THE EFFECTIVENESS OF GIVING PURPLE SWEET POTATOES AS A SOURCE OF SUPPLEMENTARY NUTRITION FOR PREGNANT WOMEN WITH CHRONIC ENERGY DEFICIENCY: *LITERATURE REVIEW*

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Abstract

Background: In Banjarmasin City, South Kalimantan Province based on the 2015 Recapitulation. From 1,131 pregnant women, there were 103 pregnant women or (9.1%) who experienced SEZ. In 2016 out of 804 pregnant women there were 250 pregnant women or (31.09%) who experienced SEZ and in 2017 out of 1002 pregnant women there were 285 pregnant women or (28%) who experienced SEZ (Banjarmasin City Health Office, 2018). Sweet potato plant as an alternative food additive because it has sufficient content to meet some of the nutritional needs of pregnant women. Objective: This study aims to determine the effectiveness of giving purple sweet potato as a source of dietary nutrition in chronic energy deficient pregnant women based on the Literature Review. Methods: This study uses a literature study approach by using sources that have been selected based on the criteria that have been determined by the researcher. Results: From 10 types of literature, it was found that the average research results showed that purple sweet potatoes had high content of carbohydrates, protein, fat, Fe and Vitamin C to meet the nutritional needs of pregnant women so that purple sweet potatoes were suitable for use as additional food for pregnant women. especially mothers with SEZ. Conclusion: Purple sweet potato is effective as a source of additional food nutrition in KEK pregnant women

Keywords: Sweet Potatoes, Pregnant Women and KEK

Introduction

Nutritional status is an expression of a state of balance in the form of certain variables, or the manifestation of nutrition in the form of certain variables. In the book Basic Principles of Nutrition, nutritional status is the state of the body as a result of food consumption and the use of nutrients. The nutritional status of pregnant women is a physical condition that is the result of consumption, absorption and utilization of various kinds of nutrients, both macro and micro (Supariasa, et al 2012).

The nutritional status of pregnant women is a state of balance in the body of pregnant women as a result of the intake of food consumption and the use of nutrients used by the body for survival in maintaining the functions of the body's organs. The nutritional status of pregnant women can be known by measuring the upper arm circumference (LILA) (Hidayati, 2012). The LILA

measurement is quite representative, where the LILA size of pregnant women is closely related to the BMI of pregnant women, namely the higher the LILA of pregnant women followed by the higher the BMI of the mother but the higher the BMI of the pregnant women. The lower the LILA, the lower the BMI of the mother which can result in the mother experiencing chronic energy deficiency (KEK).

Chronic Energy Deficiency (KEK) is a state of malnutrition. Where the condition of the mother suffers from chronic (chronic) food shortages which result in health problems for the mother in relative or absolute terms of one or more nutrients (Helena, 2013). The prevalence of Chronic Energy Deficiency (KEK) in pregnant women in 2013 nationally was 24.2% and decreased to 17.3% in 2018 (Riskesdas, 2018). In the city of Banjarmasin, South Kalimantan Province, based on the 2015 recapitulation, the number of pregnant women is 1,131 people. Of the number of pregnant women, there were 103 pregnant women or (9.1%) who experienced chronic energy deficiency (KEK). In 2016 the number of pregnant women was 804 people. Of the number of pregnant women, there were 250 pregnant women or (31.09%) who experienced chronic energy deficiency (KEK) and in 2017 the number of pregnant women was 1,002 people. Of the number of pregnant women, there are 285 pregnant women or (28%) who experience chronic energy deficiency (KEK) (Banjarmasin City Health Office, 2018). This figure is relatively small but the impact of this Chronic Energy Deficiency is very large. Where usually pregnant women who experience Chronic Energy Deficiency are also accompanied by anemia, this can cause complications or complications during pregnancy or childbirth, one of which is bleeding which is one of the most common causes of maternal death in Indonesia.

Due to chronic energy deficiency during pregnancy, it can affect both the mother and the fetus in her womb, namely, pregnant women can feel tired, tingling, the face looks pale, difficulties during childbirth, the milk that comes out is not enough to meet the baby's needs, so the baby will be deficient. breast milk while breastfeeding. In the fetus that is conceived, miscarriage can occur, fetal growth is disrupted until the baby is born with Low Birth Weight (LBW), the fetal brain development is delayed, so that it is possible later, the child's intelligence is lacking, the baby is born prematurely (premature), infant death (Helena, 2013).). The cause of SEZ is influenced by several factors, including: the amount of energy intake, age, workload of pregnant women, disease/infection, education or mother's knowledge about nutrition and family income are the causes of pregnant women suffering from CED.

