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ORIGINAL ARTICLE

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THE INFLUENCE OF RED BEAN VEGETABLES ON INCREASING BREAST MILK PRODUCTION IN BREASTFEEDING MOTHERS AT PUSKESMAS TOBELO, NORTH HALMAHERA REGENCY 2019

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ABSTRACT

Background: Background: According to the World Health Organization (WHO), 81% of AKI caused due to complications during pregnancy and labor and 25% during the past period. This happens due to lack of care to wound, bleeding (because the canal tears are born, placental residues and uterine aton) eclampsia 13% and future complications of Puerperium 11% infection during the period of puerperium is also due to lactation problems that can occur ie Dami breast milk.

Penilitarian method: This type of egalitarian uses quasi-experiments with pre and post-tests and observation through preterists first, then given treatment or intervention, then posted test so that they can know the changes in the congregation that occurred before and after granting or intervention.

Response Result: For this penitent is done normality test and use pragmatic statistical test (PAIRED sample T-TEA), namely testing procedure on a single gelkin (dependent), with the level of the destination test of T-Ts test is P <A 0.05. The amount of breastfeeding before the vegetable vegetables of bargains amounts to approximately 300-400 cc per day. While the amount of breast milk after the vegetable vegetables amounted to 700 cc per day.

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PRELIMINARY

According to *the World Health Organization* (WHO), 81% of MMR are caused by complications during pregnancy and childbirth and 25% during the postpartum period. This occurs due to a lack of care for wounds, bleeding (due to birth canal tears, residual placenta, and uterine atony) eclampsia 13%, and future complications of the puerperium 11% infection during the puerperium also due to lactation problems that can occur, namely breast milk. [1] Mother's milk (ASI) is a specially created liquid that comes directly from a mother's breast for a baby. Breast milk is the most perfect, practical, cheap, and clean baby food because it is drunk directly from the mother's breast. Breast milk contains all the nutrients and fluids that babies need to meet their nutritional needs in the first 6 months. There are 3 types of breast milk, namely colostrum, transitional breast milk, and mature breast milk. Colostrum is the first milk that comes out, thick, yellow with high protein and little fat. [2]

The results of Riskesdas 2018 revealed that the main reason children 0-23 months have not/never been breastfed is because breast milk does not come out (65.7 %). So 33.3 % of infants aged 0-5 months had been given prelacteal food with the most type of food being formula milk (84.5%).

Various efforts have been made to increase milk production, such as doing oxytocin massage. Based on the results of the 2018 study, Wulandari et.al said that there was a significant difference in the mean repeatability between breast milk production after the first, second, and third oxytocin massage treatment. The frequency of oxytocin massage is proportional to the increase in milk production. [4]

One of the nutritional content in breast milk that influences the growth, development, and health of infants is the content of macronutrients. The macronutrients in breast milk are carbohydrates, fats, and proteins. The carbohydrate content in breast milk is in the form of lactose. Lactose in the small intestine is broken down into glucose and galactose by the enzyme lactase. The lactase enzyme produced in the baby's small intestine is sometimes insufficient, but by giving breast milk to the baby, the need for the lactase enzyme can be fulfilled by meeting the requirement of 7.2 g. The protein content in breast milk is required to be 0.9g containing amino acids that have an important role in baby growth. Fat is used to meet the needs of most of the baby's energy.

The mother's way to increase breast milk production is by paying attention to eating patterns such as eating on time and consuming adequate food in the form of vegetables, meat, nuts, fruits, milk, and water. Types of food that can increase milk production are dark-colored beans such as red beans (*phaseolus Vulgaris* L) which are rich in protein and can provide benefits to babies in the formation and maintenance of the body such as bones, muscles, and baby brain. [5]

Based on data on postpartum women at the Tobelo Health Center, North Halmahera Regency in January-July 2021, there were 880 postpartum women. While the data from the register of postpartum mothers at the Tobelo Health Center, Kab. North Halmahera, which experienced a lack of breast milk production was 62 postpartum mothers, while those who did not experience a lack of breast milk production were 818 postpartum mothers. [6]

Overview of Red Beans

1. Definition of Red Bean

KINGDOM	PLANTAE
Subkingdom	Tracheobionta
Superdivision	Spermatophyta
Division	Magnoliophyta
Class	Magnoliopsida
Subclass	Rosidae
Order	Fabales
Family	Fabaceae
Genus	Phaseolus vulgaris L
Species	*Phaseolus vulgaris* L

Source: Sudarminto Setyo Yuwono 2015

2. Red Bean Classification

Table 1. Classification of Red Beans

Image: Red Beans *(Phaseolus Vulgaris L)*

1. Red Bean Morphology

Red bean plants are beans that have almost the same roots as in general. This plant has stems that are quite small and short and piled up. And this plant has a type of leaf that has more than one shape, some are oval and round.

