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The Effect of Soybean Milk Provision on Increasing Breast Milk Production in Postpartum Mothers in Salambue Village, Southeast Padangsidimpuan District

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ABSTRACT

Breast milk consists of several elements such as water, enzymes, nutrients, hormones, antibodies which are difficult for humans to imitate. One of the factors that cause a lack of breastfeeding is less milk production. Many factors cause a lack of smooth breastfeeding, namely problems with the mother, including inverted nipples, mastitis or breast abscess, swollen breasts, and sore nipples. In infants, it is generally an error in lactation management, which causes a decrease in milk production. The purpose of this study was to determine how the effect of soy bean milk on increasing breast milk production in postpartum mothers in Salambue Village, Southeast Padangsidimpuan District. The type of research used is experimental research with a prettest posttest only control group design. Using purposive sampling with the number of respondents as many as 8 people, namely the experimental group respondents as many as 4 people and the control group as many as 4 people. Based on the results of the study, it showed that there was an effect of giving soy bean milk to the increase in breast milk production in postpartum mothers in Salambue Village, Southeast Padangsidimpuan District with p-value <0.05 it mean Ho is rejected and Ha is accepted.

Keywords:

Increased Breast Milk Production, Postpartum Mothers, Soybean Milk

1. INTRODUCTION

Mother's Milk (MM) is a liquid that has a very complex content and is needed for a baby to optimize its growth and development. Breast milk consists of several elements such as water, enzymes, nutrients, hormones, antibodies which are difficult for humans to imitate. The concentration of elements in breast milk is different for each mother, this is adjusted to the circumstances and needs of her baby. [4].

Breastfeeding is very important because its nutritional content is needed for optimal growth and development, for the health and survival of babies. In addition, breastfeeding has been shown to improve the health and well-being of mothers and babies and reduce the risk of neonatal infections and other pathogens that can cause serious illness. [4]. Breastfeeding can reduce infant mortality. This is in accordance with the results of a study in Ghana which showed that 22% of newborn deaths could be prevented by breastfeeding in the first hour after birth and continued giving it for up to six months [18].

World Health Organization (WHO), 2020 states that only 41% of all babies in the world are exclusively breastfed and WHO targets that by 2025 the exclusive breastfeeding rate will increase by at least 50% [4]. Then *United The Nations International Children's Emergency Fund* (UNICEF) mentions scientific evidence issued by pediatrics journals, in 2010 it was revealed that in the world, breastfeeding mothers experienced breastfeeding problems around 17,230,142 million people consisting of 56.4% sore nipples, 36 breast dams, 12% and mastitis 7.5% [13].

According to Meihartati [11], in the United States the percentage of breastfeeding women who experienced breast milk dams reached an average of 87.05 % or as many as 8242 postpartum mothers from 12,765 people, in 2014 mothers who experienced breast milk dams were 7198 people out of 10,764 people and in 2014 In 2015 there were mothers who experienced breast milk dams as many as 6543 people out of 9,862 people, which was caused by non-smooth breastfeeding and babies did not feed their mothers often enough.

According to data from the *Association of Southeast Asian Nations* (ASEAN) in 2014 it was concluded that the percentage of cases of breastfeeding dams in postpartum mothers in the Philippines was 107,654 postpartum mothers, in 2015 there were 95,698 postpartum mothers who experienced breast milk dams (66.87%). postpartum, and in 2016 mothers who experienced breast milk dam were 76,543 (71.10%) [23]. The Ministry of Health of the Republic of Indonesia (Depkes RI), in 2014 concluded that the percentage of cases of breastfeeding dams in postpartum mothers was 107,654 postpartum mothers, in 2014 there were 95,698 postpartum mothers who experienced breast milk dams, and in 2015 there were 95,698 mothers who experienced breast milk dams. 76,543 people. This is because public awareness in encouraging increased breastfeeding is still relatively low [11].

The Indonesian Demographic and Health Survey (IDHS) in 2008-2009 showed that 55% of breastfeeding mothers experienced mastitis and sore nipples, possibly due to incorrect breastfeeding techniques [20]. Breast milk for infants aged 0-6 months in Indonesia is 37.3% exclusive breastfeeding, 9.3% partial breastfeeding, and 3.3% predominant breast milk (Juliani, et al, 2021). Based on data from the Ministry of Health of the Republic of Indonesia, (2017) the coverage of infants receiving exclusive breastfeeding is 61.22%, has reached the target limit of 44%, increased in 2018 by 68.74% and has reached the target limit of the Indonesian Strategic Plan 2 of 47%. Then it decreased in 2019 by 67.74% but the coverage of exclusive breastfeeding has reached the Indonesian strategic plan limit of 50% [17]

Based on data from the Health Profile of North Sumatra Province in 2019 from 186,460 infants aged <6 months, it was reported that only 75,820 babies received exclusive breastfeeding (40.66%), this achievement is still far from the target set in the Strategic Plan of the North Sumatra Province Health Office in 2019. which is 53%.

The 2016 Padangsidimpuan City Health Office report on the Padangsidimpuan City Health Profile shows that babies who are exclusively breastfed aged 0-6 months are 7.6% of the 4,623 babies (Health Profile of the Padangsidimpuan City Health Office, 2016). Low milk production is the main problem for new mothers, besides the problem of sinking or flat nipples , swollen breasts, the baby is reluctant to breastfeed because of improper technique. This is bad for the baby because mothers usually look for alternatives by giving formula milk to their babies which causes the intensity of the baby's sucking to be reduced because they take turns using formula milk which makes breast milk less and less [5].

