

THE EFFECT OF EDUCATIONAL LEAFLET USING BLOOD ADDED TABLETS ON THE KNOWLEDGE LEVEL OF PREGNANT MOTHER PATIENTS WITH ANEMIA AT PUSKESMAS 1 JEMBRANA

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ABSTRACT

Background: Anemia in pregnancy is a condition where the hemoglobin (Hb) level is less than 11gr/dl in women who are pregnant. Providing education through leaflets to pregnant women is expected to help prevent anemia during pregnancy. **Objective:** The purpose of this study was to determine the effect of providing education on the use of blood supplement knowledge on the level of knowledge of pregnant women with anemia at Puskesmas I Jembrana in 2022. **Methods:** The research design used in this study was a quantitative study with a pre-experimental design approach of Groups Pretest-Posttest. The sampling technique used was total sampling with 67 pregnant women with anemia. **Results:** The results of this study revealed that there was an effect of leaflet education on the use of blood-added tablets on the knowledge level of pregnant women with anemia at Puskesmas 1 Jembrana with a p-value of $0.000 < (0.05)$ and a mean difference in the pretest and posttest values of 5.43. **Conclusion:** There is a significant effect between the level of knowledge about the use of blood steadfast tablets and the incidence of anemia in pregnant women. It is hoped that the public, especially pregnant women, will pay more attention to their condition and always consult health workers regarding the use of blood-added tablets.

Keywords: Anemia; Leaflet; Knowledge

INTRODUCTION

Anemia in pregnancy is a condition in which the hemoglobin (Hb) level is less than 11gr/dl in women who are pregnant. The incidence of anemia that is not followed up properly is likely to have a worse impact on maternal and infant health and increase maternal and infant mortality. Complications that can be caused include causing death during pregnancy and after pregnancy as well as having an impact on fetal development, low birth weight, and high mortality during childbirth^[1].

Pregnant women who experience anemia have a risk of death up to 3.6 times greater than pregnant women who do not experience anemia. The prevalence of pregnant women with anemia in 2013 in Indonesia was 37.1%^[2]. Meanwhile, the

Pusponegoro and Anemia World Map research in 2013 also stated that 51% of pregnant women suffer from anemia, causing up to 300 deaths per day. The prevalence of anemia during pregnancy in Bali Province has increased by 18% in 2018 and 23.91% in 2019, whereas in Jembrana Regency, it shows that the incidence of pregnant women with anemia in 2020 is 10.5% and there has been an increase of 8.7% from the previous year^[3].

Based on the 2015 Supas, the Maternal Mortality Rate (MMR) in Indonesia in 2015 was 305 per 100,000 live births. Meanwhile, in 2019 there were 4221 maternal deaths in Indonesia from 4,778,621 live births or a maternal mortality rate of 88.33 per 100,000 live births. Hemorrhage is the most common

cause of maternal death, namely 1280 cases (30.32%), hypertension in pregnancy 1066 cases (25.2%) and 207 cases (4.9%) due to blood injection^[4]. In addition, at Puskesmas I Jembrana there was 1 person who died of anemia in 2021.

In efforts to prevent complications or deaths caused by anemia during pregnancy, health workers require pregnant women to be more active through complete pregnancy checks. Another effort is to give blood (iron) tablets to pregnant women who are anemic. Blood-supplement tablets (iron) act as a component that forms myoglobin, a protein that distributes oxygen to muscles, and forms enzymes and collagen. In addition, iron also plays a role in the body's resistance. The need for iron content (Add blood) in pregnant women is about 800 mg consisting of 300 mg needed for the fetus and 500 grams to increase the mass of maternal hemoglobin. An excess of about 200 mg can be excreted through the intestines, skin, and urine. In the diet of pregnant women, every 100 calories can produce as much as 8-10 mg of blood. So the calculation of eating as much as 3 times, with calories as much as 2500 cal can produce 20-25 mg of iron per day. During pregnancy through the calculation of 288 days, pregnant women can produce about 100 mg of iron. Thus, the need for additional blood (iron) is still lacking in pregnant women so that they require additional intake in the form of blood supplement tablets^[5].

The prevalence of giving blood supplement tablets to pregnant women in Indonesia in 2015 was 85.17%. In this case, the percentage has increased compared to 2014 which was only 85.1%. The government has carried out an anemia control program for pregnant women, namely by giving 90 tablets of blood supplement to pregnant women with the aim of reducing the number of anemia in pregnant women^[6].

