

Knowledge of Pregnant Women About the Importance of Fulfillment of Folic Acid in the Optimization of Fetal Development During Pregnancy at the Giopani Simbolon Clinic

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Article Info

Article history:

Received March 01, 2023

Revised April 11, 2023

Accepted April 23, 2023

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ABSTRACT

Prevalence rates per 1000 live births regarding folic acid fulfillment were reported in Native Americans (2.7%), Japanese (2.1%), African Americans (0.42%). The purpose of this study was to find out the knowledge of pregnant women about the importance of fulfilling folic acid during pregnancy at the Giopani Simbolon Am.Keb Midwife Clinic, Padangmatinggi Village, South Padangsidimpuan District in 2020. This type of research is descriptive using accidental sampling with 20 respondents. Data collection uses a questionnaire sheet, using primary and secondary data based on variables of knowledge, age, education, employment, parity, and sources of information. Based on the results of the study of 20 respondents, the majority lacked knowledge, namely 14 respondents (70%), based on age the majority was less, namely 10 respondents (50%), based on education the majority was lacking, namely 8 respondents (40%), based on work the majority was lacking, namely 10 respondents (50%), based on parity the majority was lacking, namely 8 respondents (40%), and based on information sources the majority was lacking, namely 11 respondents (55%). Based on the results of the study it can be concluded that the majority of pregnant women's knowledge about the importance of fulfilling folic acid is still lacking so it is expected that pregnant women will increase their knowledge about folic acid either through health workers, print media, and electronic media

Keywords: Knowledge of Pregnant, Fulfilling, Folic Acid, Optimizing Fetal, Development During Pregnancy

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1. INTRODUCTION

To ensure that the fetus develops in a healthy condition, pregnant women must maintain physical fitness to stay fit. This is not a reason to plan a special diet during pregnancy, but what is more important is that pregnant women must eat healthy and proper foods. Pregnant women are not advised to always follow a diet, especially the diet that was usually done before pregnancy. If a pregnant woman experiences nutritional deficiencies while on a diet, this will not only affect the pregnant woman herself but will also affect the fetus in the womb. Pregnant women will certainly be surprised when they realize how easy it is to gain weight during pregnancy. The increase in pregnant women's weight does vary, from 9 to 13 kg with the fastest weight gain at 24 to 32 weeks. [16].

The nutritional status of pregnant women greatly influences the development of the fetus in the womb. If the mother's nutritional status is poor, both before pregnancy and during pregnancy it will cause low birth weight, besides that it will also result retarded growth of the fetal brain, anemia in newborns, easy newborns infection, abortion and etc. The condition of children born to mothers who are malnourished and living in an underprivileged life will result in generations of malnourished and susceptible to infectious diseases. This situation is usually characterized by less than optimal body weight and height. [29].

A recent study by the World Health Organization (WHO) found that more than 20 million babies worldwide were born with low birth weight. This has the potential to increase their health risks in the future, the WHO study in

collaboration with *the United Nations Children's Fund* (UNICEF) and *the London School of Hygiene and Tropical Medicine* analyzed data belonging to 148 countries between 2000 and 2015. [19]. Surveys conducted by *the World Health Organization* show significant variations around the world and on the European continent. The WHO summary shows that the prevalence at birth per 10,000 births in Caucasians is 10 %, Japanese are 20%, Native North Americans are 36%, and Americans of African descent are 3%. [32].

The Department of Health in England (UK) issued a recommendation that administration of folic acid at a lower dose, which is 400 mg, should be taken to prevent the risk of neural tube defects in mothers without a history of pregnancy with the birth of children with these defects. The risk of occurrence ranges between 1 and 6 per 1000 births according to the population studied, while the risk of recurrence is 10-20 times higher. [32]. The prevalence rate per 1000 live births reported in Native Americans is 2.7% in the Japanese population 2.1 % and in African Americans 0.42%. [32]. The 2012 Indonesian Demographic and Health Survey said that the maternal mortality rate in Indonesia in 2012 was 359 cases per 100,000 live births, meanwhile, the Government of the Republic of Indonesia is targeting a reduction in the maternal mortality rate to 306 cases per 100,000 live births by 2019 [22].

