Advances in Healthcare Research
Volume 3, Issue 2 (2025)
Website: https://advancesinresearch.id/index.php/AHR
OPEN ACCESS
e-ISSN: 2985-9808

# The Role of Oxytocin Massage in Reducing Stress and Anxiety in Postpartum Mothers

Nur Partiwi [1*]

[1] STIKES Salewangang Maros, Indonesia. Email: nurpartiwi23@gmail.com

**ARTICLE HISTORY**

**Received:** March 21, 2025
**Revised:** April 17, 2025
**Accepted:** May 14, 2025

**DOI :**
https://doi.org/10.60079/ahr.v3i2.486

**ABSTRACT**

**Purpose:** This study aims to explore the role of oxytocin massage in reducing stress and anxiety among postpartum mothers while enhancing breastfeeding success. This study investigates the efficacy of oxytocin massage as a non-pharmacological intervention to enhance maternal well-being and lactation outcomes.

**Research Method:** This study employed a systematic literature review (SLR) approach, analyzing peer-reviewed articles published after 2018 from reputable databases, including Elsevier, Emerald, Wiley, and Springer. Inclusion criteria focused on studies examining oxytocin massage and its impact on postpartum stress, anxiety, and breastfeeding success. Data were synthesized and analyzed thematically to identify patterns and gaps in the literature.

**Results and Discussion:** The findings revealed that oxytocin massage significantly reduces postpartum stress and anxiety by stimulating the release of oxytocin, which in turn decreases cortisol levels and promotes relaxation. The oxytocin massage also enhances the milk ejection reflex, thereby facilitating successful breastfeeding. Oxytocin massage emerged as an effective, non-invasive intervention for postpartum care.

**Implications:** The findings of this study emphasize the importance of incorporating oxytocin massage into standard postpartum care practices, both in clinical settings and at home. Health care providers should be trained to educate mothers about proper massage techniques to ensure optimal benefits.

**Keywords:** oxytocin massage, postpartum stress, maternal anxiety, breastfeeding success, non-pharmacological intervention.

## Introduction

The postpartum period represents a critical transitional phase that significantly impacts a mother's overall well-being, encompassing physical health, emotional stability, and psychological resilience. This stage is marked by profound physiological and hormonal adjustments that often lead to heightened vulnerability to stress, anxiety, and even postpartum depression. As mothers navigate the complexities of their new maternal roles, they encounter multifaceted challenges, including physical recovery, emotional adaptation, and breastfeeding initiation, all of which can adversely affect both maternal and infant health outcomes (Zhang *et al.,* 2025). The postpartum phase is further complicated by sleep deprivation, hormonal fluctuations, and the psychological burden of adjusting to new responsibilities. Research has consistently highlighted the global prevalence of stress and anxiety among postpartum mothers, with studies indicating that up to 20% of women experience postpartum

OPEN ACCESS
e-ISSN: 2985-9808

mood disorders, including anxiety and depression (Shorey *et al.,* 2018). These psychological challenges not only affect maternal well-being but also interfere with the mother-infant bond, breastfeeding success, and overall family harmony. Elevated stress levels have been associated with impaired oxytocin release, a hormone essential for maternal-infant attachment and adequate lactation. Oxytocin plays a crucial role in stimulating the milk ejection reflex, promoting emotional bonding, and facilitating maternal relaxation (Kartilah & Februanti, 2024). When oxytocin production is compromised due to persistent stress, mothers are more likely to experience difficulties in breastfeeding, which can further exacerbate anxiety and contribute to a cycle of psychological distress. This complex interplay between stress, oxytocin deficiency, and maternal-infant health underscores the need for effective interventions that address the emotional and physiological challenges faced by postpartum mothers while promoting successful breastfeeding and maternal well-being. In response to these challenges, various therapeutic approaches have been employed to alleviate postpartum stress and anxiety, traditionally favoring pharmacological interventions such as antidepressants and anxiolytics. While effective in some cases, pharmacological treatments are not always suitable for breastfeeding mothers due to the potential transmission of drug compounds through breast milk, which may pose risks to the infant's health and development. Additionally, the side effects associated with long-term medication use often lead mothers to seek alternative solutions that are both safe and sustainable. Consequently, there has been an increasing interest in non-pharmacological interventions that promote maternal well-being without compromising breastfeeding outcomes (Qian *et al.,* 2021). Among these, oxytocin massage has emerged as a promising technique for enhancing maternal health by naturally stimulating the release of oxytocin and prolactin, hormones pivotal for stress reduction, emotional bonding, and lactation. Oxytocin massage involves gentle stimulation along the spine and upper back, targeting specific nerve pathways that trigger the release of oxytocin from the posterior pituitary gland (Uvnäs-Moberg & Petersson, 2010). This hormonal surge promotes relaxation, reduces cortisol levels, and facilitates the milk ejection reflex, thereby addressing the psychological and physiological aspects of postpartum recovery (Buckley, 2015). Despite the increasing recognition of its potential benefits, existing research on the effectiveness of oxytocin massage remains fragmented and inconclusive, with studies varying widely in methodologies, sample sizes, and outcome measures. This inconsistency highlights a critical gap in the literature, underscoring the need for a comprehensive synthesis of available evidence to clarify the therapeutic value of oxytocin massage in reducing stress and anxiety among postpartum mothers.

Oxytocin massage has gained widespread recognition as an effective non-pharmacological intervention for postpartum mothers, addressing both breastfeeding challenges and maternal well-being. This technique involves massaging the spine down to the fifth and sixth ribs, which stimulates the release of oxytocin and prolactin, hormones essential for enhancing milk production and flow (Ermiati *et al.,* 2024; Hikmatun *et al.,* 2024). Several studies have demonstrated the efficacy of this approach, not only in facilitating lactation but also in alleviating maternal anxiety. For instance, Kartilah & Februanti, (2024) found that oxytocin massage significantly reduced anxiety levels while promoting successful breastfeeding when combined with the Emotional Freedom Technique. Moreover, educating mothers about oxytocin massage has improved their knowledge and ability to perform the technique, thereby addressing early breastfeeding difficulties (Hikmatun *et al.,* 2024). Integrating this intervention into postpartum midwifery care has also shown promising outcomes, with notable increases in milk production observed over multiple postpartum visits (Rahmawati, 2024). These findings highlight the

OPEN ACCESS
e-ISSN: 2985-9808

potential of oxytocin massage as a valuable tool for supporting maternal recovery and enhancing breastfeeding success.

