

Slow Stroke Back Massage on Postpartum Anxiety: A Quasi-Experimental Study

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Abstract: *The postpartum period is very susceptible to anxiety due to the transition process to parenthood and hormonal changes during childbirth and postpartum. Management of postpartum anxiety can be addressed through non-pharmacological interventions such as Slow Stroke Back Massage (SSBM). Women may feel more at ease and relaxed after this intervention, which may lessen their symptoms of anxiety. The purpose of the study is to ascertain how slow-stroke back massage affects postpartum anxiety. This study employed a one-group pre-test and post-test methodology in a quasi-experimental design. 76 postpartum mothers were included in the total sampling technique. The intervention was carried out for 3 days, with a duration of 10 minutes each session. The research instrument used the Zung Self-Rating Anxiety Scale (ZSAS) anxiety questionnaire. Data analysis was performed using the Wilcoxon test. The results of this study showed that there is an effect of slow stroke back massage on anxiety in postpartum women with a p-value of $0.000 < 0.05$. It can be concluded that slow-stroke back massage can reduce postpartum anxiety. SSBM should be integrated into standard postpartum care protocols to help mothers manage anxiety during this critical period.*

Keywords: *Anxiety, Postpartum, Slow stroke back massage*

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INTRODUCTION

The process of adjusting to both physical and psychological changes occur during the postpartum phase. Psychologically, a mother will feel psychiatric symptoms after giving birth. In reality, not all mothers show a picture of happy emotions. Symptoms are mood swings, feeling sad, crying frequently, loss of appetite, and anxiety. Anxiety is often overlooked and goes undiagnosed. If this continues, it can lead to postpartum psychological disorders. The reason why pregnant women, those in childbirth, and postpartum women are vulnerable to anxiety disorders is that there are still women who are not physically and mentally ready to become mothers. Anxiety is usually experienced in the first week of birth. This is because in the first week of *postpartum*, autonomic nervous activity is in an unstable state. ([Jahdi et al., 2016](#)).

Based on data from WHO (2021), the prevalence of postpartum blues in the world is 30-75%, and this lasts for 3-4 days and peaks on the fifth day of postpartum. The prevalence of postpartum anxiety in Asian countries is quite high and varies between 26% and 85% of postpartum women. ([Rachmah et al., 2021](#)). Based on Riskesdas data in 2022, the prevalence of postpartum anxiety in Indonesia was between 50% and 70%. The prevalence of mental disorders such as depression and anxiety disorders in the postpartum period is 19.8% ([Janna & Nurul Fadhilah Gani, Hasnah, 2023](#)). About 14 million people

out of Indonesia's population, mothers experience anxiety after childbirth as much as 22.4% (WHO, 2019).

Given that touch has special therapeutic effects for reducing physical exhaustion, enhancing blood circulation, encouraging the body to release toxins, and enhancing mental health, massage is one efficient technique to assist moms in unwinding. (Dheirani et al., 2024). Mothers feel more calm, comfortable, and refreshed after receiving the massage treatment. Mothers feel more calm, comfortable, and refreshed after receiving the massage treatment. This happens as a result of massage stimulating the body's inherent pain-relieving endorphin chemicals. (Nahamin et al., 2016). One promising approach to address postpartum anxiety is the implementation of Slow Stroke Back Massage (SSBM). Massage intervention for women in the early postpartum period has demonstrated the ability to reduce anxiety and promote relaxation. The administration of back massage intervention in the postpartum period has shown a decrease in depressive symptoms when compared to standard care.

What distinguishes the current research from previous studies is our focus on applying SSBM specifically to address anxiety symptoms in the early postpartum period using a standardized protocol with clear timing and duration parameters. While previous studies have examined various forms of massage therapy in postpartum care, our research specifically investigates SSBM's effect on anxiety using validated measurement tools in the Indonesian context.

