

## Impact of the Oketani Technique Versus Lanoline on Breast Pain and Milk Production Among Puerperal Women

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### Abstract

**Background:** Breast feeding difficulties, due to nipple fissures is a common problem in early post-partum period. **Purpose:** The current study was conducted to assess the impact of oketani technique versus lanoline on breast pain and milk production among puerperal women. **Methods:** A quasi-experimental design was employed. Study was done at Menoufia University Hospital in Shebin El-kom. **A purposive sample** containing 120 of women with painful nipples in early post-partum period. Instruments: A structured questionnaire sheet, factors affecting breast feeding assessment sheet were used to collect data. **Results:** Oketani breast massage was similar in both IG and CG [7.5]. While, breast pain was significantly alleviated to a mean value of  $1.3 \pm 0.47$  post-test<sub>2</sub> in IG compared to  $(5.3 \pm 0.65)$  in CG. Also, IG resulted in significant higher amount of breast milk produced during post-test<sub>2</sub> evaluation  $(314.9 \pm 13.5)$  compared to  $(174.1 \pm 6.8)$  in CG). Application of the technique in IG, resulted in significant higher sucking speed among women in post-test<sub>2</sub> evaluation  $(47.3 \pm 3.3)$  in IG compared to  $(28.2 \pm 5.2)$  in CG. **Conclusion:** These results suggest that Oketani breast massage is useful for reducing breast pain, boosting breast milk production, and quickening a newborn's sucking reflex. **Recommendations:** further studies related to oketani breast massage should be conducted in other settings and on a larger number of puerperal women to assure the generalizability of the research results.

**Key Words:** Breast Pain, Oketani Technique, Puerperal Women.

### Introduction

Postpartum period is a unique time in a woman's life. For puerperal women, the transition to parenthood is a crucial time. The infant Friendly Hospital Initiative (BFHI) by UNICEF and WHO considers the first step toward achieving a satisfactory breastfeeding outcome for the infant to be the early commencement of breastfeeding within thirty minutes of delivery. Breastfeeding is to exclusively recommended to begin within the first few minutes of life as well as for the first six months of their lives (Amr et al., 2023). Breast milk is the most suitable meal offers undeniable immediate and long-term benefits. Antibodies in breast milk also shield newborns from infections and lower medical expenses. Faster postpartum involution and defense against breast cancer and other illnesses are two advantages for nursing women. But just 40% of children worldwide receive breast milk (Chua et al., 2023).

In New York City, thirty percent of women discontinued breastfeeding between one and four weeks postpartum. Also, According to the 2014 Egypt Demographic and Health Survey (EDHS), 71% of newborns under two months old only get

breast milk. Nonetheless, the percentage of older infants who are exclusively breastfed steadily declines. It can be difficult to breastfeed, particularly in the beginning. Nipple soreness and cracks are typically caused by things like improper nursing posture, poor cleanliness, dry skin, and fungal infections (Abdullah et al., 2022).

According to online research survey, pain with breastfeeding was the most common breastfeeding problem. Difficulties with milk supply and milk intake were most strongly associated with heightened maternal distress and perceptions of severity (Mahurin-Smith 2023). Most causes common of pain with breast feeding are cracked, inverted nipples. Within the first ten days following delivery, 11% to 96% of women experience breast pain and cracks (Serhatlioglu, et al., 2023).

Worldwide, In terms of exclusive breastfeeding, the average percentage was only approximately 48% in 2017, according to the World Health Organization (WHO) (Bhattacharjee et al., 2019). Thus, there are numerous approaches available worldwide to enhance breastmilk (Loretta et al., 2019), many treatments, including massage, fenugreek herbal tea (Ravi & Joseph, 2020), ginger (Sassarakkitt et al.,

2019), galactagogues (Asztalos & Kiss, 2022), and acupressure (Hannan et al., 2023).

Alternative and complementary medicine (CAM) has become more popular. It makes reference to medical procedures and products that are mainly utilized outside of the traditional healthcare system. But the effectiveness and safety of many complementary and alternative medicine treatments are not well supported by scientific research (Hassan et al., 2023). One nursing specialty where oketani massage has been extensively utilized is CAM.

