East Asian Journal of Multidisciplinary Research (EAJMR)
Vol. 2, No. 9, 2023: 3665-3674

The Influence of the Pocket Book (BUSAKMIL) on the Consumption of Blood Supplement Tablets and Consumption Patterns of Anemic Pregnant Women at the Harapan Baru Community Health Center in 2023

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A R T I C L E I N F O

Keywords: Anemic Pregnant Women, Consumption Patterns, Consumption of Tablets Increases Blood Pressure

Received : 22, July
Revised : 21, August
Accepted: 26, September

A B S T R A C T

This research aims to determine the effect of BUSAKMIL on the consumption of blood supplement tablets and consumption patterns of anemic pregnant women in the Harapan Baru Community Health Center working area. The method uses a Quasi Experiment with a One Group Pretest-Posttest design and a sample of 29 respondents. The results of the study showed that there was an influence of the pocketbook (BUSAKMIL) on the consumption of blood supplement tablets by anemic pregnant women at the Harapan Baru Community Health Center in 2023 (p=0.000) and there was no influence of the pocketbook (BUSAKMIL) on protein and carbohydrate consumption patterns (p=0.109; p =0.0161) and there is an influence of the pocketbook (BUSAKMIL) on energy and fat consumption patterns (p=0.021; p=0.028) of anemic pregnant women at Harapan Baru Community Health Center.

DOI: https://doi.org/10.55927/eajmr.v2i9.6104
ISSN-E: 2828-1519
https://journal.formosapublisher.org/index.php/eajmr

INTRODUCTION

According to the WHO definition, anemia during pregnancy is a condition where the hemoglobin level in pregnant women is below 11 gr%. Anemia during pregnancy can potentially cause various serious complications, such as the risk of miscarriage, bleeding, low birth weight (LBW), uterine atony, uterine inertia, and placental retention. Prevention efforts have been made by the government by providing additional blood tablets (Fe tablets) to pregnant women when they undergo pregnancy checks (Amiruddin, 2022).

Riskesdas data in 2013 shows that the prevalence of anemia in pregnancy in Indonesia is 37.1%; in 2019, that figure increased to 48.9%. Fetal mortality rates between 12 and 28 percent, perinatal mortality rates between 30 and 40 percent, and newborn mortality rates between 7 and 10 percent are all associated with iron deficiency anemia in the mother (Ministry of Health of the Republic of Indonesia, 2019). Meanwhile, in 2021, as many as 17.3% of pregnant women in East Kalimantan will suffer from anemia.

Compliance with the use of blood-boosting tablets is the percentage of pregnant women who take iron supplements as recommended by health service providers. Compliance is determined by taking the recommended amount of blood supplement tablets regularly and understanding how to take them (Hidayah et al., 2012).

Food Consumption Habits The term "Consumption Pattern" is used to describe daily food intake that provides all the nutrients a person's body needs in one meal (Almatisier, 2010). Positive and negative effects on iron absorption (Masnariyan, Y) are associated with anemia in pregnant women, which is generally caused by a diet that is low in iron content and certain types of food. In the Harapan Baru Community Health Center service area, 59.2% of pregnant women experience anemia, which indicates that their protein needs are not being met.

Based on data from the Samarinda City Health Service in 2021, it was found that in the Harapan Baru Community Health Center in 2021 the number of pregnant women experiencing anemia was 33.6%, which is the highest figure in the Samarinda City area with the coverage of Fe tablet administration in the Harapan Baru area being good, namely 94.8%, however, The coverage of pregnant women who did not take the blood supplement tablets recommended by officials was 43.7%. Therefore, researchers are interested in researching "The Effect of BUSAKMIL on Compliance with the Consumption of Blood Additive Tablets and Consumption Patterns of Anemic Pregnant Women in the Harapan Baru Community Health Center Working Area".

THEORETICAL REVIEW

Anemia in Pregnant Women

The human body contains between three and five grams of micromineral iron, making it the primary source of iron for all known organisms. The main role of iron in the body is as a transporter of oxygen (from the lungs to the rest of the body), a transporter of electrons (inside cells), and a role in enzyme activity (Almatisier, 2010). Iron is the most important nutrient in terms of its impact on the development of nutritional anemia. Nutritional anemia is most

often caused by iron deficiency, but deficiencies of folic acid, vitamin B12, protein, vitamins, and minerals are other important causes.

Reduced red blood cell count or hemoglobin levels indicate anemia; To be precise, the average hemoglobin level in menstruating women is 12.0 g/dl, while in pregnant women it is 11.0 g/dl, and so on (Varney, 2007). Hypervolemia or hydremia describes an increase in blood volume that occurs in pregnant women. However, the increase in plasma volume is greater than the increase in red blood cells, so the blood becomes thinner.

