

THE CORRELATION BETWEEN KNOWLEDGE ABOUT ANEMIA AND FAMILY SUPPORT WITH COMPLIANCE IN CONSUMING IRON SUPPLEMENT AMONG FEMALE STUDENTS

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Abstract

Anemia often occurs in teenagers. Anemia will cause decreased endurance and concentration in learning, causing decreased learning achievement. One of the efforts made by the government to lower the percentage of anemia problems is by providing Fe supplementation through school institutions. Family knowledge and support are needed to increase compliance with Fe supplementation consumption. This study determines the correlation between the level of knowledge about anemia and family support with compliance with the consumption of Fe supplementation among female students. This study used quantitative descriptive-analytical research with a cross-sectional. The total sampling involved 129 female students, who distributed questionnaires for data collection and Chi-Square for the statistical test. The results showed a correlation between the level of knowledge about anemia and compliance with consuming Fe supplementation. Besides, there is a correlation between family support and compliance with consuming Fe supplementation. Therefore, this study is expected to provide education to increase compliance in consuming Fe supplementation and educate families.

Keywords: Anemia, Knowledge, Compliance, Family Support.

1. INTRODUCTION

Adolescence, especially for young women, is a period that is vulnerable to nutritional problems, one of which is anemia. Anemia occurs when the amount of hemoglobin in the blood is abnormal, which can cause various health and developmental symptoms. According to WHO 2023, Indonesia has an anemia prevalence of 32.0%, especially in Tangerang, Banten, which has reached 25.18% (1).

Iron deficiency is the main cause of anemia, which is often caused by an unbalanced diet and blood loss during menstruation. Adolescent girls experience significant monthly iron loss, so the need for iron increases. Handling anemia by consuming iron supplements is one of the efforts recommended by the government (2). However, the level of compliance of adolescent girls in consuming iron supplements is still low (98.6%), indicated by consumption of less than 52 tablets in a year (3).

The level of knowledge about anemia and family support influences compliance in taking iron supplements. Good knowledge about anemia can increase adolescents' awareness of the importance of taking iron supplements, while family support can motivate adolescents to comply with health recommendations. Previous studies showed that the level of knowledge and family support on compliance in taking medication have a significant correlation (4). Therefore, it is crucial to research the correlation between the level of knowledge about anemia and family support with compliance in taking iron supplements in female students.

2. METHODOLOGY

This study used a descriptive analytical design with a cross-sectional approach. It involved 129 female students at a vocational school in Tangerang, Banten, as respondents obtained from

total sampling techniques. This study was conducted from March to July 2024 by using a questionnaire as an instrument, which includes some question items: compliance, knowledge, and family support. The trial of the research instrument was conducted at SMKN 9 Tangerang City with 30 female students as respondents. The validity test results obtained an r -value of 0.365-0.717 (> 0.361) so that all question items were valid. Meanwhile, the reliability test results obtained Cronbach's alpha of 0.808-0.872, indicating that the three question items were reliable. Descriptive statistics were used to identify the participants' characteristics. A bivariate chi-square test was used to measure the correlation between the level of knowledge and family support with compliance with iron supplement intake.

3. RESULTS

Table 1. Respondent characteristics by age

Age	Frequency (n)	Percentage (%)
16 years old	119	92.2
17 years old	10	7.8
Total	129	100.0

Frequency distribution based on the age of female students at the vocational school at Tangerang, Banten, obtained data from 129 respondents, 119 (92.2%) of whom were 16 years old and 10 (7.8%) 17 years old. The results of this study are the same as those of a previous study entitled "Knowledge and Attitudes Related to Compliance in Consuming Iron Supplement Tablets in Adolescent Girls," in which most respondents were aged 15-16 years, as much as 64.0% (5).

Age is the length of time lived calculated from birth. Adolescence has an age limit of 11-20 years, divided into several stages, namely early adolescence, which is 11-13 years old, middle adolescence, which is 14-16 years old, and late adolescence, which is 17-20 years old (6).

Based on the analysis results, most respondents were 16 years old because the average age of 10th-grade teenagers is 16, according to government regulations. In contrast, the initial age of elementary school is 7, so grade 10 is 16.

Table 2. Compliance with consuming Fe supplementation

Compliance	Frequency (n)	Percentage (%)
obedient	53	41.1
not obey	76	58.9
Total	129	100.0

Distribution of frequency of compliance in consuming iron supplements by female students at a vocational school in Tangerang, Banten, obtained data from 129 respondents. As many as 76 (58.9%) respondents were not compliant with consuming iron supplements, while the rest of the respondents, 53 (41.1%) were compliant with consuming iron supplements.

