

## Changes in Attitudes Toward Anemia Prevention Through Counseling Based on Health Belief Model Theory in Early Adolescent Children at Junior high school Nurul Islam Jember

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### ABSTRACT

**Background:** Based on the results of the anemia control program by the Jember District Health Office in 2018, anemia among adolescents was 41.6%, data from the preliminary study results, most students considered that adolescents were not at risk of anemia and considered that anemia did not affect their academic achievement, how the easiest way to prevent anemia is by taking blood-boosting tablets that have been programmed by the government. One such phenomenon is a negative attitude towards anemia prevention. The purpose of this study was to analyze changes in attitudes towards preventing anemia through counseling based on the HBM (Health Belief Model) theory for adolescents.

**Methods:** The research design used a pre-experimental design with a one-group pretest-posttest study design. The number of respondents in this study were 152 female students who were taken based on inclusion and exclusion criteria by means of stratified random sampling from class VII-IX Junior high school Nurul Islam Jember.

**Results:** With the Mc Nemar test, the results obtained  $\alpha$  value  $<0.05$ , namely 0.000, it can be concluded that there is a change in attitude before and after being given counseling about preventing anemia in early adolescents at Junior high school Nurul Islam Jember.

**Conclusion:** Health education about anemia prevention with interesting material and media as well as the HBM (Health Belief Model) method is proven to be able to improve adolescent attitudes because it emphasizes one's belief that young women are very at risk of developing anemia and has an impact on decreased school achievement and disrupted growth. This treatment needs to be done repeatedly in order to give a deep impression.

**Keywords :** *Anemia; Attitudes; Health Belief Model*

### Introduction

Data from the 2018 Riskesdas showed the prevalence of anemia in women aged 15-24 years was 54.6%, women aged 25-34 years was 33.7%, women aged 35-44 years was 33.6% and women aged 45-54 years was 24%. Based on gender, anemia in males was 18.4% and females were 23.9%. Based on place of residence, anemia patients lived in urban areas by 20.6% and 22.8% in rural areas (Riskesdas, 2018).

In a preliminary study conducted by distributing questionnaires in September 2022, as many as 6 out of 10 junior high school Nurul Islam Jember students considered that anemia was not a serious health problem and most adolescents did not pay attention to their daily nutritional intake.

The government has even issued minister of health regulation No.88 of 2014 concerning Blood Addition Tablet Standards for Women of Childbearing Age and Pregnant Women, this regulation was made to protect women of childbearing age and pregnant women from malnutrition and prevent the occurrence of iron nutritional anemia, so it is necessary to consume blood supplement tablets (Permenkes, 2014). Based on the results of preliminary studies related to the government program on the standard of blood supplement tablets for women of childbearing age and pregnant women, during the last 5 years at the location until September 2022 did not run as it should.

Based on the results of the anemia prevention program by the Jember District Health Office in 2018, anemia among adolescents was 41.6%. The data indicates that anemia is one of the public health problems, especially in Jember Regency and generally in Indonesia. So far, the provision of blood supplement tablets is still mostly focused on pregnant women, even though adolescent girls need to be given more attention because it will affect growth and development and school achievement in the short term and will later become prospective mothers so that they can prevent anemia as early as possible (Fikawati, Syafiq & Veratamala, 2017).

The impact of anemia on adolescents can decrease learning productivity or academic ability due to lack of concentration in learning, can interfere with the growth of height and weight that is not perfect, besides that the immune system will decrease so that it is susceptible to disease (Andriani & Wirjatmadi, 2012). The causes of anemia in adolescents are due to lack of adequate nutritional intake, lack of physical activity and education that has not been maximized. One of the government's efforts to prevent anemia is to intervene in providing TTD to adolescents at the school level, but data from Riskesdas in 2018 shows that 26.1% of adolescent girls aged 10-19 years do not feel the need to consume TTD regularly. This was also the case in East Java Province, where 26.8% of adolescent girls aged 10-19 years did not feel the need to consume TTD regularly (Riskesdas, 2018).