Based on a preliminary study conducted by researchers at Puskesmas I Jembrana, the incidence of anemia during pregnancy has increased, in 2019 the incidence of anemia in pregnant women was 97 cases and in 2020 increased by 131 cases of pregnant women with anemia. When viewed from the coverage of giving blood-added tablets at Puskesmas I Jembrana in 2019, there were 103% (606 people) of pregnant women received blood-added tablets, and in 2020, as many as 567 people (100%) received blood-added tablets. Even though the coverage rate of tablets added to blood was high, there was still an increase in cases of anemia in pregnant women at Puskesmas I Jembrana.

Pregnant women at Puskesmas I Jembrana are, on average, high school graduates. One of the reasons for this is a lack of knowledge. Knowledge is one of the factors that influence the formation of health behavior^[7]. Based on a preliminary study, graduates of pregnant women at Puskesmas 1 Jembrana are not the average high school graduates.

The provision of education through leaflets for pregnant women is also expected to help other health workers regarding the provision of information about efficient blood supplement tablets to every pregnant woman. Because it is not bound by working time, the information points to be conveyed can be conveyed properly so that it can be used in the practice of health services widely. The final result is expected that with increasing maternal knowledge, pregnant women's adherence to consuming blood-added tablets also increases, so there is an increase in Hb levels in pregnant women.

METHODS

The research design used is a quantitative study with a pre-experimental design approach of One Groups Pretest-Posttest. The study was conducted from March to May 2022. The target population of this

study were 67 pregnant women who experienced anemia at Puskesmas I Jembrana. In this study using a total sampling with a sample of 67 pregnant women with anemia. The research instrument used was a questionnaire which included name, age, education, mother's occupation, level of knowledge before and after education which consisted of 20 question items. Another instrument used is a leaflet for education on the use of blood-added tablets. Data analysis using Wilcoxon Matched Pairs Test.

RESULTS

Table 1. Characteristics of Study Subjects

Category	Frequency Presentation	
	(f)	(%)
Age		
18-19 years	5	7,5
20-29 years	41	61,2
30-38 years	18	26,9
40-43 years	3	4,5
Education		
SMP	17	25,4
SMA	47	70,1
D3	2	3,0
S1	1	1,5
Haemoglobin Levels		
7,0-7,9 mg/dl (severe)	1	1,5
8,0-9,9 mg/dl (moderate)	25	37,4
10,0-10,9 mg/dl (mild)	41	61,2
Pretest		
<56% (not enough)	55	82,1
>56%-76% (enough)	12	17,9
>76-100% (good)	0	0
Posttest		
<56% (not enough)	0	0
>56%-76% (enough)	23	34,3
>76% (good)	44	65,7

A. Age

The results show that the majority of respondents are aged 20-29 years, namely 41 respondents with a percentage of 61.2%. While the lowest data is found in respondents aged 40-43 years as many as 3 people with a percentage of 4.5%.

B. Education

The results showed that the majority of respondents had high school education with a percentage of 70.1% as many as 47 respondents. While the lowest data is found in respondents with an undergraduate education with a percentage of 1.5% as many as 1 respondent.

C. Haemoglobin Levels

The results showed that the majority of respondents based on hemoglobin levels of 10.0-10.9 mg/dl with a percentage of 61.2% as many as 41 respondents. While the lowest data is found in hemoglobin levels of 7.0-7.9 mg/dl with a percentage of 1.5% as many as 1 person.

D. Pretest

The results showed that the majority of respondents' pretest results were <56% (less knowledge) with a percentage of 82.1% as many as 55 respondents. While the lowest data is found in the pretest results of respondents >76% -100% (good knowledge) with a percentage of 0% as many as 0 respondents.

E. Posttest

The results showed that the majority of respondents' post test results were >76% (good knowledge) with a percentage of 65.7% as many as 44 respondents. While the lowest data is found in the post test results of respondents <56% -76% (sufficient knowledge) with a percentage of 34.3% as many as 23 respondents.

F. Test Results Differences in Pretest and Posttest Scores

The results of the hypothesis test using the Wilcoxon matched pairs test to see the significant difference in the effect of providing education on the use of blood-added tablets on the level of knowledge in pregnant women with anemia at Puskesmas 1 Jembrana. The results of the analysis are as shown in the table below:

Based on the results of the Wilcoxon matched pairs test, it was found that there

was a difference in the mean in the pretest and posttest of 5.43, with the p-value in the wilcoxon matched pairs test showing a result of 0.000 which means <0.005 which indicates a difference in the pretest and posttest values in pregnant women. after being given education, it can be concluded that there is an effect of providing education on the use of blood-added tablets on the level of knowledge in pregnant women with anemia at Puskesmas I Jembrana.