2. Composition and Nutritional Content of Red Beans

Table 4. Composition and Content of Red Beans

NUTRITION	CONTENT
Water	57.2 g
Energy	171 cal
Protein	11 g
Fat	2.2 g
Carbohydrate	28 g
Fiber	2.1 g
Calcium	293 mg
Phosphor	134 mg
Magnesium	138 mg
Iron	3.7 mg
Sodium	7 mg
Potassium	360.7 mg
Zinc	1.4 mg
Folate	394 mg
Choline	65.9 mcg
Vitamin K	5.6 mcg

RESEARCH METHODS

A. Types of research

This type of research is *quasi- an experiment with pre and post-tests,* namely to determine the effect of giving red bean vegetables on increasing breast milk production at the Tobelo Health Center 2019.

B. Population and Sample

1. Population

The population in this study were breastfeeding mothers who experienced a lack of milk production as many as 62 mothers at the Tobelo Health Center, Kab. North Halmahera.

2. Sample

The sample in this study was breastfeeding mothers who experienced a lack of breast milk production that met the inclusion criteria of as many as 10 breastfeeding mothers. 5 were given treatment, and 5 were not given treatment.

3. Inclusion and Exclusion Criteria

a. Inclusion Criteria

1). Breastfeeding mothers who experience a lack of milk production

2) Breastfeeding mothers aged 20-35 years

3) Breastfeeding mothers who are willing to be respondents and are willing to sign the informed consent form.

b. Exclusion Criteria

1). Breastfeeding mother who was sick during the study

2). Breastfeeding mothers who are not sick and are not respondents

C. Place and time of research

1. Research Place

This research was conducted at the Tobelo Health Center, Kab. North Halmahera 2019

2. Research time

This research was conducted in September 2019

3. Research variable

a. Dependent Variables (related variables)

Is a variable that is influenced by the independent variable, which in the experiment changes are measured by knowing the effect of one treatment.

b. Independent Variable (independent variable)

Is a variable that affects or causes changes or related variables to arise. The independent variables in this study were broccoli and red beans.

D. Data Collection Procedure

1. Data Collection Instruments

Is a tool for researchers in collecting data. The red bean vegetable instrument includes red bean seeds, while the breast milk production instrument consists of a measuring cup.

2. Research procedure

In this research, the researcher collects data first:

a. Researchers take care of licensing research cover letters at the STIKMAH institution

b. Explain to prospective respondents about the research and if they are willing to become respondents, they are invited to sign informed consent.

c. Respondents were observed to increase their milk production once, to find out whether the respondents experienced a lack of breast milk production or not.

d. Respondents were observed to increase their milk production again after consuming red bean vegetable therapy once a day and then evaluated after the intervention.

e. After all, samples were evaluated for 7 days then the data was tabulated to find out whether there was an effect of giving red bean vegetables to increase breast milk production.

Tool

1. Scales
2. Measuring cup
3. Stove
4. Frying Pan

Ingredients: Red Bean Vegetable

Ways of working

3. Weigh red beans 200 grams
   Wash the red beans thoroughly. Cook the red beans until they are cooked, and make them into

RESEARCH RESULT

After researching 5 breastfeeding mothers on the effect of giving red bean vegetables on increasing breast milk production at the Tobelo Health Center in 2019 results.

1. Univariate analysis

Conducted on the characteristics of respondents and research variables by describing the results of the research.

Table 1. Frequency distribution of respondents based on

AGE	N	PRESENTATION
<20 Yr	0	0%
20-31 Years	5	100%
>31 Yr	0	0%
Total	5	100%

Source: Primary Data 2019

Based on table 1 above, explains that from 5 respondents (100%) the majority of respondents in this study were mostly in the age range 2 4-31, namely 3 people (60 %) and the least in the age range 2 0-23 years were 2 people (40 %).

