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EVALUATION OF THE SUCCESS OF THE ANEMIA PREVALENCE REDUCTION PROGRAM

Laminah*, Endah Mulyani, Amalia Rahma, Dwi Novri Supriatiningrum, Eka Sri Rahayu Ariestiningsih
Nutritional Science Study Program, Universitas Muhammadiyah Gresik, Jl. Sumatera No.101, Gn. Malang, Randuagung, Kebomas, Gresik, Jawa Timur 61121, Indonesia
*laminahsubakin@gmail.com

ABSTRACT
Anemia is a disease in which the hemoglobin (Hb) level within the blood is lower than ordinary and shifts concurring to age bunch, sex and physiological condition. For adolescent girls (rematri) anemia is considered if Hb <12 gr/dl. This study was to evaluate the success of the anemia prevalence reduction program in Lamongan district Method: The type of research used was quantitative descriptive with a survey research design. The population used in this study were all female adolescent students in grades 7 and 10 in the working area of the Lamongan Regency Health Center. Data collection was carried out by administering questionnaires and examining hemoglobin levels. The data obtained will be analyzed descriptively to determine the characteristics of the sample and presented in the form of frequency distribution and percentage. The results showed that the majority of female adolescents had received iron supplement tablets (TTD) (80.18%), but only 73.29% consumed them according to recommendations. Most female students in grades 7 (90.13%) and 10 (93.05%) had been screened for anemia. The prevalence of anemia in 7th grade female students was 18.68% and 10th grade female students was 18.22%. Conclusions: The FERRAMEG program (FE Hari Rabu Megilan) in the working area of the Lamongan Regency Health Center is considered to have an influence in reducing the prevalence of anemia in female adolescents, indicated by the increasing number of adolescents who consume iron supplement tablets and the number of anemia in adolescents in grades 7 and 10, the majority of whom do not experience anemia and the number of female adolescents who have received screening for anemia.

Keywords: adolescent girls; anemia; FERRAMEG; iron tablets

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INTRODUCTION

Anemia is a physical condition characterized by test results showing low levels of hemoglobin (Hb) in the blood, which may be caused by an insufficient number of red blood cells (for example, severe bleeding due to an accident or other cause), or an insufficient number of red blood cells but the Hb content in the red blood cells is low.(Kemenkes RI, 2023). Iron deficiency could be a disease where the hemoglobin (Hb) level within the blood is lower than ordinary and varies according to age group, gender and physiological conditions. For adolescent girls (rematri) it is said to be iron deficiency on the off chance that Hb < 12 gr/dl (Kemenkes RI, 2020). The seriousness of handling anemia problems is based on the high prevalence of anemia. The threshold for anemia prevalence as a public health problem based on the WHO classification in 2011, if the prevalence is ≥40%, it means that the area has health problems in the severe category, 20-39.9% in the moderate category, 5-19.9% in the mild category and ≤4.9% in the normal category. (Kemenkes RI, 2014)

Based on the results of the Indonesian Health Survey (Kesehatan RI, 2023) The national prevalence of anemia for the 5-14 age group is 16.3% and the 15-24 age group is 15.5%. The prevalence of anemia in women is relatively higher (18%) than in men (14.4%). The prevalence of anemia with an education level of no/never attended school is relatively higher at 19.9% when compared to the education level of Not finished elementary school/MI

15.6%, Finished elementary school/MI 15.9%, Finished junior high school/MTS 15.6%, Finished senior high school/MA 13.8%, Finished D1/D2/D3/PT 17.7%, Finished PT 13.3%. Based on the location of residence, the prevalence of anemia in rural areas is higher (16.9%) than in urban areas (15.6%). Based on economic status, the prevalence of anemia is higher in the lowest economic status, which is 17.9% when compared to the lower middle economic status of 16.6%, middle 16.3%, upper middle 15.6%, and top 14.9%.

