Original Articles

RURAL FEMALE ADOLESCENT'S KNOWLEDGE OF ANEMIA

Kusniyati Utami [1*], Irni Setyawati [1], Dian Soekmawati Riezky Ariendha [1]

[1] STIKES Yarsi Mataram

Abstract

Background: Anemia is a condition of red blood cell count or hemoglobin count below the normal value of the reference value, anemia in adolescents will negatively affect growth, development, cognitive abilities and learning concentration, as well as increase susceptibility to infectious diseases. Anemia caused by the intake of foods that are low in iron, excessive blood loss that requires the formation of more red blood cells than usual. Some other factors that are suspected to influence the incidence of anemia in female adolescent are the knowledge of female adolescent about anemia itself.

Objective: The purpose of this study was to identify knowledge of rural female adolescent about adolescent anemia.

Methods: This research was a descriptive study with a survey method, located in East Penimbung Hamlet, West Lombok were conducted in July 2022. The population of the study is all of the female adolescent aged 11-24 years who not married, the sample subject of this study is 54 female adolescents were selected by non-probability sampling technique namely consecutive sampling with inclusion criteria, Female adolescent knowledge of anemia was identified by a closed-question questionnaire. The data analysis carried out by univariate analysis to describe the characteristics of respondents and adolescent knowledge about anemia.

Result: The average age of female adolescents is 15-17 years (63%), 89% respondents had a thin nutritional status and 48% of respondents had an upper arm circumference less than 23.5 cm and 61% female adolescent has sufficient knowledge about anemia.

Conclusion: The level of knowledge of adolescents about anemia is mostly moderate, health promotion from related parties about the definition of anemia, consequences and prevention of subsequent anemia needs to be carried out either through villages or schools.

INTRODUCTION

Anemia is a condition of red blood cell count or hemoglobin count below the normal value of the reference value. Hemoglobin itself is a protein compound that plays a role in carrying oxygen to all proteins. Iron deficiency anemia is thought to be the single biggest cause of pain and death in adolescents (Roche et al., 2018). Rural young women predominantly get information from their parents (Ernawati, 2015), however the education level of mothers in rural areas is mostly inadequate (Jaelani et

al., 2017). WHO data in 2010 showed that the rate of anemia in developing countries reached 53.7% in female adolescent. Based on RISKESDAS data in 2007, 2013 and 2018 there was an increase in the trend of increasing the prevalence of anemia in adolescents aged 15-24 years by 6.9% at the age of 2007 to 18.4% in 2013 and continued to increase to 32% in 2018 (Kementerian Kesehatan RI, 2018).

Anemia is caused by the intake of foods that are low in iron, excessive blood loss that requires the formation of more red blood cells than usual. Some other factors that are suspected to influence the incidence of anemia in female adolescent are the knowledge of female adolescent about anemia itself (Subratha, 2020) therefore female adolescent have a higher risk of developing anemia because of the high need for Fe due to blood production every month due to menstruation, besides that female adolescent often go on a diet to maintain appearance, reducing food consumption so that it can cause deficiencies in nutrients needed by the body including iron (Sya`Bani & Sumarmi, 2016). A diet that is not balanced with the needs of the body will cause the body to lack important substances such as both macronutrients and iron (Thamrin & Masnilawati, 2021). Lack of nutritional knowledge in female adolescent is also one of the factors that can cause the incidence of anemia (Anggraeni, 2020).

Anemia in adolescents will negatively affect growth, development, cognitive abilities and learning concentration, as well as increase susceptibility to infectious diseases. More broadly than this, if anemia occurs in female adolescent, it will be at risk of premature birth, low birth weight, maternal and infant mortality and furthermore the baby born can be stunted. Identification of adolescent knowledge about anemia to know the knowledge of female adolescent about anemia needs to be done to prevent anemia in adolescents. Permanasari mentioned that the Hb levels of female adolescent will increase along with the increasing knowledge of female adolescent about anemia, it is concluded that increasing the knowledge of female adolescent about adolescent anemia can increase the prevention of anemia in female adolescent (Permanasari et al., 2020). The purpose of this study was to identify the characteristics of adolescent girls in rural areas as well as identify the knowledge of rural female adolescent about adolescent anemia.

METHODS

Study Design

This research was a descriptive study with a survey method, where the results of the study are collected directly from respondents, the variable in this study is the knowledge of female adolescent about anemia.

Settings

The research location is East Penimbung Hamlet, West Lombok conducted in July 2022.

Research subject

The study population is the entire object of study, the population in this study is all female adolescent in the hamlet of East Penimbung. The research sample that is the subject of this study was selected using a non-probability sampling technique, namely consecutive sampling, where the

researcher selects all individuals encountered and meets the inclusion criteria, namely adolescent aged 14-24 years and unmarried.

