Relationship between Health Belief Model regarding the Behavior of Consuming Fe Tablets and Anemia at SMA Muhammadiyah 3 Jember

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Abstract

Introduction: Adolescent girls are prone to anemia and have a higher risk than adolescent boys due to menstruation, strict diets, nutritional deficiencies, and do not consume iron tablets for various reasons. This study aims to determine the relationship between HBM regarding the behaviour of consuming fe tablets and anemia at Muhammadiyah 3 High School in Jember.

Methods: A correlational study design with a cross-sectional approach was used on 58 adolescent girls using a total sampling technique. Analysis was performed using the Chi-square test.

Results: Perceived vulnerability (0.000), perceived severity (0.000), perceived benefits (0.000), perceived barriers (0.000), and cues to act (0.010) < 0.05, so H1 was accepted and H0 was rejected, indicating that there is a relationship between HBM components and iron tablet consumption behavior and anemia at SMA Muhammadiyah 3 Jember.

Conclusion: All HBM components, such as perceived vulnerability, severity, benefits, barriers, and cues to act, are related to iron tablet consumption behavior and anemia. Promoting information about the importance of iron tablets and the dangers of anemia should be done daily by involving teachers, health workers, and families in order to increase iron tablet consumption behavior and make it a habit among female students at Muhammadiyah 3 High School in Jember.

Keywords: HBM; Fe Tablets; Anemia

Introduction

The adolescent girls are prone to anemia and have a higher risk than adolescent boys. This is because adolescent girls menstruate every month, have a strict diet, irregular eating patterns, and are in a growth phase, so they need additional intake, especially iron. According to the WHO, anemia is a condition in which hemoglobin levels are lower than normal (<12 g/dL). The symptoms that commonly arise are known

as the 5Ls (Lemah, Letih, Lesuh, Lelah, Lunglai, or weak, tired, sluggish, exhausted, and listless). Other symptoms include frequent drowsiness, dizziness, and difficulty concentrating. Iron tablets obtained from school are often not taken because they are considered unnecessary, unimportant, unpleasant in taste and smell, and have other side effects that make adolescents reluctant to take them, thus increasing their risk of anemia.

Nutritional deficiencies, unhealthy snacks or meals, and strict diets to achieve an ideal body by reducing food consumption often cause adolescent girls to develop anemia. This is partly influenced by parents who lack knowledge about adolescent nutrition.

Anemia causes adolescents to feel weak, less sociable, unable to focus on their studies, and a decline in academic performance. Additionally, anemia has serious consequences, as adolescent girls are future mothers who will become pregnant and give birth, putting them at greater risk of maternal mortality during childbirth, premature birth, and low birth weight (LBW).

Based on preliminary studies, it was found that teachers at Muhammadiyah 3 Jember High School gave iron tablets to menstruating teenagers every day. This is important because adolescents are the future investment of the nation. However, many female students refuse to take iron tablets because they cause dizziness and nausea. Therefore, health beliefs regarding the perception of iron tablet consumption are viewed in the context of the health belief model, which attempts to explain and predict health behavior by focusing on individual beliefs.

An effective way to overcome anemia is by consuming iron tablets, which, if taken regularly once a week and every day during menstruation, will maintain normal Hb levels and may even increase Hb levels. The Health Belief Model is used to test beliefs related to the perception of iron tablet consumption. Thus, researchers are interested in examining the relationship between the Health Belief Model and iron tablet consumption behavior in relation to anemia.

Method

A cross-sectional correlational approach was used in this study. During February 2024, this study was conducted on all twelfth-grade female students at SMA

Muhammadiyah 3 Jember, including up to 58 students. For this study, primary data were used directly by filling out the instrument sheet. The data was analyzed with a chi-square test using the SPSS version 26 program, and has been granted ethical approval by KEPK

Results

a. Univariate Analysis

Table 1. Frequency Distribution of Perception of Vulnerability to Anemia at SMA Muhammadiyah 3 Jember, February 2024

Perception of Vulnerability	Frequency	Percentage
Positive	43	74
Negative	15	26
Total	58	100

Source: Primary Data, 2024

Table 1 shows that most (74%) respondents had a positive perception of vulnerability. The rest had a negative perception of vulnerability (26%). Individuals feel that they are potentially susceptible to disease.

