anemia and the importance of TTD, their awareness is still minimal. Many did not realize the relationship between iron deficiency and learning achievement and reproductive health. Some students also do not understand that TTD should be consumed regularly, especially during menstruation. In addition, an unhealthy lifestyle can also exacerbate the risk of anemia (Sudargo and Aristasari, 2018). Most students have an unbalanced diet, often consume nonnutritious snacks, and sleep late at night due to excessive assignments or too engrossed in playing *gadgets*. These habits show low awareness of the importance of maintaining health both from the aspect of nutrition and lifestyle.

School and Health Center Support

Support from schools and health centers is needed to motivate students to adhere to taking Blood Additive Tablets (TTD). School and health center support in both schools (MAN Sidoarjo and SMA NU Gresik) has started to be seen, especially through the UKS and Nutrition Action programs that have been implemented for several years. However, these efforts need to be improved through more consistent mentoring, continuous education and more attractive approach methods (Apriningsih and Sufyan, 2021). Education is not only important for students, but also for parents to avoid miscommunication that leads to the prohibition of taking





Blood Additive Tablets. In addition, the use of social media, visual campaigns and peer-based education can also be effective strategies to reach adolescents so that they become willing and able to consume Blood Additive Tablets regularly.

CONCLUSIONS

Adherence to Blood Additive Tablet (TTD) consumption among adolescent girls at SMA NU Gresik and MAN Sidoarjo is still low due to lack of understanding, misperception, and unhealthy lifestyle. School and health center support is available, but needs to be improved through consistent education and a more attractive approach so that adolescents are more aware of the importance of regular consumption of Blood Additive Tablets (TTD).

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