



## Baby massage therapy in improving breastfeeding production and bounding attachment between mom and baby in primipara postpartum mother

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### ABSTRACT

#### Background

Research on infant massage on breast milk production and Bounding Attachment was carried out because there were still many primipara postpartum mothers whose breast milk was not fluent, therefore the researcher took a study on infant massage on breast milk production and bounding attachment in the work area of Mojogedang II health center. Massage is a tactile stimulation that has biochemical and physiological effects in the baby, increase infant weight, and stimulate milk production.

#### Purpose

To prove whether baby massage can increase milk production and Bounding Attachment in primipara postpartum mothers.

#### Method

This research type is Quasi Experiment with Purposive sampling. Test analysis used is *General Linier Model Repeated Measure Anova*.

#### Results

The average increase in breast milk infant massage intervention was 24,34 ml while the control group was 2,67 ml. The average increase in infant massage infant weight gain was 0,13 grams while in the control group was 0,06 grams. The average increase in bounding attachment for the infant massage intervention group was 5,13 while in the control group was 0. The p value is  $> 0,05$ .

#### Conclusion

From the results of the study stated that there was a difference in the average increase in milk production, infant weight and bounding attachment between treatment and control groups, namely in the treatment greater than the control group, the value of  $p > 0.05$  means the hypothesis was not accepted.

**Keywords:** Baby Massage, Breastmilk Production, Bounding Attachment

## INTRODUCTION

The *World Health Organization* (WHO) says that breastfeeding reduces child mortality and has health benefits that develop into adulthood. By population, exclusive breastfeeding for the first six months of life is the recommended way to feed infants, followed by continuous breastfeeding with appropriate complementary foods for up to two years or more. [1]

The Infant Mortality Rate (IMR) in Indonesia is 40/1000 live births. The 4th target of Millennium Development Goals (MDGs) is to reduce infant and under-five mortality to 2/3 in the period of 1990 - 2015. More than 50% of under-five deaths are based on malnutrition. Adequate provision of exclusive breastfeeding is proven to be one of the effective interventions that can reduce infant mortality. The latest research results from researchers in Indonesia showed that babies who received breastmilk supplementary food before he was 6 months old were more affected by diarrhea, constipation, colds, and heat than babies who only received exclusive breastfeeding. Nationally the coverage of exclusive breastfeeding in Indonesia has fluctuated over the past 3 years. 2010 Basic Health Research states, babies who get exclusive breastfeeding until the age of 6 months have only reached 15.3%, the rest 84.7% of babies do not get exclusive breastfeeding. [2]

Breastfeeding has benefits that are recognized as optimal infant nutrition. Significant efforts take place to encourage women to start breastfeeding and do it exclusively within 6 months and after a minimum of 1 to 2 years. A number of factors that influence the duration of breastfeeding are maternal age, education, social support, returning to work or school, prior experience of formula feeding, parity, and personal goals for feeding babies. [3]

Exclusive breastfeeding is the administration of only breast milk without any liquid or solid food except vitamins, minerals or drugs in the form of drops or syrup until the baby is 6 months old. Various studies have examined the benefits of exclusive breastfeeding in reducing infant mortality, reducing infant morbidity, optimizing infant growth, fostering children's intelligence development, and helping to extend pregnancy distance for the mother. [4]

The postpartum period is a physiological and critical transition period for a woman and her baby.

[5] Parity can affect milk production. Multiparous mothers have more proportion of breast milk production than primiparous mothers. This is because multipara mothers have had experience and beliefs when breastfeeding before. If the mother is successful when breastfeeding the first child it will succeed when breastfeeding the second child so that it is more confident and successful for breastfeeding. [6]

The mother is the main caregiver for the child, if the relationship between the two is disturbed then the child's development will also be disrupted. The attachment of a Bounding Attachment can shape the character and habits of the baby. Massage is a natural way to build touch and eye contact and improve attachment between mother and baby. Engagement depends on two factors, namely the interaction between mother and baby and inner contact between them. [7]

The relationship between mother's touch and baby's emotional regulation is important to be better understood because it is related to the development and attachment of Bounding Attachment children. [8] The importance of attachment and the initial bond between mother and newborn baby. Breastfeeding fosters close contact between the mother and her newborn baby. Attachment is more likely to occur when the mother can see and have physical contact with her baby after birth such as eye contact or gentle massage. [9]

A study conducted at the University of San Francisco evaluated the impact of infant massage interventions designed to increase attachment between parents and their babies. The results show a tendency to decrease parental stress, a better relationship between parents and infants. [10]

