BLOSSOM JOURNAL OF MIDWIFERY

Article

Sweet Potatoes Consumption on Increased Hemoglobin Levels in First Trimester Pregnant Women

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SUBMISSION TRACK

Recieved: October 2019
Final Revision: November 2019
Available Online: December 2019

KEYWORDS

Anemia, Pregnant Women, Sweet Potatoes

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A B S T R A C T

Anemia is a condition in which the number and size of red blood cells or hemoglobin concentrations are below the normal limit value, which can disrupt the blood's capacity to carry oxygen around the body. Anemia is one of the health problems in the whole world, especially in developing countries where an estimated 30% of the world's population suffer from anemia. This study aims to determine the effect of sweet potato (Ipomoea Batatas L) on increasing Haemoglobin levels of first-trimester pregnant women in the Working Area of Nilam Sari Health Center in Bukittinggi City. This research was a quasi-experimental research using one group pretest-posttest design. The study population was all pregnant women with anemia as much as 10 people with a sample of 7 pregnant women with anemia, taken by non probalitiy sampling technique using purposive sampling. respondent was treated with 100 grams of sweet potato (Ipomoea Batatas L) stew for 7 days. Measurement of hemoglobin levels was carried out 2 times before consuming sweet potato stew (Ipomoea Batatas L) and on the 9th day after consuming sweet potato stew (Ipomoea Batatas L). The results showed that p value = 0.004. It can be concluded that there is an influence in the administration of sweet potato stew (Ipomoea Batatas L) to increase hemoglobin levels in pregnant women with anemia.

I. INTRODUCTION

Anemia is a condition in which the number and size of red blood cells or hemoglobin concentrations are below the normal limit value, which can disrupt the blood's capacity to carry oxygen around the body. Anemia is one of the health problems in the whole world, especially in developing countries where an estimated 30% of the world's population suffer from anemia (Rukiah, 2013)

Anemia often occurs in the community, especially in girls adolescents and pregnant women. Anemia is one of the indirect causes of death of pregnant women. Anemia in pregnant women is closely related to maternal and infant mortality and morbidity, including the risk of miscarriage, still birth, prematurity and weight of the baby low birth (WHO, 2014).

According to data from the World Health Organization (WHO), in 2014. The maternal mortality rate (MMR) in the world reached 289,000 people, which are divided into several countries, including the United States reaching 9300 people, North Africa 179,000 people and Southeast Asia 16,000 people (WHO, 2014). Maternal Mortality Rate (MMR) in Indonesia is the highest compared to other ASEAN countries (WHO, 2015).

Based on data from the Republic of Indonesia Ministry of Health, 4 out of 10 pregnant women in Indonesia experienced anemia (RI Ministry of Health, 2018). Based on 2018 Riskesdas data there was an increase in the number of pregnant women experiencing anemia at the age of 15-24 years by 84.6%, aged 25-34 years 33.7%, aged 35-44 years by 33.6% and ages 45-54 years by 24%.

The prevalence of anemia in pregnant women greatly affects the health condition of children at birth. Both of these include several things that have the potential for stunting in children viewed from weight and height at birth (Riskesdas, 2018). Health data in the province of West Sumatra shows that the prevalence of anemia in pregnant women in West Sumatra in 2014 amounted to 24.7%, this shows that anemia is still a public health problem in Indonesia, including in West Sumatra (Health Office 2016)

One of the causes of MMR is bleeding, where bleeding is the highest cause of death for mothers, such as the data from the Ministry of Health of the Republic of Indonesia which states that maternal mortality in Indonesia is caused by bleeding (30.3%), hypertension (27.1%), prolonged labor (1.8%) and abortion (1.6%) (Ditjen Kesmas, Kemenkes RI, 2016). Until now the high maternal mortality rate in Indonesia is still a priority in the health sector.

According to WHO 40% of maternal deaths in developing countries are related to anemia in pregnancy and most are caused by iron deficiency and acute bleeding, not

http://dx.doi.org/10.35730/blsm.v1i1.467

infrequently most are caused by iron definition and acute bleeding, even not infrequently the two are integrated together (Saiffuddin, 2010).