Insufficient energy and protein intake in pregnant women can cause Chronic Energy Deficiency (KEK). Pregnant women are at risk of CED if they have LILA <23.5 cm. Pregnant women with KEK are at risk of giving birth to low birth weight babies (LBW). LBW will carry the risk of death, disrupt the growth and development of children. KEK can also be indirect cause of maternal death. The results of the 2013 Riskesdas found that the proportion of pregnant women aged 14-49 years with LILA 23.5 cm or at risk of KEK in Indonesia was 24.2% lowest proportion in Bali (10.1 %) and the highest in East Nusa Tenggara (45.5 %). [15]. In Indonesia, through the health department, they are aware of disturbances to the fetus and pregnant women. Because about 24-26% of pregnant women are not aware of the lack of folic acid in the food they consume. Therefore, pregnant women are highly recommended to eat foods with balanced nutrition, rich in folic acid, and take folic acid supplement pills before and during pregnancy. [9]

Reports from District/City Health Profiles stated that the MMR data in North Sumatra Province in 2012 was only 106 per 100,000 live births. The results of the MMR Census in North Sumatra were 328 per 100,000 live births, this figure is still quite high when compared to the 2010 national figure of 259 per 100,000 live births. (North Sumatra Health Office, 2013). The 2016 Padangsidempuan City Health Office report on the Padangsidempuan City Health Profile shows that the number of newborns with LBW (Low Birth Weight) cases is 38 babies. [13]

Based on a preliminary survey conducted by researchers at the Midwife Clinic, Giopani Simbolon Am.Keb, Padangmatinggi Village, District South Padangsidempuan on September 5 obtained data on pregnant women as many as 25 pregnant women . And on September 9 the researchers met and interviewed 2 pregnant women, the study was continued on September 10, the researchers met and interviewed 4 pregnant women, out of the 6 pregnant women only 1 pregnant woman knew the benefits of folic acid. Interviews were conducted to determine the extent of knowledge of pregnant women about folic acid. Researchers found that there were still pregnant women who experienced nutritional deficiencies during pregnancy, due to several factors such as the economy and knowledge besides that a lack of folic acid could inhibit fetal development, and could be at risk for babies having low birth weight, babies born with disabilities and premature babies. Padangmatinggi Village, South Padangsidempuan District in 2020".

Based on the background of the problem and the survey above, the formulation of the research problem is "How is the knowledge of pregnant women about the importance of fulfilling folic acid in optimizing fetal development during pregnancy at the Giopani Simbolon Midwife Clinic, Padangmatinggi Village South Padangsidempuan District in 2020?". The aim of the study was to find out the knowledge of pregnant women regarding the fulfillment of folic acid on fetal development during pregnancy at the Giopani Simbolon Midwife Clinic, Padangmatinggi Village , South Padangsidempuan District in 2020.

2. METHODS

The research design used is research using *accidental sampling techniques*, which are carried out by coincidence. Anyone met at the Giopani Simbolon Am.Keb Midwife Clinic, Padangmatinggi Village, South Padangsidempuan District, complies with the desired data requirements. Researcher a n _ This starting with submitting the initial title and survey until the time scheduled or planned for August 2020. The population in this study totaled 25 people. The sample in this study amounted to 20 samples. The data used are primary data and secondary data. Data were analyzed using multiple logistic regression tests

3. RESULTS AND DISCUSSION

Univariate analysis

Respondent Characteristics

Respondents with good knowledge at the age of <20 years who have good knowledge do not exist, respondents who are knowledgeable enough as much as 1 respondent (5%), respondents who 4 respondents (20%) had less knowledge, 2 respondents (10%) had good knowledge at the age of 20-40 years, 3 respondents (15%) had sufficient

knowledge, 11 respondents (55%) had less knowledge, 11 respondents had good knowledge at > 40 years, no respondents had sufficient knowledge, no respondents had less knowledge.

