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# THE EFFECTIVENESS OF WOMEN EMPOWERMENT IN PREVENTING THE RISK OF ANEMIA IN THE SUKUN DISTRICT, MALANG CITY

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## ABSTRACT

Anemia is one of the health problems in the world, especially in developing countries. Anemia in women of childbearing age (WUS) is caused by iron deficiency caused by an unhealthy and inadequate diet. The study is purposed to analyze the effectiveness of group empowerment in improving the knowledge and attitudes of WUS related to diet to reduce the risk of anemia in the Ciptomulyo Health Center working area. The type of research used is quantitative research with a simple random sampling technique using a single group pre-post design with a sample of 46 respondents. The knowledge and attitude data collection techniques using questionnaires, checklist sheets, and observation sheets. Knowledge data was processed using the Wilcoxon Test, while attitudes used the Likert Scale. The results showed that before the empowerment of WUS, the pre-test result found that 50% of WUS had knowledge and attitudes below the average. Meanwhile, after empowerment and data collection through the post-test, it was found that the increase in knowledge was 93.47%, while the attitude of WUS increased to 62.9%. This study proves that empowerment regarding diet as an effort to prevent anemia is effective in changing the attitude and knowledge level of WUS.

**Kata Kunci:** Anemia, Empowerment, Knowledge, Eating Pattern, Behavior, Women In Childbearing Age

## INTRODUCTION

To increasing awareness and ability to live a healthy life for everyone to realize optimal public health, Indonesia is working hard to reduce maternal and infant mortality. One of the health problems that causes increased maternal mortality is anemia. Anemia is one of the health problems in the world, especially in developing countries<sup>[1]</sup>. Anemia in WUS can have serious consequences, such as decreased productivity, impaired reproductive health, and a high risk of complications in the mother and child during pregnancy. One of the primary causes of anemia in WUS is iron deficiency caused by an unhealthy and inadequate diet<sup>[2]</sup>.

In World Health Statistic 2022 data, globally the prevalence of anemia in pregnant women is higher (36.5%) than in other women (29.6%)<sup>[3]</sup>. According to the official website of SGD Resource Centre, anemia is the cause of the Maternal Mortality Rate (MMR) which is one of the health problems in the world that must be ended. Anemia is the third category in the SDGs, namely Good Health and Well-Being<sup>[4]</sup>. According to Riskesdas data in 2018 in Indonesia, the total percentage of anemia incidence in pregnant and non-pregnant women reached 48.9% of the total population in 2018. The prevalence of anemia according to age is 15-24 years old at 84.6%, 25-34 years old at 33.7%, 35-44 years old at 33.6%, and 45-54 years old at 24%<sup>[5]</sup>. Data from the Malang City Health Office in 2021 shows that the Maternal Mortality Rate (MMR) in Malang City in 2021 increased from 2020 by 29%. Maternal LB3 data from Ciptomulyo Health Center found that, there was an increase in the rate of anemia in WUS at Ciptomulyo Health Center during 2022, from January to December is 13.71%<sup>[6]</sup>.

The preliminary study was taken to obtain raw data on the prevalence of WUS in the Ciptomulyo Health Center working area and to determine the needs and preferences of women of childbearing age groups related to group empowerment. When the preliminary study was taken, there was a change in the research subject so that the initial sampling was determined to be pregnant women when the thesis proposal seminar turned into WUS. According to the Maternal LB3 data from Ciptomulyo Health Center in the field of MCH, there were still WUS who were detected with anemia.

One of the primary causes of anemia is knowledge and attitude of WUS which is contrary to the nature of a healthy diet. Empowerment was a must to change behavior, especially in the WUS group spread across 52 Posyandu under the guidance of Puskesmas Ciptomulyo. To prevent the development of anemia in women who are at high risk of causing a spike in maternal mortality rate (MMR).

One method that may be employed to improve knowledge and attitudes related to healthy eating patterns in WUS is through group empowerment. Group empowerment involves education, training, and support by social groups. Through interaction and support between group members, this program can provide practical knowledge, motivation, and social support that can influence behavior change related to healthy eating. In group empowerment, WUS can be provided with the education, training, and support needed to adopt healthy eating patterns in their daily lives<sup>[7]</sup>.

This study entitled "The Effectiveness of Empowerment of Women of Childbearing Age in Increasing Knowledge and Attitudes Regarding Healthy Eating Patterns to Reduce the Risk of Anemia in the Ciptomulyo Health Center Working Area, Sukun Subdistrict, Malang City" was carried out because although there is some evidence of the benefits of group empowerment in increasing knowledge and attitudes related to healthy eating patterns, more in-depth research is still needed to specifically evaluate the effectiveness of group empowerment in reducing the risk of anemia in WUS. Therefore, this study aims to evaluate the effectiveness of group empowerment in improving the knowledge and attitudes of WUS related to healthy eating patterns to reduce the risk of anemia in the Ciptomulyo Puskesmas working area. By understanding the effectiveness of group empowerment, the results of this study are expected to provide a strong basis for the development and implementation of more effective intervention programs in the prevention and control of anemia in women of childbearing age.

