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The Efficacy of Oxytocin Massage on Lactation in Nursing Mothers within the Cidahu Health Center's Jurisdiction, Kuningan Regency

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Abstract. Background. Breast milk is the ideal food for neonates and serves as the exclusive nutritional source needed by infants during the first months of life. Oxytocin massage is a technique employed to mitigate insufficient breast milk production. **Aim.** This study aims to investigate and assess the effect of oxytocin massage on increasing breast milk production in nursing women. **Methods**. This study used a descriptive experimental design featuring pre- and post-test evaluations to determine the effect of oxytocin massage on breast milk supply in nursing mothers. The research will be place at the Cidahu Health Center in Kuningan Regency, West Java Province. The event is planned for June to July 2024, featuring 18 postpartum ladies. **Research Results**: A majority of responders, comprising 14 persons (77.8%), are aged between 20 and 35 years. A substantial segment, consisting of eight persons (44.4%), has advanced degrees. Furthermore, 11 respondents (61.1%) possess multipara parity, whilst six individuals (33.3%) are employed in the informal sector. The Wilcoxon test produced a significance value of 0.000, which is below 0.05, signifying a substantial alteration in breast milk production pre- and post-oxytocin massage. The credible hypothesis posits that Ha is accepted while Ho is rejected. **Conclusion**: The predominant demographic of respondents was those aged 20 to 35 years, possessing a collegiate education, exhibiting multipara parity, and engaged in homemaking. A association was observed between oxytocin massage and lactation in postpartum mothers at the Cidahu Health Center in Kuningan Regency, with a significance level of p-value 0.000. **Implication:** Health workers can provide knowledge related to Oxytocin Massage to the community through counseling and other interesting content and can apply Oxytocin Massage to postpartum mothers.

Keywords: Oxytocin Massage, breast milk, breast milk production, breastfeeding

INTRODUCTION

Women are among the beings endowed by God Almighty with the ability to conceive, give birth, and breastfeed. Women are inherently defined by their reproductive anatomy, specifically the uterus and its components, which facilitate fetal growth and development in utero, as well as breasts that enable lactation post-birth. This indicates that all women possess the inherent capacity to breastfeed, paralleling their potential for conception and childbirth (Marni, 2017). The phenomena observed in mothers delivering their first child includes difficulties in nursing due to irregular milk release; also, moms frequently report that their infants often cry or fail to latch. The nipple is blistering, preventing the secretion of breast milk.

It is frequently perceived that the milk supply is insufficient or that the quality of breast milk is inadequate, which often results in the decision to discontinue nursing (Walyani, 2019).

The advantages of breastfeeding are not commensurate with the rise in breastfeeding practices, resulting in inadequate breast milk intake for infants. Multiple variables are believed to contribute to infants' inadequate intake of breast milk, one of which is the mother's level of awareness. The mother's hesitance to breastfeed stems from discomfort during the process, exhaustion associated with breastfeeding, and apprehensions regarding alterations to her breasts post-lactation. Socio-cultural variables, together with insufficient familial and environmental support, significantly impact the breastfeeding process. The deficiency of health education regarding variables that can enhance breast milk production adversely impacts the understanding of primiparous moms, perhaps resulting in insufficient breast milk volume. (Marni, 2017). Breastfeeding is very important because it is recommended in Islam, as stated in the words of Allah SWT in the Qur'an, surah Al Baqarah verse 233, namely:

وَكِسْوَتُهُنَّ رِزْقُهُنَّ لَهٗ الْمَوْلُوْدِ وَعَلَى الرَّضَاعَةَۗ يُتِمَّ اَنْ اَرَادَ لِمَنْ كَامِلَيْنِ حَوْلَيْنِ اَوْلَادَهُنَّ يُرْضِعْنَ وَالْوٰلِدٰتُ ۞ اَرَادَا فَاِنْ ذٰلِكَۚ مِثْلُ الْوَارِثِ وَعَلَى بِوَلَدِهٖ لَّهٗ مَوْلُوْدٌ وَلَا بِوَلَدِهَا وَّالِدَةٌ تُضَاۤرَّ لَا وُسْعَهَاۗ اِلَّا نَفْسٌ تُكَلَّفُ لَا بِالْمَعْرُوْفِۗ مَّآ سَلَّمْتُمْ اِذَا عَلَيْكُمْ جُنَاحَ فَلَا اَوْلَادَكُمْ تَسْتَرْضِعُوْٓا اَنْ اَرَدْتُّمْ وَاِنْ عَلَيْهِمَاۗ جُنَاحَ فَلَا وَتَشَاوُرٍ مِّنْهُمَا تَرَاضٍ عَنْ فِصَالًا ﴿٢٣٣﴾ بَصِيْرٌ تَعْمَلُوْنَ بِمَا اللّٰهَ اَنَّ وَاعْلَمُوْٓا اللّٰهَ وَاتَّقُوا بِالْمَعْرُوْفِۗ اٰتَيْتُمْ