Table 2. Wilcoxon matched pairs test data pre test and post test providing education on the use of blood-added tablets on the level of knowledge in pregnant women with anemia

Results	N	Mean	SD	Mean Difference	Z-count
Pre Test	67	10,36	1,612		
Post Test	67	15,79	1,805	5,43	-7,139

DISCUSSION

1. Based on Age

In this case, the respondents who participated in this study were included in the group of women of productive age (Batubara, 2016). In the age category of 20-29 years, providing education about blood-added tablets is very necessary because in this age range women reach young to middle age. In the young and middle adulthood phase, most women are productively starting to work. The burden of activities and work can make a woman tired. So that it can affect the health condition of the woman. The minimum requirement for red blood cells for women under the age of 20 years will be different from those of women aged 20 years and over, and vice versa will also differ from their needs with women aged over 29 years. This is in accordance with the theory which states that the hemoglobin requirement in adult women ranges from 12-17 g/dL^[8].

In addition, the age range of 20-29 years is a mature age to accept pregnancy because the female reproductive organs are said to be mature and ready to be fertilized^[9]. According to research conducted by Kamaruddin et al (2019) (10), pregnant women have a tendency to experience quite a lot of anemia. This is because during pregnancy, the fetus needs nutrients that he can get only through the mother. From the theory and facts based on the research, the age range of 20-29 years old who became the respondents in the study was relevant to the target of the leaflet education provided.

2. Based on Education

Respondents in this study were dominated by respondents with the last education level being high school, this can be based on demographic factors in the area located in an urban environment so that the majority of people have access to education services up to the high school level. The location of the area in urban areas allows the community to easily access education so that it is relevant to the education level of the respondents who have an average high school education.

Some other respondents have higher education levels such as D3 and S1 this can be caused by the increasing number of universities in the Jembrana area, where in this area there are several universities located near the Jembrana I Health Center area. Other supporting factors are also is that some residents have often carried out displacement activities such as receiving education outside the city so that people have received higher education.

3. Based on Haemoglobin

Based on the data from this study, it is known that the majority of respondents have mild anemia. This can be caused by a lack of iron intake during pregnancy. Fulfillment of this lack of iron based on the results of observations and interviews that researchers have done is caused by the

food sources consumed by pregnant women do not contain much iron. Respondents said that they usually eat foods that are available in the market with affordable economic values without knowing that they are low in iron.

The reason respondents choose these foodstuffs is because it is more economical, besides that mothers do not know what food ingredients contain high iron. They assume that foods that are high in iron, such as chicken liver, are more expensive than other foods. This is also supported by the availability of food ingredients at home for mothers. If the family has many family members, then the nutrition obtained by pregnant women can also be divided because they have to share with other family members. This is related to the ability to fulfill food for each individual in the household. The more members of the household, the more food needs will increase ^[11].

4. Level of Knowledge About the Use of Blood-Adding Tablets in Pregnant Women Patients with Anemia Before Giving Education Leaflets on the Use of Blood-Adding Tablets

The results of the pretest showed that 55 respondents (82.1%) had less knowledge (score <56%), and as many as 12 respondents (17.9%) had sufficient knowledge (score 56%-76%). Knowledge is influenced by many factors, including education, occupation and income, age, experience, information, and socio-culture^[7]. Information is one of the predictors to increase individual knowledge. The knowledge possessed by the majority of respondents is in the poor category, this can be caused by the respondent's lack of exposure to information related to blood-added tablets. This is also supported by research conducted Nurasiah (2020) which states that the lack of information will affect the knowledge possessed by respondents.

Judging from the level of education the average respondent has the last education level is high school (70.1%). Based on the results of the questionnaire, respondents with a high school education level could not answer questions about the Blood Add Tablet. This could be due to the respondent's lack of exposure to information related to blood-added tablets. Based on interviews with 5 respondents also showed that most of the respondents during high school were not majoring in science or health who were always exposed to information about health. In addition, there were indeed those who had majors in science when they were in high school, but it had been a very long time and the material received was general material so they did not really know about the use of blood-added tablets.

Mothers with higher education levels are believed to have increased knowledge because of the information they get, besides that mothers will tend to seek information both from other people and from the mass media. Meanwhile, in this study, an adequate level of education will hinder the mother's attitude in seeking and understanding information. This is in line with research Akbar Herayjat (2022) which states that the higher the education level of the respondent, the higher the level of knowledge.