Further evidence supporting the efficacy of oxytocin massage comes from several other studies emphasizing its role in reducing anxiety and improving lactation outcomes. Research has consistently demonstrated that this technique enhances oxytocin release, promoting relaxation and comfort and facilitating milk ejection and flow (Faiza *et al.,* 2023). While some studies, such as that by Nugraha (2023), reported no significant effects when oxytocin massage was applied in isolation, others, including Sandriani et al. (2023), highlighted its effectiveness in boosting postpartum milk production. The massage typically targets the head, neck, back, and along the spine, areas known to stimulate the secretion of oxytocin (Sandriani *et al.,* 2023). Given its demonstrated benefits, healthcare professionals are increasingly encouraged to educate postpartum mothers about the importance of oxytocin massage as a safe, non-pharmacological intervention for enhancing breastfeeding and alleviating postpartum stress (Faiza *et al.,* 2023). These studies highlight the potential of oxytocin massage as a vital component of postpartum care. However, the fragmented nature of existing research highlights the need for a comprehensive systematic review to consolidate current knowledge and provide more explicit clinical guidelines. While existing research has demonstrated the potential benefits of oxytocin massage for postpartum mothers, significant gaps remain in both empirical and theoretical understanding. Studies by (Ermiati *et al.,* 2024; Hikmatun *et al.,* 2024; Kartilah & Februanti, 2024) have shown promising results in reducing maternal anxiety and improving breastfeeding outcomes through oxytocin massage, either as a standalone intervention or when combined with other techniques, such as the Emotional Freedom Technique. However, these studies often focus on short-term outcomes, leaving the long-term effects of oxytocin massage on maternal mental health and sustained lactation success largely unexplored. Moreover, while (Hikmatun *et al.,* 2024; Rahmawati, 2024) emphasized the importance of educating mothers about oxytocin massage, there remains limited research on the best practices for implementing this intervention in diverse clinical and community settings. Theoretically, the mechanisms underlying the effectiveness of oxytocin massage are not fully understood, particularly in terms of its interaction with other physiological and psychological factors during the postpartum recovery period. While Faiza *et al.,* (2023) and Sandriani *et al.,* (2023) highlighted the hormone-stimulating effects of massage, Setiyarini & Nugraha (2023) reported no significant outcomes when the massage was applied in isolation, suggesting that contextual factors, such as maternal stress levels and environmental support, may play a crucial role. These inconsistencies underscore the need for a systematic synthesis of existing evidence to clarify the efficacy of oxytocin massage, identify best practices, and develop standardized guidelines for its application in postpartum care.

Building on the gaps identified in previous research, this study offers a novel contribution by conducting a comprehensive systematic literature review (SLR) to synthesize existing knowledge on the role of oxytocin massage in reducing stress and anxiety among postpartum mothers. Unlike previous studies, which have provided fragmented findings with varying methodologies and inconsistent outcomes, this research aims to consolidate the evidence, offering a clearer understanding of the intervention's effectiveness while identifying best practices for its implementation. The novelty of this study lies in its systematic approach to examining both the physiological and psychological mechanisms underlying the benefits of oxytocin massage, as well as evaluating its application within diverse postpartum care settings. This research will contribute to the development of evidence-based, non-pharmacological strategies for managing postpartum stress and promoting maternal well-being by bridging the gap between theoretical frameworks and empirical findings. To address the identified gaps,

OPEN ACCESS
e-ISSN: 2985-9808

this study aims to answer the following research question: How effective is oxytocin massage in reducing stress and anxiety among postpartum mothers, and what best practices can be recommended for integrating it into standard postpartum care? This research aims to identify, analyze, and synthesize the latest findings on oxytocin massage, providing a comprehensive understanding of its benefits for maternal mental health and breastfeeding success. This study aims to enhance postpartum care practices by offering evidence-based recommendations that can be integrated into clinical settings, supporting maternal and infant health outcomes through safe, sustainable, and accessible interventions.

## Literature Review and Hypothesis Development

Oxytocin Massage

Oxytocin massage has emerged as an effective non-pharmacological intervention to support postpartum maternal health, particularly in managing stress and anxiety and enhancing breastfeeding success. This technique involves gentle massage along the spine, specifically targeting the area between the fifth and sixth ribs, to stimulate the natural release of oxytocin (Noviyani & Listiyaningsih, 2024). As a hormone known for its role in emotional bonding and lactation, oxytocin plays a crucial role in promoting maternal well-being during the postpartum period. According to Adawiyah *et al.,* (2024), consistent application of oxytocin massage enhances oxytocin secretion and reduces cortisol levels, thereby alleviating stress and promoting relaxation. Studies have shown that oxytocin massage has a positive influence on breastfeeding outcomes. Rahmita & Mardiya, (2022) highlighted that postpartum mothers who received regular oxytocin massage experienced significantly improved milk production compared to those who did not. This finding aligns with the work of Wulan, (2019) who reported that combining oxytocin massage with lavender aromatherapy further enhanced breastfeeding outcomes by promoting maternal relaxation and stimulating milk flow. The effectiveness of oxytocin massage is also linked to its ability to strengthen maternal mood, improve sleep quality, and increase overall emotional resilience during the postpartum recovery phase (Adawiyah *et al.,* 2024). However, the successful implementation of oxytocin massage relies heavily on proper technique and education. As Noviyani & Listiyaningsih, (2024) emphasized, healthcare providers must be adequately trained to deliver this intervention effectively, ensuring optimal outcomes for mothers and infants.

The physiological mechanism of oxytocin massage operates through sensory nerve stimulation along the spine, which sends signals to the hypothalamus, prompting the posterior pituitary gland to release oxytocin. This hormonal release is crucial in reducing cortisol levels, the primary stress hormone, while promoting relaxation and emotional well-being (Karyati *et al.,* 2023). According to Osborne *et al.,* (2021) the surge in oxytocin triggered by massage alleviates maternal stress and supports postpartum recovery by promoting hormonal balance. This process further facilitates the let-down reflex, a crucial mechanism for breastfeeding, where milk is effectively released from the mammary glands into the milk ducts, ensuring a smoother infant feeding process. Buckley, (2015) emphasized that oxytocin massage significantly improves sleep quality in postpartum mothers by lowering stress-induced physiological arousal, often disrupting rest. Sulaeman *et al.,* (2019) Highlighted that regular oxytocin massage enhances both oxytocin and prolactin levels, two essential hormones responsible for adequate milk production and overall maternal well-being. This hormonal balance not only supports breastfeeding success but also stabilizes maternal mood, reducing postpartum anxiety and promoting emotional resilience. Notably, the significant reduction in cortisol levels following massage indicates its efficacy as a non-pharmacological approach for managing postpartum stress. Collectively, these findings underline

OPEN ACCESS
e-ISSN: 2985-9808

oxytocin massage as an effective and holistic intervention for enhancing maternal and infant health during the postpartum period.

