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APPLICATION OF OXYTOCIN MASSAGE THERAPY TO OVERCOME INEFFECTIVE BREASTFEEDING

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ABSTRACT
Introduction: Breastfeeding after a Cesarean section is often challenging due to the effects of anesthesia, surgical pain, limited mobility, and delayed mother-infant contact, which can inhibit prolactin and oxytocin hormone release. Oxytocin massage is a non-pharmacological intervention that may improve milk production and facilitate breast-feeding. This study aimed to assess how well oxytocin massage helps address ineffective breastfeeding in mothers who have undergone cesarean deliveries. **Method:** A descriptive case study was conducted on a P1A0 postpartum mother on day 1 after cesarean section due to severe preeclampsia. Data were collected through interviews, observations, and medical record reviews using nursing assessment forms and breastfeeding outcome indicators. The intervention consisted of two sessions of oxytocin massage combined with breastfeeding education, and the outcomes were evaluated before and after therapy. **Results:** Before the intervention, the mother experienced low milk output, weak infant latch, irregular sucking, and infant fussy. After the oxytocin massage sessions, milk flow became more continuous, infant latch improved, sucking became more effective, and infant fussiness decreased. These findings indicate a significant improvement in breastfeeding effectiveness. **Conclusion:** Oxytocin massage effectively stimulates prolactin and oxytocin release, enhances maternal relaxation, and improves infant-feeding behavior. This intervention is a practical, evidence-based approach to overcoming ineffective breastfeeding in post-cesarean mothers.

Keyword: Oxytocin, Breastfeeding, Cesarean Section, Massage, Postpartum Period

INTRODUCTION
Breastfeeding during the postpartum period after cesarean section is crucial for meeting the baby's nutritional needs and maintaining the mother's health. Ideally, breastfeeding begins as early as possible, supported by an optimal oxytocin reflex, allowing smooth milk production and its release (1). Studies have shown that breast milk production in postpartum mothers is slower than that in normal births due to the effects of anesthesia

on the balance of prolactin and oxytocin hormones, surgical wound pain, limited mobility, and a lack of early contact between the mother and baby (2). These conditions contribute to various breastfeeding problems, including sore nipples, breast engorgement, mastitis, and premature cessation of breastfeeding, as reflected in global, regional, and national reports on the high prevalence of breastfeeding disorders in postpartum mothers (3). Nursing case studies continue to focus on non-pharmacological interventions that stimulate the oxytocin reflex to accelerate the let-down reflex in postpartum mothers. Oxytocin massage is a potential intervention to stimulate prolactin and oxytocin production and facilitate breast milk production (4). However, its implementation in nursing practice has not been optimal, and scientific evidence for post-cesarean delivery is still limited. Therefore, a nursing case study is needed to address the application of oxytocin massage to address ineffective breastfeeding in patients with P1A0 post-cesarean section on day 1 for severe preeclampsia.

As reported by the WHO (2023), around 17,230,142 mothers globally face challenges with breastfeeding, such as sore nipples (56.4%), breast engorgement (36.12%), and mastitis (7.5%). In 2021, the ASEAN region documented 107,654 instances of breast milk engorgement among postpartum mothers. The number of mothers dealing with engorgement rose from 76,543 in 2015 to 95,698 in 2021, a trend linked to insufficient public awareness about breastfeeding support (Indonesian Ministry of Health, 2021, as cited by Pemilliana et al. (2023)). According to data from the Ministry of Health (2018), as referenced byYoto et al. (2022), in East Java Province, 70.2% of mothers experienced insufficient breast milk production, 3.9% of children were unable to breastfeed, 2.7% faced difficulties, 8.8% were affected by medical issues, 4.6% were separated from their mothers, and 5.4% were influenced by other factors.
One factor that can influence breastfeeding success is the baby's position and attachment during breastfeeding (8). Suboptimal positioning and attachment are contributing factors to this problem. Difficulty in releasing breast milk after childbirth can be caused by a lack of oxytocin, which plays a crucial role in milk release. Two factors influence the process of breast milk release: production and release. Breast milk production is influenced by the hormone prolactin, and its release is influenced by oxytocin. The resulting effects include sore nipples, pain during breastfeeding, mastitis, and low milk intake. These problems can lead to premature cessation of breastfeeding, negatively impacting the health of both the mother and baby. Breastfeeding is crucial for a mother and her baby, as it contains a wealth of nutrients that are beneficial for the baby's intelligence (1).

