



HEALTH EDUCATION OF ANEMIA IN PREGNANT WOMEN USING POCKETBOOK MEDIA ON INCREASING KNOWLEDGE, ATTITUDE AND COMPLIANCE WITH FE TABLET CONSUMPTION

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ABSTRACT

Proportion of anemia in pregnancy in Indonesia increased to 48.9%, whereas in Central Java the incidence of anemia in pregnant women was 43.5%. Iron deficiency is often the cause of anemia in pregnant women. Providing information through anemia health education for pregnant women is needed to increase the knowledge, attitudes, and compliance of pregnant women in consuming Fe tablets. The aim was to determine the effect of anemia health education for pregnant women using pocketbooks on increasing knowledge, attitudes, and compliance to the consumption of Fe tablets in Tlogopucang Village, where the village has 43 cases of anemia or 5.6%.

This type of research used a pre-experimental design with one group pretest and posttest. The population in this study were pregnant women in the first and third trimesters with a total of 36 respondents. Sampling with total sampling. The instruments used were questionnaires and pocketbooks. Data collection was carried out by pretest and posttest within one day. Statistical test using the Mc Nemar test.

Results showed that anemia health education using pocketbooks affected the knowledge, attitudes, and compliance of pregnant women, with the sig score for the pre-post test for knowledge, namely $0.008 < 0.05$, the sig value for the pre-post test for attitude, namely $0.000 < 0.05$. As well, the sig value for the pre-post test for compliance, namely $0.002 < 0.05$.

Pocketbook media can be used as a tool or media to provide health education. It is hoped that health workers and pregnant women can utilize this anemia pocketbook as a source of information about anemia, particularly anemia in pregnancy.

Keywords: Anemia; Knowledge; Attitude; Compliance with Consumption of Fe Tablets; Pocket Book Media

BACKGROUND

Maternal Mortality Rate (MMR) is an indicator of public health status to see success in improving maternal health [1]. Based on

data from *the World Health Organization*, maternal mortality in the world is estimated at 303,000 or around 216/100,000 live births. In developing countries alone there are as many

as 99% or around 830 women die per year [2]. One of the causes of AKI is bleeding. One of the causes of bleeding is anemia during pregnancy or it is called *Potential Danger to Mother and Child* (potential to harm mother and child).

Anemia in pregnancy is a condition in which the hemoglobin level of pregnant women is <11 gr/dl in the first and third trimesters, and <10.5 gr/dl in the second trimester [3]. During pregnancy, the body undergoes significant changes, one of which is an increase in blood volume or blood plasma but is not followed by the addition of red blood cells, causing anemia [4]. *Child Health Epidemiology Group* (CHERG) reports that around 20-78% of anemia in pregnant women is caused by iron deficiency because pregnant women need more red blood cells to carry oxygen throughout the body and needed for their babies [5].

Riskesdas data for 2013-2018 shows that the proportion of anemia in pregnancy has increased from 37.1% to 48.9%, where in Central Java the incidence of anemia in pregnant women is 43.5%. Temanggung Regency has many cases of anemia in pregnant women. The prevalence of anemic pregnant women in Temanggung Regency is 13.64% or as many as 1,465 people of the total number of pregnant women, namely 10,737 people [7]. Based on a preliminary study conducted by researchers from Kandangan District, the sub-district in Temanggung Regency with the highest cases of anemic pregnant women, and has a working area, one of which is Tlogopucang Village, which also ranks first as the village with the most anemic pregnant women, namely 43 people or 5.6%.

Anemia in pregnancy will have a negative impact on the mother and the baby. In addition, it can trigger a child's risk of stunting. Based on the preliminary study, the local

village midwife also said that cases of stunting in Tlogopucang Village were among the highest. The way to prevent anemia is by consuming iron tablets or other iron-containing foods. The government in Indonesia has carried out a program to combat anemia in pregnant women by requiring pregnant women to take iron tablets during pregnancy, namely ≥ 90 tablets. However, in fact it was not as expected, namely only 38.1%, mothers who received iron tablets ≥ 90 tablets compared to those < 90 tablets, namely 61.9%, but not all mothers who received iron tablets consumed them regularly and regularly or lacked discipline. thus leading to the occurrence of anemia [6]. Even though pregnant women get Fe tablets well, if they are not consumed by the mother then the desired effect will not be achieved so that the expected increase in health status will be hampered. Therefore, anemia health education is needed regarding the importance of consuming Fe tablets in pregnant women as a preventive measure.

