

Education Of Adolescents About Anemia And Reproductive Health As A Stunting Prevention Effort

Nia Reviani^{1*}, Sarah Amira Oktaria², Monica Syefi Febriyanti², Adinda Rahayu Samaria²,
Buca Yulanda², Stevanus Jutan Sanjaya², Ago Harlim³

¹Department of Medical Community, Medical Faculty, Universitas Kristen Indonesia, Jakarta, Indonesia.

²Medical Faculty, Universitas Kristen Indonesia, Jakarta, Indonesia.

³Department of Dermatology and Venereology, Medical Faculty, Universitas Kristen Indonesia, Jakarta, Indonesia.

* Corresponding Author:

Email: nia.reviani@uki.ac.id

Abstract.

Teenagers are an asset and the next generation of the nation, where the future of the nation and state for the future is in their hands. For this reason, it is crucial and inevitable to pay attention to the condition of teenagers today, including their health, specifically regarding reproductive health. Anemia and reproductive health are two things that cannot be separated when talking about adolescent health to prepare them to become a generation that will also have children. It is hoped that the long chain of the stunting phenomenon can be slowly reduced and even broken by preparing the current generation to become a generation that is ready and healthy both physically and physically. Community service activities with the theme of youth education about anemia and reproductive health in Rancakalong Village and Pamekaran Village involved 53 participants consisting of young women with sociodemographic characteristics of early teens and late teens, with junior and senior high school education. The activity results showed an increase in young women's knowledge about anemia and reproductive health, where based on the post-test results, an average score of 88.4 ± 5.6 was obtained from the pre-test results of 59.5 ± 12.6 . Thus, it can be concluded that educational activities are significantly useful in increasing young women's knowledge in Rancakalong and Pamekaran villages about anemia and reproductive health.

Keywords: *Stunting, anemia, reproductive health and adolescent girls.*

I. INTRODUCTION

Adolescence is a transition from childhood to adulthood, covering all the development that will be experienced in preparation for entering adulthood [1]. Adolescents during their growth period need more nutrients than other ages, especially iron. Several nutritional problems affect adolescent health, including reproductive health, such as anemia and chronic lack of energy. Lack of nutritional intake on a macro and micro scale can cause anemia in teenagers. The body really needs micronutrients, especially for teenagers. Lack of iron is one of the causes of nutritional anemia. There are several types of anemia, and iron deficiency is one of the factors that causes nutritional anemia [2]. Iron deficiency is often called anemia. Anemia is a condition where the hemoglobin level is less than expected according to age and gender, where the hemoglobin level at birth is high (20 grams/dl), but decreases in the first three months of life to the lowest number (10 grams/dl) before increasing again. to normal adult values (12 grams/dl) in women and > 13 grams/dl in men [3]. The world prevalence of anemia in adolescents ranges from 40-88%. According to the World Health Organization (WHO), the incidence of anemia in adolescent girls in developing countries is around 53.7% of all adolescent girls [4]. The prevalence of anemia in Indonesia according to Basic Health Research (RISKESDAS) in 2018 based on gender is 20.35% for men, while for women it is 27.2%. The prevalence of anemia at ages 5-14 years is 26.8% and at ages 15-24 years is 32.0% [5]. Some of the direct impacts of anemia in young women include frequent complaints of dizziness, dizzy eyes, eyelids, lips, tongue, skin, and palms becoming pale, lethargic, weak, tired, and limp.

Meanwhile, in the long term, if a female teenager becomes pregnant and has children, it can have bad consequences for the mother and baby [6]. Iron deficiency (anemia) can cause decreased exercise capacity, immune function, and cognitive performance. Adolescent girls with iron deficiency have lower scores on verbal learning and memory [7]. Anemia among adolescent girls is higher than among adolescent

boys. Anemia in adolescents harms reducing immunity, concentration, learning achievement, adolescent fitness, and productivity. Research conducted by [8]. shows a relationship between anemia and a woman's menstrual cycle. Teenagers are an asset and the next generation of the nation, therefore it is very important to fight for the rights of teenagers, specifically in obtaining information and health services, including reproductive health according to their needs, namely to obtain reproductive health and a better life. Adults as the main source for children and teenagers to obtain information, are increasingly rare due to lack of time, aka busyness, and some adults or parents feel reluctant to provide education. So even if teenagers get information, in reality, much of the information they get is confusing and even misleading. Therefore, universities as institutions with more valid sources of information need to be present to provide correct and appropriate information to teenagers, especially information about reproductive health and anemia. The Ministry of Health has carried out various preventive and intervention measures, one of which is providing blood supplement tablets (TTD) to teenage girls to reduce anemia. Apart from that, the Ministry of Health also handles anemia through education and promotion of balanced nutrition.

