



## Loving Lactation of Massage Effectiveness to Accelerating Lactation Onset

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### Abstract

Failure to provide exclusive breastfeeding can be a factor in the occurrence of stunting. The reasons for not giving exclusive breastfeeding, among others, are because the breast milk has not yet come out. Massage is one of the most popular methods among the public. Loving lactation massage has not been widely used. This study aims to analyze the effect of Loving Lactation Massage on postpartum mothers on lactation onset. This type of research is Quasi Experimental with a non-randomized control group design. The population of postpartum mothers in the Perumnas II area of Pontianak City who gave birth to BPM Titin Widyarningsih with the number of samples is 51 people. The sampling technique used was purposive sampling. Data analysis by univariate, bivariate. The hypothesis test used was Anova, with a significance of 95% ( $\alpha = 5\%$ ). Results: The average occurrence of lactation onset in the untreated group was 57.17 hours. Conventional group massage 44.17 hours. In the Loving Lactation Massage group, 35.47 hours. There was a significant difference between conventional and untreated lactation massage on lactation onset. ( $p=0,004$ ). There is a significant difference between the lactation massage with the loving lactation massage method and the untreated lactation onset ( $p=0,000$ ). Statistically, there was no significant difference between the loving lactation massage method and the conventional method of lactation onset ( $p=0,079$ ).

### Introduction

The focus of health development in Indonesia in the 2015-2019 period is reducing maternal and infant mortality, reducing the prevalence of stunting, controlling infectious diseases and controlling non-communicable diseases (Mebus, 1998). The nutritional problem facing the Indonesian nation today is stunting. Attention to stunting is an important matter because it will affect the quality of Indonesia's human resources in the future. Efforts to prevent and reduce stunting rates need to involve various sectors including empowering the family itself.

Stunting is a chronic nutritional problem in toddlers characterized by mismatching of the child's height compared to children of his age (shorter). Children who suffer from stunting will be more susceptible to disease, and are at risk for developing degenerative diseases as

adults. Besides having an impact on health, stunting also has an impact on the level of intelligence of children (Kementerian PPN/ Bappenas, 2018). The integrated stunting prevention intervention program launched by the government is an effort to prevent this. The intervention program is meant to involve cross-agencies and ministries. The government has designated 100 districts in 34 provinces as priority locations for stunting reduction in 2018. In the following year the number will increase by 60 districts. This cross-sector collaboration is expected to reduce the stunting rate in Indonesia, which in the end will reduce the stunting rate by 40% according to the target of the Sustainable Development Goals (SDGs) in 2025..

The incidence of stunting in the world in 2017 was 22.2% or around 150.8 million children under five. This figure has decreased

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when compared to the stunting rate in 2000, which was 32.6%. The proportion of children under five with stunting in the world in 2017, more than half of Asia (55%), more than a third (39%) live in Africa. The proportion of children under five with stunting in Asia is 83.6 million, and most of them come from South Asia (58.7%). The least proportion is in Central Asia (0.9%). Based on data from the World Health Organization (WHO), Indonesia is the third country with the highest prevalence of stunting in the Southeast Asia / South-East Asia Regional (SEAR) region. In 2005-2007, the average prevalence of stunting under five in Indonesia was 36.4%.

The impact of stunting can be divided into two, namely the short-term and long-term impacts. Increased incidence of morbidity and mortality, suboptimal cognitive, motor and verbal development in children and increased health costs are short-term impacts. Posture that is not optimal as an adult, increased risk of obesity and other diseases, decreased reproductive health, less than optimal learning capacity at school, not optimal productivity and work capacity are the long-term impacts (Mebus, 1998) (Kementerian PPN/ Bappenas, 2018). The risk of growth disorders, including stunting, can be affected by the nutrition obtained from birth. Failure to provide exclusive breastfeeding (ASI) and not carrying out early initiation of breastfeeding, as well as early weaning, can be a factor in the occurrence of stunting. The quality and quantity of complementary feeding of breastfeeding and the safety of the food provided are also things that need to be considered.