Throughout the world, breast massage is a therapeutic method used to address breastfeeding issues. Oketani, a Japanese massage therapist, initially presented the successful, affordable, and simple Oketani breast massage technique in 1981. Oketani breast massage beneficial in facilitating the milk discharge reflex, increasing the volume of breast milk, preventing accumulation in the breasts, raising baby's weight gain, and lowering breast congestion have all been highlighted by studies (Mahdizadeh-Shahri, et al., 2021).

Oketani massage is a non-invasive technique for breast care that can strengthen the pectoralis muscle to enhance milk production. It gives the breasts more elasticity and softness. Additionally, it helps make the areola and nipples more elastic, ease pain and discomfort in postpartum moms, and facilitate nursing (Alatalo et al., 2019). Pressure on the alveoli from this massage results in a smoother milk flow (Faulkner, 2019).

Breastfeeding as early as feasible is actually hampered by insufficient milk supply in the initial days following delivery. On the other hand, breastmilk guards against infection and chronic disease and aids in the development of motor, sensory, cognitive, and immune systems (Indrayani, 2022). According to Grzeskowiak et al. (2019), nutrition consumption, stress levels in mothers, and hormonal factors all affect how much breastmilk is produced. Breastfeeding is the most crucial aspect for an baby's survival and wellbeing, and the hospital is the ideal place to start nursing a baby. The importance of nurses' roles in promoting, instructing, and assisting in breastfeeding, as well as in worrying (Mahdizadeh-Shahri, et al., 2021).

### Significant of study

Although studies have demonstrated that oketani massage is a useful treatment for breast issues, including inverted nipples, retention, and insufficient breastmilk production (Sweet & Vasilevski, 2022), and is backed by the literature review, little research has been done in Egypt on its impact among puerperal women. With any luck, this action can lessen the unpleasant effects of breastfeeding

cessation brought on by breast discomfort. Thus, the purpose of this study is to compare the effects of lanoline and the oketani technique on breast pain and milk production in puerperal women.

### Purpose of the study

To assess the impact of oketani technique versus lanoline on breast pain and milk production among puerperal women.

### Research hypotheses

- 1- Puerperal women with breast pain who receive the oketani technique will have less evidence of breast scores than those who use lanoline and do not undergo the oketani technique.
- 2- Puerperal women with breast pain who undergo the oketani technique will have higher evidence of breast milk production than those who use lanoline and do not undergo the oketani technique.
- 3- Puerperal women with breast pain who undergo the oketani technique will have higher evidence of sucking speed than those who use lanoline and do not undergo the oketani technique.

### Operational definition of variables

1. **The Oketani Technique** : - In this study, the oketani technique refers to breast massage performed for studied women with breast pain.
2. **Lanoline**: - In this study, the studied women will operationally apply lanoline cream like vasline used for reducing breast pain prescribed by their obstetrician.
3. **Breast pain**: - In this study, breast pain is any pain of the breast after childbirth due to cracked nipples that leads to insufficient breast feeding production.

### Methods

**Design:** quasi-experimental design (study and control groups) was applied to this research.

### Setting

The study was conducted at Obstetric & Gynecological department (postpartum ward), Menoufia University Hospital Shebin El-kom. The University hospital was established in 1993. The bed capacity of the MUH is (700) beds. This divided into four buildings. Obstetrics and Gynecology department in the third level, which contains obstetrics surgeries and obstetrics department. The department consists of (3) sonography rooms, 8 inpatient rooms; the bed capacity of the department is (52) beds. The flow rate of postpartum women at university hospital is around (1000) women per year (2022).

### Sample

A purposive sample of (120 )women (60) who had oketani technique intervention (IG) and (60) who underwent lanoline ointment control (IG) groups) from the setting specified above met the inclusion criteria were postpartum mothers with no systemic disease, the mother that was not taking drugs to facilitate expulsion undergoing either vaginal or cesarean delivery who were nursing their babies, complaining the breast pain, and agreeing to participate in this study, and who had a neonate who weighed more than (2,500 g) at birth, as well as being full-term (> 36 weeks). Exclusion criteria involved babies with congenital anomalies, and mothers with lanoline allergy or with conditions that would interfere with breast feeding aiming to control extraneous variables. They were randomly allocated into two groups:

**Group I intervention group (IG):** puerperal women with painful nipples (n=60) applied oketani technique.

**Group II control group (IG):** puerperal women with painful nipples (n=60) applied lanoline ointment.

### Sample size

The minimum number of subjects for adequate study power (80%) and for standard normal variation ( $Z_{1-\alpha/2}$ ), at 5% type 1 error ( $p < 0.05$ ) of 1.96, was found to be 116 participants. One hundred twenty participants were included (60 in IG and 60 in CG), and their data were collected during the period between January 15, 2023, to August 17, 2023 in the postpartum ward that are affiliated to Menofia University Hospitals.