Parity of respondents Based on the results of the study it was found that respondents' knowledge about the importance of fulfilling folic acid in optimizing fetal development during pregnancy was based on parity with respondents having good knowledge on Primipara did not exist, respondents who had sufficient knowledge did not exist, respondents who had less knowledge were 7 respondents (35%), respondents who had good knowledge on Scundipara were 2 respondents (10%), respondents who had sufficient knowledge did not exist, respondents less knowledgeable as much as 4 respondents (20%), respondents who have good knowledge on Multipara no, knowledgeable respondents enough 2 respondents (10%), respondents with less knowledge were 3 respondents (15%), and respondents who had good knowledge in Grandemultipara did not exist, respondents who had sufficient knowledge did not exist, respondents who had less knowledge did not exist.

Respondent's Occupation Based on the results of the study , it was found that the respondent's knowledge about the importance of fulfilling folic acid in optimizing fetal development during pregnancy was based on work with good knowledgeable respondents with civil servant jobs not available, no respondents with sufficient knowledge, no respondents with less knowledge, 1 respondent with good knowledge working as a private employee (5%), 2 respondents with sufficient knowledge (10%), 4 respondents with less knowledge (20%), no respondent with good knowledge working as a farmer, 2 respondents with sufficient knowledge (1 0%), respondents with less knowledge did not exist, and respondents who had good knowledge with IRT jobs were 1 respondent (5%), respondents who had sufficient knowledge did not exist, respondents who had less knowledge were 10 respondents (50%) .

Based on the results of the study, it was found that respondents' knowledge about the importance of fulfilling folic acid in optimizing fetal development during pregnancy was based on sources of information with respondents who had good knowledge, namely with sources of information through health workers as many as 2 respondents (10%), respondents who had sufficient knowledge were 4 respondents (20%), respondents who had less knowledge were 1 respondent (5%), respondents who had good knowledge, namely with sources of information through the media print that is not there, respondents who are knowledgeable enough are not there, respondents who are less knowledgeable are 2 respondents (10%), and respondents who are knowledgeable are good, namely with sources of information through electronic media that is not there, respondents who are knowledgeable enough are not there, respondents who are less knowledgeable are 11 respondents (55%).

Based on the results of the study, it was found that the respondents' knowledge about the importance of fulfilling folic acid in optimizing fetal development during pregnancy was based on education with good knowledge of respondents. Elementary school education does not exist, respondents who are knowledgeable enough do not exist, respondents who have less knowledge do not exist, respondents who have good knowledge with junior high school education do not exist, respondents who have sufficient knowledge are 1 respondent (5%), respondents who have less knowledge are 6 respondents (30%), respondents who There were no good knowledge with high school education, 3 respondents (15%) who had sufficient knowledge, 8 respondents (40%) who had less knowledge, and 2 respondents (10%) who had good knowledge with tertiary education, no respondents who had sufficient knowledge, no respondents with less knowledge.

The gender of the respondents was female, namely all pregnant women who came to the Giopani Simbolon Am.Keb Midwife Clinic, Padangmatinggi Village, South Padangsidimpuan District. The most common respondent tribe in the case group was the Mandailing Batak (100%).

T able 1. Cross tabulation of Chi Square Test Analysis

Variable	Group				p-s	OR (95%CI)
	Case		Control			
	n	%	n	%		
Eating habit						
Good	17	37,8	34	75,6	0.0 01	5,091 (2,052-12,628)
Not good	28	62,2	11	24,4		
Physical Activity						
Good	20	44,4	42	93,3	0.001	17,500 (4,719-64,897)
Not good	25	55,6	3	6,7		
Metrocho habit						
Smoke	32	71,1	3	6,7	0.001	2,029 (1,048-11,210)
Do not smoke	13	28,9	42	93,3		