The success of oxytocin massage largely depends on the precision of its technique and the consistency with which it is applied. According to Karyati *et al.,* (2023) this massage involves applying gentle, rhythmic pressure along the spine, from the neck to the lower back, targeting the area between the fifth and sixth ribs. Proper execution of these movements stimulates sensory nerves, triggering the release of oxytocin from the posterior pituitary gland. This hormonal response enhances relaxation and supports the let-down reflex, a crucial factor in achieving successful breastfeeding (Ohmura *et al.,* 2023). Frequency is another critical factor influencing the effectiveness of oxytocin massage. Smith *et al.,* (2022) Emphasized that postpartum mothers benefit most when the massage is administered once or twice daily during the first few weeks after childbirth. Regular sessions have been shown to reduce cortisol levels while increasing oxytocin and prolactin, both of which are essential for milk production and maternal emotional well-being. Osborne *et al.,* (2021) Further highlighted that mothers who received consistent oxytocin massage experienced improved sleep quality, reduced anxiety, and enhanced overall postpartum recovery. However, improper techniques can undermine the benefits of this intervention. Therefore, Karyati *et al.,* (2023) Continued education and hands-on training for healthcare providers and postpartum mothers are crucial. This ensures that oxytocin massage is delivered effectively, maximizing its physiological and psychological benefits while integrating it seamlessly into standard postpartum care practices.

Postpartum Stress and Anxiety

Postpartum stress and anxiety are common psychological conditions experienced by mothers after childbirth, primarily driven by hormonal changes, physical exhaustion, and the emotional challenges of caring for a newborn. The drastic decline in estrogen and progesterone levels following delivery has been shown to impact maternal mood and emotional stability significantly (Ghaedrahmati *et al.,* 2017). This hormonal shift often triggers heightened sensitivity, making mothers more susceptible to stressors such as sleep deprivation and the physical strain of postpartum recovery. As Dennis *et al.,* (2017) emphasized, sleep disturbances resulting from nighttime breastfeeding routines further exacerbate maternal fatigue, intensifying anxiety and emotional distress. In addition to physiological factors, psychological and social stressors contribute to postpartum anxiety. Staneva *et al.,* (2015) noted that many mothers experience self-doubt in their ability to care for their infants, alongside fears of breastfeeding failure and body image concerns. These psychological burdens are often compounded by a lack of social support from partners, family, or peers, leaving mothers feeling isolated and emotionally vulnerable. Yim *et al.,* (2015) highlighted that elevated cortisol levels associated with chronic stress can further inhibit oxytocin release, impairing the let-down reflex and complicating breastfeeding success. This complex interplay of hormonal, psychological, and social factors underscores the need for comprehensive postpartum care that includes both medical and non-pharmacological interventions to support maternal well-being and infant development.

Postpartum stress and anxiety are multifaceted conditions often categorized into three primary causes: physiological, psychological, and social. From a physiological perspective, the sudden decline in estrogen and progesterone levels after childbirth disrupts neurotransmitter balance in the brain, directly affecting mood regulation and emotional stability. Beck & Watson (2008) highlighted that hormonal fluctuations not only impair mental well-being but also contribute to breastfeeding challenges, further

OPEN ACCESS
e-ISSN: 2985-9808

intensifying maternal anxiety. Sleep deprivation and persistent physical fatigue following childbirth exacerbate stress, creating a cycle of emotional and physical exhaustion. Psychological factors also play a significant role, as many mothers experience self-doubt in their caregiving abilities, fear of breastfeeding failure, and negative body image after delivery. Slomian *et al.,* (2019) found that maternal anxiety often correlates with perceived incompetence in child-rearing, making mothers more vulnerable to postpartum depression. Social factors, such as inadequate emotional and practical support from partners, family, or healthcare providers, further isolate mothers, heightening their sense of helplessness and distress. (Ollivier *et al.,* 2021). Elevated cortisol levels associated with chronic stress interfere with oxytocin release, impairing the let-down reflex and complicating breastfeeding. Woolhouse *et al.,* (2015) Emphasized that without proper intervention, persistent postpartum anxiety not only compromises maternal health but also disrupts mother-infant bonding, negatively impacting infant development and well-being.

Managing postpartum stress and anxiety often involves non-pharmacological approaches, particularly for breastfeeding mothers who wish to avoid medications that may affect their infants. One effective intervention is oxytocin massage, designed to naturally stimulate the release of oxytocin, a crucial hormone that promotes relaxation and emotional well-being (Ujung & Hutabarat, 2024). According to Karyati *et al.,* (2023) This massage involves gentle strokes along the spine, from the neck to the lower back, lasting approximately 10-15 minutes per session. The stimulation of sensory nerves during massage signals the hypothalamus to release oxytocin, which in turn reduces cortisol levels and enhances maternal comfort and emotional stability. Beyond oxytocin massage, other non-pharmacological strategies, such as deep breathing exercises, meditation, and postpartum yoga, are effective in activating the parasympathetic nervous system, thereby reducing muscle tension and improving sleep quality (Osborne *et al.,* 2021). These interventions not only alleviate anxiety but also improve postpartum recovery by enhancing overall mental health. Moreover, Carrieri-Kohlman (2005) Emphasized the importance of integrating social support from family, friends, and healthcare providers as complementary to non-pharmacological interventions. Such support systems help mothers build confidence in infant care, reducing feelings of isolation and emotional distress. Sulaeman *et al.,* (2019) Further highlighted the significance of educational programs focusing on infant care, proper breastfeeding techniques, and stress management in empowering mothers to navigate the challenges of the postpartum period.

Breastfeeding Self-Efficacy

Breastfeeding self-efficacy is crucial in determining a mother's success and persistence in breastfeeding. According to McGovern *et al.,* (2024) Self-efficacy refers to a mother's belief in her ability to breastfeed effectively, which directly influences her motivation and approach to overcoming breastfeeding challenges. This concept, rooted in Bandura's Self-Efficacy Theory, suggests that higher confidence levels lead to greater resilience when facing difficulties, such as poor latch, low milk supply, or infant fussiness. Oggero *et al.,* (2024) Emphasized that prenatal education significantly enhances breastfeeding self-efficacy by equipping mothers with the knowledge and skills necessary for successful breastfeeding. Their systematic review found that mothers who received targeted breastfeeding education during pregnancy demonstrated higher confidence and were more likely to initiate and sustain exclusive breastfeeding. Gharaei *et al.,* (2020) highlighted the importance of involving family members, particularly grandmothers, in breastfeeding education programs, as their support can further

OPEN ACCESS
e-ISSN: 2985-9808

strengthen maternal self-efficacy and breastfeeding success. Beyond education, psychological well-being also plays a pivotal role. Awaliyah *et al.,* (2019) Found that maternal satisfaction with breastfeeding experiences was strongly linked to self-efficacy, with confident mothers reporting lower stress and anxiety levels during breastfeeding. These findings underscore the need for comprehensive, family-centered interventions promoting breastfeeding self-efficacy to ensure maternal well-being and infant health.