## **METHODS**

This type of research is a quantitative descriptive study that is included in the category of evaluation or intervention research with a single group pre-post research design. The single group pre-post research design involves data collection in the period before the intervention (pre-intervention) and after the intervention (post-intervention) from women of childbearing age that will be calculated with the Wilcoxon Test for knowledge variables and Likert Scale to measure attitudes. This study used 46 respondents as samples, taken with a simple random sampling technique. The research variables used

were age, latest education, knowledge, and attitudes of women of childbearing age-related to healthy eating patterns to reduce the risk of anemia..

## RESULT AND DISSCUSSION

Table 1 Respondent Characteristics

Variable	Frequency	Percentage (%)
<b>Ages</b>		
15-30 years old	33	71,7
30-45 years old	13	28,3
<b>Education</b>		
JHS	2	4,3
SHS	39	84,8
Collage	5	10,9

This study involved 46 respondents who were WUS living in Bakalan Krajan Village with details of 33 respondents aged 15 to 30 years and 13 respondents aged 30 to 45 years with the last education of junior high school, high school, and college..

Table 2 Knowledge of WUS in Bakalan Krajan Subdistrict about Anemia Before and After Empowerment in 2023

Variabel	<i>Pre-test</i>		<i>Posttest</i>		P-Value
	N=46		N=46		
	f	%	f	%	
<b>Knowledge</b>					
Good	21	45,65	43	93,47	0,000
Sufficient	23	50	3	6,52	
Poor	2	4,35	0	0	
Mean	6,41		8,33		
Median	6		8		
Std Deviasi	1.529		1.446		

Based on the table above, we found that 21 respondents (45.65%) had good initial knowledge, 32 respondents (50%) with sufficient initial knowledge, and two respondents (4.35%) with poor initial knowledge. The mean value of knowledge in the pre-test is 6.41, which shows that the average knowledge of respondents before being given empowerment is in the moderate category.

While the post-test results showed that 43 respondents (93.47%) had good knowledge, three respondents had sufficient knowledge (6.52%), and no respondents had poor knowledge. The mean value of knowledge in the post-test of 8.33 shows that the average knowledge of respondents after being given empowerment is classified as a good criterion.

So, group empowerment is effective in increasing the knowledge of WUS about healthy eating patterns as an attempt to prevent anemia, as seen from the significant increase in knowledge level after empowerment is carried out (Alpha <0.05).

Table 3 Attitude of WUS in Bakalan Krajan Subdistrict regarding Anemia Before and After Being Given Empowerment in 2023

Variable	<i>Pre-test</i>		<i>Post-test</i>		P-Value
	N=46		N=46		
	f	%	f	%	
<b>Behavior</b>					
Good	23	50	34	82,9	0,000
Sufficient	23	50	12	17,1	
Poor	0	0	0	0	
Mean	40.7		43.7		
Median	40.5		43.5		
Std Deviasi	3.384		3.687		

Based on table 3, we know that 23 respondents (50%) had a good attitude, 23 respondents (50%) with a sufficient attitude, and no respondents with a poor attitude. The mean value of attitude in the pre-test was 40.7 in the sufficient category.

While the post-test results showed that 34 respondents (82.9%) had a good attitude, 12 (17.1%) respondents had sufficient knowledge, and 0% of respondents with poor knowledge. These results indicate that after being given empowerment, there was an increase in the value of respondents' attitudes in the good category about healthy eating patterns as an effort to prevent anemia. The mean value of knowledge in the post-test of 43.5 shows that the average attitude of respondents after being given empowerment is within the good criteria.

Furthermore, the p-value of  $0.000 < 0.05$  indicates that there is a significant difference between the level of attitude of WUS about healthy eating patterns as an effort to prevent anemia before and after empowerment. This shows that group empowerment also has a positive impact in increasing the level of attitude of respondents.

The results showed that in the pre-test, 50% of respondents had good knowledge compared to respondents with sufficient knowledge and poor knowledge. Meanwhile, after empowerment and data collection through the post-test, it was found that the respondents' knowledge increased to 93.47% and the rest had sufficient knowledge.

The average knowledge of respondents increased after the pretest by 6.41, which means that the average knowledge of respondents is still in the sufficient criteria. The average of respondent's behavior after the post-test was increased to 8.33, which is the average knowledge of respondents after empowerment is in the good criteria. After the Wilcoxon test, it was found that the p-value of  $0.00 < 0.05$  means that the average level of knowledge of WUS about healthy eating patterns as an effort to prevent anemia before and after empowerment is different. Thus shows that group empowerment is effective on respondents' knowledge.

After empowerment, WUS can better understand the meaning and prevention of anemia. It proves that the post-test results, especially regarding the importance of the types of food consumed. This research is continuity with Zahrulianingdyah's research in 2012, which states that empowerment regarding healthy eating patterns for women of childbearing age is very influential in preventing cases of anemia in Indonesia[8].

