Journal of Midwifery and Nursing, 6 (1) (2024) pp. 305-310

Published by: IOCSCIENCE

Journal of Midwifery and Nursing

Journal homepage: www.iocscience.org/ejournal/index.php/JMN

The effect of purple sweet potato boiled (ipomea batatas l. Poir) on increasing hb in 3rd trimester pregnant women

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ARTICLE INFO

Article history:

Received Dec 24, 2023
Revised Jan 04 2024
Accepted Jan 27, 2024

Keywords:

Boiled Purple Sweet Potato (Ipomea Batatas L. Poir);
Increased HB;
Third Trimester Pregnant Women.

ABSTRACT

Purple sweet potato is a food ingredient that contains substances needed by pregnant women. The aim of the study was to determine the effect of giving purple sweet potato decoction to increasing HB in third trimester pregnant women at the Romauli Silalahi Clinic in 2023. The method used in this research was quasi-experimental using the One Group Pretest-Posttest Design. The population in this study as many as 40 TM III pregnant women. Sampling in this study was purposive sampling. Data analysis in this study was univariate and bivariate analysis using the Wilcoxon test. The results of the study were that respondents before being given the Purple Sweet Potato Stew Intervention on Increased HB Levels of TM III pregnant women at the Romauli Silalahi Clinic experienced a HB deficiency of 5 people (100%). Respondents After being given purple sweet potato stew, some TM III pregnant women at the Romauli Silalahi clinic had HB levels increased, 4 pregnant women with moderate HB levels (80%), 1 pregnant woman with mild HB levels (20%). There is an effect of boiling Purple Sweet Potato Stew on Increasing HB Levels in TM III Pregnant Women at the Romauli Silalahi Clinic with a p value of 0.002 <0.05. It is hoped that the results of this study will be used as material for evaluation and policy reference for health workers so that they can be applied and implemented by giving purple sweet potato stew to increase Hb in pregnant women so that anemia does not occur.

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1. Introduction

Pregnancy is a physiological process that causes changes in the condition of pregnant women. One of the changes that often occur during pregnancy is anemia (Ibu & Trimester III, 2021). Iron deficiency anemia is one of the disorders that most often occurs during pregnancy. For pregnant women who undergo antenatal care, hemoglobin is an important part of the examination to determine hemoglobin levels (Pujiastutik et al., 2020). Hemoglobin is only found in red blood cells, around 98.5% of the O_2 transported in the blood is bound to hemoglobin for transfer to body tissues (Nugrawati et al., 2021).

Problems that occur in pregnancy, in young pregnancies such as hyperemesis gravidarum, vaginal bleeding (this bleeding can be caused by abortion, ectopic pregnancy and molhydatidiform), molahidatidiform, ectopic pregnancy, anemia (Wijayanti & Mawene, 2022). Meanwhile, in late pregnancy

such as vaginal bleeding (this bleeding can be caused by placenta previa, placental abruption, uterine rupture), severe headaches, blurred vision, swelling in the face and fingers, no fetal movement can be felt, and severe abdominal pain (Putri & Mudlikah, 2019).

Pregnancy is very susceptible to anemia. This is due to the increase in the mother's body's need for iron, as gestational age increases (Maharani & Noeraini, 2023). When a mother has anemia, her blood does not have blood cells Based on the 2018 Riskesdes data, the prevalence of anemia in pregnant women in Indonesia increased compared to 2013, in 2013 as many as 37.1% of pregnant women were anemic while in 2018 it increased to 48.9% . Based on the 2019 profile of the North Sumatra Province health service, the coverage of anemia in pregnant women is in the range of 15 to 39% (Siagian & Damanik, 2021).

Food that pregnant women can consume is a type of tuber that contains iron, such as purple sweet potatoes (Ipomea batatas L. Poir) (Yanti, 2019). Purple sweet potatoes are a type of food that contains substances that pregnant women need (CHAIRILLA K, 2022). According to the United State Department of Agriculture, every 100 grams of purple sweet potato contains 86 kilo calories, 20.1 grams of carbohydrates, 1.6 grams of protein, 3 grams of fiber, 30 grams of calcium, 0.6 grams of iron, and 77% water (Maryen et al., 2021).

Based on the initial survey letter conducted by researchers in April-May 2023 at the Romauli clinic, there were 60 visits from pregnant women and 40 pregnant women at TM III gestational age, of which 10 pregnant women experienced anemia, including 3 mild anemia, 4 moderate anemia. people and 3 people with severe anemia. Some of the complaints that are felt are feeling tired quickly, often dizzy and decreased appetite. A total of 10 pregnant women said they could increase their hemoglobin levels by consuming eggs, spinach, meat, fruit and green vegetables. When researchers talked about fulfilling iron by consuming purple sweet potatoes during pregnancy, pregnant women said that they had never consumed purple sweet potatoes because they did not know beforehand that consuming purple sweet potatoes could increase hemoglobin levels in pregnant women.

Practical implications The results of this study indicate that the purple sweet potato boiled intervention was given to increase the HB levels of TM III pregnant women. (2 times per week) will be as effective as 1 time per week so that the program provides Purple Sweet Potato Stew.