National coverage of exclusive breastfeeding for infants in 2017 was 61.33%. The highest percentage was found in West Nusa Tenggara (87.35%), while the lowest percentage was in Papua (15.32%). The coverage of infants receiving exclusive breastfeeding in West Kalimantan Province in 2017 was 62.73%. Exclusive breastfeeding coverage in Pontianak City in 2018 was 73.13%. The survey results in the area of the Public Health Center in Perumnas II show that 42.3% of babies do not receive exclusive breastfeeding. Based

on the survey, breastfeeding does not come out is one of the reasons for not giving exclusive breastfeeding.

According to the Ministry of Health of the Republic of Indonesia (2013), postpartum mothers on days 1-3 have not issued breastfeeding (Delayed Lactation Onset) so that exclusive breastfeeding cannot be given to their babies. To meet the needs of the baby, the mother provides formula milk. Delayed Lactation Onset is the delay in the release of breastmilk in postpartum mothers > 72 hours. Proper and proper feeding for babies is by breastfeeding the baby exclusively from birth to the age of 6 months and continuing to breastfeed the child until the age of 24 months. Breast contains lots of white blood cells, protein and immunity, so that Breastfeeding is the best food for babies, helps the child's growth, optimal development and protects against disease.

Zhu *et al.* (2013) in his research stated that Delayed OL is a negative effect of multiple perinatal biopsychosocial stress. Severe stress in the first trimester of pregnancy, delivery by caesarean section, elevated body mass index  $\geq 7.62$ , frequency of breastfeeding less than 3 times on the first day after birth, are risk factors for Delayed OL (Nommsen-rivers, Chantry, and Cohen, 2010) in his research stated that the median OL was 68.9 hours postpartum and 44% of mothers experienced Delayed OL while (Dewey *et al.*, 2003) stated Delayed onset of lactation (> 72 hours) occurred in 22% of women. (Husayni, 2018) said that the prevalence of Delayed OL 73%.

Lactation onset is the initial period of increasing milk until milk comes out for the first time or the mother's perception of when her milk comes in, which is characterized by a hard, heavy, swollen breast until milk or colostrum comes out. Lactation onset is also called stage II lactogenesis, starting from 24 hours postpartum, characterized by breasts feeling full, breasts feeling large or swollen and milk leaking. (Rocha. *et al.*, 2017) "ISSN": "1556-8342"; abstract: "Background: Low milk supply is frequently reported as a reason for breastfeeding early weaning. Objective(s) dan (Asazawa, 2017). *Loving post natal treatment* is a non-pharmacological method. Loving post natal treatment is a treatment given

to mothers after childbirth to help restore their pre-pregnancy body shape. Loving post natal treatment is a treatment that combines conventional treatments and natural ingredients from nature. Loving massage is a holistic therapy that combines physical, thought, and feeling, care, sincerity and love for the masseuse to the mother. Massage techniques are carried out by means of effleurage, petrissage, accupressure and love kneading on certain parts of the body to increase circulation and relaxation. Massage during pregnancy, childbirth and childbirth is an appropriate way to reduce stress and improve the well-being of both mother and baby.

Some of the benefits of massage for postpartum mothers are reducing pain, supporting uterine health, reducing tension, stress and anxiety, reducing nausea, stimulating peristaltic activity, encouraging deeper breathing, increasing internal respiration, reducing muscle tension, restoring balance in posture, normalizing blood pressure, elevates the mood or mood, increases milk production and encourages loving maternal care, prepares the mother physically, emotionally and mentally for the postpartum period (Melyana & Kusmini, 2018)

Massage in Arabic and French means touching. Massage is one type of alternative medicine in the physical therapy group. Massage in Indonesian is called massage or massage. Massage develops and is passed down from generation to generation not only in Indonesia but almost all over the world. Massage is one of the most popular methods among the public. Lactation massage methods that have been widely practiced include oxytocin, oxytocin, and loving lactation massage. (Yunitasari, 2015) in his research stated that Acupressure points for lactation are a solution to overcome the improper production of breast milk and help maximize prolactin and oxytocin receptors, as well as minimize the side effects of delayed breastfeeding. (Cho *et al.*, 2012) mentioned that Oketani massage significantly reduces breast pain, increases breast milk levels and the baby's sucking speed. (Putri, 2015) states that there is a significant effect of oxytocin massage on breast milk expenditure in post partum mothers.