Table 2. Distribution of respondents by education

EDUCATION	N	PRESENTATION
Low	0	0%
Medium	1	20%
Height	4	80%
Total	5	100%

Source: Primary Data 2019

Meanwhile, education in this research is related to the last education or diploma owned by the respondent. Based on table 2 above, explains that from 5 respondents (100%) it was found that the majority of respondents had a high school education level, namely 4 people (80%), and at least 1 person in junior high school education (20 %)

Table 3. Distribution of respondents by occupation.

JOB	N	PRESENTATION
IRT	5	100%
Civil servant	0	0%
TOTAL	5	100%

Source: Primary Data 2019

As for the work of the respondents from table 3 above, it is explained that out of 5 respondents (100%), all respondents in this research have jobs as housewives as many as 5 people (100 %). Distribution of Increased Breast Milk Production before and after giving Mariah Peanut Vegetables. To get a more detailed picture of the results of research on the amount of breast milk before giving red bean vegetables, the following is presented in the following table:

Table 4. Distribution of respondents based on respondents who eat red bean vegetables

Consumption of Red Beans	Amount	
	N	%
YES	5	100
NO	0	0
Amount	5	100

The results of the study are in table 4. It shows that from 5 respondents (100%) there are 5 respondents (100%) who are breastfeeding mothers who consume red bean vegetables and 0 respondents (0%) are mothers who do not consume red bean vegetables.

Table 5. Distribution of respondents based on breastfeeding mothers who experience low milk production

BREAST MILK PRODUCTION	Amount	
	N	%
A LITTLE	5	100
MANY	0	0
Amount	5	100

Source: Primary data 2019

The results of the study are in table 5. It shows that of the 5 respondents (100%) there are 5 respondents (100%) who are breastfeeding mothers who experience little breast milk and 0 respondents (0%) mothers who experience a lot of breast milk.

Table 6. Distribution of Respondents Before Consumption of red bean vegetables

BEFORE CONSUMING RED BEANS	Amount	
	N	%
Little breast milk	5	100
A lot of milk	0	0
Amount	5	100

Source: Primary Data 2019

The results of the study are in table 6. It shows that out of 5 respondents (100%) there are 5 respondents (100%) who are breastfeeding mothers who experience little breast milk and 0 respondents (0%) are breastfeeding mothers who experience a lot of breast milk.

Table 7. Distribution of Respondents After Consumption of red bean vegetables

PRODUCTION BREAST MILK	Amount	
	N	%
INCREASE	4	80
PERMANENT	1	20
Amount	5	100

Source: Primary Data 2019

The results of the study are in table 7. It shows that out of 5 respondents (100%) there were 4 respondents (80%) who experienced an increase in breast milk production after consuming red bean vegetables and 1 respondent (20%) who experienced constant milk production after consuming red bean vegetables.

2. Bivariate Analysis

Bivariate analysis was conducted to determine the effect of the independent

variable and the dependent variable using the T-test with a significance level of $p < 0.05$.

Table 8. Relationship between age and increased milk production in breastfeeding mothers

Table 8. shows that the number of breastfeeding mothers is 5 respondents (100%), there are 4 respondents (80%) who are breastfeeding mothers aged 20-30 years who experienced an increase in breast milk production as many as 3 people (60%) and who did not experience an increase in breast milk production. 1 person (20%) and 1 respondent (20%) were breastfeeding mothers >30 years old who experienced an increase in breast milk production by 1 person (20%) and 0 people did not experience an increase in breast milk production (0%)

Age	Breast Milk Production				Amount		0.05
	Increase		Permanent				
	N	%	N	%	N	%	
<20	0	0	0	0	0	0	0.000
20-30	3	60	1	20	4	80	1
>30	1	20	0	0	1	20	
Amount	4	80	1	20	5	100	

By statistical testing using the T-test technique, p = 0.001 is smaller than = 0.05, this means Ho is rejected and Ha is accepted. Thus there is an effect of giving red bean vegetables based on age to increase milk production in breastfeeding mothers.

Table 9. The Relationship of Education to Increased Breast Milk Production in Breastfeeding Mothers

Education	Breast Milk Production				Amount		0.05
	Increase		Permanent				
	N	%	N	%	N	%	
Low	0	0	1	20	1	20	0.0
Intermediate	3	60	0	0	3	60	04
Tall	1	20	0	0	1	20	
Amount	4	80	1	20	5	100	

Table 9. shows that the number of breastfeeding mothers is 5 respondents (100%), there is 1 respondent (20%) is a breastfeeding mother with low education who experienced an increase in breast milk production by 0 people (0%), and who did not experience an increase in breast milk production by 1 person. (20%) and 3 respondents (60%) were breastfeeding mothers with secondary education who experienced an increase in breast milk production by 3 people (60%) and who did not experience an increase in breast milk production were 0 people (0%), 1 respondent (20%) are nursing mothers with higher education who experienced an increase in breast milk production by 1 person (20%) and who did not experience an increase in breast milk production by 0 people (0%).