Judging from the age of the respondents, most respondents were dominated by the age groups of 20-29 years (61.2%), 30-38 years (26.9%), and 18-19 (7.5%). In this case, the average respondent who participated in the study was of sufficient age and was not at risk of pregnancy^[12]. Besides having an effect on the level of anemia in pregnant women, age also has an important role in increasing knowledge that affects the attitudes of pregnant women. Age affects the perception and mindset of a person. The older he gets, the more his grasping power and mindset will develop, so that the knowledge he gets is getting better ^[13].

In this study, although the respondents were in the age range sufficient to get pregnant, the respondents had less knowledge. This is because despite having a relatively young age, respondents cannot access information through social media and therefore cannot update information which leads to a low level of knowledge. This is in line with research Putrianti (2020), which discusses as they get older, their behavior changes and they are difficult to receive information, are less active, and get sick easily^[14].

In addition to education level and age, all respondents are also female. Indirectly, gender affects the low level of awareness because women rarely leave the house, resulting in a lack of information which leads to a lack of knowledge and has an impact on a lack of awareness. An overview of the health of pregnant women through examination of hemoglobin levels, the majority of respondents turned out to have mild anemia because they had hemoglobin levels below 12 g/dL. This can happen because people with mild anemia do not really feel the clinical manifestations of anemia in the form of nausea and vomiting, so that pregnant women are usually less aware that their hemoglobin levels are less than the normal category. This triggers pregnant women not to seek information about their perceived health because the mother does not have any symptoms and feels healthy^[15].

The level of knowledge of the majority of respondents in the category of lack of knowledge can also be due to the fact that the puskesmas has not provided optimal education to respondents about the importance of blood-added tablets.

5. Level of Knowledge About the Use of Blood-Adding Tablets in Pregnant Women Patients with Anemia After Giving Education Leaflets on the Use of Blood-Adding Tablets

The results of the posttest showed that 44 respondents (65.7%) had good knowledge with a score of >76%. While as many as 23 respondents (34.3%) have sufficient knowledge with a score of <56% -76%. Knowledge is very closely related to education, by providing education, the person concerned will have wider knowledge^[14]. This is in line with the results of research conducted by Saleh dan Kunoli (2019) which states that respondents' knowledge increases after counseling and training^[16].

Many respondents who obtained good knowledge after education due to the age of the respondents were still young. The younger the respondent, the better the ability to capture the information provided. The information provided is expected to be accepted and change the behavior of the individual concerned in a better direction as stated by WHO (1954).

This result is also in accordance with the theory Notoatmodjo (2010), where health education has a short-term goal (immediate impact) to change or increase knowledge that has a good impact on people's attitudes. Another purpose of counseling is the desire to achieve understanding, then it is enough to convey the message. Health education is part of health efforts, starting from promotive to rehabilitative. Health education plays a role in increasing one's attitude knowledge.

In accordance with the theory put forward by Azwar (2013) in Durisah (2016) explain the factors that influence knowledge, namely the experiences we have experienced and are currently experiencing will shape and influence our appreciation of social stimuli. The experience gained during the provision of education, in addition to increasing knowledge indirectly, will also change the attitude of the respondents^[17].

Respondents in this study also had the lowest education level of high school. This shows that respondents have the ability to

receive information through the media that is provided accurately. In addition, respondents were also informed about the condition of anemia experienced so that respondents were more focused on reading and paying attention to the leaflets given. This is in line with research conducted by Santi Rahayu (2018) which states that the higher a person's knowledge will affect behavior to prevent disease.

6. Differences in Knowledge Levels About the Use of Blood-Adding Tablets in Pregnant Women Patients with Anemia Before and After Giving Education Leaflets on the Use of Blood-Adding Tablets.

The Wilcoxon matched pairs test showed that there was a mean difference in the pretest and posttest of 5.43, with a p value of $0.001 < 0.005$. This shows that there is an increase in knowledge between before and after the intervention.

The level of knowledge of respondents has increased before and after education because respondents have been exposed to the information provided through educational media in the form of leaflets. Media is a tool in the educational process. According to Notoadmodjo (2010) stated that the provision of information formally and informally can increase mother's knowledge. The provision of leaflet media is one of the provision of non-formal information that is often used in health education.

Based on the results of univariate respondents have a fairly young age category and a good level of education. So that the use of leaflet media is very suitable to be given. Mothers who have a young age will be faster in receiving information provided through image and literacy media. Disamping itu, tingkat pendidikan yang owned by pregnant women also makes it easier for mothers to understand leaflet media because mothers can read leaflets without the help of others.