Anemia in pregnant women has the potential to cause various complications such as miscarriage, premature labor, impaired fetal growth in the uterus, increased risk of infection, molahidatid, hyperemesis gravidarum, and premature rupture of membranes (Manuaba, 2001).

Compliance with Blood Supplement Tablet Consumption

Permana and Sulistyawati (2019) define compliance as "a state in which an individual's behavior is consistent with recommended actions or suggestions conveyed by a health professional." Awareness and compliance with daily consumption of Add Blood tablets by pregnant women is what causes compliance with iron consumption (Kenang, et al., 2018).

The number of blood supplement tablets taken, how to take them, and the frequency of taking them are indicators of compliance with taking iron supplements (Wulandini & Triska, 2020). A person is said to be compliant if he follows the doctor's advice or uses the information provided.

According to Yunita, et al., 2018, factors that influence a pregnant woman's compliance with taking blood supplement tablets include knowledge, motivation, family support, Antenatal Care visits and side effects. The way to measure compliance with the consumption of blood supplement tablets is by using a compliance control sticker, which is attached to the cover of the KIA book and monitored every 3 days through photos of the sticker and remaining medication and sent to the WhatsApp group.

Comsumption Pattern

The intake pattern consumed is the type of food a person eats regularly to maintain a healthy eating pattern (Almatisier, 2010). The term “consumption pattern” is used to describe repeated visuals of food being eaten. What people eat may vary from person to person, community to community, and population group to population group. Quantity, nutritional composition, and monetary value are just a few ways to identify this group.

According to Hoang as quoted by Himadi (2012), a person's consumption habits can be interpreted as a collection of information that details the quantity and composition of food consumed daily by an individual or group of individuals. The eating habits of a person or a group (such as a family) are referred to as their "consumption patterns," and these habits are influenced by various environmental, physiological, emotional, cultural, and social variables.

Factors influencing consumption patterns are divided into two aspects. The first is the aspect of purchasing or obtaining food. Factors such as latitude, altitude, rainfall, and temperature fall into this category, as do variations in soil fertility and the quality of available water. The second aspect is culture related to consumption levels. People's eating habits are greatly influenced by their socio-economic level and local customs. The amount of food eaten depends largely on the local population.

When the body reaches maximum nutritional health, the degree of nutritional health is by eating habits. In this condition, the body's tissues are supplied with sufficient nutrients. The body is free from disease, has optimal levels of activity and efficiency, and has a high level of endurance (Soediatama, 2008). Low iron consumption patterns or foods that inhibit iron absorption are often associated with the development of anemia. Protein from both animal and vegetable sources, dairy products and their derivatives, carbohydrates from bread and grains, fruit and vegetables rich in vitamin C, dark green vegetables, and other fruits and vegetables are all needed by pregnant women to meet their nutritional needs (Arisman, 2010).

Education

Education is a process of obtaining knowledge that is passed through the learning process. This learning process aims to change behavior related to knowledge and skills, especially in improving lifestyle towards a better or healthier one. The components in health education are educators and targets, both individuals and community groups. In educational activities, what is expected is whether there will be changes that occur in each individual or group in which behavior changes in a positive direction, especially in terms of increasing one's knowledge and awareness regarding health (Nurrohmah, 2021)

Educational targets include individuals, groups and society. Providing health education is very important because it can help individuals and community groups increase their insight or knowledge related to health. This can also change the lifestyle of an individual or group in a healthier direction.

Educational methods are divided into 2 groups, namely large groups and small groups. Large groups, namely more than 15 participants using lecture and seminar methods. Meanwhile, for small groups of <15 people and uses role play methods, simulation games and counseling.

METHODOLOGY

This type of research is quasi-experimental research with a group pre-test and post-test design. This research was conducted at the Harapan Baru Community Health Center and was carried out in March 2023. The population in this study was 40 cases of anemic pregnant women in September-November 2022. The sample was determined using purposive sampling of as many as 29 pregnant women in the second and third trimesters. Data analysis used univariate analysis (frequency distribution) and bivariate analysis using the Wilcoxon test.

RESULTS

Univariate Analysis

Table 1. Characteristics of Respondents

Karakteristik	n	%
Work		
Work	5	17,2
Doesn't work	24	82,8
Total	**29**	**100.00**
Education		
Elementary School	2	6,9
Junior High School	2	6,9
Senior High School	18	62,1
D3/S1	7	24,1
Total	**29**	**100.00**
Gestational Age		
Trimester 2	20	68,9
Trimester 3	9	31,1
Total	**29**	**100,00**

Source: Data Primer, 2023

Table 1 above displays the characteristics of the respondents in this study. Most of the anemic pregnant women did not work as many as 24 respondents (82.8%) and the average last education was high school with a total of 18 respondents (62.1%). Most of the gestational ages in this study were in the 2nd trimester with 20 respondents (68.9%).