It means: *"Mothers should breastfeed their children for two full years, that is, for those who want to perfect breastfeeding. And the obligation of the father to feed and dress the mothers in a ma'ruf way. A person is not burdened but according to his level of ability. Let not a mother suffer misery for her child and also a father for her child, and the heirs are obliged to do so if they wish to wean (before two years) by their own volition and consultation, then there is no sin on both. And if you want your child to be breastfed by someone else, then there is no sin for you if you give the payment you deserve. Fear Allah and know that Allah is the Most Seeing of What You Do."*

Based on this verse, it can be concluded that a mother is encouraged to breastfeed her baby and there is an obligation for a father to provide food to support the breastfeeding process so that the baby gets quality breast milk. Breast milk is the optimal nourishment for newborns and constitutes the sole essential sustenance required by infants throughout the initial months of life. Exclusive breast milk refers to breast milk provided to an infant from birth for a duration of six months, without the introduction of supplementary foods or beverages (excluding medications, vitamins, and minerals). Nevertheless, not all women are able to provide exclusive breast milk to their infants (Ministry of Health of the Republic of Indonesia, 2020).

According to 2019 data from the World Health Organization (WHO), approximately 41% of infants are exclusively breastfed, but the WHO aims for at least 50% of infants to be exclusively breastfed by 2025 (WHO, 2019). The Ministry of Health aims to elevate the exclusive breastfeeding rate to 80%. Nonetheless, exclusive breastfeeding in Indonesia remains low at about 74.5% (IAARD, 2019). According to Indonesian Health Profile data, the coverage of babies who received exclusive breastfeeding in 2018 was 68.74% (Ministry of Health, 2020).

According to a report by the West Java Provincial Health Office, the coverage of exclusive breastfeeding in 2019 is (61.74%). Then it increased in 2020 to (71.41%), in 2021 to (74.1%), then it decreased in 2022 to 20,394 people (67%) (West Java Provincial Health Profile, 2022). Based on the Kuningan Regency Health Office profile data in 2023, the number of 6-month-old babies receiving exclusive breastfeeding from 1005 people was 612 people (70.82%). Of the 37 Puskesmas in the Kuningan Regency area, the highest coverage of exclusive breastfeeding is Nusaherang Health Center, which is 110 people (77.46%), followed by the Cilimus Health Center with 26 people (76.47%), while the lowest is at the Kuningan Health Center, eight people (56.57%), followed by the Cidahu Health Center, which is 48 people (62.34%). (Profile of the Kuningan Regency Health Office, 2023)

The efficient production of breast milk significantly impacts the success of exclusive breastfeeding from the onset of the nursing phase. Inconsistent milk production during the initial phase of breastfeeding significantly influences moms to supplement with formula for their infants at an early age. The 2018 Riskesdas findings indicated that the primary reason infants have never been breastfed is the inadequate or inconsistent flow of breast milk at the onset of breastfeeding (65.7%). Additionally, 33.3% of infants aged 0-5 months have received prelactic nourishment, predominantly consisting of formula milk (84.5%).

The deficiency of exclusive breastfeeding in Indonesia is attributed to multiple factors, notably the inadequate production of breast milk in the initial days postpartum, which results from insufficient stimulation of the hormones oxytocin and prolactin essential for optimal milk production. Consequently, alternative interventions, such as oxytocin massage, are necessary, as this technique is highly effective in enhancing breast milk production (Pilaria and Sopiatun, 2017). This aligns with the findings of Azizah and Yulinda (2017), who indicated that oxytocin massage significantly affects breast milk production.