Slow Stroke Back Massage: This type of massage involves moving the palm of the hand, particularly the thumb, in a circular motion over the patient's back. (Pratiwi et al., 2021). The massage movement is carried out 60 times for 10 minutes in each session and is carried out for 3 consecutive days. This technique is easy for anyone to do, and it is relatively inexpensive and can provide good benefits to the client's physiology and psychology. Stimulation carried out mainly in the thoracic nerve area 10-11-12 to lumbar 1 provides a pleasant sensation and fights discomfort or anxiety (Lalita et al., 2023). Slow Stroke Back Massage (SSBM) reduces the transmission of pain through small-diameter C and A-delta fibers by activating the faster transmission of A-beta sensory nerve fibres as neurotransmitters. It also closes the ray gate for the transmission of pain impulses, preventing anxiety. (Thomas Ari Wibowo, 2022), (Sihaloho et al., 2020). Health services for postpartum mothers need to be carried out in order to achieve an optimal life for both mothers and babies. One form of service to maximize the stability of the mother's mental health condition is to provide *back massage* intervention as an effort to prevent anxiety (Lalita et al., 2023). Researchers selected the Slow Stroke Back Massage intervention because it is easy for anyone to perform, can be done at home with support from a spouse or family member, and is cost-effective for reducing anxiety in postpartum mothers. The purpose of this study was to ascertain how slow-stroke back massage affected postpartum anxiety.

METHOD

This study uses a one-group pretest-post-test design and is quasi-experimental. The Mayong II Jepara Health Center hosted the study from February to April of 2024. Postpartum women who gave birth during Puskesmas Mayong II made up the study's population. A complete sampling technique was used to pick the 76 respondents that made up the sample. The inclusion criteria for this study were women in postpartum days 1 to 7, no injury to the area to be massaged (back region), no complications in the postpartum period, and willingness to participate as a respondent. The exclusion criteria were having rib or vertebra fractures, burns, reddish areas on the skin, open wounds in the back area, swelling or tumors, the presence of hematomas or bruises, elevated skin temperature, and the presence of skin diseases. The independent variable of the study was a slow-stroke back massage, while the dependent variable was anxiety in postpartum women. The research instrument used was the Zung Self-Rating Anxiety Scale (ZSAS) anxiety questionnaire, which is a 20-item self-report assessment device that measures anxiety levels based on scoring in four categories: cognitive, autonomic, motor, and central nervous system symptoms. Each item is scored on a 4-point scale (1-4), with total scores ranging from 20 to 80. Scores of 20-44 indicate normal anxiety levels, 45-59 mild to moderate anxiety, 60-74 moderate to severe anxiety, and 75-80 severe anxiety. The ZSAS has been validated with an internal consistency (alpha) of 0.82 and a test-retest reliability of 0.71.

A standardized slow-stroke back massage routine served as the foundation for the intervention. Following an explanation of the process, all participants gave their informed consent prior to the research being conducted. After that, participants filled out an identity document. Anxiety levels were measured both before and after the intervention using pre-test and post-test evaluations.

. The slow stroke back massage intervention was performed once daily for 10 minutes over 3 consecutive days. The massage was carried out with 60 slow, rhythmic strokes per session, focusing on the thoracic area (10 to 12) and lumbar 1. Since the variables under investigation were categorical data, the Wilcoxon test was employed in the data analysis process. The University of Muhammadiyah Kudus' Ethics Committee granted ethical approval for this study under approval number 65/Z-7/KEPK/UMKU/I/2024.

RESULTS

Table 1. Characteristics of Respondents

Variable	f	%
Age		
<20 years	3	3.9
20-35 years	67	88.2
>35year	6	7.9
Education		
Elementary School	18	23.7
Junior high school	27	35.5
Senior High School	18	23.7
University	13	17.1
Parity		
Primipara	17	22.4
Multipara	54	71.1
Grandemultipara	5	6.6
Occupation		
Housewife	31	40.8
Civil servant	10	13.2
Private	35	46.1
Total	76	100

Table 1 shows that, judging from the characteristics of the most respondents, 67 people (88.2%) are aged 20-35 years old, 67 people (88.2%) have a junior high school education (SMP), and the most multipara parity is 54 people (71.1%). The most respondents were employed by private companies, as many as 35 people (46.1%).