### Data collection instruments

Three instruments were utilized:

#### **Instrument 1:-Self-administered interview questionnaire**

The researcher developed this questionnaire after a review of literature (Mahdizadeh-Shahri et al., 2021, Dwedar et al., 2023) to the impact of oketani technique versus lanoline on reducing breast pain among puerperal women . This instrument was divided in to two parts.

**Part 1: Socio demographic characteristics** of women which include 5 items ( age, educational level, job, residence and family income ).

**Part 2: -Obstetric history:** covering information on (duration of pregnancy (weeks), number of pregnancies, antenatal care follow up, parity, mode of delivery, number of living children, post partum breast pain,and causes of breast pain ).

**Instrument II:Visual Analogue Scale (VAS):**This is used to determine a woman's level of breast pain intensity (pretest and posttest).

**It was adopted from** (Moghadam and Afra Khosravi, 2012) in the English language and translated into arabic. The visual analogue scale for measuring breast pain yields a value obtained by measuring. At this scale, the classification of pain was done according to the scores of pain interpretations (Mild: 1-3, Moderate: 4-7, Severe:8-10).

**Instrument III-Breast milk production Observation Sheet:** to identify the breastmilk production in puerperal women on day (1) and was measured again on days (2,3) through the smooth release of breastmilk by the baby's weight gain. **It was adopted by the researchers after reviewing literatures** (Coentro et al., 2022). It is a self-reported instrument designed to determine the milk production through weighing baby before and after breast feeding in grams. This instrument was translated from English to Arabic.

The reference range for 24-hour milk production is 788 ml, with low milk production defined as less than 600 ml/24 hours. The 24-hour milk profile measures maternal 24-hour milk production by weighing babies before and after breastfeeds using electronic scales resolution  $\frac{1}{4}$  2 g, accuracy  $\frac{1}{4}$  0.03. Measurements are expressed in grams and are considered equivalent to milliliters (1.03 gml-1z 1.0 ml of breast milk).

**Instrument IV. Suckling speed of neonate record:** used to determine speed of suking. It was adapted from (Mohamed et al.,2022). The number of times a newborn suckles on the breast is known as the "suckling speed." Within the first five minutes of beginning to breastfeed, it was checked by the researcher twice, for a duration of one minute each time, and the mean of them was recorded.

### Instrument Validity

To ensure validity, the instrument underwent scrutiny by a panel of experts, which included two professors specializing in obstetric nursing and one in obstetrics and gynecology. The questionnaire was meticulously developed and then reviewed for content validity by five experts, comprising three professors in maternity nursing from the Faculty of Nursing and two professors from the Obstetrics and Gynecology department at the Faculty of Medicine. Their evaluation focused on assessing content accuracy, internal validity, completeness, relevance, content coverage, and question clarity. Subsequent to their assessment, necessary modifications were carried out.

### Reliability of the instruments

The reliability of this instrument was evaluated among 10 participants using the test-retest method with a two-week interval between the assessments. The Cronbach's alpha coefficient between the two sets of scores was calculated to be 0.78.

### Pilot Study

A pilot study was conducted on 12 women, representing 10% of the total sample, to assess the instruments' feasibility, applicability, and comprehensibility. Based on the pilot study's findings, required adjustments were implemented. These pilot participants were subsequently excluded from the total sample to ensure result stability.

### Ethical considerations

Official approval was obtained from the Ethical and Research Committee at the Faculty of Nursing, Menoufia University. All participants were informed that their involvement was voluntary, and that any information provided during the study would be kept confidential and used solely for statistical purposes. An official letter was submitted from the Dean of the Faculty of Nursing, Menoufia University to the director of Memofia University Hospital, explaining the purpose and methods of data collection.