The initial survey conducted by researchers on the first day on March 5, 2022, researchers met with 3 postpartum mothers, mothers breastfeed their babies only 5 times a day and mothers say their babies are fussy because there is not enough breast milk, therefore mothers give formula milk to supplement breast milk for babies, and 1 mother breastfeeds her baby only 3 times a day the mother feels that the milk that comes out is not enough for her baby which causes the baby to fuss, therefore the mother gives formula milk in addition to breastfeeding the baby, then 2 postpartum mothers with slightly smooth milk production both only breastfeeding 8 times a day the mother feels that her breast milk is still lacking and is afraid that her baby's growth will be hampered, therefore the mother gives formula milk for the baby.

On the second day, March 6, 2022, researchers conducted a survey and met with 2 postpartum mothers, mothers breastfeed their babies only 7 times a day, researchers observed that babies always sucked their thumbs but mothers felt that their milk production was good, therefore mothers did not give formula milk or additional food. in infants, and 2 mothers breastfeed their babies 8 times a day, mothers say their babies are very fussy if they are not given formula milk in addition to breastfeeding, babies look fat and are not very active in moving like kicking. Based on the data above, there are several postpartum mothers in Salambue village, Padangsidimpuan Tenggara district, experiencing problems regarding insufficient milk production which causes babies to feel a lack of breast milk, therefore researchers are interested in conducting research on "The Effect of Soybean Milk Provision on Increasing Breast Milk Production in Postpartum Mothers in Salambue Village. Southeast Padangsidimpuan District in 2022".

Isoflavones contained in soy milk are amino acids that have vitamins and nutrients in soybeans that form flavonoids. Flavonoids are pigments, such as leaf green substances that usually smell. Green leaf substance has many benefits for the health of the body.

The benefits of isoflavones contained in soy milk are to increase metabolism in the body, are nutrients needed by the body, prevent constipation, increase the immune system, strengthen bones and teeth, control blood pressure, control cholesterol levels , prevent the risk of obesity and relieve symptoms of ulcer disease. . Isoflavones or phytoestrogen hormones are estrogen hormones that are naturally produced by the body and can help the mammary glands of nursing mothers produce more milk [15].

According to Safitri [18] stated that higher levels of isoflavones in infants were found in mothers who regularly consumed soy. Isoflavones in soybeans are believed to increase breast milk production and reduce the risk of breast cancer, increase breast cell division, suppress the growth of tumor cells, and other mechanisms. Mothers who consume foods made from soybeans in the form of soy milk and other processed soybeans are believed to increase isoflavone levels in breast tissue. Soybeans if consumed regularly can have a good effect on health, namely preventing the occurrence of breast cancer. The use of edamame (*Glycine max L.Merill*) can increase breast milk

production, so it is expected to be able to support the success of government programs in an effort to increase the coverage of exclusive breastfeeding.

2. METHODS

The type of research used is quantitative, namely *true experiments research* which is an experimental activity that aims to determine the Effect of Soybean Milk Provision on Increasing Breast Milk Production in Postpartum Mothers in Salambue Village, Southeast Padangsidimpuan District in 2022 [7]..

The design of this study used a *prettest posttest only control group design* . This study is an experimental study that investigates the possibility of causal relationships by intervening or applying treatment to one or more where there is an experimental group, namely a group of postpartum women who consume soy milk and a group of postpartum women who do not consume anything as a control group [7].

Table 1 Research Design

Prettest posttest only control group design

Group	Pretest	Treatment	Posttest
Experiment	T1	X	T2
Control	T1	-	T2

Source: Jayantika, Payadnya, 2018

Information :

Experimental Group : Research respondents who received treatment with soy milk .
Control Group : Research respondents who did not receive treatment, only as a comparison/controller.
Experimental Treatment (X) : Those who received soy bean milk treatment .
Control Treatment (-) : Those who did not receive treatment.
Pretest Experiment (T1) : Production of postpartum mother's milk before receiving treatment.
Prettest Control (T1) : Production of postpartum breast milk in the month before the study.
Posttest Experiment (T2) : Breast milk production of postpartum mothers after receiving treatment.
Posttest Control (T2) : Production of postpartum mother's milk after the study.

The population in this study were all postpartum mothers in Salambue Village, Southeast Padangsidimpuan District. The number of postpartum mothers during the period of March 2022 is 8 people. The sample in this study were all postpartum mothers who were in Salambue Village, Southeast Padangsidimpuan District in 2022. The sample in this study was taken using the *purposive sampling method* , namely adjusting the sampling method based on the researcher's own considerations, based on the characteristics or characteristics of the population that had been determined. previously known with the following sample criteria:

Inclusion criteria :

1. Willing to be researched
2. Willing not to give additional food to infants during the study.
3. Mothers during the puerperium and breastfeeding their babies.
4. Never been given non-pharmacological treatment before.
5. The health status of the mother and baby is good.
6. Mother's activity as a housewife.
7. Residents in Salambue Village, Southeast Padangsidimpuan District.

Exclusion Criteria :

1. Postpartum Blues
2. Mastitis
3. Mothers who take breast milk-stimulating drugs
4. Postpartum mother with dead baby

Research instruments are tools used for measuring variables [12]. The tool used in this study used an observation sheet in the form of a checklist for the consumption of soybeans consumed by postpartum mothers during the study. First , make a complete identity of the respondent and then measure the increase in breast milk production by observing the baby's weight by weighing the baby's weight at the beginning before giving soy beans and after giving soy beans then observing the frequency of postpartum mothers breastfeeding/breastfeeding and the frequency of formula feeding. in a day.