Table 2. Analysis of the Effect of the Pocket Book (BUSAKMIL) on the Consumption of Blood Supplement Tablets in Anemic Pregnant Women at the Harapan Baru Health Center in 2023

	n		Mean Rank	Sum of Rank	*p-value*
Pre test	Negative Ranks	0	0.00	0.00	0.000
Post test	Positive Ranks	28	14.50	406.00	
	Ties	1			
	Total	29			

Source: Data Primer, 2023

Based on Table 1, the Wilcoxon test results show that the p-value is 0.000<0.05, which indicates that there is an influence of BUSAKMIL on the consumption of blood supplement tablets for pregnant women in consuming blood supplement tablets.

Table 3. Analysis of the Effect of Pocket Books (BUSAKMIL) on Consumption Patterns of Anemic Pregnant Women at Harapan Baru Health Center in 2023

Comsumption Pattern	n			Mean Rank	Sum of Rank	*p-value*
Energy	Pre test	Negative Ranks	1	4.50	4.50	0.021
	Post test	Positive Ranks	8	5.06	40.50	
		Ties	20			
		Total	**29**			
Proteins	Pre test	Negative Ranks	6	7.25	43.50	0.109
	Post test	Positive Ranks	11	9.95	109.50	
		Ties	12			
		Total	**29**			
Fat	Pre test	Negative Ranks	4	6.63	26.50	0.028
	Post test	Positive Ranks	12	9.13	109.50	
		Ties	13			
		Total	**29**			
Carbohydrate	Pre test	Negative Ranks	2	3.00	6.00	0.161
	Post test	Positive Ranks	5	4.40	22.00	
		Ties	22			
		Total	**29**			

Source: Data Primer, 2023

Based on Table 3, the Wilcoxon test results show that the p-value for Energy and Fat is <0.05 so there is an influence of the pocketbook (BUSAKMIL) on the consumption patterns of anemic pregnant women, while the p-value for Protein and carbohydrates is >0.05 so there is no influence of the pocketbook (BUSAKIL).) on consumption patterns of anemic pregnant women at Harapan Baru Community Health Center in 2023

DISCUSSION

The Influence of the Pocket Book (BUSAKMIL) on the Consumption of Blood Supplement Tablets for Anemic Pregnant Women at the Harapan Baru Health Center in 2023

The results of the study showed that there was an influence of the pocketbook (BUSAKMIL) on the consumption of blood supplement tablets by pregnant women. During the pre-test, respondents consumed a minimum of 3 blood supplement tablets and during the post-test, this increased to 9 tablets, the maximum intake was 15 tablets during the pre-test and increased to 28 tablets during the post-test. The increase in consumption before and after giving

BUSAKMIL shows that giving BUSAKMIL can provide a more in-depth message regarding anemia, how to prevent anemia, and an example of a daily menu that can increase hemoglobin levels, especially for pregnant women.

The results of the Wilcoxon non-parametric test show that the p-value is 0.000 (<0.05), which means there is an influence of the Pocket Book (BUSAKMIL) on the consumption of blood supplement tablets in anemic pregnant women at the Harapan Baru Community Health Center. The increase in consumption of blood supplement tablets was also seen descriptively, where before the education was carried out the average consumption of blood supplement tablets among anemic pregnant women was 10 tablets for 2 weeks and after being given education the average consumption of blood supplement tablets increased to 18 tablets for 2 weeks.

This is in line with Yunita et., al (2018) that one of the factors that influences pregnant women who consume blood supplement tablets is knowledge. Knowledge about anemia, blood supplement tablets and their benefits is one of the factors that encourages mothers to comply with consuming iron tablets. The results of this research are also in line with the results of research conducted by Fatriana & Siti (2021) stating that there is an influence of nutritional education using anemia booklets on compliance in consuming blood supplement tablets among pregnant women at the Gajahan Community Health Center, Surakarta City.

This research is not in line with Ismawati Kiki (2018) who stated that there was no significant difference in compliance after being treated using a control card between the intervention group and the control group (p=0.139). This research is based on several factors, such as mothers feeling bored if they have to consume TTD every day, and the effects caused by consuming TTD make mothers too lazy to consume it. However, in this study, some respondents felt bored if they consumed TTD twice a day, but with education using Busakmil, it could be seen that there was an increase in the consumption of Blood Supplement Tablets

The Influence of the Pocket Book (BUSAKMIL) on the Consumption Patterns of Anemic Pregnant Women at the Harapan Baru Health Center in 2023

The results of the non-parametric Wilcoxon test showed that there was an effect of busakmil on energy consumption patterns with a p-value of 0.021 (<0.05) and fat with a p-value of 0.028 (<0.05). Meanwhile, there is no effect of busakmil on protein consumption patterns with a p-value of 0.109 (>0.05) and carbohydrates with a p-value of 0.161 (>0.05)