This increases adolescent girls' awareness of the importance of iron [9]. Previous research results stated that knowledge can increase compliance with taking blood supplement tablets, thereby preventing nutritional anemia from occurring. This also directly influences the attitudes and actions of young women in consuming blood supplement tablets [10]. Therefore, it is very important to start with education to prevent early nutritional anemia and increase teenagers' knowledge about blood supplement tablets (TTD). To achieve success in improving nutrition, stunting prevention interventions must focus on priority target groups. Priority target groups include pregnant women, breastfeeding mothers, and children aged 0 to 23 months. In addition, other important target groups include children aged 24 to 59 months, women of childbearing age (WUS), and adolescent girls. One way to prevent stunting is to give adolescent girls and women of childbearing age supplementation with blood supplement tablets [11]. If we want to prevent stunting in the future, we must address the problem of stunting in various ways and at all levels, especially by educating young girls to become mothers in the future. To prevent stunting, adolescent age is very important. Some studies show that getting pregnant as a teenager increases the chances of giving birth to an unhealthy child. Young couples are not prepared socially, economically, and mentally, so they are not ready for their psychological maturity and reproductive system [12]. Therefore, the UKI Faculty of Medicine plays the role of lecturers and students attending and participating in carrying out community empowerment activities through educating teenagers about anemia and reproductive health in Rancakalong village, Sumedang Regency, West Java.

II. RESULT AND DISCUSSION

As part of the health promotion activities for young women in Rancakalong village, Sumedang Regency, West Java, educational intervention activities have been carried out, and distribution of blood-boosting tablets directly to young women who are participants in the activity. The following are several series of activities carried out:

1. Measuring Participants' Initial Knowledge: The initial stage begins with an assessment of young women's knowledge about blood-boosting pills, benefits, objectives, instructions for use, dosage tips, and side effects. Effects and intake of foods containing iron. This first stage aims to measure understanding of blood-boosting pills among young women.
2. Anemia Screening: Anemia screening is done with an Hb test. It is known that anemia occurs in young women. The Hb measurement method is based on the point-of-care test (POCT). The Easy Touch GCHb tool is used to measure Hb levels. Capillary blood sampling is the first step in the POCT method and is a simple, fast, and effective testing method. [13]
3. Providing Blood Replacement Tablets: Providing blood replacement tablets to young women to prevent anemia and meet the nutritional needs of young women by educating them about the use of blood supplement tablets, namely taking one tablet every week regularly.
4. Education based on information sheets: After carrying out the initial assessment, Hb management, and administering blood enrichment tablets, educational actions regarding blood enrichment tablets are

carried out using information sheets. The contents of the brochure are created using visual media. This aims to increase attractiveness, increase understanding of the content, and highlight important parts that can be understood directly by young women in Rancakalong village and Pamekaran village [14]

5. Assessment: The final step in this activity is to assess the knowledge of young women regarding the use of blood supplement tablets using a post-test questionnaire. We surveyed young women about their knowledge about blood-boosting tablets, their effects, purpose, use, tips for taking them, side effects, and intake of foods containing iron.

Community service in the form of youth education about anemia and reproductive health was carried out in two villages, namely Rancakalong village and Pamekaran village, Sumedang Regency, West Java, attended by 53 participants consisting of young women. Activities include educating young women through counseling, using leaflets about blood supplement tablets (TTD), screening for anemia through measuring blood Hb, and also providing Blood Addition Tablets (TTD) to young women.