3. RESULTS AND DISCUSSION

3.1. Results

3.1.1. Univariate Analysis

Univariate analysis in this study was used to describe each of the results of the data studied, which included the characteristics of the respondents and descriptions of the *pretest* and *posttest variables* in the experimental and control groups.

1. Characteristics of Respondents

The results of the analysis of the characteristics of the respondents are used to determine the description of the respondents being studied. The following are the results of the analysis of the characteristics of the respondents:

Table 2
Results Characteristics of Respondents

Indicator	Category	Control		Experiment	
		Frequency	Percentage (%)	Frequency	Percentage (%)
Age	< 20 Th	1	25.0	0	-
	> 20 Th	3	75.0	1	25.0
	> 30 Years	0	-	3	75.0
Total		**4**	**100.0**	**4**	**100.0**
parity	Primipara	2	50.0	1	25.0
	secundipara	1	25.0	0	-
	Multipara	1	25.0	0	-
	Grande Multipara	0	-	3	75.0
Total		**4**	**100.0**	**4**	**100.0**

The results of the calculations in table 2 show that of the 8 respondents consisting of 4 respondents from the control group and 4 respondents from the experimental group. Based on age indicator All respondents aged 19-32 years in both the control and experimental groups . Based on the indicators of parity status, the control group of respondents with parity status was Primipara as many as 2 people (50%), secundipara 1 person (25%), and multipara 1 person (25%). From the experimental group primipara as many as 1 person (25%), and multipara 3 people (75%) .

2 Description of Research Data

a. Initial Test (*Pretest*) and Final Test (*Posttest*) Frequency of Formula Feeding to Infants in the Experimental Group

The experimental group was a group of postpartum mothers who were given soy bean milk . Before the experimental group received treatment, an initial test was conducted to determine the frequency of giving formula milk and breastfeeding and then the weight of the babies in the experimental group. The initial test subjects of the experimental group were 4 babies. The results of the initial test in the experimental group were the highest formula feeding was 5 X/Hr and the lowest formula milk was 0 X/Hr or no formula milk was given. From the calculation of the SPSS 24 program, it is known that the average score *(mean) is* 2.00 X/Hr and *the standard deviation is* 2.449 . After the experimental group was given treatment, a final test was conducted to determine the frequency of giving formula milk to infants after the mother was given soy milk. The results of the final test in the experimental group were the highest formula feeding was 2 X/Hr and the lowest formula milk was 0 X/Hr or no formula milk was given. From the calculation of the SPSS 24 program, it is known that the average score *(mean) is* 0.50 X/Hr and *the standard deviation is 1000. The grouping of pretest* and *posttest* formula feeding for the experimental group can be seen in Table 4.2 below:

Table 3
Frequency Distribution of Formula Feeding Experiment Group

No	Interval Class	Experiment			
		Pretest		Posttest	
		Frequency	Percentage	Frequency	Percentage
1	0	2	50.0	3	75.0
2	< 5	1	25.0	1	25.0
3	5 - 10	1	25.0	-	-
Amount		4	100.0	4	100.0

b. Initial Test (*Pretest*) and Final Test (*Posttest*) Frequency of Breastfeeding in Infants in the Experimental Group

The initial test subjects of the experimental group were 4 babies. The results of the initial test in the experimental group were the highest breastfeeding 17 X/Hr and the lowest breastfeeding 13 X/Hr. From the calculation of the SPSS 24 program, it is known that the average score *(mean) is* 15.00 X/Hr and *the standard deviation is* 1.633 . After the experimental group was given the treatment, a final test was conducted to determine how often the infant was breastfed after the mother was given soy milk . The results of the final test in the experimental group were the highest breastfeeding 25 X/Hr and the lowest breastfeeding 18 X/Hr. From the calculation of the SPSS 24 program, it is known that the average score *(mean) is* 22.50 X/Hr and *the standard deviation is* 3,317. The grouping of breastfeeding *pretest* and *posttest* for the experimental group can be seen in Table 4.3 below:

Table 4
Distribution of the Frequency of Breastfeeding Experimental Group

No	Interval Class	Experiment			
		Pretest		Posttest	
		Frequency	Percentage	Frequency	Percentage
1	< 10	2	50.0	2	50.0
2	10 - 20	1	25.0	1	25.0
3	21 - 30	1	25.0	1	25.0
Amount		4	100.0	4	100.0

c. Initial Test (*Pretest*) and Final Test (*Posttest*) Infant Weight Gain Experiment Group

The initial test subjects of the experimental group were 4 babies. The results of the initial test in the experimental group were the highest body weight of 4700 grams and the lowest weight of 3900 grams. From the calculation of the SPSS 24 program, it is known that the average score *(mean)* is 4275.00 grams and *the standard deviation is* 434,933 . After the experimental group was given treatment, a final test was conducted to determine the increase in the baby's weight after the mother was given soy milk . The results of the final test in the experimental group were the highest body weight 5800 grams and the lowest body weight 5000 grams. From the calculation of the SPSS 24 program, it is known that the average score *(mean)* is 5425.00 grams and *the standard deviation is 386,221. The pretest* and *posttest* weight groupings of the experimental group can be seen in Table 4.4 below:

Table 5
Distribution of Weight Gain in Experimental Group

No	Interval Class	Experiment			
		Pretest		Posttest	
		Frequency	Percentage	Frequency	Percentage
1	< 4000	2	50.0	-	-
2	4000 - 4900	2	50.0	-	-
3	5000 - 5900	-	-	4	100.0
Amount		4	100.0	4.	100.0

d. (*Pretest*) and Posttest (*Posttest*) Frequency of Formula Feeding to Control Group Babies

The control group is the group that is not given any treatment. The initial test subjects in the control group were 4 infants. The results of the initial test in the control group were the highest formula feeding was 6 X/Hr and the lowest formula milk was 0 X/Hr or no formula milk was given. From the calculation of the SPSS 24 program, it is known that the average score *(mean) is* 2.00 X/Hr and *the standard deviation is* 2.828 . Although the control group was not given treatment, a final test was still carried out to determine the comparison. The results of the final test in the control group were the highest formula feeding was 6 X/Hr and the lowest formula was 0 X/Hr or no formula milk was given. From the calculation of the SPSS 24 program, it is known that the average score *(mean) is* 2.25 and *the standard deviation is* 2.872 . The distribution of the frequency of formula feeding *pretest* and *posttest* in the control group can be seen in Table 4.5 below.

Table 6
Frequency Distribution of Control Group Formula Feeding

No	Interval Class	Control			
		Pretest		Posttest	
		Frequency	Percentage	Frequency	Percentage
1	0	2	50.0	2	50.0
2	< 5	1	25.0	1	25.0
3	5 - 10	1	25.0	1	25.0
Amount		4	100.0	4	100.0

e. Initial Test (*Pretest*) and Final Test (*Posttest*) Frequency of Breastfeeding in Control Group Babies

The initial test subjects in the control group were 4 infants. The results of the initial test in the control group were the highest breastfeeding 14 X/Hr and the lowest breastfeeding 9 X/Hr. From the calculation of the SPSS 24 program, it is known that the average score *(mean) is* 12.50 X/Hr and *the standard deviation is* 3.107 . Although the control group was not given treatment, a final test was still carried out to determine the comparison. The results of the final test in the control group were the highest breastfeeding 19 X/Hr and the lowest breastfeeding 8 X/Hr. From the calculation of the SPSS 24 program, it is known that the average score *(mean)* 13.00 X/Hr and *standard deviation* 4,967 . Distribution of breastfeeding frequency The *pretest* and *posttest* of the control group can be seen in Table 4.6 below.

Table 7
Distribution of Breastfeeding Frequency in Control Group

No	Interval Class	Control			
		Pretest		Posttest	
		Frequency	Percentage	Frequency	Percentage
1	< 10	1	25.0	1	25.0
2	10 - 20	3	75.0	3	75.0
3	21 - 30	-	-	-	-
Amount		4	100.0	4	100.0

f. Initial Test (*Pretest*) and Final Test (*Posttest*) Infant Weight Gain Control Group

The initial test subjects in the control group were 4 infants. The results of the initial test in the control group were the highest body weight 5000 grams and the lowest body weight 3100 grams. From the calculation of the SPSS 24 program, it is known that the average score *(mean) is* 4300.00 grams and *the standard deviation is* 828,654 . Although the control group was not given treatment, a final test was still carried out to determine the baby's weight for comparison. The final test results in the control group were the highest body weight 5300 grams and the most beautiful weight 3600 grams. From the calculation of the SPSS 24 program, it is known that the average score *(mean)* 4775.00 grams and *a standard deviation of* 793,200 . The distribution of the weight frequency of the *pretest* and *posttest* control groups can be seen in Table 4.7 below.

Table 8
Distribution of Infant Weight Gain Control Group

No	Interval Class	Control			
		Pretest		Posttest	
		Frequency	Percentage	Frequency	Percentage
1	< 4000	1	25.0	1	25.0
2	4000 - 4900	2	50.0	-	-
3	5000 - 5900	1	25.0	3	75.0
Amount		4	100.0	4	100.0

g. Increasing the Frequency of Formula Milking for the Experiment Group and the Control Group

The following table is presented to determine the increase in the frequency of formula feeding between the experimental and control groups.

Table 9
Increasing the Frequency of Formula Milk in the Experiment and Control Group

Descriptive Statistics

Group	N	Minimum	Maximum	mean	Std. Deviation
Experiment Pretest	4	0	5	2.00	2.449
Experiment Posttest	4	0	2	0.50	1,000
Pretest Control	4	0	6	2.00	2.828
Control Posttest	4	0	6	2.25	2.872
Valid N (listwise)	4				

Based on the results of the increase in formula feeding between the experimental group and the control group, the control group was higher than the experimental group. To facilitate comparison, a graph of the increase in the frequency of formula milk is described as follows:

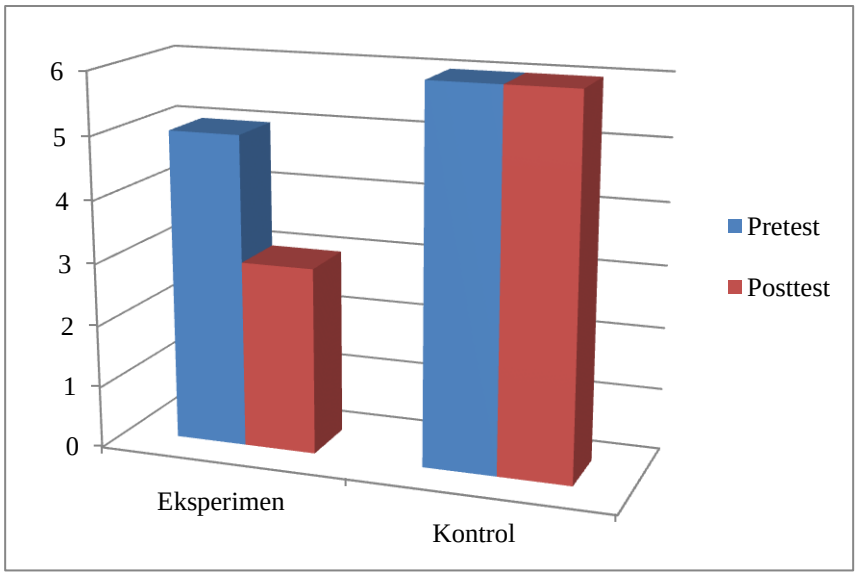

Image 1
Grouping Diagram of Increased Formula Feeding in Experiment and Control Groups

