



Effect of the Marmet Technique towards the smoothness of breast milk Expression for the mother post partum in BPM Palembang City

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Abstract - Data of Public Health Service in Palembang revealed that the coverage of giving Exclusive breastmilk in Palembang in the year of 2015 was 72,91%. In plaju District, the coverage of exclusive breastmilk production was 77%. This coverage was still below the target that was 80%. The amount of breastmilk production in the first day after the childbirth was very small. It was caused by the lack of two vital hormones in milk production, prolactin hormone and oxytocin hormone stimulus. This problem could be overcome by using the Marmet Technique. The aim of this research was to figure out the effect of the Marmet Technique towards the breast milk expression for the mother postpartum. The research designs used in this research were Pre-Experiment and One Group Pre-test Post-test. To collect the data, purposive sampling techniques was employed with the total of sample 30 respondents. Based on the result of univariate analysis, before the Marmet Technique in the smoothness of breastmilk expression was given, the result was 19 respondents (63,3%). On the other hand, after the treatment was applied, there are 15 respondents (50%). As for this result of bivariate analysis, ρ value: 0,000 whilst ($\alpha=0,05$) which meant that the result was significant. It could be summarized that the Marmet Technique influenced the smoothness of breast milk expression.

Keywords: Marmet Technique, the smoothness of breast milk expression.

I. INTRODUCTION

Childbirth is a natural event experienced by every mother after pregnancy until the time. After the delivery is complete, each mother must immediately prepare for another task, namely breastfeeding. In normal labor, breastfeeding initiation can be done immediately after the baby is born [1], [2].

Marmet technique is a way to manually express milk and express let down reflexes (LDR). Reflex let down stimulation at the beginning of the milking process can produce 2-3 times as much milk as compared without using this technique. Let down reflexes are the same as stimulation that occurs if the nipples are inhaled by the baby and after a while suddenly the breasts will

tighten and the milk will come out so heavily that the baby must accelerate the rhythm of sucking milk, more or less like that if we get the let down reflex effect [3]. The technique of milking milk by way of marmet aims to empty the milk from the lactiferous sinus which is located below the areola so that it is hoped that emptying the milk in the lactiferous sinus will stimulate prolactin release. Expenditure of the hormone prolactin is expected to stimulate mammary alveoli to produce breast milk [4].

Based on data from the Palembang City Health Office the coverage of exclusive breastfeeding for Palembang City in 2015 was 72.91%. In the sub-district of Plaju the coverage of exclusive breastfeeding was 77.0%.

A. Formulation of the problem

Is there any influence of marmet technique on the smooth delivery of breast milk for first and second day post partum mothers at BPM Husniati, BPM Choirul Mala Husin and BPM Rachmi Palembang City in 2018?

B. Research purposes

1. General Purpose

It is known that there is an influence of marmet technique on the smoothness of breast milk in the first and second day post partum mothers at BPM Husniati, BPM Choirul Mala Husin and BPM Rachmi Palembang City in 2018.

2. Special Purpose

- learned the smooth release of ASI before the first and second day post partum mother marmet technique
- learned the smooth release of breast milk after the marmet technique was performed on the first and second day post partum mothers

C. Benefits of Research

1. For Researchers

By doing this research, it is expected to be an alternative to increase the success of mothers in providing exclusive breastfeeding to their babies

A. Theoretical Basis

1. Breast Physiology

During pregnancy, the prolactin hormone from the placenta increases but breast milk has not come out because it is still inhibited by high estrogen levels. On the second or third day postpartum, estrogen and progesterone levels drop dramatically, so that the influence of prolactin is more dominant. By opening the nipple stimulation occurs earlier, the formation of pituitary prolactin, so that the secretion of breast milk more smoothly. Two reflexes in the mother that are very important in the process of lactation are prolactin and flow reflexes[5], [6].

