

# THE EFFECT OF BACK ACUPRESSURE ON THE BREAST MILK SECRETION AND INFANTS WEIGHT AT THE MATERNITY WARD, FASTABIQ GENERAL HOSPITAL, PATI, CENTRAL JAVA

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## ABSTRACT

**Background:** Breastmilk is the best food for babies that helps the growth and development of children optimally and protects children from disease. However, there are still many problems with breastfeeding. This study aimed to determine the effect of acupressure on increasing breast milk volume and the baby's weight.

**Subjects and Method:** This was a quasi-experiment with pre and post-test with no control group design, conducted at Fastabiq General Hospital, Pati, Central Java, from March to April 2021. A total of 30 post-partum mothers was selected for this study. The dependent variables were breast milk volume and baby weight (gram). The independent variable was back acupressure. The data were collected by observation sheet and analyzed by paired t-test.

**Results:** Mean score of breastmilk volume after intervention (Mean = 7.40; SD= 1.24) was higher than before (Mean= 4.93; SD= 0.96) and it was statistically significant ( $p < 0.001$ ). Mean score of baby weight after intervention (Mean= 3,130; SD= 346.3) was higher than before (Mean= 2,893; SD= 359.4) and it was statistically significant ( $p < 0.001$ ).

**Conclusion:** Back acupressure effectively increases breast milk volume and baby weight.

**Keywords:** acupressure, breastmilk, weight, baby

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## BACKGROUND

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Mother's Milk emulates fat in a solution of protein, lactose, and inorganic salts secreted by the mother's mammary glands, which is useful as food for her baby. However, many post-partum mothers are still on the first day until the third day. Usually, the breast milk has not come out, so the mother cannot give exclusive breastfeeding to her baby because the mother will give formula milk to meet her baby's needs. (Febriyanti, 2020). The percentage of exclusive breastfeeding for infants 0-6 months in

Indonesia in 2018 was 55.7%, higher than in 2017, which was 52.3%; this shows an increase in the percentage of exclusive breastfeeding due to the efforts made by the Health Office, including counseling, socialization, and supervision of breastfeeding programs (Fikawati and Syafiq, A, 2010).

Central Java Province in 2018 experienced a decrease in the coverage of exclusive breastfeeding, which previously had reached 60% in 2017 to 56.1%. The percentage of breastfeeding in Pati Regency in 2018 was 54.7%

and increased in 2015 to 63.39%. This percentage has not met the target of achieving exclusive breastfeeding in national development and national strategies of 80% (Pati Health Office, 2018).

The inhibiting factor in breast-feeding is the smoothness of breast-feeding itself. The flow of milk that is lacking and slow to come out can cause mothers not to give enough breast milk to their babies. In addition to the hormone prolactin, lactation also depends on the hormone oxytocin, which is released from the posterior pituitary in response to nipple sucking. Oxytocin affects the myoepithelial cells that surround the mammary alveoli so that the alveoli contract and expel the milk that the mammary glands have secreted. The mother's psyche influences the oxytocin reflex. If there is a feeling of anxiety, stress, and doubt, breastfeeding may be hampered (Nugraheny, 2016).

Cholifah and Mareta's research (2015) with the title Acupressure on Breastfeeding Mothers Increases Adequacy of Infant Milk Intake in Mungkid District in 2014 the results show that there is a significant difference in breast milk adequacy between the intervention group and the control group (Mean= 14.12;  $p < 0.001$ ), this indicates that acupressure can increase the adequacy of breast milk in infants.

Research by Fendristica et al. (2019) with the title The Effectiveness of Acupressure on Infant Weight Gain. The analysis results using the Independent t-test showed a difference in the weight gain of infants of breast-feeding mothers who received

acupressure and without acupressure. From research, it is known that acupressure is proven to increase the flow of breastfeeding and the bond between parents and babies, which impacts the quality of breast milk. This automatically increases the motivation of mothers to give exclusive breast-feeding to their babies.

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## SUBJECTS AND METHOD

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### 1. Study Design

This research is a quasi-experimental research with a pre-post test design. This research was conducted at Fastabiq General Hospital, Pati, Central Java, from March to April 2021.