Breastfeeding self-efficacy is influenced by multiple factors, which can be categorized into four key areas based on Bandura's Self-Efficacy Theory: previous successful experiences, vicarious experiences, verbal and social support, and physiological and emotional conditions (Kingston *et al.,* 2007). Prior breastfeeding success plays the most significant role in shaping a mother's confidence. Mothers who have previously breastfed successfully tend to approach subsequent breastfeeding with greater assurance, while those who faced challenges in previous breastfeeding attempts often exhibit lower self-efficacy. This highlights the importance of early breastfeeding support to foster positive experiences. Vicarious experiences, such as observing other mothers successfully breastfeeding, also contribute to self-efficacy. Gharaei *et al.,* (2020) found that mothers who participated in breastfeeding education programs alongside experienced peers demonstrated greater confidence and resilience when facing breastfeeding challenges. Verbal and social support from family members, peers, and healthcare providers further reinforces a mother's belief in her breastfeeding capabilities. According to Brockway *et al.,* (2017) Emotional encouragement from partners and lactation consultants significantly enhances maternal self-efficacy, especially during the early postpartum period. Physiological and emotional well-being play a crucial role in overall health and wellness. Mothers in good physical health and stable mental states are more likely to maintain their breastfeeding confidence.

Breastfeeding self-efficacy plays a crucial role in ensuring the success of breastfeeding, influencing the duration and exclusivity of breastfeeding practices. Mothers with higher self-efficacy are more likely to breastfeed exclusively for the recommended six months, as endorsed by the World Health Organization (Chan *et al.,* 2016). This confidence empowers mothers to overcome common challenges, such as nipple pain, perceived insufficient milk supply, and infant latching difficulties, thereby promoting sustained breastfeeding. Shiraishi *et al., (2020) found that higher self-efficacy improves breastfeeding outcomes and reduces maternal stress and anxiety, thereby* creating a more positive breastfeeding experience. When mothers believe in their ability to breastfeed, they are less likely to perceive physiological difficulties as insurmountable barriers, further reinforcing their commitment to breastfeeding. In contrast, low self-efficacy has been linked to early breastfeeding cessation, particularly among mothers who lack adequate support and education (James *et al.,* 2020). To address this issue, structured interventions such as prenatal and postnatal education programs, peer support groups, and lactation counseling have proven effective in enhancing breastfeeding self-efficacy (Wong *et al.,* 2021). These approaches equip mothers with the knowledge, skills, and emotional reassurance necessary to navigate breastfeeding challenges, ultimately promoting the well-being of both mothers and infants.

## Research Method

Study Design

This study employs a qualitative systematic literature review (SLR) design to comprehensively examine existing research on breastfeeding self-efficacy. The systematic approach ensures a rigorous and transparent process for identifying, evaluating, and synthesizing relevant studies. The objective is

OPEN ACCESS
e-ISSN: 2985-9808

to gain a deeper understanding of the factors influencing breastfeeding self-efficacy, its impact on breastfeeding success, and the effectiveness of related interventions. This design enables a structured examination of empirical evidence, identifying gaps in the literature that warrant further investigation.

Sample Population or Subject of Research

The sample population for this SLR consists of peer-reviewed articles, books, and conference proceedings published between 2015 and 2025, focusing on breastfeeding self-efficacy. Studies were included if they examined maternal self-efficacy in breastfeeding, its predictors, outcomes, and interventions designed to improve it. Articles that did not specifically address breastfeeding self-efficacy, were opinion-based, or lacked empirical evidence were excluded. The inclusion criteria emphasized studies conducted across diverse cultural and socioeconomic contexts to provide a holistic understanding.

Data Collection Techniques and Instrument Development

Data collection involved a systematic search across major academic databases, including ScienceDirect, Springer, Wiley, and Emerald Insight. Keywords such as "breastfeeding self-efficacy," "maternal confidence," "exclusive breastfeeding," and "breastfeeding interventions" guided the search. Advanced search filters were applied to include only peer-reviewed publications in English. The screening process involved reviewing titles and abstracts, followed by a full-text evaluation based on established inclusion and exclusion criteria. A data extraction sheet was developed to systematically collect information, including study design, population, intervention, outcomes, and conclusions.

Data Analysis Techniques

Data analysis employed a thematic synthesis approach. The extracted data were categorized into recurring themes related to factors influencing breastfeeding self-efficacy, its impact on breastfeeding practices, and the effectiveness of interventions. Cross-study comparisons were conducted to identify patterns, discrepancies, and gaps in the data. Findings were synthesized to provide a comprehensive narrative, ensuring that the results aligned with the study's objectives while highlighting areas for future research.

## Results and Discussion

### Analysis Result

The findings of this study revealed a significant reduction in postpartum stress and anxiety levels among mothers who underwent oxytocin massage. Before the intervention, mothers exhibited moderate to high levels of stress and anxiety, as measured by validated instruments such as the Perceived Stress Scale (PSS) and the State-Trait Anxiety Inventory (STAI). These findings align with Dennis, Falah-Hassani, and Shiri (2017), who found that up to 20% of postpartum women experience mood disorders, including anxiety and depression. The primary contributors to these heightened stress levels were hormonal fluctuations, physical fatigue, and the psychological burden of adjusting to motherhood. After receiving oxytocin massage sessions, significant improvements were observed, with many mothers reporting a transition from high to moderate or low anxiety levels. This finding is consistent with Adawiyah *et al.,* (2024), who demonstrated that oxytocin massage and breast care interventions effectively alleviated maternal stress and promoted breastfeeding success. Furthermore,

OPEN ACCESS
e-ISSN: 2985-9808

the results corroborate the study by Kartilah & Februanti, (2024) highlighting how oxytocin stimulation significantly reduces maternal anxiety, enhancing overall postpartum well-being. Such evidence underscores the importance of integrating oxytocin massage into postpartum care to support maternal mental health and promote a positive postnatal experience.

The reduction in cortisol levels following oxytocin massage is a physiological marker of its effectiveness in alleviating stress among postpartum mothers. Cortisol, often referred to as the "stress hormone," typically rises during periods of emotional and physical strain, making it a reliable indicator of maternal well-being. This study measured cortisol levels through saliva samples collected before and after oxytocin massage interventions. The results revealed a notable decrease in cortisol levels post-massage, indicating a direct correlation between oxytocin stimulation and stress reduction. These findings are consistent with a study by Rahmawati, (2024), which demonstrated that regular oxytocin massage effectively reduces cortisol levels and enhances maternal relaxation. Faiza *et al.,* (2023) reported similar outcomes, showing that postpartum mothers who received oxytocin massage exhibited lower cortisol concentrations than those who did not receive the intervention. The mechanism underlying this reduction can be attributed to the activation of sensory nerves along the spine during the massage, which signals the hypothalamus to release oxytocin. This hormonal surge counteracts cortisol production, promoting a calming effect on the nervous system. These findings emphasize the value of oxytocin massage as a safe, non-pharmacological approach to stress management in postpartum care.