By statistical testing using the T-test technique, p = 0.004 is smaller than = 0.05, this means Ho is rejected and Ha is accepted. Thus, there is an effect of giving red bean vegetables

based on education to increase milk production in breastfeeding mothers

Table 10. shows that the number of breastfeeding mothers 5 respondents (100%) who were given red bean vegetables was 5 respondents (100%) and those who experienced an increase in breast milk production was 4 respondents (80%), and 1 respondent did not experience an increase in breast milk production (20%).

Table 10. The Effect of Giving Red Beans on Increasing Breast Milk Production in Breastfeeding Mothers

Group	Breast milk production						
	Increase		Permanent		Amount		0.05
	N	%	N	%	N	%	
Before	0	0	5	100	5	100	0.0
After	4	80	1	20	5	1000	03

By statistical testing using the T-test technique, p = 0.003 is smaller than = 0.05, this means Ho is rejected and Ha is accepted. Thus there is an effect of giving red bean vegetables increases breast milk production in breastfeeding mothers.

Discussion

This research carried out an intervention on breastfeeding mothers who experience a lack of breast milk production by giving red bean vegetables to 5 nursing mothers, according to the inclusion criteria. This study aims to determine the effect of giving red bean vegetables to increase breast milk production. in nursing mothers. After processing and analyzing the data, the discussion is as follows:

Red bean vegetables were used for research. Before giving Red Beans to the respondents, the Red Beans were first cooked in the form of soup and then poured into a bowl. The red bean vegetables that have been provided will be given to nursing mothers who experience a lack of milk production to eat.

Univariate analysis was conducted to determine the form of the relationship between the two variables (independent and dependent variables). For this research, a normality test was carried out and a paired sample t-test parametric statistical test was used, namely the testing procedure for the same group (dependent). With the level of significance of the results of the t-test, p = 0.003 is smaller than a = 0.05, this means that Ho is rejected and Ha is accepted. Thus, there is an effect of giving red bean vegetables increases breast milk production in breastfeeding mothers.

In this study, it was found that the characteristics of respondents consisted of age group, type of work, and education, whereas in Table 1, it can be seen that the

age group 20-31 years as many as 5 people (100 %), and in table 2 where from 5 respondents (100%) the average mother with a housewife job is 5 people (100 %). And in table 3 there are 4 respondents with secondary education (SMP), and 1 respondent with higher education (SMA). after giving red bean vegetables there was an increase in breast milk production, with low education, someone will tend to get information both from other people and from the mass media. On the other hand, a low level of education will hinder a person's development and attitude towards the newly introduced values.

Based on research (**Dwi Rahayu et al**) it can be concluded that there is an effect of oxytocin massage which is very helpful for post Partum mothers to facilitate milk production. In this technique, it is carried out at acupuncture points on lactational tissue, especially on the back which can help maximize oxytocin and prolactin hormone receptors. Many studies on *Traditional Chinese Acupuncture (TCA)* to date do not cause side effects in post Partum mothers who experience breast milk incontinence.

Based on previous research according to **(Dahliana et al)** under the title the effectiveness of Moringa leaves on breast milk production in breastfeeding mothers, it said that the average difference in breast milk production in the control group before the intervention was 0.32 ml and after the intervention increased to 0.58 ml. In the intervention column, the score of breast milk expenditure between the case and control groups tended to be different, which was 0.26 ml. After the paired T-test was carried out, it showed a very significant difference with a value of $P = 0.00$ ($p < 0.05$).

Conclusion

Based on the results of research, data analysis, and discussion, it can be concluded that:

1. Based on the results of research conducted at the Tobelo Health Center, shows that giving red bean vegetables to breastfeeding mothers can increase breast milk production
2. The results showed that out of 5 postpartum mothers who were given red bean vegetables, 4 breastfeeding mothers experienced an increase in breast milk production
3. The results showed that red bean vegetables did not affect on
   side if consumed by breastfeeding mothers
4. The results showed that there was an effect of giving red bean vegetables to

increasing breast milk production in breastfeeding mothers

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