Table 2. Anxiety before the treatment of Slow Stroke Back Massage in the postpartum

Anxiety	f	%
Mild Anxiety	16	21.1
Moderate Anxiety	48	63.2
Severe Anxiety	12	15.8
Total	76	100.0

Based on the table. 2 Most of the anxiety before the treatment of Slow Stroke Back Massage in the postpartum with moderate anxiety was as many as 48 respondents (63.2%).

Table 3. Anxiety after Slow Stroke Back Massage Treatment in Postpartum

Anxiety	f	%
Mild Anxiety	69	90.8
Moderate Anxiety	7	9.2
Severe Anxiety	0	0
Total	76	100.0

Based on Table 3, it shows that most of the anxiety after the treatment of slow stroke back massage in the postpartum with mild anxiety is as many as 69 respondents (90.8%).

Table 4. The Effect of Slow Stroke Back Massage on Postpartum Anxiety

Variable	ρ value
Anxiety before the intervention	0.001
Anxiety after the intervention	

Based on Table 4, it can be seen that anxiety before the intervention and after the intervention is 46.00 with a ρ value of 0.000 (≤ 0.05), meaning that there is an effect of slow stroke back massage on postpartum anxiety.

DISCUSSION

Based on the characteristics of the respondents, most mothers in this study had multipara parity. Postpartum mothers often need practical information on how to breastfeed, hold, calm, and care for a newborn. Mothers anticipating the birth of their second or subsequent child typically have different concerns compared to first-time mothers. Anxiety in this context represents a person's emotional reaction related to external factors and their defense mechanism in facing problems (Nahamin et al., 2016). In particular, it appears as a subjectively experienced, interpersonally conveyed emotional reaction without a distinct object that is marked by bewilderment and anxiety over unpredictable future events and is linked to emotions of powerlessness and uncertainty. (Lombogia, 2020)(Bamijoko-Okungbaye, 2020).

Postpartum maternal anxiety is often overlooked and not properly addressed. Many mothers struggle alone in the immediate postpartum period. They sense that something is wrong but cannot identify what is happening. Health professionals play a crucial role in addressing anxiety in postpartum mothers by providing care, education, and support. Their involvement can give mothers the confidence to maintain a positive outlook in adapting to their new roles. (Wan Anita, Lita Nafratilova, 2023). In line with Elizabeth's research et al. (2023), it has been demonstrated that aromatherapy and back massage greatly lessen postpartum depression symptoms in mothers. During the postpartum phase, this treatment aids in pain relief, relaxation, and better sleep quality. (Lalita et al., 2023).

An increasingly popular adjunct therapy to reduce stress and enhance relaxation and well-being during pregnancy is massage, which involves the methodical touch and manipulation of the body's soft tissues. It also serves as an alternative to pharmacological or invasive analgesia during childbirth and the postpartum period. Massage has shown benefits for pregnant women with anxiety, depression, and leg and back pain and has demonstrated significant advantages in pain perception during labor and in the postpartum period (Saidah Ariany, 2021).

The Slow Stroke Back Massage (SSBM) stimulus affects the peripheral nervous system and is transmitted to the hypothalamus through the spinal cord pathway. The hypothalamus responds to this stimulus by releasing endorphins and reducing cortisol by releasing corticotropin (Widyawati et al., 2022). By engaging in these activities, parasympathetic neural activity rises and sympathetic nerve activity falls. Serotonin and dopamine are two chemicals that are stimulated by endorphin release and can lower anxiety and trigger a relaxing response. (Setiawan et al., 2023).

Consistent with the research results of Zahra Moladi, et al, (2017) there was no initial statistically significant difference between the two groups, with the arithmetic mean and standard deviation of fatigue severity being 48.25 ± 7.46 in the control group (before the intervention) and 51.15 ± 9.61 in the intervention group ($p < 0.001$). Following the massage procedure, the control group's exhaustion severity mean was 47.25 ± 8.32 , whereas the intervention group's was 40.32 ± 13.98 . This difference was statistically significant ($P < 0.000$). ([Moradi et al., 2017](#)). Massage eases anxiety, eases emotional tension, and maintains a healthy balance between the parasympathetic and sympathetic nervous systems. ([Elkheshen et al., 2017](#)). Our investigation indicates that massage has therapeutic effects for the circulatory, lymphatic, neurological, musculoskeletal, and integumentary systems. This study has important therapeutic ramifications since slow stroke back massage is a non-pharmacological treatment that is simple to provide and has few side effects, so patients are more likely to accept it and benefit from it right away.