Iron deficiency anemia is anemia caused by a lack of iron in the body, so the need for iron (Fe) for erythropoesis is not enough, which is characterized by a picture of hopochrome-microciter red blood cells, serum iron levels (serum iron), decreased saturation of iron, iron capacity total elevation and iron reserves in the bone marrow and elsewhere are very lacking or nonexistent (Rukiyah, 2013).

Iron has a vital role in fetal growth, during pregnancy, iron must be added, remembering that during pregnancy, maternal blood volume increases. Thus, to be able to continue to meet the needs of the mother and supply food and oxygen to the fetus through the placenta, more iron intake is needed. Iron intake given by pregnant women to the fetus through the placenta will be used by the fetus for growth and development needs, including for brain development, as well as storing it in the liver as a backup until the baby is 6 months old (Ministry of Health Republic of Indonesia, 2015).

Anemia in pregnant women can be treated pharmacologically and non-pharmacologically. For the treatment of pharmacological anemia, oral therapy is to provide iron preparations, namely ferrous sulfate, ferrous gluconate or Na-ferobyricate, Vit B12, Folic Acid, and Vit C (Manuaba, 2013). For non-pharmacological iron can be obtained from tubers, vegetables, and beans (Agria et al, 2012). One of the non-pharmacological treatments of anemia is to consume sweet potatoes.

Sweet is a type of tuber plants whose high carbohydrate content. Sweet Potatoes can be divided into White Sweet Potatoes, Oren Sweet Potatoes, Yellow Sweet Potatoes and Purple Sweet Potatoes. In addition to containing high carbohydrates, Sweet Potato or Sweet Potato also contains various antioxidants and Vitamins that are beneficial for our health.

Sweet potatoes are also a source of vitamins and minerals, vitamins contained in sweet potatoes include Vitamin A, Vitamin C, thiamin (vitamin B1) and ribovlavin. While minerals in sweet potatoes include iron (Fe), phosphorus (P) and calcium (Ca). Other constituents are protein, fat, crude fiber and ash. The total anthocyanin content varies in each plant and ranges from 20 mg / 100 g to 600 mg / 100 g wet weight.

II. METHODS

The design of this study was a quasi-experimental research . The population in this study were all pregnant women with first trimester anemia in the working area of the Nilam Sari Health Center in Bukittinggi. The number of first trimester anemia pregnant women with 3

http://dx.doi.org/10.35730/blsm.v1i1.467

months gestational age at the Nilam Sari Health Center is 10 people. The sample of this study using taken by non probalitiy sampling technique using purposive sampling. 7 pregnant women become samples of this study.

respondent was treated with 100 grams of sweet potato (Ipomoea Batatas L) stew for 7 days. Measurement of hemoglobin levels was carried out 2 times before consuming sweet potato stew (Ipomoea Batatas L) and on the 9th day after consuming sweet potato stew (Ipomoea Batatas L)

Data processing is done by computerization, editing (data checking), coding (code), data entry, tabulating. The analysis used was an Univariate analysis conducted on each variable of the results of the study, a bivariate analysis that was to see the effect of giving Sweet Potatoes to the increase in hemoglobin levels in pregnant women with anemia.

III. RESULT

Table 1 Average Haelmoglobin level before sweet potato intervention

Haemoglobin level	Mean	Min-Max
Pre-Test	**10.075**	**8.9-10.7**

Regarding to haemoglobin level before intervention, it was found that; the average of haemoglobin level scale was 10.075

Table 2 Average Haelmoglobin level after sweet potato intervention

Haemoglobin level	Mean	Min-Max
Post-Test	**10.257**	**9.2-11**

Regarding to haemoglobin level after intervention, it was found that the average of haemoglobin level scale was 10.257

Table 3 Effect of Giving sweet potato on Increasing Haemoglobin level in pregnant women