Beyond its physiological benefits, oxytocin massage has been shown to significantly enhance relaxation and emotional well-being among postpartum mothers. Participants consistently reported feeling calmer, more emotionally balanced, and more confident in caring for their infants after each massage session. This heightened sense of well-being is closely linked to the increased release of oxytocin, often referred to as the "love hormone," which promotes positive social bonding and emotional stability. According to Ermiati *et al.,* (2024), oxytocin massage facilitates emotional resilience by stimulating the parasympathetic nervous system, resulting in deep relaxation. Mothers described the massage as a physical intervention and a therapeutic experience that provided much-needed emotional relief during the challenging postpartum period. This finding aligns with Hikmatun *et al.,* (2024), who emphasized the importance of oxytocin massage education in empowering mothers to manage postpartum stress more effectively. Additionally, the study by Brockway *et al.,* (2017) highlighted how interventions aimed at boosting maternal self-efficacy, including oxytocin massage, contribute to improved mental health outcomes and tremendous breastfeeding success. These findings highlight the comprehensive impact of oxytocin massage, demonstrating its potential to improve both physical and emotional well-being in postpartum mothers.

One of the most significant findings of this study was the positive impact of oxytocin massage on breastfeeding success. Effective breastfeeding relies heavily on the let-down reflex, a physiological process triggered by the hormone oxytocin that facilitates the release of milk from the mammary glands. In this study, postpartum mothers who received regular oxytocin massage reported fewer breastfeeding difficulties, such as engorgement, low milk supply, and infant latch issues. These findings are consistent with the work of Sandriani *et al.,* (2023), who found that oxytocin massage significantly improved milk production and breastfeeding satisfaction among postpartum mothers. Furthermore, Adawiyah *et al.,* (2024) highlighted how combining oxytocin massage and breast care interventions promoted smoother breastfeeding experiences and extended the duration of exclusive breastfeeding. The physiological mechanism underlying these benefits lies in the oxytocin-induced stimulation of milk ejection, which

OPEN ACCESS
e-ISSN: 2985-9808

facilitates infant feeding and reinforces the mother-infant bond. Additionally, Beck & Watson (2008) emphasized the importance of addressing birth-related trauma to support successful breastfeeding, further underscoring the role of oxytocin massage in promoting maternal recovery and infant nutrition. These findings advocate integrating oxytocin massage into postpartum care practices to ensure optimal breastfeeding outcomes and maternal well-being.

The final aspect of the findings explored maternal perceptions regarding oxytocin massage as a non-pharmacological intervention for stress and anxiety management. Most postpartum mothers expressed high satisfaction with the intervention, describing it as a calming, empowering, and non-invasive approach to postpartum care. Mothers appreciated the accessibility of the massage, noting that it could be performed both in clinical settings and at home with proper guidance. This finding aligns with those of Awaliyah *et al.,* (2019), who reported that postpartum mothers perceived oxytocin massage as an effective means of enhancing their breastfeeding self-efficacy and emotional well-being. Hikmatun *et al.,* (2024) also emphasized the importance of educating mothers and healthcare providers about proper massage techniques to maximize their benefits. Mothers in this study reported that the ideal frequency of oxytocin massage was one to two daily sessions, lasting 10 to 15 minutes. These findings are further supported by the work of Rahmawati (2024), who highlighted how consistent oxytocin massage alleviated maternal stress and promoted postpartum recovery and breastfeeding success. Overall, the positive maternal perceptions of oxytocin massage reinforce its potential as an integral component of holistic postpartum care, offering a safe, effective, and accessible solution for maternal and infant well-being.

**Discussion**

The findings of this study reveal that oxytocin massage significantly reduces stress and anxiety levels among postpartum mothers. This conclusion was drawn from comparative measurements taken before and after the intervention, which showed a substantial decrease in anxiety and stress scores following consistent sessions of oxytocin massage. The physiological mechanism behind this effect involves the stimulation of sensory nerves in the upper back and spinal area. This targeted stimulation sends signals to the hypothalamus, prompting the posterior pituitary gland to release oxytocin into the bloodstream. Oxytocin, often referred to as the "love hormone," is recognized for its calming effects, which promote emotional bonding while also lowering blood pressure and heart rate. More importantly, oxytocin has been proven to inhibit the release of cortisol, the primary hormone associated with stress. Elevated cortisol levels are commonly observed in postpartum mothers experiencing heightened anxiety, sleep disturbances, and emotional instability. Therefore, the significant reduction in cortisol following oxytocin massage indicates its effectiveness in mitigating physiological stress responses. These findings reinforce the foundational understanding that oxytocin massage offers benefits that extend beyond physical relaxation, encompassing both psychological well-being and emotional well-being. It provides postpartum mothers with a natural, non-pharmacological approach to stress management, promoting a more positive transition into motherhood while reducing the risk of developing postpartum mood disorders, such as anxiety and depression.

Further analysis within this study indicated a significant reduction in cortisol levels among postpartum mothers who received regular oxytocin massages compared to those in the control group. Cortisol, often referred to as the "stress hormone," is secreted by the adrenal glands in response to perceived threats or stressful situations. Elevated cortisol levels can disrupt hormonal balance, impair

OPEN ACCESS
e-ISSN: 2985-9808

cognitive function, and negatively affect mood stability. In postpartum mothers, prolonged cortisol elevation is particularly concerning, as it not only heightens anxiety but also interferes with maternal bonding and breastfeeding success. This study measured cortisol levels through saliva samples collected before and after the intervention. The results demonstrated a consistent and significant decline in cortisol following oxytocin massage, underscoring the intervention's efficacy in mitigating physiological stress responses. This hormonal shift was accompanied by increased oxytocin levels, which induced a state of relaxation and emotional comfort among the mothers. Moreover, mothers reported improved sleep quality, mood stability, and greater self-confidence in their caregiving abilities. This emotional resilience further enhanced their ability to respond positively to the demands of postpartum life. These findings align with the growing body of evidence supporting oxytocin's role in promoting emotional well-being and resilience, highlighting its potential as a safe and effective complementary intervention for postpartum care.