Our analysis of the results suggests that massage given to postpartum mothers can provide a sense of calm and comfort during breastfeeding, thereby increasing the posterior pituitary response to produce oxytocin, which can enhance the letdown reflex and breast milk production. Loving massage affects stress levels and prolactin hormone levels, particularly for first-time mothers. Natural painkillers called endorphins are released when the body is stimulated by massage. Additionally, endorphins produce pleasurable and comforting feelings, which lessen mother worry. Postpartum maternal anxiety can inhibit the release of colostrum and potentially affect infant growth ([Wan Anita, dan Lita Nafratilova, 2023](#)). The mechanism of massage in reducing depression involves slow, rhythmic movements that can trigger the breakdown of uric acid and calcium crystals that accumulate in the blood and impede circulation. This improves blood flow and optimizes the delivery of nutrients and oxygen throughout the body ([Tannous et al., 2015](#)).

Additionally, massage can stretch the body's muscles and stimulate the nerves, which then transmit signals to the hypothalamus. Upon receiving these signals, the hypothalamus instructs the body to reduce or temporarily halt the production of stress hormones such as cortisol, adrenaline, and norepinephrine, while increasing the production of comfort-inducing hormones like endorphins, dopamine, oxytocin, and serotonin. This creates a feeling of relaxation and comfort, potentially reducing depression experienced by patients ([Saidah Ariany, 2021](#))([Patonengan et al., 2023](#)).

According to Jahdi F. et al. (2020), there were no statistically significant differences between the experimental and control groups' mean anxiety scores prior to intervention ($P=0.268$), but there was a significant difference between the groups' anxiety scores immediately after massage and the next morning ($p < 0.001$). Additionally, there were no significant differences in age ($P=0.333$), education ($P=0.427$), or medication during labor and postpartum ($P=0.412$). ([Jahdi, F., Mehrabadi, M., Mortazavi, F. & Haghani, 2020](#)).

The limitations of this study include not examining other factors that could affect postpartum mothers' anxiety, such as family support, especially from husbands. Additionally, this study did not employ randomization in recruiting and assigning participants and involved a relatively small sample size. This research provides new insights about the benefits of physical touch, specifically using the slow stroke back massage technique, to address anxiety in postpartum mothers, but further research with more robust methodologies is warranted.

CONCLUSION

Based on the results of the study, it can be concluded that slow stroke back massage can effectively reduce anxiety in postpartum women. A slow stroke back massage is an accessible intervention that can be performed by anyone, at any time, without financial cost. This technique promotes relaxation, reduces tension in the back area, and increases endorphin levels, contributing to improved emotional well-being. We recommend that slow stroke back massage be integrated into maternal and child health services as a standard intervention for postpartum care. Healthcare providers should be trained in this technique to support mothers during the critical postpartum period. Future studies should incorporate

randomized controlled designs with larger sample sizes and explore the integration of SSBM with other complementary therapies for comprehensive postpartum care

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AUTHOR CONTRIBUTION

Author 1 helped with data gathering, processing, and display. The articles were prepared with assistance from Author 2. Author 3: Supervise, revise, and write manuscripts. All authors read and accepted the final manuscripts

ETHICAL APPROVAL AND CONSENT

The University of Muhammadiyah Kudus' Ethics Committee granted ethical permission under the number 65/Z-7/KEPK/UMKU/I/2024. In compliance with the Declaration of Helsinki, informed consent was acquired from each individual participant included in the study.

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CONFLICT OF INTEREST

The authors hereby declare that there's no conflict of interest in this study, either to any institutions or individuals.

DATA AVAILABILITY STATEMENT

Due to ethical and privacy concerns, the data supporting the study's conclusions are not publicly accessible. However, Universitas Muhammadiyah Kudus has granted permission for the related author to make them available upon reasonable request.

PROTOCOL REGISTRATION

This study was not registered.

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