The importance of attachment and the initial bond between mother and newborn baby. Breastfeeding fosters close contact between the mother and her newborn baby. Attachment is more likely to occur when the mother can see and have physical contact with her baby after birth such as eye contact or gentle massage. [9]

Massage is tactile stimulation that has biochemical and physiological effects in the body. In newborns, massage is given as touch stimulation and is believed to affect the growth and development of the baby. Massage stimulation provided by the baby's mother can increase the bond and interaction of the mother and baby,

increase the baby's weight, and stimulate milk production. [11]

Babies who are massaged have a higher cognitive score at 12 months associated with age. The effect caused was an increase in body weight, length of stay, duration of breastfeeding and motorbike score did not differ between groups. [12] The benefits of massage include reducing stress hormone levels, increasing levels of endurance, improving blood circulation, stimulating digestive and disposal functions, increasing appetite, changing brain waves that can make babies sleep soundly, increase the flow of oxygen and nutrients to cells, increase gaining weight and tightening the bond between babies and parents, increasing the volume of breast milk. [13]

Massage on the baby provides enormous benefits to the development of the baby, both physically and emotionally. Baby massage will stimulate increased activity of the vagus nerve which will cause better absorption in the digestive system. So that the baby will get hungry faster and the frequency of breastfeeding the baby will be more frequent which in the end will produce more breastmilk. [14]

Baby massage can foster a bond of love for parents and children bounding Touch and a loving view of parents on their babies will flow the power of love between the two. Besides baby massage can increase milk production, the right baby massage technique will increase some gastrointestinal hormones, so the baby will quickly feel hungry and often drink breast milk. This provides feedback to the mother. The more often the milk is sucked by the baby, the stimulation of ASI production will be even greater and ASI will be smooth. [15]

According to research in Turkey, the results of the study show that infant massage is effective in increasing attachment. Bounding attachment between mother and baby. 7 While research in Bandung shows that baby massage can increase the frequency of breastfeeding which will have an effect on increasing milk production. [13]

Based on the results of the initial survey in the work area of the UPT Mojogedang II Health Center in Karanganyar Regency, data were obtained on the number of primiparous postpartum mothers in infants of approximately 50% each month. This is based on interviews of researchers with local village midwives who say that there are still many postpartum mothers whose milk has not been

smooth. Research on infant massage on the production of breast milk and Bounding Attachments has been widely carried out but is still separate and not optimal. Based on this background the researchers took the title of Therapy for Baby Massage in Increasing Breast Milk Production and Bounding Attachment between Mother and Baby in Primiparous Postpartum Mothers

## METHODS

The design of this study was Quasi experiment with the design of The Pre and Posttest Only Design with Nonequivalent Groups, namely using controls to determine the magnitude of the effects of the experiment. Quasi-experimental design is a research design that aims to test causal relationships. 42 In this care while the intervention group received infant massage and breast care education.

The sample is partially taken from the entire object under study and is considered to represent the entire population.

It is necessary to take into account the drop out incidence in the study sample calculation of sample size plus 10% so that the sample size is increased and at least 15 infants in each control group and intervention group. So the minimum total number of samples needed is 30 babies.

Sampling technique is the process of selecting from the population to be able to represent the population. The methods taken in sampling, in order to obtain samples that are truly in accordance with the overall object of research. The sampling technique in this study was purposive sampling..

Analysis of the data in a quantitative way is done after data from the research results are collected. If the latest data is categorical numerically, then use the parametric test. The next step is to analyze the data to reject or accept the existing research hypothesis. Calculations are carried out with the help of a computer program. To see breast milk production and bounding attachment before and after the baby massage intervention can be done by General Linear Test Model Repeted Measure Anova. Before the data test is carried out, the normality test is carried out first. The normality test uses the Shapiro Wilk test because the sample is less than 50. Based on the pre and post data normality test and the difference in breastmilk production, the value of  $p > 0.05$  is

obtained, which indicates that the data are normally distributed.