The results of this study support the results of a study entitled "Associations Between Knowledge and Family Support with Adherence to Consumption Iron Supplements in Adolescent Females," in which most respondents were not compliant with consuming iron supplement tablets (70.2%) (7). However, this study differs from the previous one entitled "The correlation between Family Support and Compliance in Consuming Blood Supplements in Adolescent Girls at SMAIT Ukhawah Banjarmasin." The study results showed that the respondents' compliance in consuming blood supplements was 62% (indicating in the compliant category) (8).

Compliance is an act of obedience to health service providers such as punctuality, dosage and frequency of drug consumption, therefore drug consumption compliance can also be interpreted as the extent to which a person is compliant with the prescribed dose (9).

Based on the results of the analysis, most of the respondents, female students at Tangerang, Banten, are categorized as not compliant in consuming iron supplements; this is due to the lack of interest of respondents to consume iron supplements regularly once a week because of lazy, forget, feel well. Meanwhile, when they are menstruating, most respondents do not consume iron supplements every day during menstruation due to following the prescription. It is still one of the new government programs, so they are not used to consuming iron supplements.

Table 3. *Frequency Distribution by Knowledge Level about Anemia*

Knowledge	Frequency (n)	Percentage (%)
good	35	27.1
moderate	68	52.7
mild	26	20.2
Total	129	100.0

The frequency distribution of knowledge level about anemia of female students at vocational school Tangerang, Banten, obtained data from 129 respondents. As many as 35 (27.1%) respondents had a good category of knowledge, and as many as 68 (52.7%) respondents knew. The results of this study support the results of a study entitled "Level of Knowledge About Anemia With Compliance in Taking Fe Tablets in Adolescent Girls," in which most respondents had sufficient knowledge (51.0%) (10).

Knowledge is important in the formation of behavior. Behavior that is based on knowledge will be more lasting than behavior that is not based on knowledge. The process of maintaining knowledge is called learning, learning is the result of experience, therefore knowledge can change the behavior of individuals, groups and even a person's life system (11).

Based on the analysis of this study, most of the respondents, female students at vocational school in Tangerang, Banten, are in the sufficient category in terms of having knowledge about anemia. Many respondents lack knowledge on the level of Hb (hemoglobin), or they do not know when a person is categorized as anemic, do not know that the iron content is higher in animal protein than vegetable protein and the knowledge obtained by female students is mainly obtained through social media besides that there is also no specific education about anemia from the health center or school.

Table 4. *Frequency distribution by family support*

Family support	Frequency (n)	Percentage (%)
Good	56	43.4
Less	73	56.6
Total	129	100.0

The frequency distribution of family support for female students at the vocational school at Tangerang obtained data from 129 respondents, as many as 73 (56.6%) respondents received low family support and as many as 56 (43.4%) respondents received good family support. This study supports the results of a study entitled "Knowledge, Family and Peer Support Related to Consumption of Iron Supplements in Adolescent Girls" that some respondents had low family support as much as 69.8% (12).

Family support is a source of support that can be the key to patient recovery. Although family members do not always provide positive support, the family is an important part of the recovery process (13). Family support is valuable and will make someone feel comfortable, especially when facing light and heavy problems. At this time, someone will need family support, and when they get it, they will feel appreciated, cared for, and loved (14).

According to the research analysis, most female students at the vocational school at Tangerang received less family support. When given iron supplements from the school, only a few were reminded by their families to take medicine, families did not provide money to buy iron supplements, and many female students whose parents also worked lacked family support.

Table 5. *Correlation between level of knowledge about anemia with compliance in consuming an iron supplement*

Knowledge	Compliance				Total		P value
	obedient		Not obey				
	N	%	N	%	N	%	
good	22	62.9	13	37.1	35	100	0.001
moderate	30	44.1	38	55.9	68	100	
mild	1	3.8	25	96.2	26	100	
Total	53	41.1	76	58.9	129	100	

Form table above, it showed that 35 respondents were at a good level of knowledge about anemia and 22 (62.9%) respondents were compliant with consuming iron supplements. Of the 68 respondents with sufficient knowledge, 30 (44.1%) were compliant in consuming iron supplements. Of the 26 respondents with a poor level of knowledge, 1 (3.8%) respondents were compliant in consuming iron supplements. The statistical test results using Chi-Square obtained a p-value of 0.001 ($p < 0.05$), so H_0 was rejected, meaning there was a correlation between the level of knowledge and compliance in consuming iron supplements in female students at vocational school in Tangerang.