Multivariate Analysis

Based on the results of bivariate statistical tests included in the multivariate analysis were eating habits, physical activity, and smoking habits. Then the three research variables were analyzed using logistic regression analysis. Based on the research results, it can be seen from the research variables, namely smoking habits, eating habits and physical activity, there are 2 variables that influence the incidence of *diabetes mellitus*, namely physical activity and eating habits, with a p value <0.05. The most dominant variable that has the greatest influence on the incidence of *diabetes mellitus* is physical activity which has the highest Exp (B) value of 112.687 with a regression coefficient (B) of 4.725 meaning that respondents who have poor physical activity have 112.687 chances of suffering from *diabetes mellitus* compared to respondents who have good physical activity . The results of the multivariate analysis can be seen in Table 2 below:

Table 2. Logistic Regression Test Results

Variable	B	Sig	Exp (B)	95%CI	
				Lower	Upper
Eating habit	1,928	0.038	6,874	1,111	42,545
Physical Activity	4,725	0.0001	112,687	16,419	773,375
Smoking habit	0.138	0.867	1.148	0.229	5,747
Constant	-4,660	0.001	0.009		

The Influence of Eating Habits on the Incidence of Diabetes Mellitus in Pre-Elderly

Based on the results of multivariate statistical tests with multiple logistic regression tests, it was found that the eating habits of the respondents affected the incidence of *diabetes mellitus* with a p value = 0.038 (<0.05) with an Exp (B) value of 6.874 meaning that eating habits that are not good have a 6 times chance of developing *diabetes mellitus*.

The results of research in the field found that more respondents in the case group had bad eating habits. The case group often ate foods that contained carbohydrates and had a high GI such as white rice, white bread, chicken noodles, meatballs and granulated sugar. In everyday cooking, respondents added a lot of sugar to food, moreover, respondents gave monosodium glutamate to add a delicious and savory taste to the dish. The results of this study are in line with Poniyah's research which states that the variable diet influences the incidence of *diabetes mellitus* . The statistical test of multiple logistic regression shows a p - value = 0.000 (p = 0.05) with an OR of 8.556 (95% CI = 3.976-18.410). Improper eating patterns make our bodies susceptible to disease. The results of this study are also in accordance with Anugrah's research which states that there is a significant effect of diet on the incidence of *diabetes mellitus*. [10]

According to the researchers, the eating habits of the respondents were not good because the above caused *diabetes mellitus* due to the consumption of unhealthy foods such as high carbohydrates, coconut milk, high flavorings, preserved and in cans.

The Effect of Physical Activity on the Incidence of Diabetes Mellitus in Pre-Elderly

Based on the results of multivariate statistical tests with multiple logistic regression tests, it was found that the physical activity of the respondents had an effect on the incidence of *diabetes mellitus* with a value of p = 0.0001 (<0.05) with an Exp (B) value of 112.687 meaning that a bad diet has a 112.687 chance of suffering from *diabetes mellitus*. The results of research in the field showed that the respondents in the case group did not do much physical activity or did not move often, such as taking a walk after eating (cleaning the yard). Some respondents claimed that after eating they immediately lay down or fell asleep.

According to the analysis of researchers that physical activity is very important for controlling blood pressure. Adequate physical activity can help strengthen the heart. Sufficient and regular physical activity can reduce the risk of heart and blood vessel diseases besides that it can help reduce weight in obese people. Regular physical activity can reduce systolic blood pressure by 4 points and diastolic blood pressure by 3 points. The higher a person's blood pressure when starting the exercise program, the greater the improvement that will be achieved. The results of other studies are also in accordance with Rachmawati's research that there is a relationship between physical activity and the incidence of *diabetes mellitus* with a p value = 0.012. ⁹

Physical activity already has a protective effect, as long as it is done regularly almost every day, the most important thing is regularity. In this study we can see that in the case group there were more respondents who were at risk of doing physical activity of >30 minutes every day, this proved that the respondents were still lacking in doing daily sports activities, hiking and carrying out daily activities, but more respondents did house and gardening activities in a day. Physical activity is very important for controlling blood pressure. Moderate physical activity can help strengthen the heart. A stronger heart can certainly pump more blood with less effort. The lighter the work of the heart, the less pressure on the arteries so that blood pressure will decrease. ¹⁰