2. Research methods

This research uses a quasi-experimental design using a One Group Pretest-Posttest Design, which is a research activity that provides an initial test (pretest) before being given treatment and a final test (posttest) after being given treatment. This research was conducted at the Romauli Silalahi clinic. Jl. Marelan Raya Gg. agreed Lk. VII Kel. Rengas Island Kec. Medan Marelan in 2023. This research took place from April 2023 to May 2023. The population in this study was all third trimester pregnant women who visited the Pratama Romauli Clinic in April-May 2023, totaling 40 TM III pregnant women. Sampling in this research was purposive sampling. Data collection technique, Primary data collection was obtained using interviews and direct measurement methods. General identity of the respondent The general identity of respondents was obtained through interviews using a questionnaire form which included name, age, address, cellphone number, education, employment and pregnancy history. Hb level data ata on Hb levels was obtained by measuring Hb levels before and after the intervention given purple sweet potato decoction with using a digital hemoglobinometer expressed in g/dl units. Nutrient Intake Data Given (treatment) green bean juice 2 x 24 hours (morning and evening) for 7 days. Secondary data was obtained by taking data from research location profile records regarding the general description of the research location and ANC visit book records regarding the number of pregnant women at the Pratama Romauli Clinic, Jalan agreed, Rengas Pulau, Medan Marelan in 2023. Data were analyzed in the form of univariate and bivariate analysis, namely Univariate analysis was carried out on the independent variables and dependent variables. The results of data analysis are frequency distributions and percentages of each variable. Bivariate analysis is an analysis used to determine the relationship between the independent variable and the dependent variable with statistical tests with the paired T-test which is a parametric test

(normal distribution) which is used to find the relationship between two or more variables if the data is in the form of a numerical scale, but if the data distribution abnormal can be used with the Wilcoxon test.

3. Analysis And Results

The Age Distribution of TM III Pregnant Women at the Romauli Silalahi Clinic in 2023 can be seen in the table below

Tabel 1.
Age Distribution of TM III Pregnant Women at the Romauli Silalahi Clinic in 2023

Age	Jumlah	Persentase (%)
22	1	20
23	1	20
24	2	40
26	1	20
Total	5	100

Based on table 4.1 above, it shows that the majority of respondents at the Romauli Silalahi Clinic in 2023 are 22 years old, 1 person (20%), 1 person (20%), who is 23 years old, 1 person (20%), who is 24 years old. 2 people (40%), and 1 person (20%) aged 26 years.

Table 2.
Respondent data based on type of work

type of work	Frequency	Persentase
Housewife	15	44.12%
Private	10	29.4%
Self-employed	5	14.7%
Civil Servant	4	11.8%
Total	34	100%

Based on table 2 the majority of respondents worked as housewives (IRT), namely 15 (44.12%), the rest worked privately as many as 10 respondents (29.4%), self-employed as many as 5 respondents (14.7%), and the rest worked as civil servants as many as 4 respondents (11.8%).

Tabel 3.
Pretest Hemoglobin Distribution for TM III Pregnant Women at the Romauli Silalahi Clinic in 2023

Hemoglobin *Pretest*	N	Persentase (%)
HB Normal	-	-
Light HB	-	-
HB Medium	4	80
Heavy HB	1	20
Total	5	100

Based on table 2 above, it shows that the majority of respondents at the Romauli Silalahi Clinic in 2023, 4 people experienced moderate HB levels (80%) and 1 person experienced heavy HB levels (20%).

Tabel 4.
Distribution of Posttest Hemoglobin for TM III Pregnant Women at the Romauli Silalahi Clinic in 2023

Hemoglobin *Posttest*	**N**	**Persentase (%)**
HB Normal	-	-
Light HB	4	80
HB Medium	1	20
Heavy HB	-	-
Total	5	**100**

Based on table 4.2 above, it shows that the majority of respondents at the Romauli Silalahi Clinic in 2023 who experienced mild HB levels were 4 people (20%), 1 person experienced mild HB levels (20%). Bivariate Data Analysis

3.1 Normality Test

In testing the hypothesis in bivariate analysis, a data normality test is first carried out using the Shapiro-Wilk statistical test (number of samples < 50)

Table 5.
Shapiro Wilk Normality Test Giving Decoction of Purple Sweet Potatoes on Increasing HB Levels of TM III Pregnant Women at the Romauli Silalahi Clinic in 2023

Group	Shapiro Wilk		
	Statistic	df	Sig
Pre-test	,552	5	0,000
Post-test	,883	5	0,000

Based on the results of the normality test with the Shapiro Wilk Test, it was found that the data results in the Boiled Purple Sweet Potato Pretest group had an abnormal distribution with a value of Sig. 0.000 < 0.05 and the data in the Post-test group is also not normal because the Sig value 0.000 < 0.05 from the data above this test is not normally distributed, so the Wilcoxon test is carried out.