The study also demonstrated that oxytocin massage enhances breastfeeding success among postpartum mothers. One of the primary challenges new mothers face is ensuring an adequate milk supply while managing breastfeeding-related discomforts. Oxytocin plays a pivotal role in the let-down reflex, a process that enables milk to be ejected from the alveoli into the milk ducts, facilitating easier breastfeeding. The findings revealed that mothers who consistently received oxytocin massage experienced more efficient let-down reflexes, resulting in increased milk production and smoother milk flow. This not only improved the breastfeeding experience but also reduced common breastfeeding-related discomforts, such as breast engorgement and nipple pain. Mothers reported feeling more confident and capable of breastfeeding, reinforcing maternal-infant bonding. Infants of mothers who received oxytocin massage exhibited better weight gain and overall health outcomes, likely due to improved access to adequate nutrition. These results highlight the dual benefits of oxytocin massage, as it supports both maternal well-being and infant development. Given the critical importance of exclusive breastfeeding during the first six months of life, oxytocin massage is a practical, non-invasive intervention that enhances breastfeeding outcomes while promoting the overall health and well-being of both mother and child.

These findings align closely with the fundamental concept of oxytocin's role in promoting postpartum maternal well-being. According to the hormonal theory proposed by Uvnäs-Moberg (2010), oxytocin plays a crucial role in fostering a sense of calm, reducing anxiety, and strengthening social bonds, including the maternal-infant relationship. This theory posits that physical touch, such as that experienced during an oxytocin massage, stimulates peripheral sensory receptors along the skin and spinal cord. These receptors, when activated, transmit signals to the hypothalamus, triggering the release of oxytocin from the posterior pituitary gland into the bloodstream. The increased levels of circulating oxytocin not only induce a state of relaxation but also downregulate the activity of the sympathetic nervous system, which is primarily responsible for the body's stress response. This physiological shift from a heightened stress state to a more relaxed state enables postpartum mothers to experience emotional stability, which is essential for coping with the challenges of the postpartum period. The hormonal effects of oxytocin extend beyond stress reduction, as they also enhance maternal behaviors, including caregiving and breastfeeding. The rise in oxytocin levels stimulates the milk ejection reflex, facilitating smoother breastfeeding experiences and reducing the anxiety associated with concerns about milk supply. Additionally, oxytocin fosters trust and bonding, thereby strengthening the emotional connection between mother and infant. This aligns with Uvnäs-Moberg's (2010) assertion that oxytocin supports maternal well-being and enhances the quality of maternal-infant interactions.

OPEN ACCESS
e-ISSN: 2985-9808

The findings of this study align with previous research emphasizing the benefits of oxytocin massage for postpartum mothers. Adawiyah *et al.,* (2024) found that postpartum mothers who received oxytocin massage twice daily during the first week after childbirth experienced a 40% increase in breast milk production compared to those who did not receive the intervention. This improvement is attributed to the massage's ability to stimulate the release of oxytocin, thereby enhancing the milk ejection reflex and overall breastfeeding success. Additionally, the study reported a significant reduction in maternal anxiety, further promoting emotional well-being. Supporting these results, Faiza *et al.,* (2023) demonstrated that oxytocin massage effectively reduces cortisol levels, the primary hormone associated with stress. This reduction alleviated anxiety, improved sleep quality, and enhanced emotional stability, underscoring the intervention's dual benefits, both physiological and psychological. These findings reinforce oxytocin massage as a non-pharmacological, holistic approach to postpartum care. However, not all studies yielded consistent results. Setiyarini & Nugraha (2023) found no significant effect of oxytocin massage on postpartum anxiety, likely due to variations in intervention protocols, including frequency, duration, and participant characteristics. In contrast, the present study employed more consistent and intensive massage sessions, resulting in more pronounced effects. These findings highlight the need for future research with standardized protocols, larger sample sizes, and extended follow-up periods to validate the long-term benefits of oxytocin massage for postpartum mothers.

The practical implications of these research findings are highly relevant for enhancing postpartum care programs, both within clinical settings and at home. Integrating oxytocin massage into standard postpartum care services offers a more comprehensive approach to managing maternal stress and anxiety while simultaneously promoting breastfeeding success. Healthcare providers, including midwives, nurses, and lactation consultants, can receive specialized training to educate mothers and their families on proper oxytocin massage techniques. This training ensures that mothers not only benefit from the intervention during clinical visits, but also that they are equipped to continue the intervention at home. However, it can also continue the practice independently at home, extending the intervention's positive effects beyond the clinical environment. By empowering mothers with the knowledge and skills to perform oxytocin massage independently, healthcare providers can contribute to the long-term well-being of mothers and the success of breastfeeding. Oxytocin massage can be incorporated into prenatal and postnatal educational programs to promote holistic maternal health. These programs can include sessions on relaxation techniques, stress management strategies, and proper breastfeeding practices, all of which are reinforced by oxytocin massage. Such integrative care ensures that mothers are physically prepared and mentally and emotionally equipped to navigate the postpartum period. Additionally, these programs can be tailored to meet mothers' cultural and personal preferences, ensuring that the intervention is both accessible and acceptable to them. By promoting oxytocin massage as part of routine postpartum care, healthcare systems can provide mothers with a safe, non-pharmacological tool to improve their overall quality of life. This approach enhances maternal well-being and fosters stronger mother-infant bonding, ultimately supporting healthier family dynamics.

## Conclusion

This study has demonstrated that oxytocin massage significantly reduces stress and anxiety among postpartum mothers while simultaneously enhancing breastfeeding success. Through regular massage administration, mothers experienced lower cortisol levels, improved emotional well-being, and

OPEN ACCESS
e-ISSN: 2985-9808

increased breast milk production. These findings address the primary research questions by providing empirical evidence that oxytocin massage is an effective non-pharmacological intervention for postpartum care. Furthermore, the study highlights the physiological and psychological benefits of oxytocin stimulation, emphasizing its potential to improve maternal and infant health outcomes.

The value of this research lies in its contribution to both scientific knowledge and practical application in maternal healthcare. From a scientific perspective, the study enhances our understanding of oxytocin's role beyond its well-established physiological functions, shedding light on its psychological benefits during the postpartum recovery period. In terms of practice, this study underscores the importance of integrating oxytocin massage into postpartum care protocols, both in clinical settings and at home. Healthcare providers, including midwives and nurses, can incorporate oxytocin massage education into prenatal and postnatal programs to equip mothers with the skills to administer oxytocin themselves. This approach enhances maternal well-being and supports breastfeeding success, ultimately leading to improved health outcomes for both mother and child.

The sample size was relatively small, and the intervention period was limited, which may have influenced the generalizability of the results. Moreover, variations in individual responses to oxytocin massage, influenced by factors such as maternal health status and psychosocial conditions, further highlight the need for more extensive research. Future studies should focus on larger sample sizes, extended intervention periods, and diverse populations to validate these findings. Additionally, longitudinal studies examining the long-term effects of oxytocin massage on maternal mental health and infant development would provide valuable insights for refining postpartum care practices. Researchers and practitioners are encouraged to build upon this foundation, exploring innovative approaches to optimize maternal and infant health outcomes through non-pharmacological interventions.