Instruments

The data used in this study is primary where data is obtained from interviews and direct measurements. The type of research instrument in this study is a physiological instrument used to measure height, weight and upper arm circumference to identify the characteristics of respondents, in addition to the physiological instrument questionnaire instrument to identify variables of female adolescent knowledge about anemia are conducted by closed question form questionnaires who developed by researchers and previously tested the validity and reliability.

Data collection

Data collection on respondents' characteristics including nutritional status was measured by microtoise for height, digital body scales for weight and a lilameter for upper arm circumstance. The collection of data on the knowledge of adolescent girls about anemia was carried out by filling out a questionnaire, respondents were asked to provide answers to each item of the question asked.

Data Analysis

The data analysis carried out was a univariate analysis to describe the characteristics of respondents and adolescent knowledge about anemia.

Ethical Consideration

This research has been approved by STIKES Yarsi Mataram.

RESULTS

Characteristics of Respondents

Table 1. Distribution Frequency of the Respondents based on Age, Nutrition Status, and Upper Arm Circumference among Female Adolescents in the East Penimbung Hamlet, West Lombok on July 2022 (n = 54).

Respondent Characteristics	Frequency (f)	Percentage (%)
Age		
11-14 years	11	20.37
15-19 years	34	62.96
20-24 years	9	16.67
Nutrition Status		
Thin	48	88.89
Usual	4	7.41
Obesity	2	3.70
Upper Arm Circumference		
>23.5 cm	28	51.85
<23.5 cm	26	48.15

Sources: Primary Data, 2022.

Based on the table above, it is known that the age of the most respondents in the range of 15-19 years, as much as 34 respondents (62.96%). Almost all respondents had a thin nutritional status, as many as 48 respondents (88.89%), and more than half of respondents had an Upper arm circumference < of 23.5 cm, as many as 28 respondents (51.85%).

Adolescent's Knowledge of Anemia

Table 2. Distribution Frequency of the Respondents based on Knowledge of Anemia in the East Penimbung Hamlet, West Lombok on July 2022 (n = 54).

Knowledge Level	Frequency (f)	Percentage (%)
Less	9	16.67
Moderate	33	61.11
Well	12	22.22
Total	**54**	**100.00**

Sources: Primary Data, 2022.

From the table above, it is known that most respondents have sufficient knowledge about anemia were 33 respondents (61.11%), 12 respondents have good knowledge (22.22%) and the rest have less knowledge, as many as 9 respondents (16.67%).

Table 3. Distribution Frequency of the Respondents based on the Item of Question about Knowledge of Anemia in the East Penimbung Hamlet, West Lombok on July 2022 (n = 54).

Item of Question about Knowledge of Anemia	Know		Don't Know	
	Frequency (f)	Percentage (%)	Frequency (f)	Percentage (%)
What is the definition of anemia?	26	48.15	28	51.85
What are the causes of anemia?	47	87.04	7	12.96
How to know anemia?	31	57.41	23	42.59
Food sources of iron?	49	90.74	5	9.26
Symptoms caused by anemia?	49	90.74	5	9.26
Effects of anemia?	39	72.22	15	27.78
Can anemia be prevented?	51	94.44	3	5.56
How to prevent anemia?	32	59.26	22	40.74
Can anemia be treated?	53	98.15	1	1.85
How to treat anemia?	19	35.19	35	64.81

Sources: Primary Data, 2022.

From the table above, it can be seen that 28 respondents (51.85%) did not know the definition of anemia, the 47 respondents (87.04%) known the cause of anemia, and the respondents who did not know how to know anemia were 23 respondents (42.59%). Almost all of respondents known the source

of foods containing iron and the symptoms caused by anemia, as many as 49 respondents (90.74%), respectively. Almost all of respondents known that anemia could be prevented, as many as 51 respondents (94.44%), but almost half of respondents did not know how to prevent anemia, as many as 22 respondents (40.74%). Almost all respondents also known that anemia could be treated, as many as 53 respondents (98.15%), but the respondents did not know how to treat anemia, as many as 35 respondents (64.81%).