3.2 Wilcoxon test

Table 6
Wilcoxon Test of Giving Purple Sweet Potato Decoction on Increasing HB Levels of TM III Pregnant Women at the Romauli Silalahi Clinic in 2023
Test Statistics[a]

	Posttest - Pretest
Z	-3,162[b]
Asymp. Sig. (2-tailed)	0,002

a. Wilcoxon Signed Ranks Test
b. Based on positive ranks.

Based on the results of the Wilcoxon test, it can be seen that the p value = 0.002, which means p = <0.05, it can be concluded that there is an influence of giving boiled purple sweet potatoes on increasing HB levels of TM III pregnant women at the Romauli Silalahi Clinic in 2023.

3.3 Discussion

The Effect of Giving Purple Sweet Potato Decoction on Increasing HB Levels of TM III Pregnant Women at the Romauli Silalahi Clinic in 2023, This research was conducted on TM III pregnant women to see the effect of giving purple sweet potato decoction on increasing HB levels of TM III pregnant women at the Romauli Silalahi Clinic by providing treatment with giving purple sweet potato decoction on increasing HB levels of TM III pregnant women to 5 TM pregnant women. III by consuming boiled purple sweet potatoes 2 times a day for 7 days. In this study, the results showed that there was an effect of giving boiled purple sweet potatoes on increasing HB in TM III pregnant women at the Romauli Silalahi Clinic in 2023. Based on the results of research in the field, HB levels in TM III Pregnant Women increased after consuming boiled purple sweet potatoes from 5 respondents (100%), Pregnant Women with Normal HB levels of 40%, Pregnant Women with Mild HB levels of 60%.

This research is in accordance with the results of research conducted by researchers Farida Amalia Yuliandani, Retno Kusuma Dewi, Wilujeng Kartika Ratri, stating that consuming purple sweet potatoes has

an effect on increasing hemoglobin levels in pregnant women in the Genuk Community Health Center Area, Semarang City in 2017 (Yuliandani et al., 2017). Consuming purple sweet potatoes has an effect to increase the hemoglobin levels of pregnant women, because the results of the study showed that the hemoglobin levels of pregnant women after being given the intervention in the intervention group experienced an increase in Hb levels of 0.58 and in the control group experienced an average increase of 0.18. Purple sweet potato is a food that has a high nutritional content of carbohydrates and a source of calories (Ulfiana et al., 2019). Therefore, in some areas sweet potatoes are also used as a staple food (Purnadhibrata, n.d.). Sweet potatoes are also a source of vitamins and minerals (Tombokan et al., 2021). The vitamins contained in sweet potatoes are vitamin C and are rich in vitamin A (beta-carotene), thiamin (vitamin B1) and riboflavin. Meanwhile, minerals in sweet potatoes include iron (Fe), phosphorus (P) and calcium (Ca) (Mardha et al., 2023). Based on research by Sandra G.J. Tombokan, Freike S.N. Lumy, Indah Dwi P. Rono, Wahyuni, there is an effect of giving boiled purple sweet potato to increase HB levels in TM III pregnant women at the Ranomut Community Health Center, Paal Dua District, Manado City in 2019. Sweet Potatoes contain substances 4 mg iron per 100 grams of sweet potato can prevent anemia in the body. Based on research, there is an effect of boiled purple sweet potatoes on increasing hemoglobin in TM III pregnant women (Pranata, 2021).

According to the researchers' assumptions, giving boiled purple sweet potatoes can have an effect on the anemia experienced by TM III Pregnant Women at the Romuali Silalahi Clinic, because before being given boiled purple sweet potatoes they experienced Hb deficiency, but after being given boiled purple sweet potatoes the Hb level increased and was already did not experience HB deficiency, namely with a p value of 0.002 < 0.05.

4. Conclusion

From the results of research obtained by researchers entitled The Effect of Giving Boiled Purple Sweet Potatoes on Increasing HB Levels in TM III Pregnant Women at the Romauli Silalahi Clinic in 2023, conclusions can be drawn: Based on the Wilcoxon test, there is an effect of purple sweet potato stew on increasing HB levels of TM III pregnant women at the Romauli Silalahi Clinic with a p value of 0.002 < 0.05. Respondents before being given the intervention of Purple Sweet Potato Stew on Increasing HB Levels of TM III pregnant women at the Romauli Silalahi Clinic experienced HB deficiency as many as 5 people (100%). Respondents After being given boiled purple sweet potatoes, some TM III pregnant women at the Romauli Silalahi clinic had an increase in HB levels, 4 pregnant women with moderate HB levels (80%), 1 pregnant woman with mild HB levels (20%). The implications of research on the effect of boiled purple sweet potato (ipomea batatas l.poir) on increasing Hb in pregnant women in the third trimester are as follows. Theoretical implications, namely Anemia in pregnant women will be more responsive on the administration of Purple Sweet Potato Decoction (ipomea batatas l.poir) on increasing Hb in pregnant women in the third trimester compared to the anemia group in women of childbearing age, the elderly so need the development of science and technology development of Purple Sweet Potato Stew. The research contribution is that the results of this research are expected to provide information as a basis consideration, support, and contribution of thought to decision makers in business to increase income and carry out development Efforts of boiled purple sweet potato (ipomea batatas l.poir) on increasing Hb in pregnant women.

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