Oxytocin massage offers advantages such as enhancing maternal comfort, alleviating breast milk obstruction, promoting oxytocin secretion, and sustaining breast milk production during maternal and infant illness (Pomegranate, 2016). Oxytocin massage is a remedy to

address the inadequate production of breast milk. Massage along the vertebrae to the fifth and sixth costal bones aims to boost the hormones prolactin and oxytocin post-childbirth (Rahayu, 2019).

According to Magdalena's (2019) study, the average breastfeeding frequency of infants prior to oxytocin massage is 16 respondents (100%) at 8 to 12 times daily. The average urination frequency of infants before oxytocin massage is also 16 respondents (100%) at 6 to 8 times daily. Following oxytocin massage, the average breastfeeding frequency is reported by nine respondents (56.2%) at 8 to 12 times daily, while seven respondents (43.8%) exhibit a different breastfeeding frequency. The infant urinates 8 to 12 times daily, while the average urine frequency post-oxytocin massage is reported by nine respondents (56.2%) as ≥6 to 8 times daily, and seven respondents (43.8%) as <6 to 8 times daily. It can be concluded that oxytocin massage influences breast milk production in breastfeeding women.

Delima Research (2020) asserts that an oxytocin massage given to postpartum women may augment breast milk supply by promoting the secretion of the hormone oxytocin. In an oxytocin massage, oxytocin induces contraction of the myoepithelial cells encircling the alveoli and ducts, promoting the release of milk into the sinuses and nipples, hence augmenting milk production. The study revealed a significant improvement before and after oxytocin massage.

A study by Darmasari Sagita (2019) suggests that oxytocin massage may enhance breast milk production in postpartum women compared to those who do not receive such massage. The findings indicated that postpartum mothers who received oxytocin massage produced 1,113cc of breast milk, but those who did not receive the massage generated 0.547cc. Oxytocin massage is highly effective in promoting the release of the hormone oxytocin, which is initiated when the infant suckles.

According to a survey of five postpartum mothers who received oxytocin massage, those with limited breastfeeding, together with their husbands and relatives, were instructed to perform daily massage as a routine practice. After three days of oxytocin massage, the outcomes were an increase in breast milk, a sensation of tightness and fullness in the breasts, and a feeling of lightness in the back. The oxytocin massage yielded satisfactory outcomes for all five postpartum women. The sufficiency of breast milk for the infant is achieved. Infants are often calm and exhibit good sleep patterns.

The initial research suggests that oxytocin massage significantly influences breast milk production. Additional research is required to examine the effect of oxytocin massage on breast milk production in nursing women.

LITERATURE REVIEW

Oxytocin Massage

Oxytocin massage is a technique executed by the husband on a lactating mother, comprising a back massage to promote the production of the hormone oxytocin. The oxytocin massage offered by the husband will calm the breastfeeding infant (Rahayu, 2016). Oxytocin massage involves circular movements along both sides of the spine, extending from the neck to the shoulder blades, aimed at stimulating the hormone oxytocin, which promotes uterine contractions and breast milk secretion (Suherni et al., 2017). Oxytocin massage is an efficacious technique to accelerate and improve breastfeeding by stimulating the spine (vertebrae) to the costal bone 5 – 6. This massage would offer solace to the mother during childbirth, hence averting the suppression of prolactin and oxytocin hormone secretion (Roesli & Ummah, 2018).

Benefits of Oxytocin Massage

Rahayu (2018) delineates the advantages of oxytocin massage as follows: It provides psychological support to moms, induces calmness, and alleviates tension. Enhances self-assurance. Assist mothers in cultivating positive attitudes and emotions around their infants. Augment lactation. Promote breastfeeding. Alleviating tiredness. Cost-effective. Functional. Oxytocin massage enhances maternal relaxation and comfort, thus stimulating oxytocin production and influencing breast milk expenditure. Oxytocin massage stimulates the secretion of breast milk from glandular cells, ensuring the infant receives adequate nourishment, hence promoting weight gain (Hamidah et al., 2017).

Steps of Oxytocin Massage

The steps of oxytocin massage are as follows:

- Before starting to be massaged, the mother should be in a state of being chestless and prepare a cup placed in front of the mother's breast to accommodate the milk that may drip out when the massage is carried out.
- If you want, you can also do warm compresses and massage your breasts first.
- Ask someone else to massage you. It is better if your husband helps you.
- 2 positions can be done. The first is that the mother can lie face down on the table or the

mother's position face down on the back of the chair.