The Effect of Smoking Habits on the Incidence of *Diabetes Mellitus* in Pre-Elderly

Based on the results of multivariate statistical tests with multiple logistic regression tests, it was found that the smoking habits of the respondents did not affect the incidence of *diabetes mellitus* with a p value = 0.867 (> 0.05) with an Exp (B) value of 1.148. Every cigarette butt causes blood vessels to constrict which results in worsening of the condition of blood vessels. The results of research in the field found that respondents in the case group smoked more than in the control group. Respondents admitted that smoking started at the age of 21 and over for the reason of following along with friends, experimenting until addicted to cigarettes and according to them smoking can reduce dizziness and stress.

According to the researcher, many respondents smoked, triggering the incidence of *diabetes mellitus* because smoking can cause an increase in blood pressure. The results of this study are in accordance with Poniyah's research which states that there is no effect of the smoking habit variable on the incidence of *diabetes mellitus* with the results of multiple logistic regression statistical tests showing a p value of 0.139 ($p > 0.05$).

Cigarettes can cause an increase in blood pressure. Two cigarettes are proven to increase blood pressure by 10 mmHg. Various studies prove, after smoking for about 30 minutes, blood pressure will increase significantly. Cigarettes increase blood pressure through the nicotine contained in tobacco. The inhaled nicotine circulates in the blood vessels up to the brain. The brain then reacts by giving a signal to the adrenal glands to release the hormone epinephrine / adrenaline.¹⁴

This is in accordance with the results of Anugrah's research which states that smoking habits have no effect on the incidence of *diabetes mellitus*. The above shows that the relationship between health promotion in smoking and the incidence of *diabetes mellitus* is by explaining the dangers of smoking and the effects of smoking so that sufferers are stunned to stop, not smoke and will stay away from cigarette smoke and create an area without smoking.

Research Implications

The implications that can be formulated from the findings and facts are as follows

4. CONCLUSION

Based on the results of research on the Knowledge of Pregnant Women About the Importance of Fulfillment of Folic Acid in Optimizing Fetal Development During Pregnancy at the Midwife Giopani Simbolon Am.Keb Clinic, Padangmatinggi Village, South Padangsidempuan District in 2020, the following conclusions are obtained: Respondents' knowledge about the importance of fulfilling folic acid during pregnancy, the majority of respondents with less knowledge were 14 respondents (70%), and a minority with good knowledge were 2 respondents (10%). Respondents' knowledge about the importance of fulfilling folic acid during pregnancy based on age, the majority of respondents had less knowledge at the age of 20-40 years as many as 11 respondents (55%), and a moderate minority at the age of <20 years was 1 person (5%). Respondents' knowledge about the importance of fulfilling folic acid during pregnancy based on parity was lacking in the majority of Primiparas, namely 7 people (35%), and the minority of Skundipara who had good knowledge, as many as 2 people (10%). Respondents' knowledge about the importance of fulfilling folic acid during pregnancy is based on work with the majority of respondents having less knowledge, namely the work of housewives (IRT) of 10 respondents (50%), the minority with good knowledge, namely the work of IRT 1 respondent (5%) and respondents who have good knowledge, namely the work of private employees as much as 1 person (5%). Respondents' knowledge about the importance of fulfilling folic acid during pregnancy based on sources of information was that the majority of respondents had less knowledge, namely with sources of information through electronic media as many as 11 people (55%), and the minority of respondents who had less knowledge through health workers was 1 respondent (5%). Respondents' knowledge about the importance of fulfilling folic acid during pregnancy was based on education with the majority of respondents having less knowledge with high school education as many as 8 respondents (40%), and a minority with sufficient knowledge with junior high school education as much as 1 person (5%).

ACKNOWLEDGEMENTS

Author thanks to Department of Midwifery, STIKES Darmas Padangsidempuan, Indonesia and Inovasi Pratama Internasional LTD.

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