Based on the diagram above, it can be clearly seen that in the control group the consumption of formula milk was higher than the experimental group which experienced a decline. Thus it can be concluded that after being given soy bean milk (experimental group) consumption of formula milk has decreased and the group that is not given soy bean milk (control group) consumption of formula milk has not decreased.

h. Increased Frequency of Breastfeeding Experiment Group and Control Group

The following table is presented to determine the frequency of increasing breastfeeding between the experimental and control groups.

Table 10
Increasing the Frequency of Breastfeeding in the Experimental and Control Group

Descriptive Statistics

Group	N	Minimum	Maximum	mean	Std. Deviation
Experiment Pretest	4	13	17	15.00	1,633
Experiment Posttest	4	18	25	22.50	3.317
Pretest Control	4	9	16	12.50	3.109
Control Posttest	4	8	19	13.00	4.967
Valid N (listwise)	4				

Based on the results of increased breastfeeding between the experimental group and the control group, the experimental group was higher than the control group. To facilitate comparison, a graph of the increase in the frequency of breastfeeding is illustrated as follows:

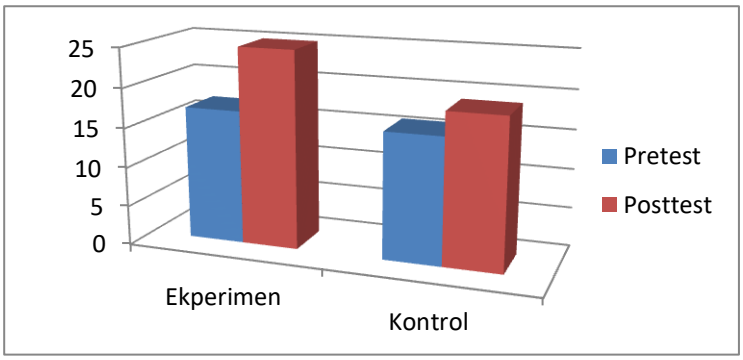

Figure 2
Clustering Diagram of Increased Breastfeeding in Experiment and Control Groups

Based on the diagram above, it can be clearly seen that the experimental group mostly resulted in an increase in breastfeeding every day > 20 times. While in the control group only resulted in an increase in breastfeeding every day < 20 times . Thus, it can be concluded that the increase in breastfeeding after being given soy milk (experimental group) was higher than in the group that was not given soy milk (control group).

i. Weight Gain of Infants in the Experiment and Control Group

infant weight between the experimental and control groups.

Table 11
Weight Gain in Experiment and Control Group

Descriptive Statistics

Group	N	Minimum	Maximum	mean	Std. Deviation
Experiment Pretest	4	3900	4700	4275.00	434,933
Experiment Posttest	4	5000	5800	5425.00	386,221
Pretest Control	4	3100	5000	4300.00	828,654
Control Posttest	4	3600	5300	4775.00	793,200
Valid N (listwise)	4				

Based on the results of the increase in formula feeding between the experimental group and the control group, the control group was higher than the experimental group. To facilitate comparison, the graph of weight gain is described as follows:

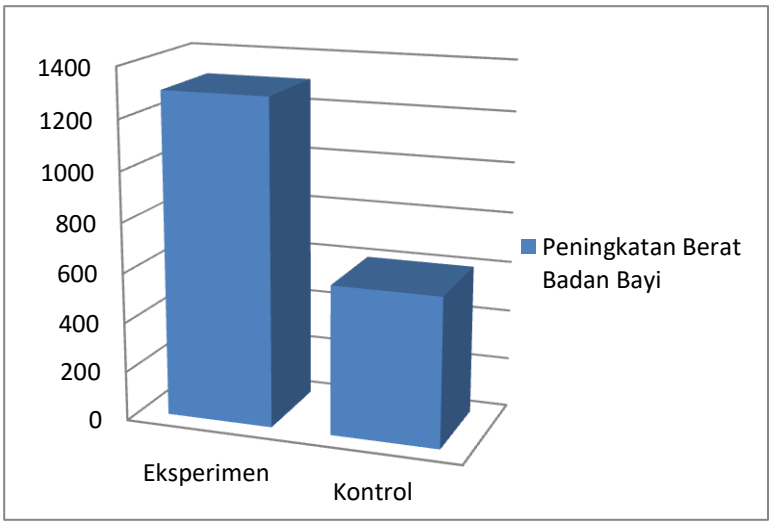

Figure 3
Grouping Chart of Infant Weight Gain in Experiment and Control Group

Based on the diagram above, it can be clearly seen that the experimental group mostly resulted in an increase in body weight >1000 grams. While in the control group only resulted in an increase in body weight <1000 grams. Thus it can be concluded that the increase in infant weight after being given soy milk (experimental group) was higher than in the group that was not given soy milk (control group).