### Procedure

- Data collection spanned six months, from January 15, 2023, to August 17, 2023. Written consent was obtained from all participating women.
- The researchers went to Menoufia University hospital 4 days weekly (Sunday, Monday, Wednesday and Thursday).
- The researchers completed data collection in the following phases:

#### Interviewing and assessment phase:

- The researchers gave the participants a verbal introduction and description of the study at beginning.
- Known to have high flowrate from 10 am to 5pm. The researchers interviewed 2:3 women a day.
- The researchers used questionnaires to assess the impact of oketani technique on reducing breast pain. Each interview lasted for 8-10 minutes.
- Two groups, an intervention (IG) group and a control group (CG), were randomly allocated to the participants.

### Implementation phase

- Those subjects at the postpartum ward who met the selection criteria were convenience sampled, with priority given to the data collection of the

control group. As the pretest of the control group, data on demographic, obstetric history, and breast pain, were collected by a researcher at the postpartum ward.

- Sucking speed was also measured twice, at an interval of (1) minute, by a researchers at the postpartum ward within (5) minutes of beginning breastfeeding. For the measurement of breast milk production before breastfeeding, baby weighing before and after breastfeeding by gram using electric digital weight scale. Then grams translated into ml to measure its differences.

### Control group (CG)

- After women received application of lanoline ointment as perscribed by their obstetrition for affecting nipples one hour and 24 hours after delivery and breast feeding was executed for the control group for 30 minutes, breast pain, sucking speed, and breast milk production were measured with same procedure as posttest.

### Intervention group (IG)

- After the experimental group received Oketani breast massage, that was performed by a researchers for 30 minutes that was administered 24 after delivery (pre-test evaluation). There are 8 different techniques; from number (1), to (8) for milking. Operations (1) to (7) are referred to -sector one of treatment, that repeated for 15-20 minutes, then pushing up C (1) and pulling up A (1) & B (2) by third finger fright than little finger and toward left shoulder The same methods used for the pretest were used to quantify breast pain, sucking speed, and breast milk production during the experimental therapy. [figure (1)].

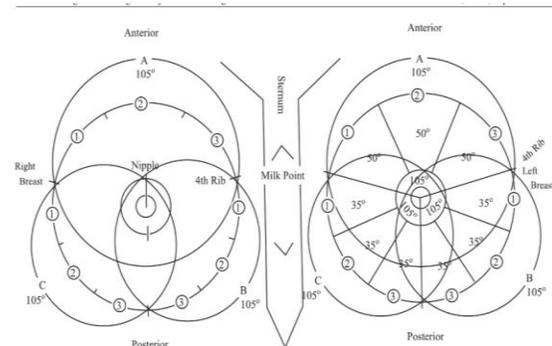


Figure (1): Anatomy of the breasts in relation to Oketani; from Kabir and Tasnim; 2009)

### Evaluation phase

- Women in both groups were subjected to post-test 1 & 2 evaluations 48 hours, and 72 hours after delivery respectively to collect data. Each interview lasted 20 minutes for each woman in both groups.
- The pre-test and post-test evaluations showed the differences of pain score, babies' weighing (denoting amount of milk production), and speed of breast sucking between women in two groups and clarified the impact of oketani technique that was used for women in IG on breast pain.
- Each interview lasted 20 minutes for detailed explanation of the methods to be used for reducing breast pain as topical lanoline ointment application, exposure of the nipple to light and air, instruction on proper breastfeeding techniques, and hot water compress.
- On the other hand, each interview lasted 30 minutes for IG women regarding giving the same detailed descriptions given to women in CG as well as explanation and application of oketani breast massage.

### Statistical analysis

- An IBM personal computer running the Statistical Package for the Social Sciences (SPSS) version 20 (SPSS, Inc., Chicago, Illinois, USA) was used to gather, tabulate, and statistically analyze the data. The statistical studies that followed were used:
- Descriptive statistics: Whereas qualitative data were shown as percentages and numbers, quantitative data were shown as mean (X<sup>2</sup>), standard deviation (SD), and range.
- Kruskal-Wallis Test (nonparametric test): To compare non-normally distributed quantitative variables between three or more groups, a significance test was employed.
- P values less than 0.05 indicated statistical significance. A P-value of less than 0.001 was deemed to have substantial statistical significance.