Picture 1 Prone Position on Chairs and Tables

- Subsequently, identify the most prominent bone on the nape or posterior aspect of the neck, referred to as the cervical vertebra 7.
- From the bony protrusion, descend roughly 2 cm; this is the location for finger placement during massage.

Picture 2 Hand Position 1 During Massage

- Massage may be performed using the thumbs of both hands or the dorsal surfaces of the index fingers of both hands.
- For obese mothers, utilize a fist posture for the hands and then apply the bones surrounding the back of the hand.
- Initiate the massage with a gradual circular motion down to the bra line, which may even extend to the waist.
- Oxytocin massage may be performed at any moment for a duration of 3 to 5 minutes. Performing the action prior to nursing or extracting breast milk (Rahayu, 2016).

According to (Nahdiah, 2018), How to carry out oxytocin massage, namely:

1. Ask someone else to help you massage your mother's back.
2. Help mom undress the top.
3. The mother sat relaxed and comfortable, folded her arms on a table in front of her, and

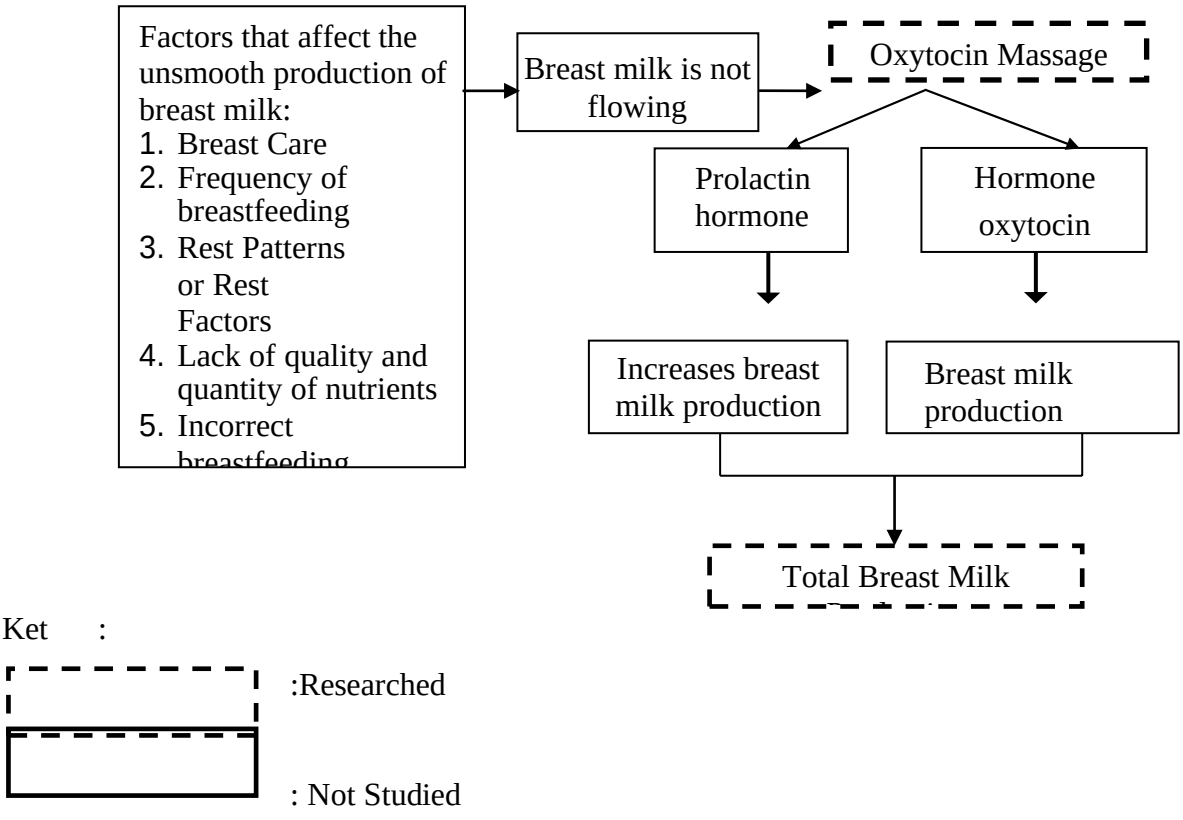
placed her head on the arm so that both breasts hung.