3.1.2. Bivariate Analysis

Bivariate analysis in this study was used to determine the effect of giving soy bean milk to increase breast milk production in postpartum mothers . Before analyzing the data in a *bivariate manner* , the analysis requirements were tested which included tests for normality and homogeneity of the data.

1. Testing Requirements Analysis

Testing of requirements analysis is carried out to determine the feasibility of the parametrics before testing the hypothesis. Test requirements analysis consists of tests of normality and homogeneity.

a. Normality test

To test the normality of the data for each treatment group, the Kolmogorov-Smirnov statistical test was used at a significant level (α) of 0.05 . This test aims to determine the normality or symmetry of the distribution of scores as a unit of analysis, namely the emotional regulation score . The null hypothesis (H0) in the normality test of this data states that the sample comes from a normally distributed population. The basis for decision making is if the significance or probability value is <0.05, it can be concluded that the data distribution is not normal, and if the significance or probability value is > 0.05, it can be concluded that the data distribution is normal. The results of calculations using the SPSS 24 program show the results of the data normality test are presented in the following table.

Table 12
Result of Normality Test of Data on Increasing Frequency of Formula Milk

Group	Kolmogorov Smirnov	Prob.	Information
Experiment	0.239	0.200	Prob. > 0.05
Control	0.276	0.074	Prob. > 0.05

Table 13
Normality Test Results of Data on Increasing the Frequency of Breastfeeding

Group	Kolmogorov Smirnov	Prob.	Information
Experiment	0.171	0.200	Prob. > 0.05
Control	0.196	0.200	Prob. > 0.05

Table 14
of Infant Weight Increase

Group	Kolmogorov Smirnov	Prob.	Information
Experiment	0.265	0.104	Prob. > 0.05
Control	0.355	0.094	Prob. > 0.05

Based on the table above, the results of the calculation of the probability value of the *Kolmogorov-Smirnov Test of Normality* , it can be concluded that the data on increasing formula feeding (0.200) , breastfeeding (0.200) , and increasing infant weight (0.104) in the experimental and control groups showed significant values (probability).) is greater than 0.05. This means that all data in the experimental and control groups have a normal distribution, so that further testing can be carried out using the *t test* .

b. Homogeneity Test

After testing the normality of the data distribution, the homogeneity test of the variance was then carried out with the help of the SPSS 24 computer program . And vice versa. The summary of the results of the homogeneity test of variance of data on infant weight gain is presented in the following table .

Table 15
Homogeneity Test for Increasing the Frequency of Formula Feeding

Levene Statistics	Sig.	Information
1.455	0.279	Homogeneous

Table 16
Homogeneity Test for Increasing the Frequency of Breastfeeding

Levene Statistics	Sig.	Information
2,400	0.119	Homogeneous

Table 17
Test of Homogeneity of Increased Frequency of Body Weight

Levene Statistics	Sig.	Information
0.840	0.498	Homogeneous

Through the results of the calculation of the homogeneity of variance of the data on the increase in formula feeding (0.279) , breastfeeding (0.119) , and the increase in infant weight (0.498) . Thus it can be concluded that the data has a homogeneous variance because the resulting significance value is greater than 0.05 .

3.2.3. Data Analysis Results

Data analysis in this study aims to test the research hypothesis by using the t-test. The data analysis was intended to determine the differences as well as to examine the effect of giving soy bean milk to the increase in production ASIin postpartum mothers in Salambue Village, Southeast Padangsidimpuan District in 2021. Data analysis using *independent t test* . The analysis is presented as follows.

1. Free t-test of experimental group and control group

From the output of the previous results, it shows that there is no difference in the diversity (homogeneous) of the data between the experimental and control groups, so that the test can be carried out using an independent t test with the assumption that the variance of the data is homogeneous (*equal variance assumed*).

independent t test statistical analysis can be presented in the following table:

Table 18
Summary of t-test results for increasing the frequency of formula feeding in the experimental group and the control group

Data	variance	T count	df	Prob.	Information
Giving Increase Formula milk	Homogeneous	-3.954	6	0.008	Prob. < 0.05 = Significant

Table 19
Summary of t-test results for increasing the frequency of breastfeeding in the experimental group and the control group

Data	variance	T count	df	Prob.	Information
Increased Breastfeeding	Homogeneous	-4,058	6	0.007	Prob. < 0.05 = Significant

Table 20
Summary of the results of the t-test of weight gain in the experimental group and the control group

Data	variance	T count	df	Prob.	Information
Baby Weight Gain	Homogeneous	-3.954	6	0.008	Prob. < 0.05 = Significant

From the table above, the independent t-test value of increasing formula feeding between the experimental and control groups was obtained a significance value of 0.356, breastfeeding the experimental group and control group was obtained a significant value of 0.107, and the increase in infant weight in the experimental group and control group in get a significance value of 0.356 ($p < 0.05$ reject Ho), which means that there is a significant (significant) difference in the two groups. From these data it can be concluded that giving soy bean milk has an effect on increasing breast milk production in postpartum mothers . This means that soy bean milk has been proven to have an effect on increasing breast milk production in postpartum mothers in Salambue village, Southeast

Padangsidimpuan district in 2021.

3.2. Discussions

3.2.1. Breast Milk Production Before Giving Soybean Milk

The results of the study based on the characteristics of the respondents showed that the majority of respondents in the experimental group aged 19-32 years were 8 people (100 0.0 %). Based on the indicators of parity status, the control group of respondents with parity status was Primipara as many as 2 people (50%), secundipara 1 person (25%), and multipara 1 person (25%). From the experimental group of primiparas as many as 1 person (25%), grande multipara 3 people (75%) .