Table 2. Frequency Distribution of Perception of the Severity of Anemia at SMA Muhammadiyah 3 Jember, February 2024

Perception of Severity	Frequency	Percentage
Positive	24	41
Negative	34	59
Total	58	100

Source: Primary Data, 2024

Table 2 shows that most (59%) respondents had a negative perception of severity. The rest had a positive perception of severity (41%).

Table 3. Frequency Distribution of Perceptions of the Benefits of Iron Tablet Consumption at SMA Muhammadiyah 3 Jember, February 2024

Perception of Benefits	Frequency	Percentage
Positive	51	88
Negative	7	12

Source: Primary Data, 2024

Table 3 shows that most (88%) respondents perceived positive benefits. The remaining small number of respondents perceived negative benefits (12%).

Table 4. Frequency Distribution of Perceptions of Barriers to Iron Tablet Consumption at SMA Muhammadiyah 3 Jember, February 2024

Perception of Barriers	Frequency	Percentage
Positive	23	40
Negative	35	60
Total	**58**	**100**

Source: Primary Data, 2024

Table 4 shows that most (60%) respondents perceived negative barriers, while a small number of respondents perceived positive barriers (40%).

Table 5. Frequency Distribution of Signals to Take Iron Tablets at SMA Muhammadiyah 3 Jember, February 2024

Signals to take	Frequency	Percentage
Positive	42	72
Negative	16	28
Total	**58**	**100**

Source: Primary Data, 2024

Table 5 shows that most (72%) respondents indicated a positive intention to act. The remaining small number of respondents indicated a negative intention to act (28%).

Table 6. Frequency Distribution of Iron Tablet Consumption Behavior at SMA Muhammadiyah 3 Jember, February 2024

Iron Tablet Consumption Behavior	Frequency	Percentage
Good	35	60
Not good	23	40
Total	58	100

Source: Primary Data, 2024

Table 6 shows that most (60%) respondents had positive iron tablet consumption behavior. The rest of the respondents had negative iron tablet consumption behavior (40%).

b. Bivariate Analysis

Table 7. Relationship between Perceptions of Vulnerability, Severity, Benefits, Barriers, and Cues to Action with Iron Tablet Consumption Behavior at SMA Muhammadiyah 3 Jember, February 2024

| No | Preception | Iron Tablet Consumption Behavior | | | | | | P Value |
| | | Good | | Not good | | Total | | |
		freq	%	freq	%	freq	%	
1	**Vulnerability**							
	Positive	19	44,2	24	55,8	43	100	0,000
	Negative	4	26,7	11	73,3	15	100	
2	**Severity**							
	Positive	10	41,7	14	58,3	24	100	0,000
	Negative	13	38,2	21	61,8	34	100	
3	**Benefits**							
	Positive	21	41,2	30	58,8	51	100	0,000
	Negative	2	28,6	5	71,4	7	100	
4	**Barries**							
	Positive	10	43,5	13	56,5	23	100	0,000
	Negative	13	37,1	22	62,9	35	100	
5	**Signals to Take**							
	Positive	18	42,9	24	57,1	42	100	0,010
	Negative	5	31,3	11	68,8	16	100	

Source: Primary Data, 2024

Table 7 shows that three of the five HBM components, namely perceived vulnerability, perceived benefits, and cues to action, had positive results. Based on the results of data analysis conducted using SPSS with a Chi-square test, p-values of 0.000 and 0.010 ($\alpha<0.05$) were obtained.

