

Specific Intervention to Prevent Stunting Through Iron Supplementation in Adolescent Girls in Jambi City

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Abstract

Introduction: Adolescent girls are a vulnerable group that needs special attention in efforts to prevent stunting, considering their important role in shaping the future generation. Based on RI Presidential Decree No. 72 of 2021 concerning the acceleration of stunting reduction, specific interventions are activities carried out to address the direct causes of stunting, where one of the interventions is blood supplementation tablets for adolescent girls. **Objective:** This study aims to determine how specific interventions for preventing stunting through iron supplementation for adolescent girls in Jambi City. **Method:** This research uses quantitative methods with a cross-sectional approach where the sample is all teenagers Woman in Jambi City Public High School as many as 105 people using proportional simple random sampling technique. **Result and Discussion:** The results of the analysis show that the teacher and parent support variable have a significant effect on the implementation of the blood supplementation tablet program. **Conclusions:** Consumption behavior variables, anemia status and perception did not have a significant effect. The variables teacher support and parental support have a significant effect on the implementation of the iron supplementation program. Expected from teenagers woman to continue consuming iron regularly and the school to be able to implement a regular iron supplementation program in full coordination with the Community Health Center.

Introduction

Blood-boosting tablets are blood-boosting nutritional supplements in the form of tablets/caplets/capsules which can be obtained from programs or independently. Providing TTD to young women can be done through UKS at educational institutions (middle and high school or equivalent) by determining the day they drink TTD together. The dose given is one tablet every week and once a day during menstruation (WHO, 2020). The proportion of young adults in Indonesia who received TTD in the last 12 months at school was 76.2% but only 1.4% took TTD as recommended (SSGI, 2022). Research conducted by Alizadeh, et al (2014) shows a higher prevalence of anemia during pregnancy in adolescents and a high risk of experiencing poor birth outcomes (Bahjuri, 2020). Another study, Khanal, et al (2024) suggests that schools that implement weekly TTD supplementation recommendations can significantly reduce the incidence of anemia compared to schools that do not implement them. Where the prevalence of anemia is lower (14%) in obedient female students. The results of multivariable logistic regression analysis show that the likelihood of anemia is 3.1 times higher in schools that do not implement a weekly TTD program (Vaivada, 2017).

Rheumatism is prone to suffering from anemia due to the monthly menstrual cycle. The resulting impact can cause a decrease in endurance and productivity. Apart from that, it is also risky during pregnancy and has a negative impact on the growth and development of the fetus in the womb as well as complications during pregnancy and childbirth, causing the death of the mother and child. The prevalence of anemia at the age of 15-24 years based on Riskesdas 2018 is 32%. This means that around 3 out of 10 children in Indonesia experience anemia (SSGI, 2022). One of the factors that influences the incidence of stunting is anemia during pregnancy. Research conducted by Angraini (2021) shows that there is an influence of a history of anemia in pregnancy on the risk of stunting in toddlers aged 0-24 months with $p\text{-value} = 0.001$. Pregnant women who are not anemic can prevent the risk of stunting 1.06 times greater than pregnant women who are anemic. Anemia that occurs during pregnancy causes the fetus to experience a lack of oxygen and nutrients, resulting in growth and development failure in the womb and a risk of stunting at birth (Perpres, 2021).

Jambi City is one of the cities on the island of Sumatra and is also the capital of Jambi Province which has 11 sub-districts. Coverage of TTD provision for adolescent girls in 2022 in the city of Jambi is 55.32% (Kemenkes, 2022). This shows that this figure has not reached the expected national target. Therefore, this research is very important to support the implementation of specific intervention programs in handling stunting. By in-depth investigation of the variables that influence the supplementation program, it is hoped that it can make a positive contribution in dealing with the problem of stunting among young women in Jambi.

Method

This research uses quantitative methods with a cross sectional approach. The sample in this study was 105 young women who attended Jambi City Public High School. The sampling technique used *proportional simple random sampling*. The research instrument uses a questionnaire, data analysis uses statistical software to test the relationship between dependent and independent variables.

Result and Discussion

1. Result

Table 1
 Univariate Analysis

Variable	f (n)	Percentage (%)
Iron Supplementation Program		
Implemented	29	27.6
Unimplemented	76	72.4
Iron Consumption Behavior		
Regular	3	2.9
No	102	97.1
Status Anemia		
Anemia	34	32.4
No	69	65.7
Perseption		
Good	56	53.3
Less	49	46.7
Teacher Support		
Good	46	56.2
Less	59	43.8
Parental Support		
Good	48	45.7
Less	57	54.3

Based on this table, it is known that the majority of iron supplementation programs are not implemented (76%), TTD consumption behavior is irregular (97.1%). Furthermore, the majority of respondents were not anemic (65.7%), teenagers' perception of the iron supplementation program was good (53.3%), but they lacked support from teachers (56.2%) and parents (54.3%).