Based on the results of the study, it was shown that the majority of respondents who gave formula milk before the study were <5 x/day as many as 7 people (75%), and the minority who gave formula milk was >5 x/day as many as 1 person (25%). The majority of respondents who gave breastfeeding before the study were 10-20 x/day as many as 7 people (75%), and the minority who gave breast milk were <10 x/day as many as 1 person (25%). The majority of respondents' baby weight before the study was 4000-4900 grams as many as 4 people (50%), and the baby's weight was <4000 grams as many as 3 people (38%), and the minority baby weight was 5000 as many as 1 person (12%).

Signs of a baby getting enough breast milk can be assessed when it reaches a state such as the baby drinking breast milk every 2-3 hours or in 24 hours at least getting breast milk 8 times in the first 2-3 weeks, yellow stools with frequent frequency, and the color becomes lighter on the fifth day after breastfeeding. is born, the baby will urinate (BAK) at least 6-8 times a day, the mother can listen when the baby swallows breast milk, the breasts feel softer, which indicates the milk is empty, the color of the baby is red (not yellow) and the skin feels supple , the growth of the baby's weight (BB) and the normal height (TB) of the baby is in accordance with the growth, the motor development is good (the baby is active and the motor is in accordance with the age range, the baby looks satisfied, wakes up hungry from time to time and sleeps enough, the baby breastfeeds strongly (greedy), then weakened and fell asleep [9].

Research conducted by Puspita Elika [14] that there is an effect of soy bean milk on increasing milk production in postpartum mothers in RB Bina Sehat Bantul obtained p value = 0.000 (p <0.05) [24]. Research conducted by Nurrahmaton, Juliani (2021) that there is an effect of giving young soybeans (edamame beans) to increasing breast milk production in post partum mothers at the Pratama Suci Yuliana Clinic, Simeulue Timur District, Aceh Province *P* value (0.0025) < 0.05 then H0 is rejected, Ha is accepted, which means that there is an effect of pre-test and post-test on the provision of young soybeans (edamame beans).

Research conducted by Safitri [18] that there is an effect of giving Edamame (*Glycin max (L) merrill*) to increase milk production in primiparous postpartum mothers in the practice of independent midwives (PMB) Dillah Sobirin, Pakis District, Malang Regency, obtained p value = 0.009, thus Ho rejected and Ha accepted.

According to the results of researchers in the field, based on observations, there were 4 mothers who did not give exclusive breastfeeding and weighing the baby's weight before giving soy milk to breastfeeding mothers in Salambue Village, Southeast Padangsidimpuan District, there were no babies who weighed 2500 Grams.

3.2.2. Breast Milk Production After being given Soybean Milk

Based on the results of the study, it showed that there was a difference in formula feeding, namely the experimental group experienced an increase in breast milk production which caused the formula feeding to decrease and breastfeeding to increase, then the baby's weight in the experimental group experienced an increase in body weight after giving Soybean Milk in Salambue Village, Padangsidimpuan District. Southeast with an average increase of 1100 Grams.

Based on the results of the study, the majority of respondents gave formula milk after the study, namely <5 x/day as many as 7 people (75%), and the minority giving formula milk, namely >5 x/day as many as 1 person (25%). The majority of respondents breastfeeding after the study were 10-20 x/day as many as 4 people (50%), breastfeeding 21-30 x/day as many as 3 people (38%), and the minority breastfeeding was <10 x/day as many as 1 person (12%). The majority of respondents who weighed infants after the study were 5000-5900 grams as many as 7 people (75%), and a minority of babies weighing <4000 grams as many as 1 person (25%).

Signs that a baby is getting enough breast milk, a baby aged 0-6 months, can be judged to have sufficient breast milk when it reaches a state such as a baby drinking breast milk every 2-3 hours or in 24 hours at least getting breast milk 8 times in the first 2-3 weeks, yellow stools with frequent frequency , and the color becomes lighter on the fifth day after birth, the baby will urinate (BAK) at least 6-8 times a day, the mother can listen when the baby swallows breast milk, the breasts feel softer, which indicates the milk has been empty, the color the baby is red (not yellow) and the skin feels supple, the growth in the baby's weight (BB) and the baby's height (TB) is in accordance with the growth, the motor development is good (the baby is active and the motor is in accordance with the age range, the baby looks satisfied, wakes up at any time hungry and sleep well, the baby suckles vigorously (greedy), then weakens and falls asleep [9].

Isoflavones contained in soy milk are amino acids that have vitamins and nutrients in soybeans that form flavonoids. Flavonoids are pigments, such as leaf green substances that usually smell. Green leaf substance has many

benefits for the health of the body. Broadly speaking, the benefits of isoflavones contained in soy milk are to increase metabolism in the body, are nutrients needed by the body, prevent constipation, increase the immune system, strengthen bones and teeth, control blood pressure, control cholesterol levels , prevent the risk of obesity and relieves symptoms of gastric ulcer. Isoflavones or phytoestrogen hormones are estrogen hormones that are naturally produced by the body and can help the mammary glands of nursing mothers produce more milk [24].