In this study, the level of energy consumption during the pre-test and post-test increased. During the pre-test, there was a severe deficit of 20 respondents (69%), after the post-test it became 14 respondents (48.3%) with a severe deficit of energy, and protein was also found. Consumption increased during the pretest with a severe deficit level of 11 respondents (37.9%), after being given education (posttest) and there were differences in results, namely a severe deficit level of 9 respondents (31.0%), fat consumption also increased during the pretest deficit level. the weight of 6 respondents (20.7%) after being

given education, there were differences in results, namely the weight deficit of 3 respondents (10.3%), and carbohydrates also experienced changes. During the pretest, the carbohydrate consumption pattern of all respondents was at a severe deficit, 29 respondents (100.0%). Then, after being given education, the researchers conducted another recall (posttest) and there were differences in results, namely the severity of the deficit in 25 respondents (86.2%).

This research shows that nutritional education using BUSAKMIL does not affect two types of nutrient intake (carbohydrates and protein). This is possible because the process of forming and changing human behavior is influenced by several factors. According to Bloom in Setyaningsih (2021), the factors in question come from within and outside the individual. Factors from within the individual in the form of knowledge, intelligence, perception, attitudes, emotions and motivation function to process external stimuli, while external factors include the surrounding environment, both physical and non-physical; such as climate, human, social, economic, cultural, and so on.

This research is in line with Pakhri (2018) with statistical test results p value = 0.002 which states that there is a significant effect of nutritional education on increasing energy intake in teenagers at SMPN 35 Makassar, with the level of consumption patterns (energy) before the intervention of 47.1% and after intervention it increased to 52.9%. Factors that influence changes in energy consumption patterns, such as nutritional education, are provided in addition to increasing knowledge and practices in meeting energy needs.

The results of this research are also supported by previous research by Yuliati, et al (2017). Based on the results of the Pearson Correlation test, the significance value is 0.000 because it is less than 0.05, so Ho is rejected and Ha is accepted, so there is a relationship between energy adequacy figures and Hb levels. The researcher assumes that the consumption patterns of pregnant women will influence the incidence of anemia. The better the consumption patterns, the reduced the risk of pregnant women for anemia. Factors that must be looked at in consumption patterns consist of carbohydrates, protein, and fat.

This research is not in line with research from Nurcahyani, et., al., 2020 which carried out two education sessions with 4 24 24-hour recalls, so that in this research there was an effect of nutritional education on increasing protein. In this study the 24-hour recall was divided into 4 times, namely before education (FR1 and FR2 were carried out for two consecutive days before education or 2 x 24 hours) and after education (FR3 was carried out after education for 2 x 24 hours) and FR4 was carried out 1 week after education.

Based on the research results, the researcher assumes that they consume small amounts of food sources that contain protein nutrients and with poor and regular eating habits, often consume foods that do not meet the nutritional content, such as drinking tea more than 3x/day and preferring increase portion sizes of carbohydrate sources such as noodles and snacks which cause pregnant women to feel full.

BUSAKMIL media is a factor that can influence the increase in average consumption patterns in this study. This is because education is provided using busakmil media. One of the contents of the busakmil media explains the

recommended portion sizes for pregnant women and examples of foods that are high in iron.

CONCLUSIONS AND RECOMMENDATIONS

Based on the objectives of this research, the following conclusions were obtained:

1. There was an increase in TTD consumption before and after being given BUSAKMIL, namely during the pre-test the average consumption of blood supplement tablets was 10 tablets and after the post-test test it increased by an average of 19 tablets.
2. There is an effect of the pocketbook (BUSAKMIL) on the consumption of blood supplement tablets for pregnant women when consuming iron tablets (p-value 0.000 < 0.05). BUSAKMIL increases the number of blood supplement tablets consumed
3. There is no significant effect of the Pocket Book (BUSAKMIL) on the consumption patterns of protein (p-value 0.109 > 0.05) and carbohydrates (p-value 0.161 > 0.05) of anemic pregnant women, for energy and fat nutrients it shows that there is a significant effect Pocket Book (BUSAKMIL) on energy consumption patterns (p-value 0.021<0.05) and fat (p-value 0.028 <0.05

FURTHER STUDY

Future researchers who wish to research the same theme are expected to use other media and learning methods to be more innovative when providing nutritional education to respondents and to carry out the education repeatedly and over a long period to determine changes in consumption levels.

ACKNOWLEDGMENT

I would like to express my gratitude to Allah SWT, who has given health, mercy and guidance so that the author can complete this research. I would like to especially thank my family and all my friends and comrades in arms who have provided extraordinary prayers, support and encouragement. Don't forget the supervisors and examiners who were involved in completing this research.

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