a. Prolactin Reflex

When the baby suckles, the nerve endings of the touch found in the nipple are stimulated. These stimuli by afferent fibers are carried to the hypothalamus at the base of the brain, then stimulate the anterior pituitary to secrete the hormone prolactin to stimulate glandular cells (alveoli) to produce milk. The amount of prolactin that is secreted and the amount of milk produced is related to the sucking stimulus, which is the frequency, intensity and length of time the baby sucks[4].

b. Flow Reflexes (*Let Down Reflex*)

Stimulation caused by the baby when feeding is delivered to the back of the pituitary gland which will release the hormone oxytocin into the blood. Oxytocin will stimulate the smooth muscles that surround the alveoli and ductuli contract so they squeeze milk from the alveoli, ductuli, and sinuses into the nipple[3].

a. Breast Volume

According to Kent, the following is a guide to the average amount of milk they give to babies during breastfeeding:

Table I. Volum ASI

When born	Up to 5 ml ASI	first breastfeeding
In 24 hours	7-123 ml/day ASI	3-8 breastfeeding
between 2-6 days	395-868 ml/day ASI	5-10 breastfeeding
One month	395-868 ml/day ASI	6-18 breastfeeding
Six month	710-803 ml/day ASI	6-18 breastfeeding

Source: Pollard,2015[7]

It is interesting to note that each breast produces a different amount of milk. In 7 out of 10 mothers it was found that the right breast was more productive. Kent also found that babies empty their breasts only once or twice per day with an average of only 67 percent of available milk being consumed with an average volume of 76 ml each time breastfeeding. Low milk production is a result of:

- Breastfeeding less or breastfeeding less frequently
- If the baby cannot suck breast milk effectively due to the wrong attachment technique
- Hypoplastic breast tissue
- Abnormalities of metabolism or digestion of infants so that they cannot digest breast milk
- Lack of maternal nutrition [3].

b. How to do the Marmet Technique

According to Bayu (2015), before blushing, do a simple massage and warm compresses to the breast so that the mother feels comfortable also for the expenditure of breast milk[8], [9]. A simple massage is performed in a circular / circular motion to the breast outside the areola and nipple area, from the base of the breast to the areola skin border[8]. This is to destroy the possibility of milk stoppers in the breast ducts.

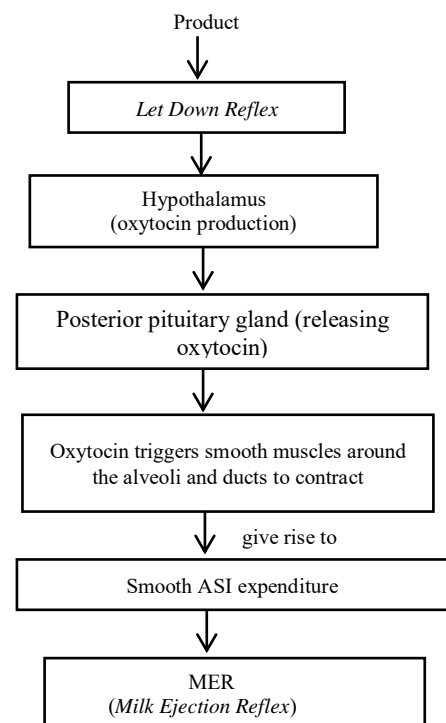
- Place two fingers (index and thumb) outside the areola near the boundary between the skin and the areola as forming the letter C in an upright position.
- Bring and press the fingers to the chest like stretching fingers (for mothers with large breasts the bottom of the breast can be supported with the other palm).
- Slowly, push both fingers towards the front, such as massaging / pushing milk collected in the mammary glands located under the two fingers.
- Repeat the above movements regularly for about 2-3 minutes.
- Do the other breast
- Avoid pressing movements of the breasts, pulling the nipples and pushing the breasts.