The leaflet evaluation conducted stated that 80% of respondents agreed that the leaflet used provided interesting and needed information for the respondents, including the definition, benefits of blood-added tablets, how to take blood-added tablets, the impact of iron deficiency, side effects of blood-added tablets, as well as food and beverages. drink that inhibits the absorption of blood-added tablets. 80% of respondents also stated that the design on this leaflet was made with a combination of different colors so that it was easy for respondents to read. The choice of font size was also adjusted to the respondent, namely the medium font size was chosen so that it was easy to read (100% of respondents). 70% of respondents stated that the choice of words in the leaflet sentence was chosen using lay language, not medical language so that it was very easy for respondents to understand.

In addition to factors from pregnant women and the media used as information, the puskesmas is also one of the keys to increasing knowledge of pregnant women. Puskesmas as a promotive and preventive-based health service center can provide optimal services through the provision of this leaflet. This is supported by research conducted Herlambang (2018) who stated that the role of primary care also helped to reduce anemia rates and increase knowledge of pregnant women.

The results of this study are in line with the research conducted Wulandari et al. (2020) about the Effect of Health Education Using Leaflet Media to Increase Knowledge and Behavior in Efforts to Implement Health Protocols on Merchants at Car Free Day Temanggung which revealed that the results of univariate analysis showed that respondents' knowledge increased after being given health education using leaflet media by 50% good knowledge and 50% knowledge enough. Respondents' behavior increased after being given health education using leaflet media by 41.7% good behavior,

35.3% moderate behavior and 23% lack of knowledge. The difference in knowledge level scores before and after being given health education intervention using leaflet media was $Z=-1.957$, $p < 0.05$) and the difference in behavior level scores before and after being given health education using leaflet media was $Z=-2.283$, $p < 0,05$).

This research is also in line with research Andarmoyo (2015) on the Provision of Health Education through Effective Leaflet Media in Improvement which stated that the results of the study obtained a value of $P = 0.001$ which was smaller than $= 0.05$, which means that there was a significant difference in knowledge about pulmonary tuberculosis before and after health education was carried out using leaflet media.

From some of the things above, it can be concluded that the results of this study are in line with previous studies which were effective in increasing respondents' knowledge through leaflet education media, especially the level of knowledge of pregnant women with anemia to consume blood-added tablets.

7. Questionnaire Answer Results Questionnaire Validity Test Results Effect of Blood Added Leaflet Education on Knowledge Levels in Pregnant Women Patients

Based on the results of the pretest, the respondents who answered the most incorrect answers were found in question number 8 with the question that consuming blood-added tablets can cause fever with a percentage of wrong answers as much as 100%. One of them is the lack of knowledge about the effects of drugs on the body which results in the respondent's assumption leading to the effect of blood-added tablets causing fever. However, after being given education in the form of blood-added leaflets, respondents' answers to the question of consuming blood-added tablets can cause fever to increase

significantly with the percentage of wrong answers being 0%. This proves that there is an increase in knowledge related to education in the form of extra blood leaflets^[18].

While the post test results of respondents who answered many incorrectly, namely in question number 14 with questions born prematurely were one of the effects of iron deficiency during pregnancy with the percentage of wrong answers as much as 67.2%. Based on the researcher's assumptions regarding the wrong answer in number 14, it was caused by the respondent's lack of understanding of the importance of consuming blood-added tablets during pregnancy. So there are many respondents who answered incorrectly on this question. The importance of understanding the consumption of blood-added tablets in order to prevent one of the maternal risks, such as premature birth.

Based on this research, it is hoped that there should be promotive and preventive efforts to the problem of anemia by providing information and education about anemia, especially to pregnant women about the harmful effects of anemia. blood, and it is hoped that further researchers can add other factors that can affect anemia in pregnant women such as gender, genetics and food consumption patterns.

CONCLUSION

Based on the results of the discussion on the effect of leaflet education on the use of blood-added tablets on the level of knowledge of pregnant women with anemia at Puskesmas 1 Jembrana, it can be concluded that the level of knowledge about the use of blood-added tablets in pregnant women with anemia prior to the provision of education leaflets on the use of blood-added tablets was obtained. The results showed that the majority had a low level of knowledge as many as 55 (82.1%) respondents, after the intervention, it was found that the majority had a low level of

knowledge as many as 44 (65.7%) respondents, and there was an effect of leaflet education on the use of blood-added tablets on the level of knowledge of pregnant women patients. with anemia in Puskesmas 1 Jembrana with a p value of 0.

CONFLICT OF INTEREST

There is no conflict of interest in this article. This article is written independently without the involvement of other parties who could improperly influence this article.

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