Back massage is effective at increasing lactation. Back massage can speed up the

release of breast milk because the basis of this back massage is to stimulate the oxytocin reflex (Patel & Gedam, 2013). When the spine is massaged there arises a neurogenic reflex that accelerates the work of the parasympathetic nerves to convey commands to the back of the brain (Rahayu, 2015). From the study results stated that the combination of breast care and oxytocin massage significantly increased breast milk production (Hesti *et al.*, 2017). Post partum mothers who were given lactation massage, the onset of lactation was faster than those given oxytocin massage ( Hesti *et al.*, 2017).

Based on the research results mentioned above, most of the measured outcomes were milk production. To the best of our knowledge, the effect of lactation massage on lactation onset has not been widely carried out. Research on lactation massage on lactation onset was conducted by Hesti *et al.* (2017) comparing between lactation massage and oxytocin massage. Based on this premise, "The effect of the Loving Lactation Massage method of lactation massage on postpartum mothers on lactation onset is interesting to study.

## Method

This research is a Quasi Experiment study, with a non-randomized control group design. In this study, the experimental group was divided into 3 (three) groups. The first group was treated in the form of lactation massage using the Loving Lactations Massage method, the second group used conventional methods and group 3 without treatment. The Loving Lactational Massage method is a massage method that is carried out holistically, starting with breathing relaxation, then praying to God, releasing emotions and integrating body, mind, and spirit, followed by creating a feeling of caring, loving and loving massage to the mother sincerely followed by massage with effleurage, petrissage, accupressure and love kneading on certain body parts to improve circulation and relaxation. The conventional method is a massage method that is not carried out holistically and is done by massaging the breasts in 3 steps, followed by warm compresses and cold compresses and back massage.

The population of this study was postpartum mothers in the area of the

Preumnas II Public Health Center, Pontianak City. The research subjects were postpartum mothers in the area of Puskesmas Perumnas II, Pontianak City who gave birth at BPM Titin Widyaningsih during the study period. The sample size obtained was 17 people for each group. Inclusion criteria are implementing Early Initiation of Breastfeeding, Willingness to be a respondent, and being able to read and write. Exclusion criteria were postpartum mothers experiencing bleeding, fever, nausea, diarrhea, acute vascular inflammation such as phlebitis, high blood pressure, acute pneumonia, infectious diseases, diabetes with complications such as kidney problems and cancer.

The instruments used in this study were the protab for the Loving Lactation Massage method and the conventional massage method. Observation sheet was used to measure the onset of lactation. Univariate analysis was carried out to describe the characteristics of the respondents and presented in tabular form. Bivariate analysis was performed to determine the effect of Loving Lactation Massage and conventional massage on lactation onset.

Hypothesis testing used is the Anova Test and Post Hoc Bonferroni with a significance level of 95%. ( $\alpha=0.05$ ).

## Results and Discussion

Univariate analysis is carried out as a first step in a study and is used to determine further analysis. The results of the univariate analysis included the characteristics of the respondents, the data on lactation onset and the distribution of the data, the characteristics of the respondents based on the type of treatment. The results of the analysis are presented in tables.1, .2 and 3. The characteristics of the respondents in table 1 show that: based on age, some of the ages are 20-35 years, namely 47 people from 51 people (92.16%). Based on parity mostly on parity two, namely as many as 23 people from 51 people (45.10%) and parity 1 as many as 20 people from 51 people (39.22%). The characteristics of respondents based on education are mostly high school education, namely as many as 45 people (88.24%). Based on occupation, most of the respondents were housewives as many as 45 people (88.24%).