2. Related Research Results

The Effect of Marmet Technique on Breast Milk Production in Post-Partum Mothers at PKU MuhammadiyahGamping Hospital [8]. Chi Square statistical test results obtained significance value (p) of 0.025

B. Theoretical Framework

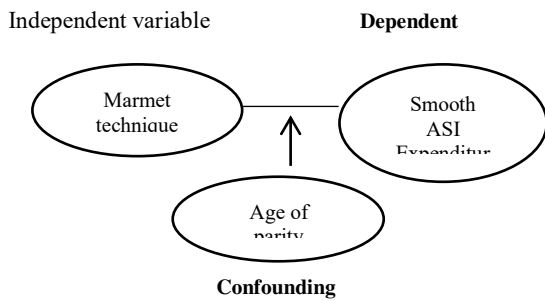
A theoretical framework is a set of theories that underlie research topics [10]. The theoretical framework used in this study is as follows:



C. Concept Framework

Conceptual framework is a description and visualization of concepts and variables to be studied[11]. The

conceptual framework of the research to be carried out is in the following figure:

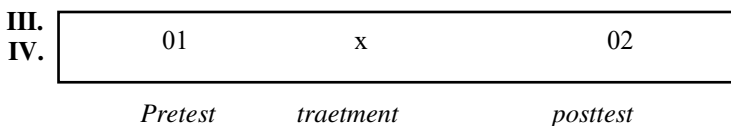


D. Hypothesis

The hypothesis of this study is that there is an influence of marmet technique on the smooth delivery of breast milk in postpartum mothers at BPM Palembang City in 2018.

II. RESEARCH METHODOLOGY

This research is a quasi-experimental research with the design used is One Group Pretest-Posttest. This design is no comparison group (control). The intervention group was given Marmet Engineering intervention from first day to third day.



Information:

- 01 → before the intervention
- x → intervention (marmet technique)
- 02 → after the intervention

In general, this experimental study only uses a relatively small sample, when compared to the size of the population. Therefore, the results of this experimental research are processed and analyzed with a careful statistical test so that adequate generalization can be carried out [11].

A. Research Time and Place

1. Research Time

The study was conducted in March to May 2019.

2. Researc Sites

The research was conducted at BPM Husniati, BPM Choirul Mala Husin and BPM Rachmi.

B. Popuation and Sample

1. Research Population

The study population was the first day post-partum mothers at BPM Husniati, BPM Choirul Mala Husin and BPM Rachmi.

2. Research Samples

The population in this study was post-partum mothers in 3 BPM Palembang City and obtained samples in Husniati BPM as many as 14 respondents, in Choirul Mala Husin BPM as many as 7 respondents and in BPM Rachmi as many as 9 respondents. So the total sample is 30 respondents

a. Inclusion criteria

- 1) Mother's first day postpartum
- 2) Do not give formula milk to the baby

- 3) Post partum mothers who are willing to do the marmet technique
- 4) Mothers who give birth to term
- 5) Mothers who give birth to babies with normal birth weight
- 6) Mothers who give birth normally

b. Exclusion Criteria

- 1) Post-partum mothers who have abnormalities in milk nipple
- 2) Mother with LBW baby (Low Birth Weight)
- 3) Mothers with chronic complaints
- 4) Mother who gave birth by Caesarean section (SC).

In this study, the variables used are the dependent variable and the independent variable. Which includes the dependent variable is the smoothness of ASI expenditure while the independent variable is the Marble Technique.

V. RESULTS

1. Overview of Research Locations

This research was conducted at 3 BPM Palembang City, namely Husniati, Choirul Mala Husin and Rachmi.

2. Univariate Analysis

This data analysis was performed to determine the frequency distribution and the percentage of research variables. The smoothness of ASI expenditure is divided into 3 categories, namely lack (score 1-3), adequate (score 4-6) and lots (7-8). Data is presented in tabular and text form below:

- 1) Frequency distribution of respondents before and after being given the technique marmet.

Table 4.1
Frequency Distribution of Smooth ASI Expenditures Before and after Granting Marmet Engineering at BPM Palembang City in 2018

No	Smooth ASI Expenditures	Before Marmet Technique		After Marmet Technique	
		n	%	n	%
1	less	19	63,3	6	20
2	enough	11	36,7	15	50
3	lots	0	0	9	30
amount		30		100	

Based on table 4.1. above, it can be seen that from 30 respondents, before and after the technique of marmet, respondents with smooth ASI expenditure decreased from 19 (63.3%) to 6 people (20%), while ASI expenditure increased quite before and after the marmite technique, ie from 11 (36) 7%) to 15 (50%) and for breastmilk expenditure increased considerably from 0 to 9 (30%).