### 2. Population and Sample

The population in this study was postpartum women at the Fastabiq General Hospital, Pati, Central Java, from March to April 2021. A total of 30 postpartum women were randomly selected in this study.

### 3. Study Variables

The dependent variables were the volume of breast milk and the baby's weight. The independent variable is back acupressure.

### 4. Operational Definition of Variables

**The volume of breast milk** is the adequacy of the mother's milk that the baby drinks.

**Baby weight** measures the baby's weight measured in grams or kilograms.

**Back acupressure** is a massage technique performed on mothers to increase the volume of breast milk.

## 5. Instruments

The research instrument used informed consent, Standard Operating Procedures, and observation sheets.

## 6. Data Analysis

Univariate analysis was used to see the frequency distribution of subjects, while bivariate analysis used paired t-test analysis to see differences before and after the intervention.

## RESULTS

### 1. Univariate Analysis

Based table 1 shows the average smoothness of breastfeeding before being given acupressure therapy intervention (Mean = 4.93; SD = 0.96), and the average smoothness of breastfeeding after the intervention (Mean = 7.40; SD = 1.24), the average weight of the baby before the mother was given the intervention was (Mean = 2893; SD = 359.4), while after the mother was given the intervention, it was (Mean = 3130; SD = 346.3).

**Table 1. Univariate analysis (continuous data) of breastfeeding before and after acupressure therapy (intervention group).**

Variable	N	Mean	SD	Min.	Max.
<b>Breastmilk secretion</b>					
Before	15	4.00	1.46	2.00	6.00
After	15	4.066	1.57	2.00	7.00
<b>Infant weight</b>					
Before	15	2920	346.3	2400.00	3500.00
After	15	2926	368.3	2400.00	3500.00

**Table 2. Univariate analysis (continuous data) of breastfeeding fluency before and after acupressure therapy (control group with the communication).**

Variable	N	Mean	SD	Min.	Max.
<b>Breastmilk secretion</b>					
Before	15	4.00	1.46	2.00	6.00
After	15	4.066	1.57	2.00	7.00
<b>Infant weight</b>					
Before	15	2920	346.3	2400.00	3500.00
After	15	2926	368.3	2400.00	3500.00

Table 2 shows the average smoothness of breastfeeding before the control group (giving communication) (Mean= 4.00; SD= 1.46), and the average smoothness of breastfeeding after the control group (giving communication) (Mean= 4.06; SD= 1.57), the infants weight before being in the control group was (Mean= 292; SD= 346.3) while after the mother was

given the intervention, it was (Mean= 2926; SD= 368.3).

### 2. Bivariate Analysis

The average fluency of breastfeeding before the intervention (Mean= 4.90; SD= 0.96) and after the intervention (Mean= 7.40; SD= 1.24), with  $p=0.001$ . The breastmilk secretion before in the group that was not given acupressure therapy (Mean= 14.00;

SD= 1.46) and after (Mean= 4.06; SD= 1.57), with  $p= 0.334$  (Table 3).

**Table 3. Differences in breastmilk secretion in the intervention group and the control group**

Groups	n	Mean	SD	p
<b>Intervention</b>				
Before	15	4.90	0.96	0.001
After	15	7.40	1.24	
<b>Control group</b>				
Before	15	4.00	1.46	0.334
After	15	4.06	1.57	

Table 3 shows the average value of breastfeeding fluency before the intervention (Mean= 4.90; SD= 0.96) and after the intervention (Mean= 7.40; SD= 1.24) and statistically significant

( $p= 0.001$ ). The smoothness of breastfeeding before in the group that was not given acupressure therapy (Mean= 4.00; SD= 1.46) and after (Mean= 4.06; SD= 1.57) and not statistically significant ( $p= 0.334$ ).

**Table 4. Differences in infant weight in the intervention group and the control group**

Groups	n	Mean	SD	p
<b>Intervention</b>				
Before	15	2,893	359.4	0.001
After	15	3,130	346.3	
<b>Control group</b>				
Before	15	2,920	368.3	0.334
After	15	2,926	367.4	

Table 4 shows the mean weight of infants before the intervention (Mean= 2,893; SD= 359.4) and after the intervention (Mean= 3130; SD= 346.3) and statistically significant ( $p= 0.001$ ). Infant weight before in the group not given acupressure therapy (Mean= 2,920; SD= 368.3) and after (Mean= 2,927; SD= 367.4) and not statistically significant ( $p= 0.164$ ).

after being given acupressure therapy, as much as 3130.