Compliance is influenced by several factors, namely predisposing factors, supporting factors, and reinforcing factors. One of the three factors, namely the predisposing factor, includes knowledge that can be the basis and motivation to increase compliance in consuming medication (15). One of the government's efforts to improve compliance with the consumption of iron supplements in adolescents is by increasing knowledge about anemia from various sources (16). Research results entitled "Intervention with Fe Supplementations and IEC About Anemia Against Hemoglobin Levels in Female Teenagers in State Senior High School" show that the most dominant factor in increasing hemoglobin levels is young women's knowledge in consuming iron supplements (17).

According to the research analysis, the knowledge possessed by respondents is related to compliance with the consumption of iron supplements, this is because respondents with a sufficient level of knowledge do not know much about what anemia is, resulting in a lack of interest in consuming iron supplements. When someone has good knowledge about anemia and knows what benefits and impacts they get, they tend to be obedient to consuming iron supplements because they will feel the benefits obtained from the drug.

Table 6. Correlation between family support and compliance with iron supplement consumption

Family Support	Compliance				Total		OR (95 %CL)	P Value
	Obedient		Not Obey					
	N	%	N	%	N	%		
good	47	83.9	9	16.1	56	100	58.315	0.001
less	6	8.2	67	91.8	73	100		
Total	53	41.1	76	58.9	129	100		

Based on the cross table above, it was found that there were 9 (16.1%) respondents who had good family support but were not obedient in taking iron supplements because, in fact, their families often reminded them to take iron supplements, but the respondents' motivation was lacking, they felt lazy, felt healthy and had no complaints related to their health. There were 6 (8.2%) respondents who had less family support but were obedient in taking iron supplements because the respondents had their motivation to be obedient because they already knew the benefits they would get and prevent the impact of anemia that could occur in the short or long term.

From the correlation between Family Support and Compliance with the Consumption of Iron Supplements of female students at vocational school Tangerang, 56 respondents in the good family were at support category, 47 (83.9%) respondents were compliant with blood supplement tablets, and 73 respondents with low family support category, 6 (8.2%) respondents were compliant with iron supplement consumption.

The results of statistical tests obtained a p-value of 0.001 ($p < 0.05$), indicating that H_0 is rejected and there was a correlation between family support and compliance with iron supplement consumption in female students at vocational school in Tangerang, Banten. Based on the analysis, an OR (Odd Ratio) value was obtained at 58.315, meaning that respondents who get good family support had a 58 times greater chance of being compliant with iron supplement consumption than those who get low family support.

This study develops the previous study entitled "The Relationship Between Family Support and Compliance in Taking Iron Supplement Tablets (TTD) Among Female Adolescents at State Senior High School 1 Tanta" with a p-value of 0.000, which indicates that there is a significant correlation between family support for the consumption of iron supplement tablets (TTD) and compliance among female adolescents.

Compliance is also influenced by several factors, namely predisposition, supporting factors and reinforcing factors of the three factors, one of which is the reinforcing factor, namely the factor

that arises when a behavior exists such as family support (15). Compliance of adolescent girls in consuming iron tablets can be increased by utilizing the social capital that exists in adolescent girls. Support from the family shows promising compliance in consuming iron tablets, which is ultimately expected to reduce anemia in adolescent girls (18). The family has an important role in maintaining family members' health, especially during adolescence, as it is a period of rapid physical growth(19). Family can motivate by providing support that can create feelings of security and comfort so that someone will feel that they are getting attention and care from their family (20).

According to the research analysis, family support is related to compliance with the consumption of iron supplements, this is because respondents with less family support tend not to comply with the consumption of iron supplements due to the lack of family support in terms of reminding to consume iron supplement, not providing iron supplement so that respondents tend not to comply with the consumption of iron supplement. High family support for adolescents can increase compliance in consuming iron supplement because the good care and support obtained from the family is expected to improve health status.

4. CONCLUSIONS

This study concludes that there is a correlation between the level of knowledge about anemia and compliance in consuming an iron supplements of female students at vocational school in Tangerang, Banten, with a p-value of 0.001. There is a correlation between family support and compliance in consuming an iron supplement of female students at vocational school in Tangerang, Banten,(as shown by a p-value of 0.001).

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