Table 1 Characteristics of Research Respondents

No.	Characteristics	n= 51	%	
1	Ages			
	<20 years old	1	1,96	
	20-35 years old	47	92,16	
2	Parity			
		1	20	39,22
		2	23	45,10
		3	7	13,73
3	Education			
		4	1	1,96
		Junior high school	2	3,92
		Senior high school	45	88,24
5	Occupation			
		Higher education	4	7,84
		Housewife	45	88,24
		Entrepreneur	4	7,84
	Civil servant	2	3,92	

Source: Primary Data, 2019

Table 2. Characteristics of Respondents by Type of Treatment

Characteristics	Type of Treatment						p
	Loving Lactation Massage		Conventional Massage		Without Treatment		
	n	%	n	%	n	%	
<b>Ages</b>							
<20 years old	1	5,88	0	0	0	0	0,40
20-35 years old	16	94,12	15	88,24	16	94,12	
>35 years old	0	0	2	11,76	1	5,88	
<b>Parity</b>							
1	6	35,29	6	35,29	8	47,06	0,83
2	8	47,06	8	47,06	7	41,18	
3	3	17,65	2	11,76	2	11,76	
4	0	0	1	5,88	0	0	
<b>Education</b>							
Junior high school	1	5,88	1	5,88	0	0	0,49
Senior high school	14	82,35	14	82,35	17	100	
Higher education	2	11,76	2	11,76	0	0	
<b>Occupation</b>							
Housewife	14	82,35	15	88,24	16	94,2	0,80
Entrepreneur	2	11,76	1	5,88	1	5,88	
Civil servant	1	5,88	1	5,88	0	0	

Source: Primary Data, 2019

To see the variable homogeneity between groups given treatment (massage) with conventional methods and loving lactation massage and those without treatment can be seen in table 2. The results of the analysis contained in table 2 show that of the 4 characteristics of respondents in the three treatment groups, statistically there is no difference in characteristics (homogeneous).

Given that the data in this study have a numerical scale (interval), to determine the next test it is necessary to describe the distribution of data based on the time of lactation onset. The results of the analysis in Table 3 show that the average occurrence of lactation onset in the untreated group was 57.17 hours with a standard deviation of 9.13. The conventional group massages 44.17 hours with a standard deviation of 12.34. In the Loving Lactation Massage group, the average

occurrence of lactation onset was 35.47 hours with a standard deviation of 11.51. The three groups are normally distributed.

After it is known that the three groups are normally distributed, then the variant test is carried out. The results of the variant test showed that the three groups had the same variants, so the hypothesis test used was the Anova test. This is based on the data collected on a numerical scale and the number of groups is more than 2. To see which groups are different, a Bonferroni Post Hoc analysis is carried out. The results of the analysis are presented in tables 4 and 5.

The data contained in table 4 shows that statistically there is at least one significant difference between the three treatment groups. To see the different groups, the Post Hoc Bonferroni analysis was continued. The results of the analysis are contained in Table 5. The results of the analysis in Table

Table 3. Data Distribution of Lactation Onset

Type of Treatment	N	Lactation Onset Time		Data Distribution	p
		Mean ( $\pm$ SD)	Median (Min-Max)		
Loving Lactation Massage	17	35,47 ( $\pm$ 11,51)	29 (24-62)	Normal	0,130
Conventional Massage	17	44,17 ( $\pm$ 12,34)	41 (29-66)	Normal	0,107
Without Treatment	17	57,17 ( $\pm$ 9,13)	54 (40-81)	Normal	0,072

Source: Primary Data, 2019

Table 4. Effect of Lactation Massage with Conventional Methods of Massage and Loving Lactation Massage on lactation onset

Type of Treatment	N	Mean ( $\pm$ SD)	Median ( $\pm$ SD)	F	p
Loving Lactation Massage	17	35,47 ( $\pm$ 11,51)			
Conventional Massage	17	44,17 ( $\pm$ 12,34)	45,60 ( $\pm$ 14,1)	16,52	0,000*
Without Treatment	17	57,17 ( $\pm$ 9,13)			

Source: Primary Data, 2019

\*= Anova test

Table 5. Differences in Lactation Onset by Type of Treatment

No.	Type of Treatment	Conventional Massage	Without Treatment
		Difference (p)	Difference (p)
1	Loving Lactation Massage	8,7 (0,079)	21,7 (0,000)
2	Conventional Massage		13 (0,004)

Source: Primary Data, 2019

5 show that there is a significant difference between loving lactation massage and without treatment on lactation onset ( $p = 0.000$ ). There was a significant difference between conventional and untreated methods on lactation onset ( $p = 0.004$ ). There was no significant difference between loving lactation massage and conventional massage on lactation onset ( $p = 0.079$ ). Based on the average value, the loving lactation massage has the shortest average, so the loving lactation massage is the best method.