Oxytocin massage facilitates the release of breast milk(9). The hormone oxytocin is triggered either by the baby's sucking action on the nipple or by massaging the mother's spine. This type of massage involves working along the spine (vertebrae) up to the fifth and sixth ribs, aiming to stimulate the hormones prolactin and oxytocin following childbirth(10). When a mother receives an oxytocin massage on her spine, she experiences relaxation and calmness, which leads to an increase in oxytocin levels and the prompt release of breast milk(11). This research sought to explore the use of oxytocin massage as a method to address ineffective breastfeeding in patients with P1A0 post-Caesarean section on the first day, due to severe pre-eclampsia indications in nursing care.

METHOD

This research method uses a case study approach with a descriptive design to describe the nursing care process, starting from assessment to evaluation after the application of Oxytocin Massage therapy in patients with ineffective breastfeeding problems. The subject of the study was Mrs. F, a P1A0 patient who underwent a post-

cesarean section on day 1 for indications of severe pre-eclampsia and was treated in the maternal care unit. The participants were selected purposively based on the following criteria: postpartum mothers after cesarean section who experienced breastfeeding obstacles in the form of inadequate breast milk supply and baby attachment, had a stable general condition, and were able to receive oxytocin massage intervention. Data collection was carried out on October 28, 2024, through interviews, physical observations, and review of medical record documentation using a nursing assessment format, breastfeeding response observation sheet, and breastfeeding status outcome indicators based on the Indonesian Nursing Outcome Standards (SLKI, 2018). The nursing care process begins with a comprehensive assessment, establishing a nursing diagnosis of Ineffective Breastfeeding according to the Indonesian Nursing Intervention Standards (IDHS) (2017), developing an action plan referring to the Indonesian Nursing Intervention Standards (SIKI, 2018) with a focus on breastfeeding education and the application of Oxytocin Massage, and implementing the intervention for one day with two meetings. Evaluations were conducted before and after therapy to assess changes in breastfeeding conditions using indicators of breast milk supply and flow, infant sucking, attachment to the breast, and the level of infant fussiness. This study met ethical eligibility criteria and received approval from the Health Research Ethics Commission (KEPK) of Noor Huda Mustofa University, including the implementation of informed consent, guaranteeing patient confidentiality, respecting patient rights and comfort, and implementing nursing procedures without adverse risks.

RESULT & DISCUSSION

The present case study focuses on the application of Oxytocin Massage to address ineffective breastfeeding in a P1A0 postpartum mother on day one after a cesarean section due to severe pre-eclampsia. The initial assessment revealed that the mother reported low breast milk production and poor infant sucking reflexes. Objective findings included slow infant latch, inability to attach properly to the breast, frequent crying, and irregular sucking patterns. These observations align with the nursing diagnosis of Ineffective Breastfeeding (D.0029), as outlined in the Indonesian Nursing Diagnosis Standards (SDKI, 2017), with an etiology related to insufficient breast milk supply. The major signs observed were the infant's inability to latch and inadequate milk flow, while the minor signs included intermittent sucking and persistent infant fussiness (12).

The nursing care plan was implemented over one day with two sessions, following the Indonesian Nursing Care Outcome Standards (SLKI, 2018), with the primary outcome focused on improving breastfeeding status (L.03029) (13). Expected improvements include increased milk flow and supply, enhanced infant suckling, better attachment to the breast, and reduced fussiness. The care plan was developed based on the Indonesian Nursing Intervention Standards (SIKI, 2018), emphasizing breastfeeding education (I.12393) and the application of Oxytocin Massage. The interventions included observing the mother's breastfeeding goals, supporting maternal confidence, providing education on breastfeeding benefits and techniques, and teaching postpartum breast care through massage to stimulate prolactin and oxytocin (14). The implementation of Oxytocin massage involves preparing the mother and ensuring hygiene, positioning her comfortably, applying oil to the hands, and performing a structured massage along the spine and surrounding areas to stimulate oxytocin release (15,16). During the procedure, the mother appeared relaxed, consistent with the intended physiological effect of increasing oxytocin levels and facilitating milk ejection.
Following the first session, partial improvement was observed, including occasional milk flow, continued insufficient infant latch, slow sucking, and some

fussiness. After the second session, milk flow became more continuous, the infant 'slatch improved, sucking became more effective, and fussiness decreased. These findings are consistent with the SDKI's (2017) definition of ineffective breastfeeding, in which insufficient stimulation of oxytocin can impede milk ejection, affecting both milk production and infant satisfaction. Previous studies support these results with Hamid et al., (2024),reported that postpartum mothers who received Oxytocin Massage experienced increased relaxation, improved appetite, and higher breast milk production due to enhanced oxytocin release and decreased stress. Fara, (2022) demonstrated a significant increase in milk volume after Oxytocin Massage (from 5.59 cc to 16.75 cc), confirming its role in improving milk ejection. Similarly, Pratiwi and Nurrohmah (2023) showed that Oxytocin Massage significantly enhanced breastfeeding efficiency, with more mothers achieving effective milk flow than in the control group.