One example of a food source that is easily available and is one of the local foods at affordable prices, namely tubers which are additional food as a source of nutrition. Tubers are food derived

from roots/tubers that can be consumed as staple foods such as sweet potatoes, cassava, potatoes, sago, taro and their derivative products such as flour, cakes and bread (Suhaimi 2019).

Sweet potatoes or yams, which in some areas are called yams, are an important source of carbohydrates. Purple sweet potato is also widely consumed by the public with various types of preparations. Sweet potatoes contain nutritious substances per 100 grams, namely 123 kcal of energy, 1.8 g of protein, 0.7 g of fat, 27.9 g of carbohydrates, 30 mg of calcium, 49 mg of phosphorus, 0.7 mg of iron, and vitamin A. 7700 SI, 22 mg vitamin C, 0.90 mg vitamin B1 (Winarti, 2010).

Purple sweet potato contains higher anthocyanin pigments than other varieties. The strong purple color indicates the high levels of antioxidants and anthocyanins in it. The protein content in purple sweet potato is higher than that of yellow sweet potato 0.77% (Winarti, 2010). Based on the explanation and data above, the authors are interested in conducting research using the Literature Review Method on "The Effectiveness of Giving Sweet Potatoes as a Source of Supplementary Food Nutrients for Pregnant Women with SEZ". The author hopes that this Literature Review can reduce the number of Chronic Energy Deficiency in pregnant women.

Materials and Methods

This study uses a literature review study approach by using several sources of journals or articles selected based on predetermined criteria.

Results

The process of collecting literature is done by selecting the number of journals or articles from 205 literatures to 10 literatures.

Discussion

According to research conducted by Suparmi et al (2020) stated that nutrition in pregnant women is not only needed for maternal health, but also highly recommended for fetal brain development (Suparni, Fitriyani, Aisyah RD, 2019). Nutritional needs for pregnant women are adjusted to the nutritional status of pregnant women. Pregnant women who experience KEK experience an imbalance of protein energy (Ervinawati, 2019). And purple sweet potato contains nutritious substances per 100 grams, namely 123 kcal energy, 1.8 g protein, 0.7 g fat, 27.9 g carbohydrate, 30 mg calcium, 49 mg phosphorus, 0.7 mg iron, vitamin A 7700 SI, vitamin C 22 mg, vitamin B1 0.90 mg. During 14 days of administration of purple sweet potato there was no change in upper arm circumference (LiLa) maybe if it was consumed longer and in larger quantities it could increase LiLa changes and if LiLa increased then body weight also increased it can be concluded

that purple sweet potato contains Fe which is high enough so that it is useful for improving the Hb of pregnant women but also has sufficient content to increase the protein and nutritional needs of pregnant women and is good for consumption as an additional food to meet the nutritional needs of pregnant women.

According to research conducted by Nursiti Muttaahalliyah (2018) stated that of 150 pregnant women, 65 people experienced nutritional status problems. Based on the literature, it is stated that there are 43% of pregnant women experiencing anemia caused by lack of nutritional intake containing iron both in daily consumption and nutritional intake such as blood-added tablets in pregnant women. Based on these problems, the purpose of this study was to determine the relationship between the nutritional status of pregnant women in the third trimester and the incidence of anemia. From the results of this study it can be concluded that the nutritional status of pregnant women is an indicator of health status in Indonesia. Of the 150 pregnant women, 65 people experienced nutritional status problems. If pregnant women experience poor nutritional status, it can lead to anemia even though the mother's weight and LiLa size are normal, but if the mother is anemic then pregnant women are also pregnant women with chronic energy deficiency.

According to research conducted by Farida Amalia (Yuliandani et al, 2017) states that the cause of Anemia in Pregnant Women is the increasing amount of iron needs for the growth of the fetus they contain. The causes of anemia in pregnant women are less nutritious food, indigestion and malabsorption, lack of iron in food, increased iron needs, a lot of blood loss such as past childbirth, menstruation and others. Therefore, a study was conducted using purple sweet potato as an additional food for pregnant women and the results showed that the hemoglobin level of pregnant women before being given intervention in the intervention group was an average of 10.8545 and in the control group an average of 10.4636, with the incidence of anemia before consuming sweet potato. most experienced mild anemia and after consuming sweet potatoes became normal. From the results of research conducted by Farida Amalia (Yuliandani et al., 2017) it can be concluded that the need for iron in pregnant women has an impact on fetal growth and where in this study it was found that purple sweet potato has sufficient content to meet the iron needs of the mother. pregnant.