4. The helper grasps the hands/clenches the fingers except the thumbs, then massages the mother's back in line with the spine to form a small circle with both thumbs.
5. Massage is done from the neck on both sides of the right and left spine together to the shoulder blades for 2-3 minutes.

Signs of *an Active* Oxytocin Reflex

According to Rahayu (2017), the signs *of an active oxytocin reflex* are: There is a painful sensation such as squeezing or jerking in the breast just before or during breastfeeding the baby. Milk flows from her breasts when she thinks about her baby or hears her baby crying. Milk drips from her other breast as her baby nurses. Milk flows from her breasts in a smooth burst if the baby releases the breast while breastfeeding. There is pain that comes from uterine contractions, sometimes accompanied by blood discharge during breastfeeding in the first days. Slow and gulping suction by the baby, shows that the milk flows and is swallowed by the baby. Mom felt thirsty.

Theoretical Framework



Ket :

:Researched

: Not Studied

Research Hypothesis

The hypothesis functions as a provisional answer to the formulation of the study issue, articulated as a question (Sugiyono, 2018, p. 63). This study's hypothesis can be expressed as follows: The effect of Oxytocin Massage on lactation in breastfeeding moms at the Cidahu Health Center, Kuningan Regency, in 2024.

METHODOLOGY

Research Methodology

This research employed a descriptive quasi-experimental design, incorporating a one-group pretest and posttest approach, to evaluate the effect of oxytocin massage on breast milk production among breastfeeding mothers at the Cidahu Health Center.

Pre Test	Treatment	Post Test
T1	X	T 2

Research Design *One Group pre test-post test*

Information: T 1 is the preliminary assessment conducted prior to the administration of treatment. X constitutes a treatment.
T 2 is the conclusive assessment (post-test) conducted following the administration of treatment.

Place and Time

The research was conducted from June to July 2024 at the operational area of the Cidahu Health Center, Kuningan Regency.

Research Variables

Variables are behaviors or characteristics that give different values to an object, human and others (Suparto in Nursalam, 2020). In this study, the research variables were identified as follows:

Independent Variable

Independent variables induce alterations or the manifestation of dependent or bound variables (Sugiono, 2013). The independent variable in this study is the impact of oxytocin massage on breastfeeding moms under the jurisdiction of the Cidahu Health Center in 2024.

Dependent variables

Variables whose value is determined by other variables, in other words factors that are

observed and measured to determine the existence or absence of a relationship or influence of independent variables (Nursalam, 2020). The dependent variable is breast milk production in breastfeeding mothers in the working area of the Cidahu Health Center.

Operational Definition

Sugiyono (2013) defines the operational definition of a variable as an attribute, property, or value of a person, object, or activity that exhibits certain variations, which the researcher selects for study and subsequently analyzes to make conclusions.

Table 1

Operational Definition

It	Variable	Definition Operational	Measuring Instruments	Measurement Results	Measure Scale
Independent Variable					
1	Oxytocin massage	Massage is carried out on the back starting from the neck bone or on the protrusion of the neck bone to the shoulder blades, using both thumbs / fists at the knuckles, the position of the mother face down on the table for 2-3 minutes with a frequency of 2 times per week on the 4th and 10th days of postpartum mothers.	Breast Pump	Breast Milk Volume	Ratio
Related Variables					
2	Breast Milk Production	The production of postpartum breast milk was measured using a breast pump before and after oxytocin massage on the fourth and tenth days of both breasts.	1. Breast Pump	Breast milk volume between days 4-9 =395-868 ml/day	Ratio

Population and Sample

Population

The population constitutes a segment of subjects to which research findings can be generalized (Badriah, 2012:101). This study's population comprises 122 breastfeeding women within the jurisdiction of the Cidahu Health Center from June to July 2024.

Research Sample

A sample is a subset of the population and, therefore, automatically exhibits the characteristics of that population. The sample for the quasi-experimental research comprised a minimum of 15 participants. The expected dropout rate is 10%, requiring 18 participants for this study employing the Purposive Sampling Technique.