Table 2
 Bivariate Analysis

Variable	Iron Supplementation Program		Total	p-Value	OR (95% CI)
	Implemented	Unimplemented			
	n	%	n	%	
Perseption					
Good	14	25.0	42	75.0	0.672
Less	15	30.6	34	69.4	
Teacher Support					
Good	24	52.2	22	47.8	0.000
Less	5	8.5	54	91.5	
Parental Support					
Good	21	43.8	27	56.3	0.002
Less	8	14.0	49	86.0	

Based on this table, it is known that there is a relationship between teacher support variables (p-value=0.00) and parent support p-value=(0.002) with the iron supplementation program, while the perception variable does not show a relationship (p-value=0.756).

2. Discussion

The research results show that there are still 32.4% of teenagers with anemia. Anemia is a condition where the amount of hemoglobin in the blood is less than normal. This hemoglobin is made in red blood cells which contain few or not enough blood cells (Sulistyawati & Nurjanah, 2023). Anemia is iron deficiency which is the most common nutrient deficiency problem in children throughout the world, especially in developing countries, including Indonesia. This disease is caused by a lack of iron in the sufferer's body (Fitriany, et al, 2018). From the results of interviews regarding the perceptions of young women, it can be seen that young women have good perceptions. Basically, a good perception of blood supplementation tablets will increase the implementation of the blood supplementation tablet program, but this is not in line with the results of the bivariate analysis test that has been carried out, the Chi Square test results that $p\text{-value} = 0.672$, so it can be concluded that there is no relationship between Adolescents' perceptions of the implementation of the blood supplementation tablet program.

In line with the results of research conducted by Nuradhiani et al (2015), it turns out that the $p\text{-value}$ is 0.05, which means there is no significant relationship between teenagers' perceptions of the TTD program which consists of colors, taste, and smell of TTD with compliance with TTD consumption in the three treatment groups. Only a few subjects liked the characteristics of TTD and adhered to consuming it (Nuradhiani, et al, 2017). The results of this research are inversely proportional to research conducted by Rahmiati where young women at SMAN 1 Baubau who have poor perceptions tend to behave disobediently towards the implementation of the TTD supplementation program, while students with good perceptions will be compliant in consuming TTD. The statistical test results, the $p\text{-value}$ 0,000 (< 0.005) shows that there is a relationship between perception and consumption of blood supplement tablets (Rahmiati, 2024).

The government has issued a policy to prevent anemia from occurring. The government's step in preventing anemia in young women is the distribution program for Blood Supplement Tablets (TTD) in accordance with the Republic of Indonesia Minister of Health Regulation No. 88 of 2014 concerning TTD standards for women of childbearing age and pregnant women (Permenkes, 2014). Distribution of TTD to young women through school intermediaries (Nurjanah & Azinar, 2023). From the research results, it was found that the $p\text{-value} = 0.000$, which means that there is a relationship between teacher support and the implementation of the blood supplementation tablet program. In this study, it was found that the majority of respondents received support from teachers with a prevalence of 52.2%. This could be one of the factors influencing the implementation of a good blood supplementation tablet program. Having teacher support by providing information about blood supplementation tablets, reminding people to take blood supplementation tablets, providing encouragement and building relationships with students will help the blood supplementation tablet supplementation program in schools continue to run.

This is in line with the results of research conducted by Hayuti et al from the results of the Chi-Square test with $p\text{-value} = 0.000 < 0.05$ which means Hypothesis is accepted, and shows that there is a significant relationship between teacher support and compliance with consuming TTD in adolescents daughter at SMAN 4 Tana Toraja (Kasmawati & Husnah, 2024). Other research conducted by Rofaliani showed similar results that teacher support influenced student compliance in implementing the TTD supplementation program, from statistical tests *Kendall Tau* show results *themselves*. (2-tailed) is 0.027 so $p\text{-hairry} < 0.05$. So it can be concluded that there is a real relationship between the variable

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teacher support and compliance with the consumption of blood supplement tablets among female students at SMA Negeri 1 Gamping (Nurharsiwi, 2023). Parental support plays an important role in compliance with taking blood supplement tablets. This support is needed to foster confidence and positive perceptions in young women about the importance of taking blood supplement tablets to prevent the risk of anemia (Samputri, 2022). Research by Prayudhistya (2023) teenagers who received support from their parents were more compliant in consuming blood supplement tablets by 71%, whereas teenagers who did not receive support from their parents were less compliant in consuming blood supplement tablets by 20% (Prayudhistya, et al, 2023).

Conclusion

Most of the iron supplementation programs in Jambi City have not been implemented well (76%) but the majority of adolescent girls are not anemic (65.7%). The variable teacher support (p-value=0.00) and parental support p-value=(0.002) were related to the iron supplementation program, while the perception variable did not show any relationship (p-value=0.756).

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