## RESULTS

### Characteristics of Respondents

**Tabel 4.1 Karakteristik dan Homogenitas responden**

Characteristic	Group		Total				p value
	Treatment		Control				
	n	%	n	%	n	%	
Age							0,1000
< 20 th	2	6,67 %	2	6,67%	4	13,33%	
20-35 th	13	43,33%	13	43,33%	26	86,67%	
>35 th	0	0,00 %	0	0,00 %	0	0,00 %	
Education level							0, 580
SD	0	0,00 %	0	0,00 %	0	0,00 %	
SMP	3	10,00%	8	26,67%	11	36,67%	
SMA	11	36,67%	6	20,00%	17	56,67%	
D3/PT	1	3,33 %	1	3,33 %	2	6,67 %	
Job							0,207
IRT	12	40,00%	8	26,67%	20	66,67%	
PNS	0	0,00 %	0	0,00 %	0	0,00 %	
Priate	3	10,00%	5	16,67%	8	26,67%	
Entrepreneur	0	0,00 %	2	6,67%	2	6,67 %	

Data were obtained about the age of research subjects in primipara postpartum mothers. The results showed that the research subjects at the age of 20-35 years were 26 people (86.67%) aged <20 years as many as 4 people (13.33%). The test results showed differences in age characteristics in each group with a p-value of 0.1000 in other words age in the two groups was not significant, so it was not an influential factor.

Data obtained from the education of research subjects, namely with 17 high school education (56.67%), 11 junior high school education (36.67%), D3 / PT research subjects as many as 2

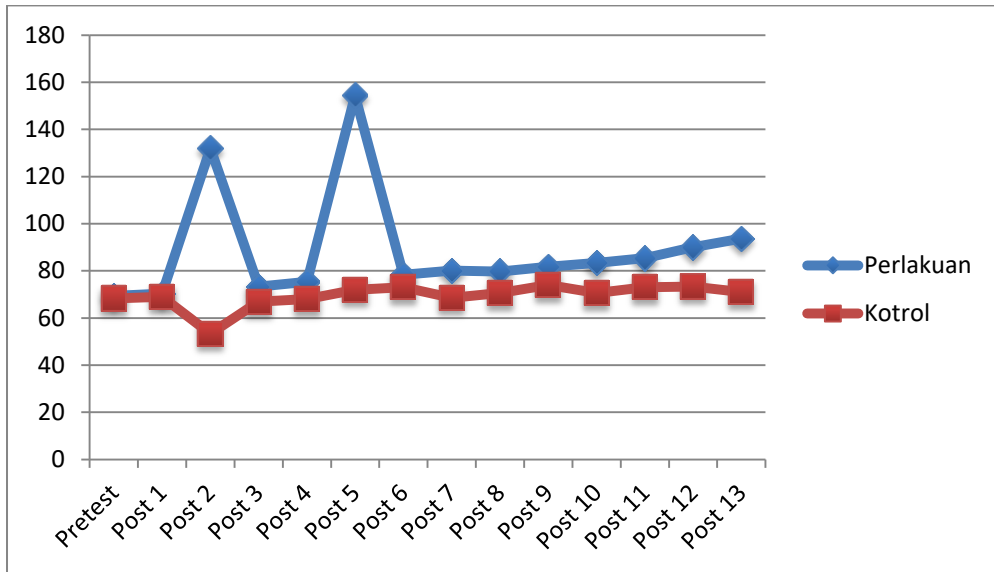
people (6.67%). The test results show differences in the characteristics of the level of education p-value 0.580 in other words the level of education in the two groups is not significant, so it is a factor that has no effect.

Data obtained from the work of research subjects, namely IRT as many as 20 people (66.67%), private work as many as 8 people (26.67%), entrepreneurial work as many as 2 people (6.67%). The test results show differences in job characteristics with a p-value of 0.207 in other words the work in the two groups is not significant, so it is a factor that has no

### Production of breast milk

**Table 4.3 Different Test Tables of breastmilk for infant massage Intervention groups and control groups**

Group	Before	Day to 13	p Value
Treatment	69, 33	96,67	0,008
Control	68, 33	71,00	1,000
p = 0,608			



Graph 4.1 Description of the average breastmilk production in treatment and control

The absolute risk of improvement was the intervention of breast milk intervention day 13 reduced before the intervention of 24.34 ml.

The relative increase in risk was the absolute risk of increased ASI production divided by day-to-day breast milk production by 0.26 / 26%.

Different tests in the intervention group before and after the 13th day of artiness showed an

increase in breast milk production on day 13 compared to before intervention (meaningful difference) so the hypothesis was accepted.