The socio-demographic characteristics of education participants who are young women based on age and level of education are described in Table 1 below:

Table 1. Distribution of Sociodemographic Characteristics of Young Women Education Participants in Rancakalong Village and Pamekaran Village

No	Sociodemography	Number	Percentage (%)	
1	Age	- Early Teenagers (12-16 years)	48 5	90.6 9.4
		- Late Teenagers (17-25 years)		
2	Education	- Junior High School	45	84.9
		- Senior High School	8	15.1

From the data in Table 1, it can be seen that the young women who participated in education about anemia and reproductive health were dominated by early adolescents aged 12 - 16 years, namely 48 people (90.6%) with 45 people's education level being junior high school (SMP). (84.9%). This is very in line with the aim of community service activities, namely providing earlier or earlier education, considering that currently there are so many sources of information that can be accessed by teenagers, which is feared, including information that is confusing and inaccurate. Based on the results of anemia screening through a Hb level test, various results were obtained between not being included in the anemia category, mild anemia, moderate anemia, and severe anemia. Data distribution is described in Table 2 below:

Table 2. Anemia Classification of Young Women in Education Participants in Rancakalong Village and Pamekaran Village

No	Klasifikasi	Number	Percentage (%)
1	Severe Anemia (Hb < 8.0 gr/dL)	2	3.8
2	Moderate Anemia (Hb: 8.0-10.9 gr/dL)	5	9.4
3	Mild Anemia(Hb: 11.0-11.9 gr/dL)	21	39.6
4	No Anemia (Hb > 12 gr/dL)	25	47.2
Total		53	100

From table 2, data is obtained that the classification of anemia among female adolescent girls participating in education in Rancakalong village and Pamekaran village is classified as good, where 21 people are not anemic and 25 people who are mildly anemic, while 2 people are categorized as severe anemia (3.8%) From the results of the pre-test and post-test to determine the knowledge of young women about anemia and reproductive health, data was obtained as in Table 3 below:

Table 3. Results of Pre-Test and Post-Test Data Analysis

	Min	Max	Average ± SD
<i>Pre-test</i>	41.5	86.7	59.5 ± 12.6
<i>Post-test</i>	70.2	100	88.4 ± 5.6

From the results of the analysis, data was obtained that there was a significant increase in the knowledge of young women participating in education about anemia and reproductive health with an average pre-test score of 59.7% to 88.4% based on the post-test results. Apart from that, based on the standard

deviation, information was obtained that before attending the education, the distribution of gaps in young women's knowledge about anemia and reproductive health was very high with a standard deviation of 12.6%, whereas after attending the education, the gap became smaller with a standard deviation of 5.6. This health education aims to facilitate adolescents and make it easier for them to obtain information and education regarding adolescent health in general and stunting prevention related to reproductive health and pre-pregnancy nutrition in particular. The objectives of this activity include 1). increasing teenagers' understanding of aspects of reproductive health; 2).

Identifying the incidence of anemia in adolescents by conducting Hb checks; and 3). Give blood supplement tablets. The results of the service show increased awareness regarding reproductive health and anemia prevention methods as steps to prevent stunting. It is important to educate young women about reproductive health topics, including family planning and delaying the age of marriage, so that they have a better understanding of preparing to become mothers in the future. This aims to reduce the incidence of unwanted teenage pregnancies. Research in the field of public health has long focused on efforts to prevent unintended pregnancy in adolescents [15]. Teenage pregnancy has serious impacts not only for the individual woman, but also for the family and community involved [[16]. Implementation of teenage pregnancy prevention strategies helps reduce the risk of teenage pregnancy by up to 82% of the total number of teenage marriages in the United States and several other states [17]. The adolescent pregnancy prevention strategy aims to increase knowledge, skills, and understanding of adolescent reproductive health (KRR).

Photo documentation of this community service activity is as shown in Figure 1 below:



Fig 1. Community Services Documentation

III. CONCLUSION

Community service in Rancakalong village and Pamekaran village, Sumedang Regency, West Java with the theme of educating young women about anemia and reproductive health can be concluded to be going well and providing great benefits for young women, where there is an increase in knowledge of young women from 59.5% to 88.4 % and standard deviation which describes the knowledge gap at the beginning reached 12.6 (before attending education, but after participating in socialization it became 5.6, which means that the knowledge gap between one young woman and another young woman is not that big the difference.

IV. ACKNOWLEDGMENTS

We would like to express our deepest thanks to the village governments of Rancakalong and Pamekaran Village, who very cooperatively and actively facilitated everything needed by the team in carrying out this community service activity. We would also like to thank our younger sisters and daughters who were so enthusiastic and eager to take part in educational activities, even though they had to take their time after school. Thank you also to the Universitas Kristen Indonesia Medical Faculty, which has also supported the team in carrying out this activity.

REFERENCES

- [1] Rosyida, D. A. C. (2019). Effectiveness of the Menstrual Calendar Application on Knowledge of Young Women. SNHRP, 2, 467-472.