Discussion

Perceived vulnerability is based on individuals' beliefs about the likelihood of contracting a disease, referring to risk factors for anemia, namely being female, age, and lifestyle. Perceived vulnerability is based on individuals' beliefs about the likelihood of contracting a disease, referring to risk factors for anemia, namely being female, age, and lifestyle.

The results of this study indicate that the high level of positive perception is due to respondents having a high risk of anemia and an unhealthy lifestyle, making them susceptible to anemia and prompting them to take preventive measures. Individuals with

a negative perception feel that they have a low risk of anemia and therefore do not take iron tablets.

A person's belief about the effects of anemia. These effects can be felt from the perspective of the difficulties that cause anemia. Health problems are perceived differently by each person; some consider them a disease, while others do not.

The results of this study indicate that respondents have negative perceptions because they feel that anemia does not require attention to be prevented, and they do not yet understand the future impact on their lives as mothers if they experience anemia. Individuals who have extensive knowledge about anemia prevention and the benefits of taking iron tablets have positive perceptions in responding to the severity of anemia by taking iron tablets.

In addition, most respondents consider iron tablets to be a useful preventive measure for anemia because they have adopted consumption behaviors that have a positive impact on their lifestyle when taking iron tablets, and a healthy lifestyle can increase their Hb levels. Conversely, if someone takes iron tablets but has an unhealthy lifestyle, they will not feel the benefits of what they consume.

The barriers faced by respondents were dominated by constraints such as cost, social, environmental, and others. The results of this study indicate that respondents are reluctant to consume iron tablets due to the side effects they cause. In addition, iron absorption in the body is hampered by unhealthy lifestyles. Individuals should prioritize the benefits gained over the minor barriers that exist. The intention to act requires the strength and need to take action to consume iron tablets. This is achieved by increasing awareness of information obtained from various media and environmental influences.

Other factors related to the research results show that a person's intention to act is related to the motivation to act, so that if adolescent girls are more active in obtaining information related to anemia prevention, their intention to act in this regard will be greater. Respondents took action to consume iron tablets due to the influence of a supportive environment, so adolescent girls who perceive vulnerability, severity, high benefits, and low barriers will immediately take action to prevent anemia by consuming iron tablets.

Behavior is influenced by biological and sociopsychological factors, attitudes and tendencies to react to a given situation, emotions that influence everything a person does, and cognitive components related to a person's beliefs.

The results show that respondents have obtained knowledge about iron tablets from health centers and schools. Respondents also receive iron tablets every day from school, so they gain knowledge and experience that can influence them. Good experiences will lead to positive perceptions, but if the experience is not good, they will tend to forget.

The statistical test results show that there is a relationship between the health belief model and iron tablet consumption behavior in relation to anemia at SMA Muhammadiyah 3 Jember.

Perceived vulnerability refers to adolescents' feeling vulnerable to anemia, which will lead them to consume iron tablets. The perceived severity of anemia can influence adolescents' behavior in taking action to consume iron tablets, depending on the adolescents' own perceptions of the severity and impact of anemia. Perceived benefits arise when adolescents feel that they are at risk and that consuming iron tablets is beneficial.

Perceived barriers arise when adolescents experience barriers to consuming iron tablets, such as side effects. Cues to act can be obtained by increasing awareness of the effects of anemia, obtaining information from various media related to anemia and the benefits of consuming iron tablets, and support from family, school, peers, and health workers.

Conclusion

Based on the results of the study, it can be concluded that the perception of vulnerability to anemia, perception of benefits, cues to action, and iron tablet consumption behavior of female students at Muhammadiyah 3 High School in Jember tend to have positive perceptions. However, the perception of the severity of anemia and the perception of barriers to iron tablet consumption among female students at Muhammadiyah 3 High School in Jember tend to have negative perceptions. All components of the health belief model regarding iron tablet consumption behavior in

relation to anemia among female students at Muhammadiyah 3 High School in Jember are interrelated.

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