The statistical test results using the paired sample t-test were obtained in the control group,  $p$ -value = 0.334 so that in the control group, there was no difference in the fluency of breastfeeding. While in the intervention group,  $p= 0.001$ . Therefore  $H_0$  is rejected. So it can be concluded that acupressure affects the smooth flow of breast milk in the postpartum room at Fastabiq Sehat PKU Muhammadiyah Hospital, Pati.

The results showed that 17 people (81%) mothers breastfed their babies more than 10 times within 24 hours after being given acupressure

## DISCUSSION

Postpartum mothers obtained the study results before being given acupressure therapy at Fastabiq Sehat Muhammadiyah Hospital, Pati. The average weight of the babies in the intervention group was 2893, while

therapy; 16 people (76%) mothers breastfed their babies for 10 minutes on each other breast. Then, 20 people (95%) after feeding, the baby fell asleep quietly for 2 hours or more.

In addition to having an impact on increasing the smoothness of breastfeeding, the presence of bonding between mother and baby will also have a positive impact on the baby. If the mother feels comfortable and calm, the baby will also calm down so that the breastfeeding process will be comfortable and enjoyable. The baby gets enough breast milk from the mother to increase the baby's weight; the mother will also be much calmer and happier knowing the baby's weight has increased. The breastfeeding process becomes a fun and memorable moment for the mother (Yulia, 2019). Bodyweight is a measure that is commonly or often used to assess human nutrition. Bodyweight is a body measurement of weight, which is weighed in a minimally dressed state without any equipment. Bodyweight is measured by measuring body weight with a unit of kilograms. Bodyweight is an indicator to assess the results of increasing or decreasing all existing tissues in the body (bone, muscle, fat, body fluids) so that the child's nutritional status or growth and development will be known. Body weight can also be used to calculate drug doses. (Nilakesuma et al., 2015)

Fendristica et al., 2019 research entitled *The Effectiveness of Acupressure on Infant Weight Gain*. The analysis results using the independent t-test showed a difference in the weight gain of breastfeeding mothers who received acupressure

and without acupressure. From research, it is known that acupressure is proven to increase the flow of breast milk and the bond between parents and babies, which impacts the quality of breast milk. This can automatically increase the motivation of mothers to give exclusive breastfeeding to their babies.

Based on the study results, supporting theories, and previous research, it can be concluded that acupressure on the baby's weight in the postpartum room at Fastabiq Sehat Muhammadiyah Hospital, Pati, massaging the upper back can relax the shoulders and stimulate the let-down reflex. The back will make breast milk smooth. Babies who get breast milk smoothly will affect body weight.

Research conducted at the Mujahidah Bantul clinic showed an effect of acupressure on breast milk production with indicators of baby weight and baby frequency (Djanah and Muslikhatun, 2017).

Back massage and acupressure therapy can increase prolactin hormone levels. This therapy can be given to postpartum and breastfeeding mothers for milk production and can be considered for practice in mid-wifery care (Anita et al., 2020).

Research conducted in Theran found that acupressure and general education methods effectively increased the volume of breast milk in nursing mothers. The acupressure method is more effective than other methods. Therefore, applying the acupressure method as an alternative treatment method is recommended to increase milk production (Esfahani et al., 2015).

Similar research was conducted at Ungaran Hospital. The results showed that the difference between the mean and the treatment group was 282.31 and the control group was 218.08 with p-value = 0.000 (<0.05). In conclusion, this study recommends that patients independently perform breast acupressure and oxytocin massage to increase milk production (Parwati et al., 2017).

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#### **AUTHOR CONTRIBUTION**

Atun Wigati acts as the main author of this research, coordinates the research, conducts all research stages, and completes research papers. Dwi Astuti plays a role in compiling the research framework, data analysis, presenting analytical research results, and preparing research papers. Nasriyah and Dewi Hartinah played a role in developing ideas, research designs, hypotheses, and completeness research files.

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#### **CONFLICT OF INTEREST**

There is no conflict of interest in compiling this article.

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