According to research conducted by Iga Ayuni Fatmala and Annis Catur Adi (2017) stated that the use of purple sweet potato flour and soy protein isolate can be processed into biscuits that have the potential to be the right Supplementary Feeding (PMT) for pregnant women who experience Chronic Energy Deficiency (Chronic Energy Deficiency). SEZ). And the results of the study show that it has the highest acceptability and a protein content of 11.9 g per 100 g which

can meet 10% of the protein needs of pregnant women so that it is suitable for use as supplementary feeding (PMT) for pregnant women.

According to research conducted by Amriani (2017) stated that purple sweet potato biscuits are one of the local food diversification products for the potential of natural resources, especially the use of purple sweet potatoes. This study aims to determine the nutritional content (Carbohydrate, Protein, Fat, Iron (Fe), and Vitamin C) in purple sweet potato biscuits and organoleptic test of the biscuits. The type of design in this study was a completely randomized design (CRD) because it was applied to experiments conducted in a homogeneous environment and the research approach used in this study was an experimental approach using a true-experimental design. With sufficient content to meet the protein and nutritional needs of pregnant women, it is recommended for the public to be able to make purple sweet potato biscuits to become food suitable for consumption as additional food to meet their daily nutritional needs.

According to research conducted by Nuraida Fitri (2020) stated that this plant is a plant that has many benefits, one of which is rich in iron which is needed by the body. The purpose of this study was to determine the acceptability and nutritional content of biscuits modified with sorghum flour and purple sweet potato flour. This research is an experimental research using a simple experimental design with two factors and two treatments. The first treatment (P1) was 50% sorghum flour and 50% purple sweet potato flour. The second treatment (P2) was 85% sorghum flour and 15% purple sweet potato flour. This acceptance test was carried out on 25 panelists, namely untrained panelists (middle teenagers). The results of the analysis of the nutritional content of P1 biscuits contained Iron (Fe) 14.2851mg and fiber 2.31%, while the nutritional content of P2 biscuits contained Iron (Fe) 7.0583mg and fiber 2.36%. It can be concluded that the use of purple sweet potato flour can increase the iron content and is low in fiber so that it is sufficient to meet the needs of iron (Fe) in pregnant women and is suitable for use as a mother's supplementary food during pregnancy.

According to research conducted by Ciagusbandiah and Rindiani (2019), cakes with purple sweet potato flour can provide antioxidant intake in the body, contain anthocyanins that provide natural color aesthetics, and are functional foods. This study aims to determine the characteristics of making cakes with purple sweet potato flour as a snack that contains antioxidants. The results of the nutritional composition are 292.35 kcal energy, 9.20% protein, 12.15% fat, 36.55% consumption, with one consumption of 1 fruit (74 grams/consumption). In addition to having sufficient iron content to meet the needs of mothers during pregnancy, purple sweet potatoes are also rich in antioxidants and high energy so that they can help mothers increase endurance and make it easier for mothers to carry out activities during pregnancy.

According to research conducted by Muhammad Rijal, et al (2019) stated that 4 treatments with different concentrations on purple sweet potato biscuits were repeated 3 times. The results of the 1:0 sample research are Carbohydrate content of 16.26%, Protein 4.51%. Fat 21,50%, Fe 107, 57 ug/g and Vitamin C 66,89 mg sample 1:1, namely the content of sample 1:1, namely sample content 1:3 namely Carbohydrate 16.26%, Protein 4.51%. Fat 21,50%, Fe 107, 57 ug/g and Vitamin C 66,89 mg. The best hedonic test is found in the 1:3 formulation, while the hedonic quality test with rather good criteria is in the 1:1, 3:1 and 1:3 formulations. Carbohydrates, protein and fat are very influential in weight gain. The main source of carbohydrates in food comes from plants which are the main source of energy in the form of starch (amylum) and sugars (mono and disaccharides) which are useful for increasing body weight. So if consuming these biscuits can help increase the weight of pregnant women during pregnancy.

According to research conducted by Diyan Indriyani (2021) stated that the nutritional content of Ipomoea batatas L. poiret as an alternative food to improve the nutritional status of pregnant women and examine the consumption patterns of macronutrients during pregnancy with pregnancy growth. As we know, adequate nutritional intake for pregnant women is very necessary in order to give birth to a healthy baby. Inability to meet nutritional needs due to financial problems is a common problem. Diversification of cheap and affordable food is needed by pregnant women to avoid various pregnancy complications, therefore with sufficient carbohydrates, fat and protein content to meet the nutritional needs of pregnant women, sweet potatoes are recommended to be consumed. With the levels of protein and fat present in sweet potatoes, if consumed as additional food in large quantities and in a long enough time, it can increase the weight of pregnant women, but keep in mind that pregnant women must also consume staple foods such as vegetables, fruit. - Fruits, seeds, meat and fish, sweet potatoes as a useful supplement to increase nutrition and maternal weight during pregnancy.