	Paired Differences					
				95%		
	Mean	Standar Deviation	Standar error	Lower	Upper	P
Haelmoglobin level **Pre**	**10.075**	**0.7254**	**0.2742**	**8.9**	**10.7**	**0.004**

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test Post Test	**10.257**	**0.7208**	**0.2724**	**9.2**	**11**

Average of haemoglobin level before intervention is 10.075 with a standard deviation 0.7254 while the average of haemoglobin level after intervention is 10.257 with a standard deviation of 0.7208, Dependent T-test results p value of 0.04 <0.05 indicates that there was sweet potato on haemoglobin level in pregm]nant women.

IV. DISCUSSION

Anemia in pregnancy is caused by iron deficiency, its type of anemia whose treatment is relatively easy, inexpensive material. Anemia in pregnancy is a national problem because it reflects the value of the socioeconomic of the community, and its influence is very large on the quality of human resources. Anemia of pregnancy is called "potential danger to mother and child" (potential to endanger the mother and child), that's why anemeia requires serious attention from all parties involved in health services at the forefront (Manuaba, 2014).

Sweet Potatoes contain vitamins A, C, B1, ribovlavin. iron (Fe), phosphorus (P) and calcium (Ca). The content contained in Sweet Potatoes is useful as an anti-anemia or can increase hemoglobin levels in the blood. Sweet Potato Stew is more easily absorbed than meat or other ingredients, Sweet Potato Stew can be consumed every day for pregnant women can have an effect on increasing hemogobin levels in pregnant women (Luthfa Nurridha, 2018).

The results of this study are in line with research conducted by Farida Amalia Yuliandani, et al (2017), the study showed that almost all pregnant women experienced a Hb level increase of 11.4318gr% after being given sweet potatoes for 7 days. In my research, almost all pregnant women experienced an increase in Hb levels with an average of 10.257 gr% after giving sweet potato stew for 7 days.

Sweet Potato Stew can affect hemoglobin levels in pregnant women who have anemia. Sweet Potatoes contain vitamins A, C, B1, ribovlavin. iron (Fe), phosphorus (P) and calcium (Ca). The content contained in the Sweet Potato Stew is useful as an anti-anemia or can increase hemoglobin levels in the blood. Sweet Potato Stew is more easily absorbed than meat or other ingredients, Sweet Potato Stew can be consumed every day, for pregnant women can have an effect on increasing hemogobin levels in pregnant women (Luthfa Nurridha, 2018).

The results of this study are in line with research conducted by Farida Amalia Yuliandani, et al (2017), that pregnant women who were given sweet potato boiled Hb levels increased by an average of 0.18 gr% grams in 7 days. In this study the results of the analysis using the t test obtained p value = 0,000 (p <0.05) meaning that Ha was accepted and Ho was rejected.

http://dx.doi.org/10.35730/blsm.v1i1.467

According to the researchers 'assumptions, before being given a Sweet Potato Stew on average the respondents' hemoglobin levels were low. Decreasing hemoglobin levels during pregnancy is physiological as long as it is within normal limits, because during pregnancy most women's bodies experience changes, especially changes in the blood circulation system where the total blood volume and plasma volume rise rapidly since the end of the first trimester and peak in the trimester III, followed by increased cardiac output. Physiologically this hemoglobin level falls due to hemodilution in the blood. The dilution that occurs is due to the large amount of plasma in the blood.