The results of the analysis show that statistically there is a significant difference

between those who are given treatment (lactation massage) and those who are not given treatment for the occurrence of lactation onset. ( $p=0,000$ ). The time of onset of lactation in the treated group was 13 hours faster than that of the untreated group. Research on the impact of lactation massage on lactation onset to the best of our knowledge has not been widely conducted. Similar research (Patel & Gedam, 2013)non pharmacologic measures are an attractive option over pharmacologic measures for improving lactation. Methods: A quasi experimental study was conducted for a period of 16 months, to assess the effectiveness

of back massage on lactation among immediate postnatal mothers. A total of 220 mothers were enrolled in two groups (Group A, Experimental group-100 cases, Group B, Control group-120 cases), stated that back massage in post partum mothers is effective in increasing lactation. Back massage is recommended to all mothers, especially those who face problems related to the initiation of breastfeeding.

Lactation onset is also called stage II lactogenesis, starting from 24 hours postpartum. Delayed breastfeeding in post partum mothers > 72 hours (delayed onset lactation) is one of the factors that the breastfeeding process is unsuccessful. The long-term impact of delayed onset lactation in infants is the risk of excess body weight occurring (Dewey *et al.*, 2003). Research result (Dewey *et al.*, 2003) stated that the risk of being overweight was 7.1 greater in mothers who experienced delayed onset lactation and 2.6 times greater in infants whose breastfeeding on day 0 was not optimal. Peng Zhu, *et al.* (2013) in his research stated that Delayed OL is a negative effect of multiple perinatal biopsychosocial stress. Nommsen-Rivers, L.A. *et al.* (2010) in his study stated that the median OL was 68.9 hours postpartum and 44% of mothers experienced delayed OL. The risk factors for delayed OL are age > 30 years, obesity, LBW > 3600 grams, nipple disorders 0-3 days post partum, failure / not being able to breastfeed properly > 2 times in 24 hours post partum.

Lactation massage is a non-pharmacological method that has been used with many benefits. Research result (Patel & Gedam, 2013) non pharmacologic measures are an attractive option over pharmacologic measures for improving lactation. Methods: A quasi experimental study was conducted for a period of 16 months, to assess the effectiveness of back massage on lactation among immediate postnatal mothers. A total of 220 mothers were enrolled in two groups (Group A, Experimental group-100 cases, Group B, Control group-120 cases), showed that back massage in post partum mothers was effective in increasing lactation. Back massage is recommended to all mothers especially those who face problems related to initiation of breastfeeding. During childbirth, the discharge of the placenta causes

a sudden drop in the levels of the hormones progesterone, estrogen and the Prediction Day of Birth, but the hormone prolactin remains high. This results in the production of massive breastfeeding known as phase Lactogenesis II. When the breasts are stimulated, the prolactin level in the blood raises, peaks over a 45 minute period, and then returns to the pre-stimulation level three hours later. The release of the hormone prolactin stimulates cells in the alveoli to produce Breastfeeding, and this hormone also comes out in Breastfeeding itself. Research indicates that the prolactin level in milk is higher when the breastfeeding is higher, which is around 2 a.m. to 6 a.m., but the prolactin level is low when the breasts feel full.

Biochemical markers indicate that the process of lactogenesis II begins about 30-40 hours after delivery, but usually new mothers feel full breasts about 50-73 hours (2-3 days) after delivery. This means that breastfeeding production is actually not immediately after delivery. After the mother gives birth, there will be changes both physically and psychologically. The psychological changes after childbirth consist of three phases. The dependency phase lasts from the second day after delivery. Mothers are focused on themselves so they tend to be passive towards their environment. The mother's discomfort is more caused by the labor she has just gone through. Mules, pain in the birth canal, lack of sleep, or lethargy, are the things that mothers often complain about. In this phase, the need for rest, nutritional care and good communication must be fulfilled. If these needs are not met, the mother can experience psychological problems in the form of: disappointment with the baby, discomfort as a result of physical changes experienced, guilt for not being able to breastfeed the baby and criticism of the husband or family about caring for the baby.