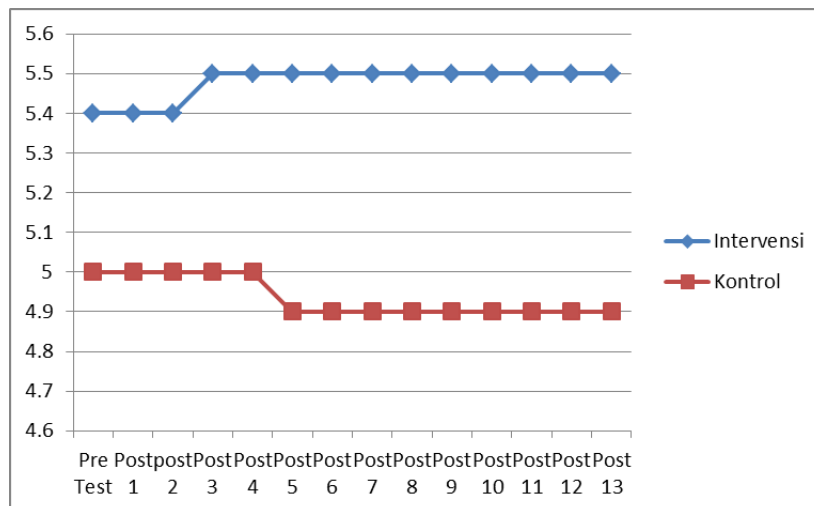
Different test intervention and control groups with p: 0.608 which means that differences in groups are not meaningful so the hypothesis is rejected.

**Infant weight in the Intervention group and the control group**

Table 4.5 Table of Different Tests for Infant Massage Weight for Intervention and Control Groups

Groups	Before	Day to 13	p Value
Treatment	5,40	5,53	1,000
Control	5,00	4,93	1,000

P = 0,337



Graph 4.2 Overview of the average baby weight in treatment and control

The absolute risk of improvement is the intervention of the 13th day intervention baby before the intervention is 0.13 gr.

The relative risk of increase was the absolute risk of increasing infant weight divided by the intervention body weight of day 13 at 0.024 / 2.4%.

Different tests in the intervention group before and after the 13th day of artination were found to

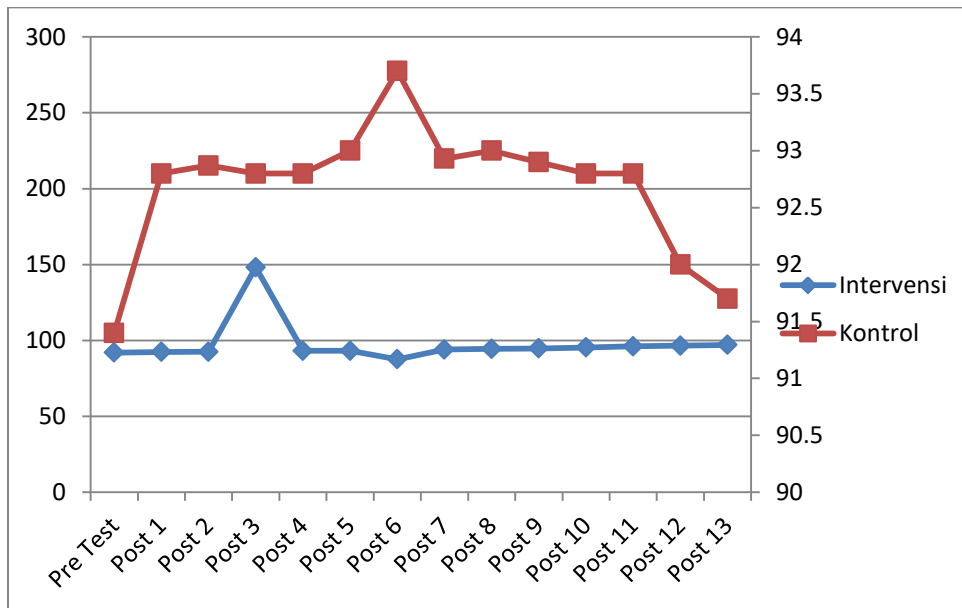
increase the baby's weight on day 13 compared to before the intervention (the difference was not meaningful) thus the hypothesis was rejected.

Different tests of intervention and control groups with p: 0.337 which means that differences in groups are not meaningful so the hypothesis is rejected

**Bounding Attachments in the Intervention group and the control group**

**Table 4.7 Different Test Tables for Bounding Attahments for infant massage Intervention groups and control groups**

Kelompok	Sebelum	Hari ke 13	p Value
Intervensi	92,00	97,13	0,006
Kontrol	91,47	91,74	1,000
P = 0,273			



**Graph 4.3 Overview of Bounding Attachments on treatment and control**

The absolute risk of improvement was the 13th bounding attachment intervention reduced before the intervention of 5.13.

The relative increase in risk was the absolute risk of increasing bounding attachment intervention divided by day 13 of the intervention, which was 0.053 / 5.3%.

Different tests in the intervention group before and after the 13th day of artery were found to increase Bounding Attachment on the 13th day compared to before the intervention (meaningful difference) so the hypothesis was accepted.

