

ANALYSIS OF THE RELATIONSHIP BETWEEN KNOWLEDGE AND ANEMIA PREVENTION BEHAVIOR AMONG FEMALE ADOLESCENTS

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ABSTRAK : ANALISIS HUBUNGAN PENGETAHUAN DENGAN PERILAKU PENCEGAHAN ANEMIA PADA REMAJA PUTRI

Latar Belakang: Kejadian anemia pada remaja putri di provinsi Lampung masih pada angka yang cukup tinggi, kondisi ini bisa berpengaruh pada penurunan konsentrasi belajar, produktivitas, dan risiko komplikasi kehamilan di kemudian hari.

Tujuan :Penelitian ini bertujuan untuk mempelajari dan mengetahui hubungan pengetahuan dengan perilaku pencegahan anemia pada remaja putri. Penelitian ini dengan desain studi potong lintang dengan menggunakan data primer. Populasi adalah remaja Putri kelas X di SMA N 01 Kebun Tebu Kabupaten Lampung Barat yang berusia 14-15 tahun dan sudah mengalami menstruasi. Pemilihan sampel dengan teknik total sampling dan didapatkan 85 responden siswi.

Metode: Analisis data dilakukan dengan uji *univariat* untuk mendeskripsikan karakteris responden, pengetahuan responden tentang anemia dan perilaku pencegahan anemia. Uji statistik bivariat dengan uji *Chi-square*.

Hasil: Didapatkan hasil bahwa tingkat pengetahuan tentang anemia remaja putri berada pada tingkat cukup baik dan baik . Perilaku pencegahan anemia juga pada tingkat cukup baik dan baik. Hasil uji *bivariat* menunjukkan bahwa variabel tingkat pengetahuan berhubungan dengan variabel perilaku pencegahan anemia dengan *p-value* <0,005).

Kesimpulan: Terdapat hubungan signifikan antara variabel tingkat pengetahuan dengan variabel tingkat perilaku pencegahan, dalam arti kata lain semakin tinggi pengetahuan maka semakin tinggi tingkat perilaku pencegahan anemianya.

Saran : Mengadakan penyuluhan kesehatan secara berkala dengan menghadirkan tenaga kesehatan profesional untuk meningkatkan pengetahuan siswi tentang anemia dan Mengintegrasikan edukasi kesehatan reproduksi dan pencegahan anemia ke dalam kurikulum atau kegiatan ekstrakurikuler, seperti dalam mata pelajaran Pendidikan Jasmani dan Kesehatan atau program UKS (Unit Kesehatan Sekolah)

Kata Kunci : anemia, pengetahuan, perilaku pencegahan.

ABSTRACT

Background: The incidence of anemia among female adolescents in Lampung Province remains considerably high. This condition can affect decreased learning concentration, productivity, and the risk of pregnancy complications in the future.

Objective: This study aims to examine and determine the relationship between knowledge and anemia prevention behavior among female adolescents. This research employed a cross-sectional study design using primary data. The population consisted of female adolescents in grade X at SMAN 01 Kebun Tebu, West Lampung Regency, aged 14-15 years who had experienced menstruation. Sample selection was conducted using total sampling technique, resulting in 85 female student respondents.

Methods: Data analysis was performed using univariate tests to describe respondent characteristics, respondents' knowledge about anemia, and anemia prevention behavior. Bivariate statistical test was conducted using Chi-square test.

Results: The findings showed that the level of knowledge about anemia among female adolescents was at moderate and good levels. Anemia prevention behavior was also at moderate and good levels. Bivariate test results indicated that the knowledge level variable was associated with the anemia prevention behavior variable with *p-value* <0.005.

Conclusion: There is a significant relationship between the knowledge level variable and the prevention behavior level variable, meaning that the higher the knowledge, the higher the level of anemia prevention

behavior.

Recommendation: Conducting health education sessions regularly by inviting professional health workers to increase students' knowledge about anemia and Integrating reproductive health education and anemia prevention into the curriculum or extracurricular activities, such as in Physical and Health Education subjects or the UKS (School Health Unit) program. Health workers should enhance knowledge and provide counseling about anemia and reproductive health for adolescents.

Keywords: Anemia, Knowledge, Prevention behavior

INTRODUCTION

Adolescent reproductive health is a strategic global issue as it is directly related to the quality of future human resources. Adolescents are a vulnerable group to reproductive health problems, such as anemia, unwanted pregnancy, sexually transmitted infections, and lack of access to health information (WHO, 2021).

Data from the 2023 Indonesian Health Survey (SKI) showed that the prevalence of anemia among adolescents in Indonesia (aged 15-24 years) was 15.5%, with a prevalence of 18% among female adolescents and 14.4% among male adolescents. The incidence of anemia among female adolescents is higher, and this condition can have implications for decreased learning concentration, productivity, and the risk of pregnancy complications in the future.

Regionally, the 2022 Lampung Province Health Profile reported that the prevalence of anemia among female adolescents reached 34.5%, higher than the national average, thus indicating a serious problem in adolescent reproductive health in Lampung Province (Lampung Province Health Profile, 2022).