### Results

**Table 1:** shows characteristics of the studied women in IG and CG. The mean age of women in IG was 28.5 years, and the mean age of those in CG was 29.7

years. There were no significant differences in the socio-demographic regarding maternal age, educational level, occupation, annual income residence.

**Table 2:** shows obstetric history of the studied women in IG and CG. There were no significant differences in the studied women regarding Duration of pregnancy /weeks, Parity, Mode of Delivery, Neonatal birth weight.

**Table 3:** displays comparison between IG and CG of studied women regarding to their pain score. Breast pain before the administration of Oketani breast massage was similar in both IG and CG [7.5]. However, after the administration of Oketani breast technique in IG, breast pain was significantly alleviated to a mean value of  $2.7 \pm 1.1$  for the IG and  $6 \pm 0.89$  for the CG, ( $p < 0.0001$ ; post-test 1 evaluation, 48 hours after delivery). Further amelioration of breast pain in IG ( $1.3 \pm 0.47$ ) was shown 48 hours after application of Oketani breast massage and this alleviation was significantly higher than that in CG ( $5.3 \pm 0.65$ ;  $p < 0.0001$ ; post-test 2 evaluation, 72 hours after delivery).

**Table 4:** indicates comparison between (IG) and (CG) of the studied women regarding to breast milk production (BMP). Application of the Oketani breast massage in IG, resulted in significant higher amount of breast milk produced as a result of breast sucking among women in IG, compared to those in CG within both post-test 1 evaluation that was done 48 hours after delivery [ $44.3 \pm 3.39$  versus  $173.2 \pm 10.1$  in IG whereas  $42.8 \pm 3.5$  versus  $88.4 \pm 4.6$  in CG;  $p < 0.0001$ ] and post-test 2 evaluation that was done 72 hours after delivery [ $44.3 \pm 3.39$  versus  $314.9 \pm 13.5$  in IG whereas  $42.8 \pm 3.5$  versus  $174.1 \pm 6.8$  in CG;  $p < 0.0001$ ].

**Table 5:** shows comparison between IG and CG of the studied women regarding their Breast sucking speed (BSS; times/minute). Application of the technique in IG, resulted in significant higher sucking speed among women in IG, compared to that in CG in both post-test 1 evaluation, done 48 hours after delivery [ $27 \pm 5.3$  versus  $37.2 \pm 5.1$  in IG whereas  $25.6 \pm 4.7$  versus  $27.3 \pm 4.9$  in CG;  $p < 0.0001$ ] and post-test 2 evaluation, done 72 hours after delivery [ $27 \pm 5.3$  versus  $47.3 \pm 3.3$  in IG whereas  $25.6 \pm 4.7$  versus  $28.2 \pm 5.2$  in CG;  $p < 0.0001$ ].

## Results

**Table (1): Characteristics of the studied women in intervention group (IG) and control group(CG)**

Variables	Intervention group (n=60)		Control group (n=60)		P value
	NO	%	NO	%	
<b>Age (mean ±SD)</b>	28.5±5.4		29.7.5±5.8		NS
<b>Education</b>					NS
Illiterate	16	26.7	21	35	
Read & write	11	18.3	11	18.3	
High school	17	28.3	15	25	
University	16	26.7	13	21.7	
<b>Occupation</b>					NS
Working	16	26.7	22	36.7	
House wife	44	73.3	38	63.3	
<b>Residence</b>					NS
Urban	38	63.3	33	55	
Rural	22	36.7	27	45	

NS: non significant

**Table (2): Comparison between IG and CG of the studied women regarding to their obstetric history:**

variables	Intervention group (n=60)		Control group (n=60)		P value
	NO	%	NO	%	
<b>Duration of pregnancy (weeks)</b>					NS
• 36-38 term delivery	12	20	10	16.6	
• 39-40	30	50	34	56.7	
• More than 40 weeks (post date)	18	30	16	26.7	
<b>Parity</b>					NS
• Primipara	22	36.7	27	45	
• Multipara	38	63.3	33	55	
<b>Mode of Delivery</b>					NS
• Vaginal	16	26.7	11	18.3	
• CS	44	73.3	49	81.7	
<b>Neonatal birth weight</b>					NS
• 2.5-3kg	33	55	38	63.3	
• 3-3.5kg	27	45	22	36.7	
• 4kg & More than	0	0	0	0	