Rematri during puberty poses a high risk of nutritional anemia due to iron. This is because teenagers have the habit of consuming plant foods that contain little iron, compared to animal foods so that the body's need for iron is not met. In addition, every day humans will lose 0.6 mg of iron which is excreted through feces.(Mulyani & Safriana, 2023). The causes of anemia in adolescents are nutritional status, knowledge, compliance with taking TTD, menstrual cycle, tooth decay, psychosocial aspects, malaria and thyroid. In addition, anemia if left untreated can result in decreased immunity, decreased concentration, decreased learning outcomes, decreased physical capacity and productivity, increased risk of death during childbirth and is one of the causes of premature birth and low birth weight.(Kemenkes RI, 2018). This is in line with research conducted (Budiarti et al., 2021) where The study revealed that the factors contributing to anemia encompass knowledge, dietary intake, eating and drinking habits, menstrual cycles, consumption of iron tablets, nutritional status, and socio-economic conditions. Aulya et al., (2022) also stated that anemia suffered by Adolescents experience this issue due to unhealthy eating and sleeping patterns as well as excessive menstrual flow.

In an effort to prevent anemia, the efforts made by the Indonesian government are the implementation of balanced nutritious food, nutritional supplementation in the form of TTD, iron fortification of wheat flour, treatment of causative/concomitant diseases including infectious diseases. TTD is given to all female adolescents in grades 7-12 or ages 12-18 years using a comprehensive approach regardless of anemia status. This TTD is given to junior high school/high school students or equivalent madrasahs through the Akzi Bergizi activity which is integrated with UKS or healthy schools/madrasahs. Dosage 1 tablet every week throughout the year. Consumed together at school according to the TTD consumption day determined by the school/madrasah. (Kemenkes RI, 2020).

In Lamongan Regency, the prevention of anemia in adolescent girls was followed up with the launch of the FERRAMEG program (FE Hari Rabu Megilan). The FERRAMEG activity is an activity of drinking iron tablets together with female students who are in junior high school/high school or equivalent madrasah schools every Wednesday every week. The purpose of this study was to determine the success of the anemia prevalence reduction program in the working area of the Lamongan Regency Health Center.

METHOD

The sort of inquire about utilized is quantitative expressive with a study inquire about plan, to be specific a think about conducted on a expansive number of objects and in a certain period of time. The populace used in this study were all female students in grades 7 and 10 in the working area of the Lamongan Regency Health Center. The sampling technique in this study was total sampling by taking the entire population that was sampled in this study. Data collection was carried out by giving questionnaires and examining hemoglobin levels. The data gotten will be analyzed distinctly to decide the characteristics of the test and displayed within the frame of frequency distribution and percentage.

RESULT

Table 1. Explains the characteristics of this study, namely 10,471 female adolescents in grade 7 aged 12 years or (49.97%) and 10,485 female adolescents aged 15 years or (50.03%) so the total number of adolescents who are the characteristics of the respondents is 20956.

Table 1.
Respondent Characteristics

Teen Girls Class Level	N	F
Kelas 7 (usia 12 tahun)	10471	49,97
Kelas 10 (usia 15 tahun)	10485	50,03

Table 2, Shows the number of adolescent girls in the working area of the Lamongan Regency Health Center, which is 53,632. Most adolescent girls receive iron tablets (TTD) as much as 80.18%, but not all adolescent girls who receive TTD are consumed according to the rules, only 73.29% of adolescents consume complete TTD and according to recommendations.

Table 2.
Number of Adolescent Girls

Adolescent Girls	F	%
Number of Adolescent Girls	53632	
Number of those who received TTD (Complete/Appropriate)	43002	80.18
Number of those who consumed TTD (Complete/Appropriate)	39308	73.29

Table 3. Explaining that the number of female adolescents in grade 7 who received screening for anemia was only 90.13%. While the number of female students/female adolescents who received screening for anemia was 93.05%, meaning that not all female adolescents in grades 7 and 10 received screening for anemia.

Table 3.
Screening for Rematri Anemia

Screening Anemia	f	%
Number of 7th grade students screened for anemia	9438	90.13
Number of 10th grade students screened for anemia	9756	93.05

Characteristics in this study in terms of age and classification of anemia, based on data from table 3. Shows that all 7th grade female students who experience anemia are 18.68%, with details of 1,159 (11.06%) 7th grade female students experiencing mild anemia, 768 (7.33%) experiencing moderate anemia and 30 (0.28%) 7th grade female students experiencing severe anemia. In table 4. 10th grade female students who experience anemia are 18.22%, 1,135 (10.82%) 10th grade female students experiencing mild anemia, 755 (7.20%) 10th grade female students experiencing moderate anemia and there are 21 (0.20%) 10th grade female students experiencing severe anemia.