A Ministry of Health survey (2021) found that only 38% of female adolescents consumed iron supplementation tablets (TTD) as recommended, and only 41% knew that anemia is related to menstrual cycles and nutritional status. In Lampung, results from a Health Office survey (2022) showed that adolescent compliance with TTD consumption remained low at <40%, despite the routine TTD distribution program being in operation. This indicates a gap between knowledge and anemia prevention behavior among female adolescents.

Reproductive health knowledge plays an important role in shaping healthy behaviors among adolescents, including in anemia prevention. However, a study conducted by Amalia, N. R., Jamil, M. U., Dewi, H. A., & Hidayatulloh, A. I. (2024) indicated that most female adolescents do not have adequate understanding about iron requirements, menstrual management, and the importance of iron supplementation tablet (TTD) consumption.

Previous research supports the existence of a relationship between reproductive health knowledge and anemia prevention behavior. A study in India by Singh et al. (2020) reported that adolescents with good reproductive knowledge had a 2.7 times higher likelihood of engaging in anemia prevention behavior.

In Indonesia, research by Fitriani et al. (2019) found a significant relationship between the level of nutritional knowledge and compliance with TTD consumption among female high school students. Meanwhile, a meta-analysis by Petry et al. (2019) confirmed that school-based nutrition education interventions are effective in reducing anemia prevalence by 15–20%. However, most studies remain descriptive in nature and rarely explore behavioral factors comprehensively.

Although empirical evidence shows a relationship between knowledge and anemia prevention behavior, there are several limitations in previous research. First, most studies used simple descriptive designs without analyzing relationships in depth using inferential statistical tests. Second, research at the local level, particularly in Lampung Province, remains limited, even though adolescent anemia prevalence is higher than the national average. Third, some instruments used were not standardized by the Indonesian Ministry of Health, thus limiting the external validity of research findings.

This research presents novelty by using standardized instruments, analyzing the relationship between reproductive knowledge and anemia prevention behavior through quantitative analytical methods, and providing a contextual overview in the West Lampung area.

As one of the priority areas for anemia prevention. This research aims to analyze the relationship between knowledge and anemia prevention behavior among female adolescents in grade X at SMAN 01 Kebun Tebu, West Lampung Regency. The novelty of this research lies in the use of standardized instruments and an analytical approach that can strengthen evidence of the relationship between knowledge and behavior. The results of this study are expected to contribute to

the development of school-based intervention strategies, particularly reproductive health education programs and TTD distribution among adolescents.

Practically, this research supports the achievement of the Healthy Indonesia Program with Family Approach (PIS-PK) targets and the Sustainable Development Goals (SDGs) 2030, especially in reducing adolescent anemia prevalence. Thus, this research not only has academic relevance but also provides tangible contributions to public health policies at both local and national levels.

RESEARCH METHODS

This research employed an analytical research design using a cross-sectional approach. The researcher aimed to obtain information regarding the relationship between knowledge and behavior toward anemia prevention among female adolescents in senior high schools in West Lampung Regency.

The population in this study consisted of all female students in grade X at SMAN 01 Kebun Tebu, West Lampung Regency. Meanwhile, the sample in this study was the total population of 85 female students in grade X at SMAN 01 Kebun Tebu, West Lampung Regency.

The research subjects were respondents who met the inclusion criteria. The inclusion criteria were: female students who were willing to become respondents and female students who had experienced menstruation. Meanwhile, the exclusion criteria for this study were female students who were not willing to become respondents and had not experienced menstruation.

Data collection was conducted using primary data with questionnaires as the instrument, consisting of two questionnaires. The first questionnaire was used to collect data on knowledge about anemia. The second questionnaire collected data on behavior regarding anemia prevention. An ordinal scale was used to measure the level of knowledge, and behavior was assessed using a Likert scale. The questionnaire instruments were obtained from the Indonesian Ministry of Health guidelines and previous research.

Data analysis used univariate analysis which was performed by describing each variable, while bivariate analysis involved two variables, with the aim of examining the relationship between variables using the Chi-square test.

RESEARCH RESULTS

Respondent Characteristics Based on Age

Based on the research that has been conducted, the age of respondents can be described as follows:

Table 1
Respondent Characteristics Based on Age, Grade X Female Students

Usia	Frekuensi	Presentase %
14 Tahun	5	5.9
15 Tahun	56	65.9
16 Tahun	24	28.2

Based on the data above, it shows that respondents were between 14-16 years of age, where the majority age was 15 years, namely 56 respondents (65.9%).

Univariate Analysis

Knowledge about Anemia and Anemia Prevention

Based on the research that has been conducted, the level of knowledge among female adolescents about anemia can be described as follows:

Table 2
Level of Knowledge among Female Adolescents about Anemia

Level of Knowledge	Frekuensi	Presentase %
Kurang	0	0
Cukup	27	31.8
Baik	58	68.2

Based on the data above, it can be seen that the behavior of female adolescents regarding anemia prevention at SMAN 01 Kebun Tebu, West Lampung was mostly moderate, namely 39 respondents (45.9%), and good, totaling 35 respondents (41.2%). Meanwhile, poor behavior totaled 11 respondents (12.9%).