According to the results of the study, it was found that the results of the study were in line with the theory because based on the results of research in Salambue Village, Padangsidimpuan Tenggara District, postpartum mothers experienced an increase in breast milk production which caused reduced formula feeding and increased breastfeeding, then the baby's weight in the experimental group experienced an increase in weight. Body weight after giving Soybean Milk in Salambue Village, Southeast Padangsidimpuan District with an average increase of 1100 Grams tends to be caused by regularly consuming soy milk for 14 days. Because the more often the baby breastfeeds, the better the milk production, so that there is an increase in milk production for the baby. After a 14-day study where before and after the study, the baby's weight was measured, which caused 3 babies to increase by 1100 grams and 1 baby to gain 800 grams in weight in the experimental group.

3.2.3. Differences in breast milk production by giving soy milk and not giving soy milk

Based on the results of the study, it showed that there was a difference between giving soy milk and without soy milk in Salambue Village, Southeast Padangsidimpuan District in 2022 , giving formula milk with *p-value* = 0.008 <0.05, breastfeeding with *p-value* = 0.007 < 0.05, and weight gain *p-value* = 0.008 < 0.05. The mean value in the experimental group with formula feeding was 0.75 and the control group was 2.25 , then the mean in the breastfeeding experimental group was 22.50 and the control group was 13.00, and the mean value in the experimental group increased body weight 5425.00 and the control group was 4775.00 . Thus, it can be concluded that the experimental group is higher than the control group, which means that the experimental group has an effect on increasing milk production which causes a decrease in formula feeding and an increase in body weight in infants. This means that soy bean milk has an effect on increasing breast milk production in postpartum mothers.

Research conducted by Puspita Elika [15] that there is an effect of giving soy bean milk to increasing milk production in postpartum mothers in RB Bina Sehat Bantul obtained a value of p = 0.000 (p <0.05) [24].

Research conducted by [18] that there is an effect of giving Edamame (*Glycin max (L) merrill*) to increase milk production in primiparous postpartum mothers in the practice of independent midwife (PMB) Dillah Sobirin, Pakis District, Malang Regency, obtained p value = 0.009, thus Ho rejected and Ha accepted.

The results of the three studies are in line with this study and the research conducted by Research conducted by Nurrahmaton, Juliani (2021) that there is an effect of giving young soybeans (edamame beans) to increase milk production in postpartum mothers at Pratama Suci Yuliana Clinic, Simeulue Timur District, Aceh Province *P* value (0.025) < 0.05 then H0 is rejected Ha is accepted which means that there is an effect of pre-test and post-test on the provision of young soybeans (edamame beans) [8]

Breastfeeding mothers are given 300 Ml of soy milk per day. Isoflavones or phytoestrogen hormones are estrogen hormones that are naturally produced by the body and can help the mammary glands of nursing mothers to produce more breast milk (Puspitasari, 2018). When consuming soy milk, it will affect the work of the prolactin reflex and letdown reflex due to nipple stimulation at the time of baby sucking. After that, the release of breast milk by the hormone oxytocin occurs due to the sufficient supply of breast milk. prolactin [19] .

According to the results of researchers in the field, the results of this study are in line with the theory because it proves that giving soy bean milk can increase breast milk production which causes reduced consumption of formula milk and an increase in body weight in infants. This means that there is a difference between giving soy bean milk with no soy milk in increasing breast milk production in postpartum mothers in Salambue Village, Southeast Padangsidimpuan District in 2022. This is because soy milk produces a content large enough to increase breast milk production in postpartum mothers , in addition to Soybean milk is also very easy to get and can be made yourself.

The difference in the increase after being given soy milk showed that there was a difference between the experimental group and the control group giving formula milk, namely the experimental group experienced an increase in breast milk production which caused the formula feeding to decrease and breastfeeding to increase, then the baby's weight in the experimental group increased after giving Soybean milk in Salambue Village, Southeast Padangsidimpuan District with an average increase of 1100 Grams, while in the group of mothers who were not given soy milk, breast milk production did not increase which caused babies to still often consume formula milk and an average weight gain of 475 Grams. .Statistically it is also proven that giving Soybean milk was significant in decreasing formula feeding and increasing breast milk production and increasing infant weight. This means that there is a difference between giving soy milk and without soy milk in increasing breast milk production in postpartum mothers Salambue Village, Southeast Padangsidimpuan District in 2022.

4. CONCLUSION

Based on the results of the analysis and discussion above, the conclusions that can be given are as follows:

1. Before giving soy bean milk, the average value of formula feeding was 2.00 , then the average breastfeeding was 15.00 , and the average weight of the control group was 4275.00 .
2. After being given soy bean milk, the average value of formula feeding was 0.75 , the average breastfeeding was 22.50 , and the average body weight was 5425.00 .

3. The difference in the increase after being given soy milk showed that there was a difference between the experimental group and the control group giving formula milk, namely the experimental group experienced an increase in breast milk production which caused the formula feeding to decrease and breastfeeding to increase, then the baby's weight in the experimental group increased after giving Soybean milk in Salambue Village, Southeast Padangsidimpuan District with an average increase of 1100 Grams, while in the group of mothers who were not given soy milk, breast milk production did not increase which caused babies to still often consume formula milk and an average weight gain of 475 Grams. .Statistically it is also proven that giving Soybean milk was significant in decreasing formula feeding and increasing breast milk production and increasing infant weight. This means that there is a difference between giving soy milk and without soy milk in increasing breast milk production in postpartum mothers Salambue Village, Southeast Padangsidimpuan District in 2022. The results of the study using an independent t test obtained p value <0.05, meaning Ho was rejected and Ha was accepted, which means that there is an effect of giving soy bean milk to increase breast milk production in postpartum mothers in Salambue Village, Southeast Padangsidimpuan District in 2022.

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