Providing information is very necessary, if knowledge increases it will affect a healthy pregnancy because knowledge about anemia is very important so that mothers can adhere to taking Fe tablets [8]. Thus, holding anemia health education during pregnancy is very necessary so that mothers can pay attention to the importance of their health and that of their fetus.

Providing information or messages can be done using the media because it can minimize misperceptions that are obtained by individuals and to clarify understanding, so that the target can learn the message given and can make decisions about the message that has been conveyed [9].

Media can be in the form of electronic or print media. Electronic media can be in the form of video, radio, television, and others. Print media can be in the form of leaflets,

brochures, magazines, posters, newspapers, pamphlets, stickers and books or pocketbooks. Pocketbooks have advantages such as more detailed and in-depth contents, can be re-read, detailed contents and communicants can enjoy or read anytime and anywhere [10]. A pocketbook is a book that is light, practical, and easy to carry because of its small size. In addition, it is also equipped with pictures that make it easier for someone to describe it [11].

RESEARCH METHODS

This type of research is *Pre-Experimental Designs with One Group Pretest-Posttest design Design* and sampling in this study using total sampling where the number of samples is equal to the number of population. The population for pregnant women in the first and third trimesters is 36 respondents. Respondents were given anemia health education using a pocketbook with the stages of *pretest*, *intervention*, and *posttest* in 1 day. The subjects in this study were pregnant women in their first and third trimesters in the Tlogopucang Village, Kandangan District, Temanggung Regency. The measuring instrument in this study used anemia pocketbooks and questionnaires containing statements about anemia and consumption of Fe tablets as well as biodata or characteristics of the respondents. The time of this research was carried out on January 26 2023 at the auxiliary health center in Tlogopucang Village. The analysis used was univariate analysis in the form of frequency and percentage distributions as well as bivariate analysis using the *McNemar test* with the test condition that if $p < 0.05$ then H_a is accepted. This research has been declared to have passed the ethical test with the issuance of SK No. 0112/EA/KEPK/2023 from the Semarang Ministry of Health Poltekkes.

RESULTS AND DISCUSSION

Table. 1 Characteristics of Respondents

Characteristics	F	%
Age		
< 20 years	4	11.1%
20-35 years	30	83.3%
>35 years	2	5.6%
Amount	36	100%
Education		
Base	9	25.0%
Intermediate	22	61.1%
Tall	5	13.9%
Amount	36	100%
Gravida		
Primigravida	12	33.3%
Multigravida	24	66.7%
Amount	36	100%
Work		
Working	5	13.9%
Not working	31	86.1%
Amount	36	100%

Based on the results shown in Table 1, the majority of respondents in this study were aged 20-35 years, with 30 respondents (83.3%). The youngest respondent is 17 years old and the oldest is 37 years old. There are 22 respondents with secondary education. Most of the respondents were pregnant with their second child (multigravida), namely 24 respondents (66.7%), and 12 respondents (33.3%) were pregnant with their first child (primigravida). Many of the respondents who did not working as many as 31 respondents (86.1%).

Table 2 Frequency Distribution of Levels of Knowledge, Attitudes, and Compliance of Pregnant Women Taking Fe Tablets

Before and After Being Given Anemia Health Education with Pocket Books

Variable	Pretest		Posttest	
	F	%	F	%
Knowledge				
Not enough	8	22.2%	36	100%
Good	28	77.8%		
Attitude				
Does not support	27	75%	4	11.1%
Support	9	25%	32	88.9%
Obedience				
Not obey	16	44.4%	4	11.1%
Obey	20	55.6%	32	88.9%

Table 2 shows that the majority of respondents at the *pretest stage* had good knowledge of 28 (77.8%), and experienced an increase in the *posttest stage* so that there were 36 respondents (100%) who had good knowledge. The attitude of the respondents at the *pretest stage* was only 9 respondents (25%) who had a supportive attitude and after being given health education it increased to 32 respondents (88.9%) who had a supportive attitude. Before being given the intervention, as many as 20 pregnant women were included in the obedient category, and after being given the intervention it increased to 32 respondents (88.9%).