- [2] Sari, V. M., Tonasih, T., & Rahmatica, S. D. (2022). Supplementary Blood Tablets (TTD) In Adolescent Women (Remary) To Increase Hemoglobin (Hb) Levels. *Malahayati Midwifery Journal*, 8(2), 413–419. <https://doi.org/10.33024/jkm.v8i2.6512>
- [3] Aulia, G., Udiyono, A., Saraswati, L. & Adi, M. (2017). Description of Anemia Status in Adolescent Girls in Mountainous and Coastal Areas (Study at Public Middle Schools in Getasan and West Semarang Districts). *Journal of Public Health*, 5(1).
- [4] WHO. Reducing stunting in children: equity considerations for achieving the Global Nutrition Targets 2025. 2018.
- [5] Indonesian Ministry of Health. (2018). 2017 Indonesian Demographic and Health Survey: Adolescent Reproductive Health. National Population and Family Planning Agency, Central Statistics Agency, Ministry of Health. <https://ekoren.bkkbn.go.id/wpcontent/uploads/2018/10/reportsdki-2017-juvenile.pdf>
- [6] Sandra. (2017). Child and Adolescent Nutrition. Rajawali Press.
- [7] Sharlin J, & Edelstein, S. (2015). Textbook of Nutrition in the Life Cycle. EC
- [8] Kristianti, S., Wibowo, T. & Winarsi Winarsi. (2014). The Relationship between Anemia and the Menstrual Cycle in Adolescent Girls at SMA Negeri 1 Imogiri Bantul Yogyakarta, 2013. *Journal of Youth Studies*, 3(1).
- [9] Sitawati, & Amanda, F. (2023). Prevention of Anemia with Education on the Consumption of Blood Supplement Tablets and Infused Water. JAI: *Bali ITEKES Community Service Journal*, 2(2), 147–152. <https://doi.org/10.37294/jai.v2i2.478>
- [10] Runiari, N., & Hartati, N. (2020). Knowledge and Compliance with Taking Blood Increasing Tablets in Young Women. *Echo Journal of Nursing*, 13(2), 103–110
- [11] Fatmaningrum, W., Nadhiroh, S. R., Raikhani, A., Utomo, B., Masluchah, L., & Patmawati. (2022). Situation Analysis of Efforts to Accelerate Stunting Reduction Using the Approach to Families at Risk of Stunting (Case Study in Jombang Regency, East Java). *Indonesian Nutrition Media*, 17(1SP), 139–144. <https://doi.org/10.20473/mgi.v17i1SP.139-144>
- [12] Abdullah, F. F. F., Saleh, S. E., Solang, M., Hasan, A. M., & Kadir, L. (2024). Prevention of Stunting in Adolescent Girls in Gorontalo Regency Using Structural Equation Modeling (SEM). *VARIANCE: Journal of Statistics and Its Applications*, 6(1), 29–38. <https://doi.org/10.30598/variancevol6iss1page29-38>
- [13] Utami, K., Yolanda, H., Albayani, M. I., Suprayitna, M., Sulistiawati, F., & Mentari, I. N. (2022). Anemia Screening, Nutritional Status and Nutritional Intake of Young Women. *JMM (Journal of Independent Society)*, 6(6), 5086. <https://doi.org/10.31764/jmm.v6i6.11017>
- [14] Magdalena, I., Pratiwi, S., Pertiwi, A., & Damayanti, A. P. (2021). The Use of Image Media in Increasing Interest in Learning for Class IV Students at Sd Negeri 09 Kamal Pagi. *PENSA : Journal of Education and Social Sciences*, 3(2), 334–346.
- [15] Taufikurrahman, T. Z. (2023). Socialization of Early Marriage and Reproductive Health Education for Adolescents as Efforts to Prevent Stunting in Pabean Village, Probolinggo Regency. *Scientia: Journal of Research Results*, 8(1), 73-88. doi:<https://doi.org/10.32923/sci.v8i1.3379>
- [16] Won, H. M. (2018). Comprehensive understanding of risk and protective factors related to adolescent pregnancy in low- and middle-income countries: A systematic review. *Journals of Adolescence*, 69(September), 180-188. doi:<https://doi.org/10.1016/j.adolescence.2018.10.007>
- [17] Koh, H. (2014). The teenage pregnancy prevention program: *An evidence-based public health program model*. *Journal of Adolescent Health*, 54(3), 51-59. doi:<https://doi.org/10.1016/j.jadohealth.2013.12.031>.