According to Maulana (2013), one method of providing health education is based on the theory of The Health Belief Model. This theoretical model is often used to look at health prevention attitudes and behaviors such as early disease detection behavior and see behavioral responses to treatment of patients with acute and chronic diseases. Health education based on The Health Belief Model is a conceptual collection that aims to determine the changing factors (demographics and knowledge)

and perceptions of individuals whether they accept or not about their health which is assessed through individuals' desire to avoid illness and their belief that there are efforts to avoid the disease. This method is applied to encourage clients to take better health actions (Suirvi, Herlina, & Dewi, 2022).

HBM is related to beliefs in health that are designed to help people change their health attitudes and behaviors towards a positive direction. This method emphasizes the role of perceptions of vulnerability, severity, benefits and barriers to a disease that can threaten their health, so that people need to be given knowledge ranging from the concept of disease to how to prevent and treat it (Riauwi & Lestari, 2014).

This is in accordance with the study where after the treatment the attitude value obtained increased as well as the practice value also increased. It is known from the level of knowledge, attitudes and practices of mothers after receiving health counseling is higher than before receiving health counseling and the level of knowledge, attitudes and practices of mothers who receive health counseling is higher than those who do not receive health counseling (Kusumawardani, 2013).

In this study, the application of the HBM concept is the attitude of preventing anemia in adolescents. From the description above, the researcher is interested in conducting research on changes in attitudes towards preventing anemia in early adolescents with counseling based on HBM theory.

## Method

This type of research is quantitative research with a Pre-experimental research design, with the research design used One Group Pretest-Posttest Design. This study conducted one measurement in advance (pretest) before treatment (treatment) and after that another measurement (posttest). The population in this study were all female students of junior high school Nurul Islam Jember, totaling 390 students. Determination of the sample using the slovin formula with a sampling error that can still be tolerated 5% and the calculation results are 152 samples. The sampling technique used is stratified random sampling.

he data collection tool is a questionnaire with a Likert scale containing 10 statements developed from 5 dimensions of HBM. Data collection methods are primary data and secondary data. Data analysis with the help of using the SPSS statistical computer program with Nonparametric test analysis with 2 paired samples and the Mc Nemar method, with a significance level of  $\alpha = 0.05$ . So, if the probability value of  $\chi^2 \geq \alpha \rightarrow H_0$  is accepted and if  $\chi^2 \leq \alpha \rightarrow H_0$  is rejected.

## Results

### Univariate Analysis

Tabel 1. Frequency distribution of respondents based on age at junior high school Nurul Islam Jember

Age	Frequency	Percentage %
13 years	46	30,26
14 years	53	34,86
15 years	53	34,86
Total	152	100

Source : Primary Data for 2023

Based on the age table, almost half of the respondents, 53 or 34.86%, were 14 years old and 15 years old respectively, and a small proportion were 13 years old, 46 or 30.26%.

Tabel 2. Frequency distribution of respondents based on information exposure about anemia prevention in early adolescents at junior high school Nurul Islam Jember

Exposure information	Frequency	Percentage %
Never	137	90,24
Ever	15	9,86
Total	152	100

Source : Primary Data for 2023

Based on table 2, almost all respondents have never been exposed to information as many as 137 respondents or 90.24% and only 15 respondents or 9.86% have been exposed to information.

Table 3. Frequency distribution of respondents based on the source of information obtained about the prevention of anaemia in early adolescents at Nurul Islam Jember junior high school.

Source of information	Frequency	Percentage %
Parents	1	6,6
Teacher	3	20
Health workers	6	40
Friends	3	20
Media	2	13,4
Total	15	100

Source : Primary Data for 2023

Based on table 3, almost half of the respondents received information sources from health workers, namely 6 or 40%, followed by getting information sources from teachers and friends as many as respondents or 20% each and the remaining 1 respondent or 6.6% received information sources through parents.

### Bivariate Analysis

Table 4. Frequency distribution of respondents' attitudes towards anemia prevention before being given counseling based on Health Belief Model theory in early adolescents at Nurul Islamic junior high school Islam Jember

Attitude before given conseling	Frequency	Percentage %
Positive	38	25
Negative	114	75
Total	152	100

Source : Primary Data for 2023

Based on the results of the study, the attitudes of respondents before being given counseling on the prevention of anemia mostly had a negative attitude, namely 114 or 75%. The rest had a positive attitude, namely 38 or 25%.