Table 4.
Prevalence of Anemia

Prevalence of Anemia	f	%
Number of 7th grade students		
mild anemia (Hb 11-11.9 g/dl)	1159	11,06
moderate anemia (Hb 8-10.9 g/dl)	768	7,33
severe anemia (Hb < 8 g/dl)	30	0,28
Number of 10th grade students		
mild anemia (Hb 11-11.9 g/dl)	1135	10,82
moderate anemia (Hb 8-10.9 g/dl)	755	7,20
severe anemia (Hb < 8 g/dl)	21	0,20

DISCUSSION

The behavior of consuming Iron Supplement Tablets (TTD) is expected to prevent and reduce the prevalence of anemia in adolescent girls. The rule for consuming iron supplements is 1 tablet every week regularly (52 tablets/year), and of course balanced with balanced nutritional consumption, for example consuming high protein, iron, and vitamin C to increase iron absorption optimally. This iron supplement tablet can be obtained from available health facilities and can also be purchased independently on the basis of adolescent initiatives(Kemenkes RI, 2020). However, several studies have shown that there are still adolescents who are not compliant in consuming iron supplements regularly every month, and have a low level of balanced nutritional consumption (Ningtyias et al., 2020).

There are 2 factors that are the reasons for teenagers to consume TTD. These factors include their own desires and external encouragement, for example teachers, health workers, parents. Some teenagers do not consume TTD for several reasons including forgetting to take it, the tablet is lost, it smells and so on. This is in line with research (Susanti et al., 2016) which states that iron supplements are not consumed due to laziness, boredom, broken/lost tablets, and forgetfulness. And other studies also reveal that low compliance in consuming TTD is caused by very diverse reasons by respondents, especially reasons of forgetting, lost TTD, nausea(Masfufah et al., 2022).

Based on the results of the study, the majority of female adolescents or students in grades 7 and 10 have received anemia screening, adolescent screening is a program of the Directorate General of Public Health, Ministry of Health of the Republic of Indonesia with the aim of detecting anemia early so that it can be carried out earlier for further treatment, screening is carried out by examining hemoglobin levels in female adolescents. Early detection of anemia needs to be done in order to reduce the impact of anemia such as decreased immunity, concentration, achievement and productivity, which is characterized by 5L (Weak, Tired, Lethargic, Tired, Negligent), frequent dizziness, blurred vision, pale face, nails, eyelids, lips and palms (Setianingsih, 2023).

Anemic adolescent girls are also at risk of becoming anemic mothers. Mothers who experience anemia are At significant risk of maternal mortality, preterm births, and infants with low birth weight babies (LBW) (Khobibah et al., 2021). The majority of adolescents in the Lamongan district health center work area do not experience anemia, but there are some adolescents who experience mild, moderate to severe anemia. Adolescents are susceptible to anemia due to increased nutritional needs for their growth, where the need for iron also increases for the formation of myoglobin in muscles and the formation of hemoglobin in the blood (Mulyana et al., 2024).

Menstrual blood loss also contributes significantly to iron depletion because it is difficult for women to provide sufficient iron intake to compensate for menstrual iron loss. This is also supported by the habits of adolescent girls who practice too much dieting and limit the consumption of certain food products, resulting in reduced energy intake and lower iron intake. In addition, adolescents tend to have a habit of consuming fast food which usually has high energy content and low nutrient density (Skolmowska & Głąbska, 2019). Based on the results of the study, 7th grade female students in the Gresik district health center work area experienced mild anemia as much as 11.06%, moderate anemia 7.33%, and severe anemia 0.28%. While in 10th grade female students experienced mild anemia as much as 10.82%, moderate anemia 7.20%, and severe anemia 0.20%. Laili et al., (2024) also stated that 29% of adolescent girls experienced mild anemia, 4% moderate anemia and 0% severe anemia.

CONCLUSION

The FERRAMEG (FE Hari Rabu Megilan) program in the working area of the Lamongan Regency Health Center is considered to have an influence in reducing the prevalence of anemia in adolescent girls, indicated by the increasing number of adolescents who consume iron supplements and the number of anemia in adolescents in grades 7 and 10, the majority of whom do not experience anemia and the number of adolescent girls who have received screening for anemia.

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