NS: non significant

**Table (3): Comparison between IG and CG of studied women regarding to their pain score**

Pain score	Intervention group (n=60)	Control group (n=60)	P value	95% CI of the difference	
	Mean ±SD	Mean ±SD		Lower	Upper
<b>Pre-test</b>	7.5±1.04	7.5±1.12	>0.05	6.7	8.3
<b>Post-test 1</b>	2.7±1.10	6±0.89	<0.0001	-3.9	-2.6
<b>Post-test 2</b>	1.3±0.47	5.3±0.65	<0.0001	-4.4	-3.6

**Table (4): Comparison between (IG) and (CG) of the studied women regarding to Breast milk production (BMP)**

BMP	Intervention group (n=60)	Control group (n=60)	P value	95% CI of the difference	
	Mean $\pm$ SD	Mean $\pm$ SD		Lower	Upper
Pre-test	44.26 $\pm$ 3.39	42.75 $\pm$ 3.50	0.14	-0.6	3.6
Post-test 1	173.2 $\pm$ 10.10	88.4 $\pm$ 4.6	<0.0001	77.5	92.2
Post-test 2	314.9 $\pm$ 13.5	174.1 $\pm$ 6.8	<0.0001	130.6	150.5

**Table (5): Comparison between IG and CG of the studied women regarding their Breast sucking speed (BSS; times/minute)**

BSS (Times/minute)	Intervention group (n=60)	Control group (n=60)	P value	95% CI of the difference	
	Mean $\pm$ SD	Mean $\pm$ SD		Lower	Upper
Pre-test	27 $\pm$ 5.3	25.6 $\pm$ 4.7	0.062	-0.09	2.81
Post-test 1	37.18 $\pm$ 5.1	27.3 $\pm$ 4.9	<0.0001	8.5	11.4
Post-test 2	47.3 $\pm$ 3.3	28.2 $\pm$ 5.2	<0.0001	16.7	21.5

### Discussion

As demonstrated by several previous research, the results of the current study indicated that oketani massage has favorable impacts on the mother's nursing success and can improve it in a variety of ways, including breast pain, breast milk supply, and speed of sucking.

**Regarding to comparison between intervention group and control group of the studied women regarding their breast pain.** The present study revealed that breast mean pain score was statistically significantly alleviated in (IG) than (CG). There was no significant difference between the (CG) and the (IG) concerning breast mean pain score before the administration of Oketani breast message was seven point five in pretest. While, after the intervention has been applied, breast mean pain score 48 after birth posttest1 was two point seven in (IG) compared to six in (CG); that mean statistically significant appeared between (IG) and the (CG). Also, breast mean pain score 72 after birth posttest2 one point three in (IG) compared to five point three in (CG).

This result is in accordance with Cho, et al., (2012) They discovered that, in comparison to the control group, the experimental group's discomfort dramatically decreased. These results suggest that Oketani breast massage is useful for reducing breast pain; thus support the first hypothesis.

Similarly Romlah & Rahmi, (2019) stated that mother experiences no pain or discomfort from the oketani massage. No matter how big or small her breasts and nipples are, the mother will feel an immediate sense of overall relief and comfort, and lactation will be aided. Also corrected are abnormalities such nipple inversion, flattening, or cracking, as well as mastitis and nipple injuries

avoided.

### Concerning to comparison between intervention group and control group of the studied women regarding their Breast milk production (BMP).

One way to deal with decreased breast milk supply is to get a massage (Helina et al., 2020). Oketani massage is one kind of massage used as a treatment technique for breastfeeding issues such swollen breasts and insufficient milk supply (Anderson et al., 2019). Soft, supple breasts are the result of oketani massage. More elasticity is developed in the nipples, lactiferous ducts, and areola. According to Dehghani et al. (2018), there is an increase in total solids content, fat concentration, and gross energy as breast milk quality increases. Protease enzyme activity is elevated when breast tissues and glands are massaged, leading to elevated protein levels, as the outline explains. The production of proteins can be boosted by elevated protease enzyme activity. Oketani breast massage is a special technique practiced by Japanese midwives to improve breast milk secretion and quality (Roy et al., 2019).