The condition of the mother who is easily anxious and stressed can interfere with lactation so that it can affect milk production. This is because stress can inhibit the release of Breastfeeding (Chen *et al.*, 1998) and (Dewey, 2001). The emotional state greatly influences the milk flow reflex. This reflex controls the commands sent by the hypothalamus to the pituitary gland. When the mother is under

stress, anxiety, worry, tension, etc., milk will not go down from the alveoli to the nipple.

Generally this occurs during the first days of breastfeeding when the reflex to drain milk is not fully functional. The milk flow reflex works best when the mother is relaxed and calm, not tense or anxious. Breast care will accelerate milk production and stimulate the breasts, will affect the hypophyse to release more of the hormones progesterone, estrogen and oxytocin. The oxytocin hormone will cause contractions in other cells around the alveoli, so that milk flows down towards the nipples. The mean time of onset of labor in the treatment group was 44.17 hours, with the shortest time being 29 hours and the longest time being 66 hours. Whereas in the untreated group the average time of lactation onset was 54 hours and the longest was 81 hours. There were 1 (5.8%) people who experienced Delayed Onset of Lactation. The prevalence of DOL ranges from 22-44%. So in this study the prevalence of DOL is smaller. This is because the respondents in this study were doing Early Initiation of Breastfeeding (IDM).

The results of the analysis showed that there was a significant difference in the time of lactation onset between those who were given lactation massage using the *loving lactation massage* method and those who were not given the treatment. ( $p=0,000$ ). The group that was given the loving lactation massage method, the lactation onset time was faster than the untreated group, with a mean difference of 21.7 hours. The effect of massage on this *loving lactation massage* method is similar to conventional methods, but the results are different. It is possible that there are differences in massage technique procedures. In the loving lactation massage method, relaxation techniques, emotional release, and positive affirmations are taught. Besides that, they are also given aromatherapy and music therapy. In the conventional method is not given.

The health benefits of music therapy include overcoming muscle tension and reducing depression. (H. H. Lin *et al.*, 2019 and (C.-J. Lin *et al.*, 2019), in his research on the effects of music therapy during vaginal delivery as a post partum pain reliever and mental health, states that using music therapy during

labor reduces anxiety, pain at post partum. (Kheirkhah *et al.*, 2014) in his research, stated that aromatherapy and footbath can reduce anxiety in a mother giving birth to primiparous in the active phase. (Sara Esmaelzadeh-Saeieh<sup>1</sup>, Mitra Rahimzadeh<sup>2</sup>, Nafiseh Khosravi-Dehaghi<sup>3</sup>, Shokufeh Torkashvand<sup>4</sup>) in their research stated that inhalation of *Boswellia Carterii* essential oil can significantly reduce pain in childbirth. (Asazawa *et al.*, 2017) stated that aromatherapy significantly improves relaxation in the early postpartum period.

The results showed that statistically, there was no significant difference between the *Loving Lactation Massage* method and the conventional method ( $p = 0.079$ ). The average time of lactation onset with the Loving Lactation Massage method was 35.47 hours and the conventional method was 44.17 hours. Lactation onset with the *Loving Lactation Massage* method is 8.7 hours faster than the conventional method. Although it does not show a statistically significant difference, it can be considered clinically significant, considering that the process of breastfeeding takes 3 hours. The characteristics of the respondents in this study were equivalent, so that the characteristics of the respondents were not at issue. Lactation onset is also influenced by early initiation of breastfeeding (IMD). In this study, all respondents did early initiation of breastfeeding, given the policy at BPM Titin Widyaningsih facilitating Early Initiation of Breastfeeding.

## Conclusion

Based on the results of the study, it can be concluded that there is an effect of lactation massage on lactation onset. There are differences in the onset of lactation using the Loving Lactation Massage method with conventional methods ( $p \leq 0,001$ ). The treatment uses the Loving Lactation Massage Method which is more effective in stimulating Lactation Onset compared to conventional methods.

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