Table 5. Frequency distribution of respondents' attitudes towards anemia prevention after being given counseling based on Health Belief Model theory in early adolescents at Nurul Islam junior high school Jember.

Attitude after given extension	Frequency	Percentage %
Positive	140	92
Negative	12	8
Total	152	100

Source : primary data for 2023

Based on the results of research on the attitude of respondents after being given counseling on the prevention of anemia, most of them have almost the entire attitude, namely 140 or 92% of respondents have a positive attitude. The remaining 12 or 8% of respondents had a negative attitude. before being given counseling are 32.4% (22 people). After being given counseling, the number of respondents who had a good attitude increased to 85.3% (58 people).

Table 6. Comparison of changes in attitudes towards anemia prevention before and after counseling based on Health Belief Model theory in early adolescents at Nurul Islam Jember junior high school.

Attitude	Before counseling		After Counseling		Test Results
	F	(%)	F	(%)	
Positive	38	25	140	92	$\alpha$ 0,000
Negative	114	75	12	8	
Total	152	100	152	100	

Source : Primary Data for 2023

Based on the results of the study, the attitude of respondents before being given counselling increased from a positive attitude of 25% to 92% after being given counselling. In the negative attitude, there was a decrease from 75% to 8% after being given counselling on anaemia prevention. With data analysis using a comparative statistical test of two paired samples using Mc Nemar, an asymptotic significance value of 0.000 or p value of 0.000 ( $<0.05$ ) was obtained. So it can be concluded that  $H_0$  is rejected where there is a change in the attitude of Nurul Islam Jember Junior High School students before and after being given counselling on anaemia prevention based on the Health Belief Model theory.

## Discussion

The results of Frequency distribution of respondents' attitudes towards anemia prevention before being given counseling based on Health Belief Model theory in early adolescents at Nurul Islamic junior high school Islam Jember are in accordance with research conducted by Marini (2017) which states that respondents who have a negative attitude in the pre-test are 47.3% and have a positive attitude as much as 52% towards adolescent attitudes about reproductive health at Senior High School 1 Cisarua in 2017 (Agustin & Ningtyas, 2017).

In addition, the results of Meidayati's research (2017) stated that the attitude of adolescent girls in preventing anemia before being given health counseling, most attitudes were in the good category as many as 19 respondents (50%), while a small proportion of the attitude of adolescent girls in preventing anemia before being given health counseling in the very good category as many as 9 respondents (23.7%), and the category was not good as many as 10 respondents (26.3%) (Meidayati, 2017).

Attitude is a reaction or response that is still closed from a person to a stimulus or object. The manifestation of attitude cannot be seen directly but can only be interpreted in advance from closed behavior (Rajaratenam, Martini & Lipoeto, 2014). According to Kulsum & Jauhar (2016), attitudes can be formed or changed through four things, namely 1) Adoption, are events and events that occur repeatedly and continuously, over time gradually absorbed into the individual and affect the formation of attitudes. 2) Differentiation, namely with the development of intelligence, increased experience, in line with increasing age, there are things that were previously considered similar, now seen separately apart from their kind. From this object, an attitude can form by itself. 3) Integration, is the formation of attitudes here occurs gradually, starting with various experiences related to one

thing which eventually forms an attitude about it. 4) Trauma, is a sudden, shocking experience, which leaves a deep impression on the soul of the person concerned (Kulsum & Jauhar, 2016). The researcher believes that most adolescents at junior high school Nurul Islam Jember before being given counseling, have a negative attitude towards anemia prevention, this is because adolescent girls have not received much information about anemia prevention. This condition will affect their knowledge and experience. In addition to the little information obtained, the person who provides the information is considered less attractive to adolescents so that it does not make an impression.