Bivariate Analysis Results

The next test is bivariate analysis, bivariate analysis is done to identify the relationship between two variables. To see the smoothness of ASI release before and after the marmet technique was given to the paired groups (pre and post) using the

Wilcoxon Test. The results of the bivariate analysis can be seen in the table below (table 4.3).

Table 4.3 Effect of Marmet Technique on Smooth Expenditures of Breast Milk Palembang city 2018

	Smoothness of breastfeeding after Marmet technique				p value
	Less %	Enough %	Lots %	Total %	
Smoothness of breastfeeding after Marmet technique	6 (31,6)	12 (63,2)	1 (5,3)	19 (100,0)	0,000
	0 (0,0)	3 (27,3)	8 (77,7)	11 (100,0)	
Total	6 (20,0)	15 (50,0)	9 (100,0)	30 (100,0)	

VI. DISCUSSION

This research was conducted at 3 BPM namely Husniati, Choirul Mala Husin and Rachmi and was carried out from March to May 2018. The population in this study was post-partum mothers at BPM Palembang City and obtained samples at BPM Husniati as many as 14 respondents, in BPM Choirul Mala Husin as many as 7 respondents and in BPM Rachmi as many as 9 respondents.

1. Characteristics of Respondents

From the analysis of characteristics based on the age of the post-partum mothers who were given the treatment of marmet techniques at BPM Husniati, BPM Choirul Mala Husin and BPM Rachmi, as many as 30 people (100%). Researchers divided into three age groups: respondents aged 19-25 years totaling 14 people (46.7%), respondents aged 26-30 years were 10 people (33.3%), and respondents aged 31-35 years as many as 6 people (20.0%).

Mother's age affects the production of breast milk[12]. Mothers who are younger are producing more milk than older mothers[13]. According to Biancuzzo (2003) that younger mothers or less than 35 years of age produce more milk than older mothers [14].

The results are consistent with research conducted by Hidayati, 2012, which says that the more age the level of maturity of a person to be more mature in thinking and acting, and therefore vulnerable age above 20 years and below 35 years is the age reproduction healthy and safe for pregnancy, labor and breastfeeding.

From the results of the analysis of characteristics based on parity of post-partum mothers who were given the treatment of marmet technique there were two groups, namely in primipara as many as 19 people (63.3%) and in multipara as many as 11 people (36.7%).

Proverawati (2010) states that the number of births ever experienced mothers provide experience in breastfeeding, and to know how to increase milk production so there is no problem for

the mother in breastfeeding[15]. Mothers who give birth for the first time and mothers who give birth more than twice often have problems in giving breast milk[16]. The more children born will affect the productivity of breast milk, because it is closely related to the health status of the mother and fatigue and nutritional intake. Parity is thought to have something to do with finding information in breastfeeding. This is related to the influence of one's own and other people's experiences[17], that the mother's experience influences the care of the child and also influences the knowledge about breastfeeding [18], [19].

Mothers who gave birth to their second child and rivals had more milk production compared to the birth of the first child [13]. While Loyalady (2005) stated that multiparous mothers showed more milk production compared to primipara on the fourth day of postpartum [14].

Mothers who have one child have more time to come to a health facility where their health facilities have the opportunity to obtain information related to breastfeeding practices that are good and right[20]. The number of children has not been able to guarantee the implementation of exclusive breastfeeding, because in addition to IMD, admission and other supporting variables, support from health workers plays a very important role through well-scheduled health education, so that respondents are able to know exactly the benefits of breastfeeding [19], [21].