Table 3. *Mc Nemar* Statistical Test Results Knowledge Variable

Pretest	Posttest		Sig 2 Tailed
	Knowledge Not enough	Good	
Knowledge			
Not enough	0	8	0.008
Good	0	28	

Mc Nemar statistical test above show that the *Sig value* of the knowledge variable is <0.05 so that there is an effect of anemia health education using pocketbooks on the knowledge of pregnant women. The results of the cross

table above show that there has been a change in the knowledge of all pregnant women from those with moderate knowledge to good knowledge.

Table 4 *Mc Nemar* Statistical Test Results Attitude Variable

Pretest	Posttest		Sig 2 Tailed
	Attitude Does not support	Support	
Attitude			
Does not support	2	25	0.000
Support	2	7	

Table above shows the *Sig value* of the attitude variable <0.05 so that there is an effect of anemia health education using pocketbooks on the attitude of pregnant women. There was a change in attitude from not supporting to being supportive, it's just that there were still 4 pregnant women who had an unsupportive attitude .

Table 5. *Mc Nemar* Statistical Test Results for Compliance Variables

Pretest	Posttest		Sig 2 Tailed
	Obedience Not obey	obey	
Obedience			
Not obey	3	13	0.002
Obey	1	19	

Mc Nemar's statistical test showed that the *Sig value* of the compliance variable was <0.05 so that there was an effect of anemia health education using pocketbooks on pregnant women's compliance. Compliance also experienced a change from disobedient to obedient, and there were still 4 pregnant women who were disobedient.

DISCUSSION

Characteristics of Research Respondents

Majority of respondents in this study were aged 20-35 years, which is a healthy reproductive age so that many pregnancies occur at this age. Age greatly determines one's health, mothers are said to be at high risk if pregnant women are <20 years old and > 35 years old [12]. Age under 20 years is feared to have a risk of complications that are closely related to reproductive health, while those over 35 years are at high risk because of a decline in the function of the reproductive organs [13].

Average middle-educated respondent is 22 respondents (61.1%). The level of education can affect a person's level of knowledge because the ability to receive and understand something is determined by the level of education one has. Acceptance and understanding of information received by someone with higher education is better than those with low education [14]. In RI Law no. 23 of 2003, a person's level of education can support or influence the level of knowledge, that is, the higher the education, the higher the knowledge so that they are not indifferent to receiving information or existing health programs and vice versa [15].

Most of the respondents in this study were multigravida, with 24 respondents (66.7%). Women who are pregnant frequently are three times more likely to suffer from anemia than those who are pregnant for the first time. This is because pregnancy increases the risk of bleeding before, during, and after delivery. In multigravida and grande multigravida pregnancies uterine distension can occur, this increases the risk of high parity maternal anemia in subsequent pregnancies [16].

Most of the respondents did not working or only as housewives as many as 31 respondents (86.1%). One of the factors of social structure is work. One's working can reflect the amount of information received, this

information will help someone in making decisions. In addition, also someone can gain experience and knowledge either directly or indirectly. A working mother will get a lot of health information compared to a mother who not working.

The Effect of Anemia Health Education with Pocket Book Media on Knowledge of Pregnant Women

Based on the results of the study, it can be seen that there was an increase in the number of pregnant women who had good knowledge, previously there were only 28 who had good knowledge and 8 people who had sufficient knowledge after being given health education using pocketbooks, all of them were in the good category. The results of the *Mc Nemar* test showed that the *Exact sig (2 tailed)* value of knowledge was 0.008 <0.05, this shows that health education using pocketbooks can have an effect on increasing the knowledge of pregnant women.