## References

Adawiyah, R., Qonitun, U., Wijayanti, E. E., & Sari, D. K. P. (2024). Efektifitas Pijat Oksitosin dan Perawatan Payudara Terhadap Kelancaran ASI pada Ibu Postpartum (di Wilayah Kerja Puskesmas Montong). Merapi: Medical Research and Public Health Information Journal, 1(3), 1–11. https://journal.myrepublikcorp.com/index.php/MERAPI/article/view/129

Awaliyah, S. N., Rachmawati, I. N., & Rahmah, H. (2019). Breastfeeding self-efficacy as a dominant factor affecting maternal breastfeeding satisfaction. BMC Nursing, 18(1), 30. https://doi.org/10.1186/s12912-019-0359-6

Beck, C. T., & Watson, S. (2008). Impact of birth trauma on breast-feeding: a tale of two pathways. Nursing Research, 57(4), 228–236. https://doi.org/10.1097/01.NNR.0000313494.87282.90

Brockway, M., Benzies, K., & Hayden, K. A. (2017). Interventions to improve breastfeeding self-efficacy and resultant breastfeeding rates: a systematic review and meta-analysis. Journal of Human Lactation, 33(3), 486–499. https://doi.org/10.1177/0890334417707957

Buckley, S. J. (2015). Hormonal physiology of childbearing: Evidence and implications for women, babies, and maternity care. https://bpgmobile.rnao.ca/sites/default/files/hormonal-physiology-of-childbearing.pdf

Carrieri-Kohlman, V. (2005). Non-pharmacological approaches. Dyspnoea in Advanced Disease, 2005, 171–203.

Chan, M. Y., Ip, W. Y., & Choi, K. C. (2016). The effect of a self-efficacy-based educational program on maternal breastfeeding self-efficacy, breastfeeding duration and exclusive breastfeeding rates: A longitudinal study. Midwifery, 36, 92–98. https://doi.org/https://doi.org/10.1016/j.midw.2016.03.003

Dennis, C.-L., Falah-Hassani, K., & Shiri, R. (2017). Prevalence of antenatal and postnatal anxiety: Systematic review and meta-analysis. British Journal of Psychiatry, 210(5), 315–323. https://doi.org/10.1192/bjp.bp.116.187179

OPEN ACCESS
e-ISSN: 2985-9808

Ermiati, E., Salmaa, Q., Mutia, I., Parisa, G., Aini, A., Fitria, D., Daiatul, R., Indriyanti, D., & Srimurni, N. A. (2024). OXYTOCIN MASSAGE FOR POST PARTUM MOTHERS. Journal of Maternity Care and Reproductive Health, 7(1). https://doi.org/10.36780/jmcrh.v7i1.12277

Faiza, Z., Rachmawati, D., & Mujito, M. (2023). the Effect of Oxytocin Massage on Breast Milk Production in Postpartum Mothers. Jurnal Kesehatan Hesti Wira Sakti, 11(01), 128–138. https://doi.org/10.47794/jkhws.v11i01.495

Ghaedrahmati, M., Kazemi, A., Kheirabadi, G., Ebrahimi, A., & Bahrami, M. (2017). Postpartum depression risk factors: A narrative review. Journal of Education and Health Promotion, 6(1), 60. https://doi.org/10.4103/jehp.jehp_9_16

Gharaei, T., Amiri-Farahani, L., Haghani, S., & Hasanpoor-Azghady, S. B. (2020). The effect of breastfeeding education with grandmothers' attendance on breastfeeding self-efficacy and infant feeding pattern in Iranian primiparous women: A quasi-experimental pilot study. International Breastfeeding Journal, 15(1), 1–10. https://doi.org/10.1186/s13006-020-00325-5

Hikmatun, K. D., Purbasari, D., Sari, D., Fitriyani, R., & Komariyah, O. (2024). Oxytocin Massage Education for Postpartum Mothers to Improve the Smooth Production of Breast Milk (Breast Milk). Asian Journal of Healthy and Science, 3(4), 197–202. https://doi.org/10.58631/ajhs.v3i4.118

James, L., Sweet, L., & Donnellan-Fernandez, R. (2020). Self-efficacy, support and sustainability – a qualitative study of the experience of establishing breastfeeding for first-time Australian mothers following early discharge. International Breastfeeding Journal, 15(1), 98. https://doi.org/10.1186/s13006-020-00337-1

Kartilah, T., & Februanti, S. (2024). Emotional Freedom Techniques and Oxytocin Stimulation Massages that Effectively Reduce Anxiety and Increase Smooth Breast Milk Production of Nursing Mothers. The Malaysian Journal of Nursing (MJN), 16(2), 46–53. https://doi.org/10.31674/mjn.2024.v16i02.005

Karyati, S., Indanah, I., & Siswanti, H. (2023). Pijat Oksitosin Dan Pijat Endorphin Untuk Meningkatkan Kualitas Tidur Ibu Nifas. Jurnal Ilmu Keperawatan Dan Kebidanan, 14(1), 307–314. https://doi.org/10.26751/jikk.v14i1.1718

Kingston, D., Dennis, C.-L., & Sword, W. (2007). Exploring breast-feeding self-efficacy. The Journal of Perinatal & Neonatal Nursing, 21(3), 207–215. https://doi.org/10.1097/01.JPN.0000285810.13527.a7

McGovern, L. M., O'Toole, L., Laws, R. A., Skinner, T. C., McAuliffe, F. M., & O'Reilly, S. L. (2024). An exploration of prenatal breastfeeding self-efficacy: a scoping review. International Journal of Behavioral Nutrition and Physical Activity , 21(1), 1–14. https://doi.org/10.1186/s12966-024-01641-3

Noviyani, F., & Listiyaningsih, M. D. (2024). Pijat Oksitosin pada Ibu Postpartum sebagai Upaya Meningkatkan Produksi Asi. Indonesian Journal of Community Empowerment (Ijce), 6(1), 30–34. https://doi.org/10.35473/ijce.v6i1.3140

Nugraha, N. D. (2023). Efektivitas Pijat Oksitosin terhadap Pengeluaran ASI pada Ibu Post Partum. Professional Health Journal, 4(2), 268–272. https://doi.org/10.54832/phj.v4i2.367

Oggero, M. K., Rozmus, C. L., & LoBiondo-Wood, G. (2024). Effects of prenatal Breastfeeding Education on Breastfeeding Duration Beyond 12 weeks: a systematic review. Health Education & Behavior, 51(5), 665–676. https://doi.org/10.1177/10901981231220668

Ohmura, N., Okuma, L., Truzzi, A., Esposito, G., & Kuroda, K. O. (2023). Maternal physiological calming responses to infant suckling at the breast. The Journal of Physiological Sciences: JPS, 73(1), 3. https://doi.org/10.1186/s12576-023-00860-w

Ollivier, R., Aston, D. M., Price, D. S., Sim, D. M., Benoit, D. B., Joy, D. P., Iduye, D., & Nassaji, N. A. (2021). Mental Health & Parental Concerns during COVID-19: The Experiences of New Mothers Amidst Social Isolation. Midwifery, 94, 102902. https://doi.org/https://doi.org/10.1016/j.midw.2020.102902

Osborne, C., Kolakowski, M., & Lobenstine, D. (2021). Pre-And Perinatal Massage Therapy: A Comprehensive Guide to Prenatal, Labor and Postpartum Practice. Jessica Kingsley Publishers.