Inclusion and Exclusion Criteria

Postpartum maternal inclusion above the 4th to 10th day; Mothers who are willing to be respondents; Mothers whose breastfeeding frequency is at least 6 to 8 times per day; Less volume of breast milk and slow out; Breastfed infants; exclusion of postpartum mothers who experience complications and complications during postpartum; Mothers who have problems with the breasts (Mastitis, abrasions on the nipples, and unprotruding nipples); Mothers who are not willing to be respondents

Data Examination

Univariate Analysis. Univariate analysis was conducted employing distribution, frequency, and descriptive statistical methods to assess the volume of breast milk in postpartum moms who underwent oxytocin massage compared to those who did not.

Bivariate Analysis. Bivariate analysis was conducted using the paired T-test for normally distributed data and the Mann-Whitney test for non-normally distributed data. The T-test principle involves a simultaneous method of observation or data collection, indicating that each study subject is observed only once, with measurements taken on the characteristics or variables of the subject at the time of assessment.

RESEARCH RESULTS

Univariate Analysis

Characteristics of Respondents

The univariate analysis of respondents, as detailed in Table 4, reveals that the majority were aged between 20 and 35 years (14 individuals, 77.8%), predominantly held higher education qualifications (8 individuals, 44.4%), primarily exhibited multipara parity (11 individuals, 61.1%), and most were engaged in IRT occupations (6 individuals, 33.3%).

Table 2
Characteristics of Research Respondents

Characteristic	Number (Person)	Percentage (%)
Age		
< 20 Years	1	**5,5**
20 – 35 Years	14	**77,8**
> 35 Years	3	**16,7**
Education		
Basis	5	**27,8**
Intermediate	5	**27,8**
Tall	8	**44,4**
Parity		
Primipara	6	**33,3**
Multipara	11	**61,1**
Grandemultipara	1	**5,6**
Work		
IRT	6	**33,3**
Civil servants	3	**16,7**
Teachers / Lecturers	5	**27,8**
Merchant	3	**16,7**
Nurse	1	**5,5**

Breast Milk Production Before Oxytocin Massage

Table 5
Amount of Breast Milk Production Before Oxytocin Massage

Breast Milk Production	f	Percentage (%)
Breast Milk Production Day 4 Before Oxytocin Massage		
≤ 50 cc	15	83,3
> 50 cc	3	16,7
Breast Milk Production Day 10 Before Oxytocin Massage		
≤ 200 cc	15	83.3
> 200 cc	3	16,7

The analysis presented in Table 5 indicates that on the fourth day prior to the oxytocin massage, the majority of respondents, 15 individuals (83.3%), produced 50 cc or less of milk. Conversely, on the tenth day before the oxytocin massage, the same number of respondents (15 individuals, 83.3%) produced 200 cc or less of milk.

Breast Milk Production After Oxytocin Massage

Table 6
Amount of Breast Milk Production After Oxytocin Massage

Breast Milk Production	f	Percentage (%)
Breast Milk Production Day 4 After Oxytocin Massage		
≤ 50 cc	4	22,2
> 50 cc	14	77,8
Breast Milk Production Day 10 After Oxytocin Massage		
≤ 200 cc	5	27,8
> 200 cc	13	72,2

The analysis presented in Table 6 indicates that on the fourth day following oxytocin massage, the majority of respondents, 14 individuals (77.8%), produced more than 50 cc of milk. Conversely, on the tenth day post-oxytocin massage, 13 respondents (72.2%) produced more than 200 cc of milk.

Bivariate Analysis

Data Normality Test

Table 7
Data Normality Test

	Shapiro-Wilk		
	Statistics	Df	Sig
Day 4 Before	0,814	18	0,002
Day 4 After	0,920	18	0,130
10th Day Before	0,894	18	0,045
Day 10 After	0,937	18	0,258

The data normality test yielded a significance value below 0.05, indicating that the data is not normally distributed. Consequently, the data will be analyzed utilizing the Wilcoxon Test.