In addition, when viewed based on the age of respondents who experienced an increase in hemoglobin levels, they were 19, 28, 21, 30, 25, 22 years old, while respondents who did not experience an increase / settled were at the age of 26 years. It can be concluded that age does not affect the occurrence of anemia. While it can be seen from the parity of respondents who experienced an increase in hemoglobin levels found in gravid 1, 2, 1, 3, 1, 1 and those who did not experience an increase / settled hemoglobin levels were found in gravid 1. Then it can be concluded that parity does not affect the increase in hemoglobin levels. Judging from the weight of respondents who experienced an increase in hemoglobin levels were 42, 50, 40, 56, 45, 51 kg, while respondents who did not experience an increase / settled in their hemoglobin were 48 kg. It can be concluded that BB does not affect the increase in hemoglobin levels.

affects the lack of knowledge of the mother of the efficacy of sweet potato stew that can increase hemoglobin levels in anemia. In addition, the low hemoglobin level is caused by the psychological influence of mothers who are anxious in facing their pregnancy, the nutritional needs of mothers who are less like mothers do not want to consume vegetables and consume less fruits. In addition, as health workers must be able to overcome the handling of anemia both in terms of pharmacological and non-pharmacological or complementary treatment.

V. CONCLUSION

Sweet Potatoes contain vitamins A, C, B1, ribovlavin. iron (Fe), phosphorus (P) and calcium (Ca). As a midwives it is important to educate some food that contain of high level of haemoglobon to prevent anemia in pregnant women.

http://dx.doi.org/10.35730/blsm.v1i1.467

REFERENCES

Agria, et al. 2012. Anemia in Pregnancy. Jakarta; Salemba Medika

Briawan, Dodik et al. 2013. The Efficacy of Sweet Potato Cookies for Improving Anemia Status of Schoolgirls. Accessed April 10, 2019

Hidayat.2010. Nursing Research Methods and Data Analysis Techniques. Solo; Salemba Medika RI Ministry of Health. 2014. Accessed April 2019 Khalil, munawar. 2016. Healthy without drugs with sweet potatoes. Yogyakarta

Mandriawati, Ayu et al. 2014. Pregnancy Midwifery Care. 2014. Jakarta; Medical Book Melfiawati, 2012. Book Guidelines for Diet and Nutrition Therapy 2nd Edition Jakarta; hypocrates Manuaba 2010. Maternity Edition 4. Jakarta

Manuaba 2014. Anemia in Pregnancy. Jakarta; Salemba Medika Notoatmodjo, S. 2012. Health Research Methodology. Jakarta: Rineka Cipta.

Nurirdha, Lutfi. 2018. Blood-boosting food for anemic pregnant women. Accessed August 2019 Nurjanah, siti.2017. Relationship of Vitamin C, Fe Tablets, and Sweet Potatoes Duns to Changes in Hemoglobin Levels in Pregnant Women with Anemia. Accessed April 2019

Prawiharjo, Sarwono. 2014. Midwifery. Jakarta: Library Development. The health profile of the city of Bukittinggi. 2012. Accessed April 2019 Rukiah, Ai et al. 2010. Midwifery Care 1 Pregnancy Revised Edition. Jakarta; CV. Trans Info Media.

Rukiah, Ai et al. 2013. Anemia in Pregnant Women. Jakarta ; Trans Info Media Riskesdes. 2018. Accessed June 2019

Sarah, Rusdiya Handayani. 2017. Comprehensive Midwifery Care. Accessed April 2019 Sulistiawati, Ari, 2011. Midwifery Care During Pregnancy. Salemba Medika

Saiffudin. 2010. Midwifery Care. Jakarta ; Salemba Medika Saryono 2013.

Health Research Methodology. Jakarta. Trans Info Medika Tarwoto et al. 2011.

Anemia in Pregnant Women. Jakarta; Trans Info Media Wardani, if revelation. 2011. Third edition of Capita Selekta Medicine World Health Organization (WHO). 2014. Accessed April 2019.

World Health Organizatin (WHO). 2014. AKI. Accessed April 2019 Yohana and et al., 2011.

Pregnancy and Childbirth. Garda Medika. Jakarta Yuliandani, Amalia et al. 2017.

http://dx.doi.org/10.35730/blsm.v1i1.467

Effect of Sweet Potato Consumption on Increased Hemoglobin Levels in Pregnant Women TM III. http; // ejournal.poltekkes-smg.ac.id/ojs/index.php/jrk. Accessed April 9, 2019.

http://dx.doi.org/10.35730/blsm.v1i1.467