From these results, it is known that group empowerment of WUS has a significant influence on changes in knowledge about healthy eating patterns as an effort to prevent anemia. The results obtained

tend to be positive so that its sustainability can be considered by involving a good group of WUS in a wider scope of society.

It is known from pre-test data that 50% of respondents had a good attitude regarding diet as an attempt to prevent anemia in WUS. After the empowerment program, there was a significant increase in the good category to 82.9% and a decrease in the percentage in the fair category.

After the empowerment program, the mean obtained in the pre-test shows a value of 40.7, and the post-test value increased to 43.7. From these data, it was found that the p-value was  $0.00 < 0.05$ , meaning that the average level of attitudes of WUS regarding healthy eating patterns as an effort to prevent anemia before and after being given empowerment was different. This means that H1 is accepted.

The results of the data processing above are in line with research shows that empowerment has a significant influence on people's attitudes and knowledge. This program effectiveness can be seen through an increase in the average value of knowledge and attitudes before and after empowerment.

Research conducted by Ningsih & Novira shows the result of their empowerment program is effective in increasing respondents' knowledge and attitudes. This is in line with the aim of this research, namely identifying the effectiveness of empowerment on knowledge and attitudes with the final results proving the initial hypothesis[9].

From the results above, it can be seen that empowerment in WUS has a significant influence on changes in respondents' attitudes regarding healthy eating patterns to reduce the risk of anemia.

Based on the post-test score which is higher compared to the pre-test score, there is a fairly large increase. The meaning of this research is stated in Maryani & Nainggolan where empowerment in this case is doing, so that the object becomes empowered both in terms of knowledge and attitudes[10].

The result is commensurate with previous research by Podungge, which stated that significant changes occurred in the attitudes and knowledge of WUS after empowerment was held. It proves that by actively answering questions before and after empowerment[11].

It was found that WUS knew more about the meaning of anemia, the causes of anemia, and the long-term impacts of anemia. WUS can also differentiate between anemia and low blood pressure. Before the intervention, there were still many WUS who could not distinguish between symptoms of low blood pressure and anemia. So, conclude of this empowerment program is it can increase WUS' knowledge regarding diet to reduce the risk of anemia.

This study clearly shows that there is a change in respondents' knowledge regarding healthy eating patterns to reduce the risk of anemia in WUS before and after empowerment. There were significant changes both directly and indirectly in respondents' knowledge. From this research, we hoped that by carrying out this research, respondents will adopt a healthy eating pattern by paying attention to the quality and quantity of food consumed.

There was a change in the attitude of WUS before and after being given an empowerment intervention regarding diet to prevent anemia. This can be seen through the results of the observation sheet which states the effectiveness of group empowerment on changes in the attitude of WUS.

Empowerment is going to provide a healthy quality of life for WUS. Significant changes occurred in the type of food and meal schedule. WUS who previously never had breakfast before activities, slowly began to get used to breakfast. The types of food consumed are also diverse with complete carbohydrates, proteins, and nutrients to maintain hemoglobin in the body.

Research conducted by Wijayanti & Fitriani described in the previous chapter also states that nutritional factors that contribute to anemia are the lack of intake of nutrients such as energy, protein, iron, folic acid, vitamin A, vitamin B complex, vitamin C, and zinc. This is related to the value of attitude and knowledge of WUS who have met the good category in the study.

Anemia in WUS in this study is mostly caused by an unhealthy lifestyle, especially the type and portion of food consumed every day. After empowerment, the attitude of WUS began to show positive

changes. This is evident through the written observation sheet. So, the intervention in the form of empowerment in this study can change the attitude of WUS regarding diet to reduce the risk of anemia.

This research is going to do with respondents of Women of Fertile Age (WUS) in Bakalan Krajan Village were 46 respondents. The data results show that there are more respondents with below-average scores than respondents who are considered to have qualified knowledge. Meanwhile, after empowerment and data collection through post-test, the results of respondents who had good knowledge increased rapidly until the calculation of the final results did not find respondents with poor knowledge.

The effectiveness of empowerment regarding diet as an effort to prevent anemia in WUS can be seen by paying attention to the acquisition of data that is written that the average value of WUS increases in the implementation of the pretest and post-test, it can be concluded that the average knowledge of WUS regarding diet as an effort to prevent anemia before and after empowerment is different, which means that the provision of empowerment about healthy eating patterns as an effort to prevent anemia can be declared effective.

It means, that empowerment in this study is effective in increasing the knowledge and attitudes of WUS regarding healthy eating patterns to reduce the risk of anemia, this is because the discussion sub-chapter has explained the factors and their relationship to previous theories regarding knowledge and attitudes of WUS regarding the risk of anemia which increased before and after empowerment. It proves that there are significant differences in knowledge and attitudes. This research also has a positive influence on the habits of respondents.

## **CONCLUSION**

There was a significant increase in the knowledge and attitudes of WUS before and after empowerment, so empowerment was declared effective in changing the attitudes and level of knowledge of WUS regarding healthy eating patterns to reduce the risk of anemia.

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