Bivariate Analysis

Based on the research that has been conducted, the relationship between knowledge and the behavior of female adolescents regarding anemia prevention at SMAN 01 Kebun Tebu, West Lampung yielded the following results:

Table 4
Relationship between Knowledge and Anemia Prevention Behavior at SMAN 01 Kebun Tebu, West Lampung.

Pengetahuan	Perilaku Pencegahan Anemia				Total		P Value
	Baik		Tidak Baik		f	%	
Baik	71	83.5	6	7.1	77	90.5	0.005
Tidak Baik	2	2.4	6	7.1	8	9.5	

Based on the results of bivariate analysis using the Chi-square test, it was stated that there is a significant relationship between the knowledge variable and the anemia prevention behavior variable among female adolescents at SMAN 01 Kebun Tebu, West Lampung.

DISCUSSION

Based on the results of bivariate analysis using the Chi-square test, it was stated that there is a significant relationship between the knowledge variable and the anemia prevention behavior variable among female adolescents at SMAN 01 Kebun Tebu, West Lampung.

This is in line with research conducted by Situmeang, A. M. N., Apriningsih, A., Makkiyah, F. A., & Wahyuningtyas, W. (2022), which stated that there is a relationship between knowledge and anemia prevention behavior among female adolescents in Sirnagalih village with a p-value of 0.005.

Research by Izdihar, M. S., et al. (2022) also stated that there is a relationship between knowledge and anemia prevention behavior among female adolescents at SMAIT Ukhuwah Banjarmasin. Research in Bangladesh by Rahman, M. J., et al. (2024) mentioned that knowledge contributes to high anemia incidence and low prevention behavior among female adolescents and encourages the government to provide school-based nutrition education, lunch programs with iron supplementation, and improve sanitation facilities.

Research conducted by Nurbai (2019) on female adolescents at SMAN 4 Jambi found that there is a relationship between knowledge and anemia prevention behavior (p-value 0.002).

Research conducted by Gosdin et al. (2020) on 2,948 adolescent children in Ghana found that 24% of adolescents had anemia and recommended the need to provide information/knowledge to increase adolescents' knowledge in anemia prevention efforts.

Research by Sunuwar, D. R., et al. in 2020 conducted a survey in South Asian and Southeast Asian countries including Bangladesh, Cambodia,

India, Maldives, Myanmar, Nepal, and Timor-Leste, resulting in a combined anemia prevalence of 52.5%, with a range from 22.7% in Timor-Leste to 63% in Maldives. Anemia incidence was significantly higher among young women (aged 15–24 years) with primary education backgrounds or no education and without adequate knowledge.

Knowledge related to anemia can indicate ongoing health and nutrition education, and there is potential for adolescents to improve anemia prevention and control behavior. In line with research conducted in rural India, it stated that knowledge about anemia has a significant relationship with anemia prevention practices (Singh et al., 2020).

Research findings conclude that efforts are needed to maintain the level of knowledge and anemia prevention behavior among SMAN female students through continuous socialization or provision of knowledge because every year there will be new female students entering the school and old female students leaving the school.

According to Notoatmodjo (2018), knowledge is the result of knowing and occurs when someone perceives an object. Knowledge is an important factor for someone to take an action or decision. Without knowledge, a person has no basis for making decisions and determining actions to solve pressing problems.

Lawrence Green stated that health behavior, including behavior, is influenced by three factors: predisposing factors, enabling factors, and reinforcing factors (in Notoatmodjo, 2018).

Knowledge is a predisposing factor, which is an internal factor of the individual that helps them to behave better. Good knowledge will help female adolescents have the ability to prevent anemia.

According to Notoatmodjo (2018), a person's behavior is closely related to their level of knowledge. This is in line with research conducted by Pratiwi (2021) in Sukoharjo Regency. The results of Chi-Square test analysis showed there is a relationship between mothers' knowledge and the incidence of suspected anemia among female adolescents in Sukoharjo Regency, indicating a

relationship between mothers' knowledge and the incidence of suspected anemia among female adolescents with a p-value of 0.022.

A moderate to good level of knowledge will influence the selection and provision of good food as an effort to prevent anemia among female adolescents (Shaban et al., 2020). Knowledge of female adolescents and parents that is applied well will become an anemia prevention effort by fulfilling nutritional needs and encouraging adolescents to consume iron tablets (Mulugeta et al., 2024).

CONCLUSION

High knowledge among adolescents about anemia and its prevention efforts will contribute to healthier behavior in preventing anemia incidence among female adolescents, or in other words, the higher the knowledge, the higher the level of anemia prevention behavior.

SUGGESTION

Conducting health education sessions regularly by inviting professional health workers to increase students' knowledge about anemia and Integrating reproductive health education and anemia prevention into the curriculum or extracurricular activities, such as in Physical and Health Education subjects or the UKS (School Health Unit) program.

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