

Oxytocin massage enhanced breast milk production in post-partum women

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ABSTRAK

Tujuan: Mengetahui pengaruh pijat oksitosin terhadap kelancaran produksi ASI dan kenyamanan ibu pascapersalinan.

Bahan dan Metode: Penelitian ini merupakan survei analitik dengan rancangan cross-sectional menggunakan data primer yang diperoleh melalui kuesioner. Populasi penelitian terdiri atas 36 ibu pascapersalinan yang dipilih dengan teknik non-probability sampling. Analisis data dilakukan menggunakan uji Chi-square dengan tingkat signifikansi 0,05.

Hasil: Hasil uji Chi-square menunjukkan adanya hubungan yang bermakna antara pijat oksitosin dan peningkatan produksi ASI pada ibu pascapersalinan ($p = 0,001$).

Simpulan: Pijat oksitosin terbukti berperan dalam meningkatkan produksi ASI pada ibu pascapersalinan di Puskesmas Batulicin 1, Kabupaten Tanah Bumbu, Kalimantan Selatan. (MOG 2017;25:63-65)

Kata kunci: Pijat oksitosin; kelancaran produksi ASI

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ABSTRACT

Objectives: To evaluate the effect of oxytocin massage on breast milk production and maternal comfort in postpartum women.

Materials and Methods: This analytical cross-sectional study utilized primary data collected through a structured questionnaire. A total of 36 postpartum mothers were recruited using a non-probability sampling technique. Data were analyzed using the Chi-square test with a significance level set at 0.05.

Results: The Chi-square analysis demonstrated a significant association between oxytocin massage and breast milk production ($p = 0.001$).

Conclusion: Oxytocin massage significantly improved breast milk production among postpartum mothers at the Batulicin 1 Public Health Center, Tanah Bumbu District, South Kalimantan. (MOG 2017;25:63-65)

Keywords: Oxytocin massage; enhanced breastmilk production

INTRODUCTION

Breast milk is the primary and most essential source of nutrition for infants, particularly during the first months of life. It provides an ideal composition that meets the nutritional requirements for infant growth, making it the most complete form of nourishment in both quality and quantity. As a single food source, breast milk sufficiently fulfills the nutritional needs for normal infant development up to the age of four to six months. The World Health Organization (WHO) recommends exclusive breastfeeding for the first six months of life without any additional food or drink.¹ This recommendation is based on the fact that breast milk provides the most natural and optimal nutrient composition for infant growth.² Factors influencing breast milk production include breast care, feeding frequency, birth weight, maternal age and parity, delivery age, stress, acute illness, cigarette consumption, and use of contraceptive pills. Inhibiting factors include infrequent breastfeeding or pumping, ineffective infant suckling, and inadequate maternal nutrition.^{3,4}

In South Kalimantan Province in 2014, it was found that 76% of infants received breast milk. However, only 4.25% were breastfed within one hour after delivery,

and 26% received formula milk due to inadequate milk production. A 2015 survey in Tanah Bumbu District reported that among 3,858 breastfeeding mothers, 48.1% provided exclusive breastfeeding for 0–6 months without additional food or fluids. Among those who did not, 51.9% experienced inhibited milk production leading to lactation failure.⁵ Data from Batulicin 1 Public Health Center, Tanah Bumbu District, from January to March 2017 showed 332 postpartum mothers, with only 112 (36.3%) experiencing smooth lactation, while 220 (60.6%) reported poor milk production.

MATERIALS AND METHODS

This study employed an analytical survey design with a cross-sectional approach to examine the correlation dynamics between the risk factor (oxytocin massage) and the outcome (smoothness of breast milk production), through observation and data collection at a single point in time (point time approach).⁶⁻⁸ The study population consisted of all postpartum mothers attending Batulicin 1 Public Health Center, Tanah Bumbu District, South Kalimantan.

Samples were selected using total sampling. Data were obtained from the register book documenting mothers who visited Batulicin 1 Public Health Center. The inclusion criteria comprised postpartum mothers whose breast milk was not yet produced and physiological postpartum mothers between 2 hours and 40 days after delivery. Exclusion criteria included mothers unwilling to participate, those with mental disorders, and those not recorded in the register book.