Different test intervention and control groups with p: 0.273 which means that differences in groups are not meaningful so the hypothesis is rejected

**DISCUSSION**

**Production of Breastmilk, Increase in Infant Weight and Bounding Attachments**

**Breasstmilk production of research subjects**

The hypothesis is that there is a difference between the treatment and control groups, rejected even though there is an increase in breast milk

production and having an absolute risk of 24.34 ml and a relative risk of 26%, the difference is not significant.

The study of infant massage was carried out by primipara postpartum mothers with a massage frequency of once day for 14 days with a duration of 15 minutes, the area being massaged was the legs, abdomen, chest, back, hands and face. Because massage is done by the mother's own baby, the emphasis between mothers is also different. This can affect the production of breast milk.

There are several factors that cannot be controlled in this study that make the results of the study become insignificant such as uneven / equal age, environmental factors that can affect breastmilk production such as temperature, nutritional status, psychological and socio-cultural support.

By giving a baby massage treatment, the treatment group increased the production of ASI greater than the control group. In accordance with the theory of efforts to increase the production of breast milk by infant massage which is tactile stimulation which has biochemical and physiological effects in the body. In newborns, massage is given as touch stimulation and is believed to affect the growth and development of the baby. Massage stimulation provided by the baby's mother can increase the bond and interaction of the mother and baby, increase the baby's weight, and stimulate milk production. [11]

### **Baby's weight is the subject of research**

The hypothesis is that there is a difference between the treatment and control groups, rejected even though there is an increase in infant weight and having an absolute risk of 0.13 gr and a relative risk of 2.4%, the difference is not significant.

The study of infant massage was carried out by primipara postpartum mothers with a massage frequency of once day for 14 days with a duration of 15 minutes, the area being massaged was the legs, abdomen, chest, back, hands and face. Because massage is done by the mother's own baby, the emphasis between mothers is also different. This can affect the production of breast milk.

There are several factors that cannot be controlled in this study which make the results of the study become insignificant such as the age of uneven / same baby, environmental factors that can

affect the baby's weight such as nutritional status, psychological and social cultural support.

According to the theory, this weight gain is likely caused by stimulation of pressure receptors which causes increased vagus nerve activity and ultimately causes the release of digestive hormones such as glucose and gastrin. [11]

### **Bounding attachment to research subjects**

The hypothesis is that there is a difference between the treatment and control groups, rejected even though there is an increase in Bounding Attachment and has an absolute risk of 5.13 and a relative risk of 5.3%, the difference is not significant.

The study of infant massage was carried out by primipara postpartum mothers with a massage frequency of once day for 14 days with a duration of 15 minutes, the area being massaged was the legs, abdomen, chest, back, hands and face. Because massage is done by the mother's own baby, the emphasis between mothers is also different. This can affect the production of breast milk.

There are several factors that cannot be controlled in this study that make the results of the study become The relationship between mother's touch and baby's emotional regulation is important to be better understood because it is related to the development and attachment of the child Bounding Attachment.8 The importance of attachment and the initial bond between mother and newborn baby. Breastfeeding fosters close contact between the mother and her newborn baby. Attachment is more likely to occur when the mother can see and have physical contact with her baby after birth such as eye contact or gentle massage.

## **CONCLUSION**

Based on the results of research on Infant Massage in increasing breastmilk production and bounding attachment in primipara postpartum mothers in the work area of the Mojogedang II Health Center, Karanganyar Regency can be concluded as follows:

1. The intervention group and the control results are:
  - a. There was no difference in breast milk production in both groups

- b. There were no differences in infant weight in both groups
1. c. There were no differences in Bounding Attachments in the two groups
2. The group before and after the intervention results are:
  - a. After intervention More milk production.
  - b. There is no difference in infant weight before and after intervention
  - c. After the Bounding Attachment Intervention is more.

## RECOMENDATION

### For Health Workers

In particular, midwives are expected to be able to provide information about the importance of infant massage for breast milk production therapy

and bounding attachment to primipara postpartum mothers in the work area of the Mojogedang II Health Center in Karanganyar Regency.

### For Researchers

It is expected to be able to apply the innovation of infant massage as a combination therapy in order to facilitate its ASI production and strengthen bonding and attachment between mother and baby in the work area of the Mojogedang II Health Center in Karanganyar Regency.

### For Mother

Can add convenience which is a Bonding Attachment and the benefits of baby massage therapy to facilitate the production of breast milk in the work area of the Mojogedang II Health Center in Karanganyar Regency.

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