DISCUSSION

Table 2 found that on average of the respondents' knowledge was moderate (61.11%), only 12 respondents (22.22%) had good knowledge of adolescent anemia, and the remaining 9 adolescents (16.67%) had less knowledge about anemia. Notoatmojo mentioned that knowledge is the result of knowing that occurs after a person carries out the process of sensing a certain object, it is stated that one of the factors that affect a person's knowledge is age. As a person grows older, there will be changes in physical and psychological aspects, physically there will be changes in both the size and function of organs, while from the psychic aspect there will be changes in a person's level of thinking, as they get older the process of thinking and receiving information will be better when compared to someone who is younger. In addition, as you get older, the more knowledge and experience a person gets so that it will increase a person's maturity in thinking (Notoatmojo, 2018). It is known that respondents' knowledge is a category of female adolescents mostly moderate (61.11%). It is explained more detail in table 3 that most of the respondents know that anemia can be prevented and treated, the respondents know the causes, signs and symptoms of anemia in adolescents and food sources that contain iron. However, the respondents did not know what exactly anemia was, how to find out if someone had anemia and how to prevent and treat it. In Subratha's research at Tabanan State High School, it was found that on average2 adolescent knowledge about the meaning of anemia is good (Subratha, 2020). However good knowledge in addition to being associated with age is also associated with several other factors including the level of education, information from mass media, social culture, family, the social environment of adolescents themselves. Education will affect how someone absorbs information, someone who is more educated will have better knowledge. Someone will benefit from having knowledge that also has a high educational background (Permanasari et al., 2020)

In table 1.1, it is known that the most respondents in this study were female adolescent aged 15-19 years, these ages were grouped based on the age classification of adolescents according to BKKBN the age range of adolescents is 10-24 years and unmarried. Respondents were classified according to that age range to then identify the level of knowledge of female adolescent according to age. Further known that respondents aged 20-24 years more than half have good knowledge about anemia compared to female adolescent aged 15-19 years who mostly have an average knowledge about adolescent anemia. Fajriyah in her research mentioned that most female adolescent aged 15 years do not know about anemia (Fajriyah M, 2016), it supports this research that a younger age affects a person's understanding of

anemia knowledge. Subatha in a study conducted at Tabanan state high school also mentioned that almost all female adolescent who are 17 years old have good knowledge about anemia (Subratha, 2020). The results of Permanasari's research also found that most of the samples were 16 years old with an average knowledge score of 13 (from the range of 1-17) (Permanasari et al., 2020)

Although the causes of anemia, the symptoms of anemia and the source of iron-containing food substances are known to most respondents but almost half of respondents do not know how to find out anemia, female adolescent mentioned that knowing anemia can be known only from dizziness, dizziness, weakness, lethargy without knowing that the diagnosis of anemia is done by measuring hemoglobin (Hb) levels in the blood (Subratha, 2020).

The large number of research results that state that female adolescent's knowledge about anemia has a relationship with the incidence of anemia in female adolescent themselves shows that increasing adolescent knowledge about anemia is very important for the prevention of anemia in female adolescent (Pangaribuan et al., 2022). One of the efforts that can be made to increase female adolescent's understanding of anemia is health education. Rohim in his research mentioned that health education lecture methods with book media can increase adolescent knowledge about adolescent nutrition (Rohim et al., 2016)

It was found that the most knowledge of rural young women about anemia was moderate, namely as many as 33 young women (61%) if it was associated with the characteristics of the respondents, it was found that the most ages were 15-19 years old (63%), had a thin nutritional status of 48 people (89 %) with arm circumstance > 23.5 as many as 28 people (52%). The nutritional status of adolescents shows that almost all young women experience malnutrition. Jaelani in his research stated that nutritional status is the dominant factor causing anemia. , spending and needs (Jaelani et al., 2017). Poor nutritional status can be caused by the respondent's lack of knowledge about anemia itself. This can happen because of the lack of access to information in adolescents in rural settings, because not all respondents have cellphones, where cellphones are the most frequently used devices in general to access information. The results of Ernawati's research also found that the dominant source of information used by village teenagers was from their respective parents compared to sources from the internet (Ernawati, 2015).

LIMITATION

This research is a survey method research, not all confounding factors that affect knowledge can be controlled by researchers.

CONCLUSION

The level of knowledge of adolescents about anemia is mostly Moderate, health promotion from related parties about the definition of anemia, consequences and prevention of subsequent anemia needs

to be carried out either through villages or schools so that information about anemia can be known by female adolescent properly to prevent further anemia events in female adolescent.

AUTHOR CONTRIBUTION

Kusniyati Utami: Literature review, conceptualization, methodology, investigation, resources, formal and statistical analysis, writing-original draft validation, project administration, and drafting the manuscript.

Irni Setyawati: Literature review, conceptualization, methodology, and drafting the manuscript.

Dian Soekmawati Riezky Ariendha: Literature review, conceptualization, methodology, and drafting the manuscript.

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Kusniyati Utami   : None.

Irni Setyawati   : None.

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CONFLICT OF INTEREST

The author declares that the data published in the above manuscript has no conflict of interest with any party.

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