The variables examined in this study were the independent variable—oxytocin massage—and the dependent variable—breast milk production. The research instruments consisted of a questionnaire and checklist. Questionnaires and direct observation checklists were used to assess the relationship between oxytocin massage and postpartum breast milk production at Batulicin 1 Public Health Center, Tanah Bumbu District. Data analysis included univariate analysis to describe the characteristics of each variable and evaluate the effect of oxytocin massage on milk production. Bivariate analysis was performed to determine the correlation between oxytocin massage and postpartum milk production.⁸ Data were analyzed using the Chi-square (χ^2) test with a significance level of $\alpha = 0.05$.

RESULTS AND DISCUSSION

The univariate analysis revealed that most postpartum mothers (72.2%) at Batulicin 1 Public Health Center, Simpang Empat Subdistrict, Tanah Bumbu District, performed oxytocin massage, while a smaller proportion (27.8%) did not. Similarly, the majority (72.2%) of postpartum mothers at Batulicin 1 Public Health Center experienced smooth breast milk production, whereas a smaller proportion (27.8%) reported unsmooth milk production.⁵

The bivariate analysis demonstrated that oxytocin massage significantly influenced the smoothness of breast milk production. Almost all mothers who regularly performed oxytocin massage had smooth breast milk production, while a small proportion did not. Nearly half of the mothers who did not perform oxytocin massage still produced milk smoothly, whereas most of the others experienced difficulty in milk production. The Chi-square test yielded a p-value < 0.001 , $\alpha = 0.05$, indicating a strong and significant association between oxytocin massage and smooth breast milk production among postpartum mothers at Batulicin 1 Public Health Center, Simpang Empat Subdistrict, Tanah Bumbu District.

Besides being stimulated by infant suckling, oxytocin release is also influenced by receptors located within the ductal system. When the ducts expand or soften, oxytocin is reflexively secreted by the pituitary gland to propel milk from the alveoli. Following childbirth, the inhibitory effects of estrogen and progesterone on the pituitary gland diminish, allowing pituitary hormones, including prolactin, to resume activity. The breasts, which have been physiologically prepared during pregnancy, respond to this stimulation, resulting in milk secretion. Breast milk production becomes faster and more abundant when breastfeeding is initiated as early as possible.

One of the main causes of inhibited breast milk production is inadequate breast care. Breast milk production may increase or decrease depending on stimulation of the mammary glands, particularly during the first week of lactation. Factors influencing the smoothness of milk production include breastfeeding frequency, breast care, birth weight, gestational age, maternal age, stress, and acute illness.⁹ The recommended breastfeeding frequency is at least eight times per 24 hours, as increased suckling enhances milk production and secretion. Breast care stimulates the pituitary gland to release prolactin and oxytocin. Prolactin regulates milk synthesis, whereas oxytocin governs milk ejection.¹⁰

Maternal diet strongly influences breast milk production. Adequate nutritional intake and regular meal patterns promote optimal lactation. Infants with low birth weight have a reduced ability to breastfeed compared with normal-weight infants because weight differences affect prolactin and oxytocin stimulation in milk production. Gestational age at delivery also influences the infant's suckling ability, which may lead to suboptimal milk production. Stress and acute illness can further impair lactation; thus, maintaining maternal relaxation and comfort is essential.¹¹

Spinal massage and stimulation of neurotransmitters activate the medulla oblongata, which sends signals to the hypothalamus and posterior pituitary to release oxytocin, resulting in milk ejection. This spinal stimulation also relieves tension and stress, facilitating oxytocin release and promoting breast milk secretion, assisted by the infant's suckling immediately after birth. Breastfeeding is influenced by two mechanisms: milk production and milk ejection. Prolactin regulates milk production, whereas oxytocin regulates milk ejection. Oxytocin is secreted in response to nipple stimulation during suckling or spinal massage. Spinal massage induces calmness, relaxation, and maternal affection, increasing oxytocin release and promoting faster milk secretion.¹²

The findings of this study were inconsistent with those of Kent et al. (2006), who reported no correlation between breastfeeding volume and frequency per day and 24-hour milk production.¹³ This discrepancy may be attributed to confounding variables such as infant weight, which in this study was influenced by pre- and post-feeding milk volume.

This study had several limitations regarding data collection. Data were obtained through questionnaires assessing all study variables. Self-reported questionnaire data tend to be subjective, and the accuracy depends on respondent honesty. Another limitation involved communication barriers. Effective communication with respondents is essential for achieving study objectives. However, language differences posed challenges, as respondents primarily spoke Banjar and Bugis dialects, which the researchers did not fully understand.

CONCLUSION

Oxytocin massage improved breast milk production among postpartum mothers at Batulicin 1 Public Health Center, Simpang Empat Subdistrict, Tanah Bumbu District, South Kalimantan.

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