The present study showed that application of the Oketani breast message, resulted in significant higher amount of breast milk produced with mean score one hundred seventy three point two in (IG) compared to eighty eight point four in (CG) after 48 hours posttest1. Furthermore, mean score of amount of milk production three hundred and fourteen point nine in (IG) compared to one hundred seventy four point one in (CG) posttest2. There were highly statistically difference between (IG) and (CG) in posttest1 and posttest2. But there was no statistically difference between (IG) and (CG) in pretest2. But there was no statistically difference between (IG) and (CG) in pretest1.

Astari and Machmudah (2019) state that oketani massage also increases the pectoralis muscle's strength, which in turn produces more milk and results in softer, more elastic breasts that are easier for a baby to caress. In the same line ; According to research findings published in the journal Breastfeeding Self-Efficacy, Mothers' Breastfeeding Support Need, and Successful Breastfeeding: A Clinical Trial Study, Oketani Breast Massage can help mothers who had cesarean sections produce more milk and reduce the amount of time they need to nurse their babies.

Agreeing to a study by Foda (2014) on nursing moms, breast massage treatment can enhance the quality of both breast massage and breastmilk. The average weight of the neonates in the intervention group increased, while a tiny percentage of the newborns in the control group exhibited no increase in weight.

This result is in accordance with Nurfazriah,(2022) who claimed that postpartum moms' milk production is significantly affected by the oketani massage both before and after. These findings suggest that in order to improve postpartum moms' milk production, the oketani approach needs to be introduced, either through workshops or training. Also, according to Harefa et al. (2020), there was a notable difference in the weight gain of newborns between the Oketani group that received breast massage and the control group.

This study could have one explanation: Oketani massage can also reduce lipoxigenase activity by forming more milk glands and producing more breast milk by widening and maturing the mammary glands. This result support the second research hypothesis.

#### **Concerning to comparision between intervention group and control group of the studied women regarding their sucking speed (BSS; times/minute).**

Oketani breast massage increases the overall quality of breast milk by dramatically increasing its total solids, lipids, casein content, and gross energy (Rahnemaie et al., 2019). In addition, prolactin and oxytocin reflexes are produced by oketani massage, which is meant to activate the posterior pituitary gland's neurons and cause the hormone oxytocin to be released. As a result, milk may be forced into the ampulla and the myoepithelial cells that surround the alveoli may contract (Mahdizadeh-Shahri et al., 2021; Fatrin et al., 2022). Receptors in the ducts have an impact on the release of oxytocin in addition to the baby's sucking (Monks & Palanisamy, 2021).

The present study showed that application of the Oketani breast message, resulted in significant higher sucking speed with mean score thiry seven point

eighteen in (IG) compared to twenty seven point three in (CG) after 48 hours posttest1. Furthermore, mean score of sucking speed forty seven point three in (IG) compared to twenty eight point two in (CG) posttest2. There were highly statistically difference between (IG) and (CG) in both posttest1 and posttest2. But there was a statistically difference between (IG) and (CG) in pretest.

These results corroborate those of Jamzuri et al. (2019) who discovered that oketani massage improved the average oxytocin levels in women and accelerated their rate of sucking, both of which led to improved breastfeeding outcomes.

This study could have one explanation: Oketani massage softens breast tissue and makes nipples and areolas more elastic, making them easier for a newborn to suck. This result support the third research hypothesis.

#### **Conclusions**

Compared to women in control group, the intervention group's women reported less pain scores following the application of the Oketani technique, which validates the first hypothesis. Conversely, the ladies under study experienced an increase in breast milk production and a faster newborn sucking reflex after applying the oketani technique (this finding supports the second hypothesis).

#### **Recommendation**

To ensure that the research findings are broadly applicable, more studies on oketani breast massage ought to be carried out on a greater number of puerperal women in different contexts. To reduce breast discomfort, increase milk production, and speed up a newborn's sucking, oketani breast massage need to be used in all obstetrics and gynecology departments. The ability to do oketani breast massages should be taught to nurses.

#### **Reference**

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