According to research conducted by Paramhita Rahayu (2016) states that second trimester pregnant women should consume additional nutritional foods per day as many as 2 pastels with purple sweet potato lids filled with meat rogout or 2 purple sweet potato fillings or 1 purple sweet potato pancake. test fiber, anthocyanins and vitamin A nutritional content of additional food for pregnant women with the basic ingredients of purple sweet potato. As we discussed in previous journals that the benefits and content of purple sweet potatoes are so many that the acceptability test and processing of purple sweet potatoes is also very important and in this study the acceptability of purple sweet potatoes which are processed into pastels covered with purple sweet potatoes filled with meat rogout , purple sweet potato filo and purple sweet potato pancake are accepted and liked by pregnant women, so this is an alternative way of consumption other than

just boiling it so that pregnant women don't get bored of consuming them. In addition to the fairly cheap price, sweet potatoes with high protein, carbohydrate and fat content are sufficient to meet the nutritional needs of pregnant women during pregnancy and if consumed in large quantities and in the long term, it is estimated that they can increase the weight of pregnant women and can even help to lose weight. prevent Chronic Energy Deficiency.

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References

Suparni., Fitriyani., & Risqi, D. The Effect of Giving Purple Sweet Potato (Ipomoea Batatas) to Increase Upper Arm Circumference for Pregnant Women with Chronic Energy Deficiency in the Kedungwuni II Health Center Area, Kedungwuni District, Pekalongan Regency in 2018. http://ejournal.stikesmuhgombong .AC ID

Nursiti, M. Relationship between Nutritional Status of Third Trimester Pregnant Women and the Incidence of Anemia at the Cikancung Public Health Center in 2018. http://repository.bku.ac.id/xmlui/handle/123456789/2268...

Farida, A. Y., Retno, K. D., Wilujeng, K.R. (2017). The Effect of Consumption of Sweet Potatoes on Increased Hemoglobin Levels of Pregnant Women in Trimester iii. https://ejournal.poltekkes-smg.ac.id/ojs/index.php/jrk/article/viewFile/2930/582

Iga, A. F & Annis, C. A. (2017). Acceptance and Protein Content of Purple Sweet Potato Flour Substitution Biscuits and Soy Protein Isolate for Supplementary Feeding for Pregnant Women Cake. https://www.e-journal.unair.ac.id/MGI/article/view/5335

Amriani, (2017). Analysis of Nutritional Content of Purple Sweet Potato Biscuits (Ipomoea Batatas L. Poiret) as an Alternative for Nutrition Improvement in the Community. http://repository.uinsu.ac.id/10880/

Nuraida, F. (2020). Test of Acceptance and Nutritional Value of Biscuits From Modified Sorghum Flour Purple Sweet Potato Flour. http://repository.uinsu.ac.id/10880/

Ciagusbandiah & Rindiani. (2019). Purple Sweet Potato Flour Cake As A Snack Containing Antioxidants. https://publikasi.polije.ac.id/index.php/inahco/article/view/177

Muhammad, R., Nur, A. N., Idrus, S. (2019). Analysis of Nutrient Content in Purple Sweet Potato Flour (Ipomoea Batatas Var Ayumurasaki) With Sun Drying and Oven. file:///C:/Users/User/Downloads/7130-23064-1-PB.pdf

Awatiful, A., Diyan, I., Ika, P., Hendra, K. (2020). Macronutrient Analysis in Ipomoea Batatas L. Poiret as an Alternative Food in Improving Nutritional Adequacy of Pregnant Women. https://www.researchgate.net/publication/342689223_Macronutrients_Analysis_

in_Ipomoea_Batatas_L_Poiret_as_an_Alternative_Food_in_Improving_Nutritional_Adequacy_of_Pregnant_Women [accessed August 26, 2021]

Paramitha, R. (2016). Acceptance and Nutritional Content of Supplementary Foods for Second Trimester Pregnant Women With Purple Sweet Potatoes. https://scholar.google.com/scholar?hl=id&as_sdt=0%2C5&q=POWER+ACCEPT+AND+CONTENT+NUTRITION+FOOD+ADDITIONAL+MOTHER+PREGNANT+THE 2nd+TRIMESTER+WITH+INGREDIENTS+BASIC+CARB+RED+PURple&btnG