Effect of Oxytocin Massage on Breast Milk Production in Breastfeeding Mothers

Table 8
Effect of Oxytocin Massage on Breast Milk Production in Breastfeeding Mothers in the Working Area of Cidahu Health Center

	N	Mean	SD	*p-value*
Day 4				
Before	18	30,11	31,751	0,000
After	18	89,44	37,608	
Day 10				
Before	18	180,56	57,238	0,000
After	18	354,44	148,134	

Table 7 demonstrates a 59.33% increase in breast milk production on the fourth-day post-oxytocin massage. Four days before the oxytocin massage, the average breast milk production was 30.11; however, after the oxytocin massage, it rose to 89.44. On the tenth day, breast milk production increased to 173.88, with an average of 180.56 before oxytocin massage and an average of 354.44 after oxytocin massage. The Wilcoxon test produced a significance value of 0.000, which is below 0.05, signifying a substantial alteration in breast milk production pre- and post-oxytocin massage. Thus, it can be concluded that oxytocin massage affects breast milk production in lactating mothers at the Cidahu Health Center, Kuningan Regency in 2024.

DISCUSSION

Overview of Respondent Characteristics in the Working Area of Cidahu Health Center, Kuningan Regency

The univariate analysis of respondents, as detailed in Table 4, revealed that the majority were aged between 20 and 35 years, comprising 14 individuals (77.8%). A significant portion held higher education qualifications, totaling eight individuals (44.4%). Furthermore, most respondents were multipara, amounting to 11 individuals (61.1%), and the predominant occupation among them was IRT, represented by six individuals (33.3%). Arikunto (2014) asserts that the optimal reproductive age for pregnancy and childbirth is between 20 and 35 years.

The findings of this study align with those of researcher Teti (2016), who performed research in RSUD 45 Kuningan, indicating that the majority of pregnant women aged 20-35 years constitute 85.7%. The findings of this study align with the research conducted by Ika Mustika Dewi et al. (2022) at Panembahan Senopati Bantul Hospital, indicating that the majority of pregnant women are aged 20-35 years, comprising 67.7% of the sample.

As a person ages, their ability to constructively address challenges increases. The younger an individual is while confronting challenges, the more significantly it will influence their perception (Rizan, 2015). KBBI (2021) defines education as the process of altering the attitudes and behaviors of individuals or groups to cultivate maturity through teaching and training initiatives.

The highest educational attainment of parents encompasses categories including non-completion of elementary school, elementary school (SD), junior high school (SMP), high school (SMA), diploma (D3), bachelor's degree (S1), and master's/doctoral degrees (S2/S3), as indicated by Arikunto in Halimah (2018). This study's findings correspond with the research by Rista Dian et al. (2023), which demonstrates that most respondents have a high degree of education.

The author contends that maternal education is fundamental education that influences an individual's knowledge level; as educational attainment increases, so does the capacity for comprehension of acquired information. As to Abraham Maslow (2014), labor constitutes one of the fundamental human needs that must be fulfilled subsequent to physiological and safety requirements. Employment can yield gratification and assist an individual in fulfilling psychological needs and attaining self-actualization. The findings of this study align with the research conducted by Rista Dian et al. (2023), which indicated that the majority of respondents were housewives. Non-working postpartum mothers possess more time than their working counterparts.

Breast Milk Production Before Oxytocin Massage

The analysis in Table 5 reveals that on the 4th day prior to oxytocin massage, the majority of respondents, 15 individuals (83.3%), produced 50 cc or less of milk, while on the 10th day before the massage, 15 respondents (83.3%) produced 200 cc or less of milk. Breast milk production is the process of synthesizing and secreting milk from the mammary glands. Breast milk is synthesized under the influence of the hormones prolactin and oxytocin following the birth of the infant. The determinants of breast milk production include maternal nutrition, nursing frequency, breast hygiene, and rest patterns (Atikah Proverawati, 2018). The findings of this study align with the research conducted by Dian Priharja Putri et al. (2023), which indicated that the average value of smooth breastfeeding before to treatment in both the intervention and control groups that underwent massage yielded minimal results.