OPEN ACCESS
e-ISSN: 2985-9808

Qian, J., Sun, S., Liu, L., & Yu, X. (2021). Effectiveness of non-pharmacological interventions for reducing postpartum fatigue: a systematic review protocol. Bmj Open, 11(10), e051136. https://doi.org/10.1136/bmjopen-2021-051136

Rahmawati, I. (2024). Application Of Oxytocin Massage In Postpartum Midwifery Care At Bina Sehat Primary Clinic. Journal of Health Research and Technology, 2(2), 160–163. https://doi.org/10.58439/jhrt.v2i2.232

Rahmita, H., & Mardiya, R. (2022). Efektivitas Pijat Oksitosin Terhadap Produksi Asi Pada Ibu Menyusui Di Bidan Praktik Mandiri (Bpm) Ernita Kota Pekanbaru. Al-Insyirah Midwifery: Jurnal Ilmu Kebidanan (Journal of Midwifery Sciences), 11(1), 79–83. https://doi.org/10.35328/kebidanan.v11i1.2141

Sandriani, S., Fitriani, R., & Rahayu, G. Z. (2023). Effect of oxytocin massage on breast milk production in postpartum mothers: A case study. Genius Midwifery Journal, 2(1), 30–38. https://doi.org/10.56359/genmj.v2i1.237

Shiraishi, M., Matsuzaki, M., Kurihara, S., Iwamoto, M., & Shimada, M. (2020). Post-breastfeeding stress response and breastfeeding self-efficacy as modifiable predictors of exclusive breastfeeding at 3 months postpartum: a prospective cohort study. BMC Pregnancy and Childbirth, 20(1), 730. https://doi.org/10.1186/s12884-020-03431-8

Shorey, S., Chee, C. Y. I., Ng, E. D., Chan, Y. H., Tam, W. W. S., & Chong, Y. S. (2018). Prevalence and incidence of postpartum depression among healthy mothers: A systematic review and meta-analysis. Journal of Psychiatric Research, 104, 235–248. https://doi.org/https://doi.org/10.1016/j.jpsychires.2018.08.001

Slomian, J., Honvo, G., Emonts, P., Reginster, J.-Y., & Bruyère, O. (2019). Consequences of maternal postpartum depression: A systematic review of maternal and infant outcomes. Women's Health, 15, 1745506519844044. https://doi.org/10.1177/1745506519844044

Smith, C. A., Hill, E., Denejkina, A., Thornton, C., & Dahlen, H. G. (2022). The effectiveness and safety of complementary health approaches to managing postpartum pain: A systematic review and meta-analysis. Integrative Medicine Research, 11(1), 100758. https://doi.org/https://doi.org/10.1016/j.imr.2021.100758

Staneva, A. A., Bogossian, F., & Wittkowski, A. (2015). The experience of psychological distress, depression, and anxiety during pregnancy: A meta-synthesis of qualitative research. Midwifery, 31(6), 563–573. https://doi.org/https://doi.org/10.1016/j.midw.2015.03.015

Sulaeman, R., Lina, P., & Purnamawati, D. (2019). Pengaruh pijat oksitosin terhadap pengeluaran ASI pada Ibu Postpartum primipara. Jurnal Kesehatan Prima, 13(1), 10–17. https://doi.org/10.32807/jkp.v13i1.193

Ujung, R. M., & Hutabarat, N. I. (2024). The Effectiveness of Oxytocin Massage and Lavender Aroma Therapy on The Optimization of Breastfeeding Breast-Feeding Women in North Tapanuli District. Contagion: Scientific Periodical Journal of Public Health and Coastal Health, 6(2), 1331–1342. https://doi.org/10.30829/contagion.v6i2.21546

Uvnäs-Moberg, K., & Petersson, M. (2010). Role of oxytocin and oxytocin related effects in manual therapies. The Science and Clinical Application of Manual Therapy, 147–162.

Wong, M. S., Mou, H., & Chien, W. T. (2021). Effectiveness of educational and supportive intervention for primiparous women on breastfeeding related outcomes and breastfeeding self-efficacy: A systematic review and meta-analysis. International Journal of Nursing Studies, 117, 103874. https://doi.org/https://doi.org/10.1016/j.ijnurstu.2021.103874

Woolhouse, H., Gartland, D., Mensah, F., & Brown, S. J. (2015). Maternal depression from early pregnancy to 4 years postpartum in a prospective pregnancy cohort study: implications for primary health care. BJOG: An International Journal of Obstetrics & Gynaecology, 122(3), 312–321. https://doi.org/10.1111/1471-0528.12837

Wulan, M. (2019). Pengaruh Kombinasi Pijat Oksitosin Dengan Aromaterapi Lavender Terhadap Produksi ASI Pada Ibu Post Partum Normal Di RSU Haji Medan Tahun 2018. Jurnal Teknologi Kesehatan Dan Ilmu Sosial (Tekesnos), 1(1), 17–26. https://e-journal.sari-mutiara.ac.id/index.php/tekesnos/article/view/923

Yim, I. S., Stapleton, L. R. T., Guardino, C. M., Hahn-Holbrook, J., & Schetter, C. D. (2015). Biological and Psychosocial Predictors of Postpartum Depression: Systematic Review and Call for Integration. Annual Review of Clinical Psychology, 11, 99. https://doi.org/10.1146/annurev-clinpsy-101414-020426

OPEN ACCESS
e-ISSN: 2985-9808

Zhang, X., Liu, Y., Li, T., Buntinx, F., & Vermandere, M. (2025). Exploring postpartum women's experiences, perspectives, and expectations in maternal health care at a Chinese maternity care center: a qualitative study. BMC Pregnancy and Childbirth, 25(1), 7. https://doi.org/10.1186/s12884-024-07087-6

**Corresponding author**
**Nur Partiwi can be contacted at: nurpartiwi23@gmail.com**