This is supported by research conducted by Hidayah and Sopiandi regarding the effectiveness of using educational media pocketbooks and leaflets on dietary knowledge and adherence to type 2 diabetes outpatients at health centers showing that there is a significant difference in knowledge after being given nutrition education with pocketbook media of 0.000 < 0.05. This means that pocketbook media is effectively used as a medium in education or health education [18].

Pocket book the use of media in this study has an effect on increasing the knowledge of pregnant women because the contents of the pocketbook are interesting and easy to understand, and the use of media can help mothers understand the messages conveyed.

Pocket book has the advantage of having pictures that make the pocketbook a

medium for conveying messages that are interesting to read. In addition, the description is not too long and the colors are attractive so as to invite the reader to enter into the contents of the book being presented [19]. Media information that is conveyed in an interesting way can help respondents easily receive and learn the message or information conveyed [20].

The Influence of Anemia Health Education with Pocket Book Media on the Attitudes of Pregnant Women

Based on the results of the study, before being given health education using the pocketbook media, the majority of the respondents' attitudes showed not supporting as many as 27, and only 9 respondents who had a supportive attitude. After being given health education there was an increase in the attitude of support for respondents, namely to 32 people. The statistical test results showed that there was an effect of health education on pregnant women's attitudes, this was evidenced by the results of the p value = 0.000 < 0.05.

Health education with print media in the form of pocketbooks has an influence on the attitude of respondents. In line with the research conducted by Putri, there was a significant difference, so that there was an increase in the attitude of the respondents before and after being given health education using pocketbooks. This is in accordance with the theory that the media is a means of conveying messages to the target so that the target can understand them either through print, electronic or other media [21].

Respondents in this study showed an attitude of accepting and responding to what the researcher conveyed, it was evident from the process of the researcher delivering the material, most of the respondents paid attention and afterwards one of the respondents asked questions related to the topic of the material

presented. This is in accordance with the theory of attitude levels, namely *receiving* and *responding*.

After a person knows the stimulus or object, the next process will be to judge or behave towards the given stimulus or health object. Receiving means someone wants and pays attention to the stimulus given to him, while responding means giving a response back to something given or asked, doing something and completing the task given [22].

The Effect of Anemia Health Education with Pocket Book Media on Compliance of Pregnant Women

Based on the results of the study, it showed that after being given health education using pocketbooks, there were 32 pregnant women who were in the obedient category and 4 other pregnant women who were not. There was a significant increase in compliance between before and after being given the pocketbook. Based on the results of the *Mc Nemar* test that has been carried out, it shows that the *sig value* of compliance is 0.002 < 0.05, which means that there is an effect of anemia health education using pocketbooks on pregnant women's compliance.

This is supported by the research of Setiawati and Rumintang that there is a significant difference in the adherence of pregnant women to consuming Fe tablets before and after being given health education. The p -value of 0.000 < 0.05 indicates that there is an effect of health education with printed media on the compliance of pregnant women taking Fe tablets at the Meninting Health Center. This happens because providing health education with the media will be easier and more effective [17]. The pocketbook is an effective print media because it has advantages as a media for health education because the material is solid, concise and clear and

accompanied by pictures that serve to explain the content of the material presented.

Results of this study also show that the majority of respondents as many as 22 have secondary education and 9 respondents have basic education. The level of education is one of the factors that supports a person in receiving information. High or low education can affect how much information is obtained, mothers with extensive information will increase their knowledge [23]. Thus higher education is expected to make it easier for pregnant women to receive information so as to reduce non-adherence of pregnant women in consuming Fe tablets during pregnancy and reduce the incidence of anemia in pregnancy.

CONCLUSION

Health education using pocketbooks about anemia has an effect on increasing knowledge, attitudes, and compliance of pregnant women in consuming Fe tablets.

SUGGESTION

It is hoped that this research can be an alternative in providing health education, information materials, and adding insight to pregnant women regarding anemia and how to take Fe tablets correctly as an effort to prevent anemia during pregnancy.

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