2. Univariate Analysis

From the analysis of table 4.1 above it can be seen that from 30 respondents, before being given the technique of guinea pigs, respondents who experienced smooth ASI expenditure were less than 19 respondents (63.3%), ASI was enough as many as 11 respondents (36.7%) and ASI many did not exist.

According to the results of research conducted by Hamidah in 2016 at PKU Muhammadiyah Gamping Hospital, marmet technique can help reflexes milk by massaging, cells and ducts producing milk during circular movements similar to movements used in breast examinations[8].

In this study, when after being given the technique of guinea pigs, there were 6 respondents who still experienced a smooth flow of breast milk which was categorized as less. This possibility may occur because it is influenced by several factors, namely age, the average age of 6 respondents is in the range of 19-25 years and has just given birth to the first child. The smoothness of breast milk expenditure is also very dependent on psychology, with such age there may be some mothers who are not yet confident to breastfeed their babies as well as limited experience because they have just given birth to their first child and the next factor is there are some mothers who are less cooperative in trying and learning new things. given by researchers or health workers.

3. Bivariate Analysis

Bivariate analysis was performed to identify the relationship between the two variables. In this study there are 2 groups of paired data, ordinal scale but the data are not normally distributed so as to see the smoothness of ASI expenditure before and after the marmet technique was given to the paired groups (pre and post) using the Wilcoxon Test[11].

Based on the results of research that has been done in 3 BPM Palembang, namely Husniati, Chirul Mala Husin and Rachmi, the results of the influence of marmet technique on the smoothness of ASI expenditure in post-partum mothers. Based on table 4.3 above of 30 respondents, before being given treatment technique Marmet who have fluency spending ASI less as many as 19 people, after being given treatment technique Marmet respondents breastfed less to 6 people, respondents with enough milk as many as 12 people and respondents with ASI much is 1 person. Marmet technique before being given treatment that has the smooth spending enough milk that is 11 people, after being given treatment Marmet technique of respondents with less breast milk is not available, respondents with enough milk 3 people and respondents with ASI many are 8 people.

Based on the Wilcoxon statistical test, the p value is 0,000 and because the p value is $0,000 < \alpha$ (0.05) which means that there are differences in the smoothness of ASI expenditure before and after the marmet technique in post partum mothers at BPM Palembang.

The results of the study are also in line with research conducted by Ilyas (2015) entitled The Effect of Marmet Technique on the signs of ASI adequacy in post Caesarean section mothers in Moewardi Hospital Surakarta, based on his research there were

changes in the signs of ASI adequacy in the intervention and control groups before and after treatment was given with $\text{sig} = 0,000$ ($p < 0.005$). There were differences in the signs of adequate milk in the control and intervention groups after being given a marmet technique with $\text{sig} = 0,000$ [22].

Based on theory, research, and related research, investigators believe that the smooth spending ASI is a very complex interaction between mechanical stimuli, nerves and hormones and exerts Marmet technique can improve these three things. From the results of this study it was found that there was an influence on the smoothness of breast milk expenditure before and after the technique of marmet in post-partum mothers in BPM of Palembang city

VII. CONCLUSION

Based on the results of research and discussion it can be concluded that there are significant before and after Marmet technique for the smooth expenditure on maternal breastfeeding postpartum in Husniati BPM, BPM and BPM Choirul Mala HusinRachmi Palembang.

VIII. SUGGESTION

1. For researchers

By doing this research, it can increase insight, knowledge and research experience in applying the knowledge that has been obtained in educational institutions and is expected to be an alternative to increase the success of mothers in providing exclusive breastfeeding to their babies and as a final assignment requirements to obtain a Bachelor of Applied Midwifery degree.

2. For Respondents

It is expected to be able to add insight, knowledge, and be able to perform marmet techniques independently, also to facilitate

breastfeeding mothers must supplement it with good nutrition, adequate rest and apply a healthy lifestyle.

3. For Research Sites

The results of this study are expected to be information as well as a facilitator and motivator in health education for mothers that Exclusive breastfeeding is very important for the health of mothers and babies and this marmet technique can be applied to assist the smooth process of breastfeeding in postpartum mothers.

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