Breast Milk Output After Oxytocin Massage

The analysis presented in Table 6 indicates that on the fourth day following oxytocin massage, the majority of respondents, 14 individuals (77.8%), produced more than 50 cc of milk. Conversely, on the tenth day post-oxytocin massage, 13 respondents (72.2%) produced more than 200 cc of milk. The oxytocin massage in this study was conducted on 18 postpartum moms within the jurisdiction of the Cidahu health center. A multitude of studies has examined the use of oxytocin massage in postpartum mothers to augment breast milk production and facilitate the nursing process. This massage is conducted by the mother, who is seated and leans forward with her arms crossed on the table, resting her head on her arms, while her breasts are unclothed and hanging freely. The researcher exerted pressure on the lateral sides of the mother's spine with two fists, positioning the thumbs anteriorly and performing firm, circular movements with both thumbs on either side of the spine. The massage duration is 2 to 3 minutes. Purnamasari, 2020. This study corroborates the findings of Nurindah Sari et al. (2022), which demonstrated a 51.82 ml augmentation in breast milk production after to oxytocin massage application. Research by Widastuti et al. (2020) indicates that the average breast milk production in the treatment group increased from 31.2 ml before the intervention to 34.7 ml after the intervention, reflecting a rise of 3.5 ml in the control group post-intervention. Physiologically activating oxytocin in neurotransmitters will trigger the medulla oblongata to convey signals to the hypothalamus in the posterior pituitary, thereby initiating the oxytocin reflex or let-down reflex, resulting in the production of oxytocin into the bloodstream. The oxytocin reflex is influenced by the mother's psychological condition; emotions such as anxiety, worry, and uncertainty can impede breast milk production. Dewi et al., 2022. Oxytocin's role in the mammary gland is to induce the contraction of myoepithelial cells surrounding the alveolus, thereby aiding in the evacuation of alveolar contents into the milk ducts, leading to the emptying of the alveolus and enhancing subsequent milk production. Administering oxytocin massage to enhance prolactin secretion in postpartum mothers. Ertysukesty, 2020

Effect of Oxytocin Massage on Breast Milk Production

The study's findings demonstrate that the significance value of 0.000 is below 0.05, thereby validating the alternative hypothesis (ha). The Oxytocin Massage markedly affects breast milk production in lactating mothers within the Cidahu Health Center's jurisdiction. This study's findings corroborate previous research by Muna Sirajul and Aryani Roza (2023), which

indicated a significance value of 0.001, demonstrating the impact of oxytocin massage on breast milk production in postpartum mothers at the Aceh Besar Regency Regional General Hospital, as this value is below 0.05. This study's findings correspond with Intan Natalia's research (2019), which indicated a significant value of 0.000, demonstrating the impact of oxytocin massage on breast milk production in postpartum mothers at Haji Medan Hospital. Oxytocin massage can improve comfort and relaxation in mothers, hence affecting breast milk production. Mothers who experience contentment, happiness, and confidence will demonstrate a more active oxytocin reflex, promoting the efficient flow of breast milk (Widyawati & Sari, 2022).

Oxytocin massage can enhance the psychological bond between mother and infant, hence influencing breast milk production. Mothers who harbor affectionate thoughts and other pleasant emotions towards their infants will activate the oxytocin reflex. The hormone oxytocin, released during oxytocin massage, stimulates muscle spasms around the alveoli, facilitating the expulsion of breast milk from the ductal system, so triggering the let-down reflex. (Fatrin et al., 2022; Kusmayadi, 2022).

Research Limitations

In this investigation, the researcher endeavored to attain ideal outcomes. Nonetheless, the researcher may encounter an impediment, resulting in a restriction of this study: when the researcher visits the respondent's residence, the respondent may have already administered breast milk to the infant.

CONCLUSION & ADVICE

Conclusion

1. The majority of respondents were aged 20 to 35 years, held a college degree, had multiple pregnancies, and were homemakers.
2. On the fourth day preceding oxytocin massage, the majority of respondents produced 50 cc or less of breast milk, whereas on the tenth day prior to the massage, most respondents generated 200 cc or less of breast milk.
3. On the fourth day post-oxytocin massage, the majority of participants produced more than 50 cc of breast milk, while by the tenth day, most participants produced over 200 cc of breast milk.

4. The oxytocin massage influences breast milk production in breastfeeding moms within the jurisdiction of the Cidahu Health Center, Kuningan Regency.

Suggestion

1. For Health Workers. Health workers can provide knowledge related to Oxytocin Massage to the community through counseling and other interesting content and can apply Oxytocin Massage to postpartum mothers.
2. For the next researcher. It is hoped that the next researcher can add other interventions to support breast milk production in breastfeeding mothers.

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