The results of Frequency distribution of respondents' attitudes towards anemia prevention after being given counseling based on Health Belief Model theory in early adolescents at Nurul Islam junior high school Jember are in accordance with attitude research by Feras (2020) which states that respondents after being given counseling on the prevention of anemia mostly have an almost overall attitude, namely as many as 140 or 92% of respondents have a positive attitude. This is in accordance with research related to attitude, respondents who have a good attitude towards SADARI. According to Azwar (2012) attitudes do not stand alone, but always have a certain relationship to an object. In other words, attitudes are formed, learned, or changed always with respect to a particular object that can be clearly formulated (Azwar, 2011).

Education with the Health Belief Model approach has a positive impact on increasing perceived susceptibility, perceived benefits, perceived severity, perceived benefits, perceived barriers and cues to action. This theory emphasizes individual attitudes and beliefs in behavior, especially health behavior. Individual beliefs and perceptions of something that fosters action plans in individuals, this behavioral theory emphasizes more on aspects of individual beliefs and perceptions (Irwan, 2017). This model is an approach to changing a person's perception which includes perceived susceptibility, perceived severity, perceived benefit, perceived barrier, and cues to action, so that the individual will change their health attitudes and behavior (Chitra, 2016).

This is in line with the research of Ghaderi et al., 2017 which states that health education with the application of the Health Belief Model model is able to change attitudes and behaviors to prevent iron deficiency anemia and confirms that educational programs based on Health Belief Model theory have been effective in adopting attitudes and behaviors to prevent iron deficiency anemia (Ghaderi et al., 2017).

Researchers argue that almost all adolescents at junior high school Nurul Islam Jember after being given counseling have a positive attitude towards anemia prevention, this is because adolescent girls

have received information about anemia prevention based on Health Belief Model theory. Although only once getting exposure to information but can change the attitude of adolescents to be positive. Health counseling with the Health Belief Model theory method emphasizes an approach with a person's beliefs and perceptions of a stimulation that fosters an action plan from a person.

The results of comparison of changes in attitudes towards anemia prevention before and after counseling based on Health Belief Model theory in early adolescents at Nurul Islam Jember junior high school are in line with research conducted by Marini (2017) by testing the research hypothesis using paired t-test to determine the effect between health counselling and adolescent attitudes about reproductive health. The results obtained a two-tailed asymptotic significance value or p value of 0.000 ( $p < 0.05$ ) so that  $H_0$  is rejected, it can be concluded that there is a significant influence between the two variables (Marini, 2017). In addition, it is reinforced by Ranthi's research (2017) which shows that the statistical test results obtained a P-value = 0.003, compared to the alpha ( $\alpha$ ) coefficient value = 0.05, the P-value  $< \alpha$ . It can be concluded that  $H_a$  is accepted so that there is an effect of health counseling on anaemia prevention on attitudes in preventing anaemia in adolescent girls at senior high school Negeri 1 Yogyakarta (Meidayati, 2017). The researcher argues that based on the results of respondents before being given counseling most of them have a negative attitude, this can occur because they have not been exposed to information repeatedly or never at all about anaemia prevention so that adolescents have little experience and knowledge about anaemia prevention which has an impact on the prevention of anaemia.

After being given counselling on anaemia prevention, almost all respondents had a positive attitude, this could occur due to exposure to information in the form of anaemia prevention with interesting material using the Health Belief Model method which emphasises a person's belief, especially adolescents, that adolescent girls are very at risk of anaemia and if they experience anaemia it will have an impact on decreased school achievement and impaired growth. In addition, with the Health Belief Model counseling, respondents know the benefits of preventing anaemia in an easy and inexpensive way, namely being able to get blood supplement tablets provided by the school and consuming nutritious food so that there will be no more assumptions from adolescents that anaemia is not a serious problem and does not need attention.



## Conclusion

There is a change in attitude before and after being given counselling on the prevention of anaemia in early adolescents at Junior High School Nurul Islam Jember. This can occur due to information exposure in the form of anaemia prevention with interesting material using the Health Belief Model method which emphasises a person's belief that adolescent girls are very at risk of anaemia and if they experience anaemia it will have an impact on decreased learning achievement at school and impaired growth. In addition, with the Health Belief Model counseling, respondents knew the benefits of preventing anaemia in an easy and inexpensive way, namely being able to obtain blood supplement tablets provided by the school and consuming nutritious food.

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