The current findings suggest that Oxytocin Massage is an effective non-pharmacological intervention for improving breastfeeding outcomes in postpartum mothers, especially following cesarean delivery. It promotes milk production and ejection, enhances maternal relaxation, and supports infant-feeding behavior. Consequently, Oxytocin Massage can be considered a practical and evidence-based approach to address ineffective breastfeeding, contributing to improved maternal and infant health and well-being. Based on the results of the research on the application of oxytocin massage to address ineffective breastfeeding, all patients complained that breast milk was coming out very little, the baby's sucking reflex was weak, and the baby did not suck continuously. The intervention provided was oxytocin massage therapy, with the final evaluation results based on subjective data indicating that patients reported smooth breast milk flow but not much dripping, and objective data showing that the baby's breastfeeding reflex was quite adequate, the baby was able to latch onto the mother's breast, suck slowly, and was not fussy.

According to the SDKI DPP PPNI Task Force (2017), ineffective breastfeeding is a condition in which both the mother and baby experience dissatisfaction or difficulty while breastfeeding. This condition of ineffective breastfeeding leads to a low breast milk supply, which can pose a threat to the baby. Most mothers believe that their babies do not want to breastfeed because their milk is insufficient, tastes bad, or is not good, which often leads them to decide to stop breastfeeding. Difficulty in breast milk flow in mothers after childbirth may be caused by inadequate stimulation of oxytocin, which plays a crucial role in milk ejection. There are two factors that influence milk ejection: production and ejection itself. According to Irving and Irdianty (2023), milk production is influenced by the prolactin hormone, while ejection is influenced by the oxytocin hormone.

As reported by Hamid et al. (2024), postpartum mothers experience increased relaxation and comfort in breast milk production after receiving oxytocin massages, which also makes eating more pleasurable. This leads to greater food intake, thereby boosting breast milk production. The relaxation is attributed to the oxytocin massage, which stimulates the oxytocin hormone and prompts the release of adrenaline, enhancing the mothers' sense of comfort and calmness. This finding aligns with research by Fara (2022), which observed that the average breast milk volume increased from 5.59 cc before the massage to 16.75 cc afterward. Consequently, it can be inferred that oxytocin massage significantly boosts breast milk production in postpartum mothers. Initially, breast milk production is not smooth in the days following childbirth due to insufficient stimulation of the prolactin and oxytocin hormones, which are crucial for seamless milk production. Prolactin is involved in milk formation, while oxytocin facilitates milk ejection. This is consistent with the findings ofPratiwi and Nurrohmah (2023),

who stated that oxytocin massage positively impacts the smooth production of breast milk in postpartum mothers. Their study showed that before the massage, 13 respondents in the treatment group and 2 in the control group faced breastfeeding difficulties. However, after the massage, 14 respondents in the treatment group experienced smooth milk production, with only one still encountering challenges.

Research indicates that oxytocin massage therapy is effective in boosting breast milk production and offering psychological advantages to mothers after childbirth (21). Numerous studies have consistently shown that this type of massage significantly enhances breast milk volume (22). When compared to other techniques like the Oketani massage, both methods are equally effective, although the Oketani massage has a slight edge in increasing milk production. Additionally, oxytocin massage offers emotional benefits, particularly in alleviating maternal anxiety, which is crucial since high anxiety levels can hinder lactation (23). Although the correlation is weak, this reduction in anxiety is linked to smoother milk production (24). On a physiological level, oxytocin massage elevates prolactin and oxytocin levels, which are directly involved in lactation, thereby promoting optimal milk production in postpartum mothers (25).

Researchers have found that Oxytocin Massage can effectively boost milk production in breastfeeding mothers, particularly with their first child, to maximize milk output. This technique can be beneficial for mothers facing challenges with low or insufficient milk supply. Additionally, Oxytocin Massage may enhance the quality of breast milk, supporting the baby's healthy growth and development. Furthermore, this massage technique can serve as a practical solution for mothers experiencing difficulties with breastfeeding, helping them to nurse with ease and confidence. Therefore, Oxytocin Massage can be a valuable method for promoting the health and well-being of both mothers and their infants.

CONCLUSION

Oxytocin massage therapy is effective in improving breastfeeding effectiveness in postpartum women. This finding implies that integrating oxytocin massage into postpartum care can support lactation and reduce breastfeeding difficulties. Future research should explore the long-term effects of oxytocin massage, compare its efficacy with other lactation interventions, and examine its impact on maternal-infant bonding and psychological well-being.

Conflicts of interest

The authors declare that they have no conflicts of interest.

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