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Application of Slow Deep Breathing Therapy in Reducing the Scale of Pain in Post Section Caesarea Mothers in Jasmine Room, dr. Soediran Mangun Sumarso Regional Hospital, Wonogiri

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Abstract

Background: Sectio caesarea (SC) is the act of removing the baby through an incision in the abdominal wall and uterus to save the mother and baby for several medical indications. Patients who undergo childbirth by SC usually feel various discomforts in the form of pain. One of the non-pharmacological actions that can be done to reduce pain is slow deep breathing. **Objective:** To find out the results of the slow deep breathing technique in reducing the pain scale in post-SC mothers in the Jasmine Room of dr. Soediran Mangun Sumarso Regional Hospital, Wonogiri. **Methods:** The research design used is a descriptive case study. **Results:** The application of the slow deep breathing technique for 2 days resulted in a decrease in the postoperative pain scale. In Mrs. Y, the postoperative pain scale with a pain scale of 7 (severe pain), the pain dropped to a scale of 3 (mild pain), while in Mrs. M the postoperative pain scale with a pain scale of 7 (severe pain) the pain dropped to a scale of 2 (mild pain). **Conclusion:** There was a decrease in the scale of post SC pain after the application of the slow deep breathing technique for 2 days

Keywords: Slow Deep Breathing Therapy, Pain, Section Caesarea

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1. BACKGROUND

Cesarean section (SC) is a surgical procedure to deliver a baby through an incision in the mother's abdomen and uterus, performed to save the lives of both mother and child for various medical indications such as fetal distress, prolonged labor, placenta previa, transverse lie, cephalopelvic disproportion, and preeclampsia (Nopriani & Utami, 2023). Cesarean delivery is one method of childbirth involving a surgical incision in the abdominal wall to remove the baby (Sidharti et al., 2023). A cesarean section is a birthing process that involves making an incision in the uterus through the abdominal wall, aimed at minimizing risks to both mother and fetus during pregnancy

or labor, while preserving the health and life of both (Melani et al., 2023).

According to the World Health Organization (WHO), the average cesarean section rate in any country is about 5–15% per 1000 births worldwide. In the United States, the cesarean rate has increased to 29.1%. In the United Kingdom and Wales, it reaches 21.4%, and in Canada, it is 22.5%. These data indicate that globally, especially in developed countries, cesarean section rates are relatively high (Febrianawati et al., 2023). In Indonesia, the cesarean section rate has increased over the years, rising from 2% in 1986 to 16% in 2012 (Zalfa et al., 2022). The Basic Health Research (RISKESDAS) in 2018 showed that in Central Java province, there were 927,000 cesarean deliveries out of 4,039,000 normal deliveries (Astuti et al., 2024).

A cesarean section is a high-risk procedure, and the impacts include complications such as bleeding, infection, anesthesia-related issues, pulmonary embolism, and failure due to prolonged hypotension. Patients undergoing cesarean delivery often experience discomfort (Rangkuti et al., 2023). One of the main discomforts experienced by postoperative cesarean patients is pain, which results from the activation of pain receptors caused by tissue disruption due to surgical incisions. This pain can also lead to activity limitations, such as disability (patients fear movement, resulting in restricted mobility) and functional limitations (inability to stand, walk, or move freely), all of which are due to the pain experienced (Utami & Novryanthi, 2024).

The severity of postoperative pain depends on individual physiological and psychological factors. Non-pharmacological methods are not replacements for medication but are necessary to shorten ongoing painful episodes. In cases where severe pain lasts for hours or days, combining non-pharmacological and pharmacological methods may be the most effective way to manage pain, such as through slow, deep breathing exercises (Nurfadlilah et al., 2024).

Slow deep breathing, also known as deep breathing, is a relaxation technique that reduces pain by stimulating the central nervous system—the brain and spinal cord—to produce endorphins, which act as natural pain inhibitors. Slow deep breathing is a conscious effort to regulate breathing slowly and deeply (Rustini et al., 2022). Based on research conducted by Delyka et al. (2022), there was a noticeable change in pain scale

ratings among post-cesarean mothers before and after practicing slow deep breathing. Among 32 respondents, those who initially reported moderate pain levels dropped to mild pain after performing the slow deep breathing technique, with 27 respondents reporting mild pain and only 5 still experiencing moderate pain. Similarly, research by Mariani & Murhan (2023) showed a decrease in pain scores, from an average of 6.23 before the slow deep breathing technique to 3.14 afterward.

Deep breathing relaxation or slow deep breathing is a form of nursing care where patients are taught how to perform deep and slow breaths (holding inhalation maximally) and how to exhale slowly (Delyka et al., 2022). This technique aims to reduce tension and anxiety by increasing self-awareness through focused attention on breathing. Deep breathing helps regulate the sympathetic nervous system, thereby reducing pain levels. Breathing relaxation can reduce muscle tension and stimulate the release of endorphin hormones, which help block pain signals to the brain (Sanjaya et al., 2024).

Preliminary study results conducted on February 1, 2025, in the Jasmine Room revealed that two respondents experienced varying levels of pain. The first respondent, on their second day post-cesarean surgery, had a pain score of 4, while their pain level was rated at 5 on the first postoperative day. The second respondent, on the first day after cesarean surgery, had a pain score of 8. Both respondents admitted they did not know how to manage post-surgical wound pain.

Based on the background outlined above, the author is interested in conducting a study titled: "The Application of Slow Deep Breathing Technique in Reducing Pain Scale in Post-Cesarean Mothers in the Jasmine Room of dr. Soediran Mangun Sumarso Regional Hospital, Wonogiri.

2. METHODS

The research method used in this study was a descriptive case study design aimed at providing an overview of the application of the slow deep breathing technique to reduce pain levels in post-cesarean section mothers in the Melati Room of dr. Soediran Mangun Sumarso Regional Hospital, Wonogiri. The primary tool for data collection was the Numerical Rating Scale (NRS), which was used to measure pain intensity. The implementation procedure involved measuring pain levels before and after the application of the slow deep breathing technique. This therapy was conducted

twice daily (morning and evening) for two consecutive days, with each session lasting approximately 10–15 minutes.

The study subjects consisted of two post-cesarean section patients who met the inclusion criteria. These included being on the first day post-cesarean section, experiencing pain, having moderate to severe pain levels, and agreeing to participate as respondents. Exclusion criteria were emergency conditions or contraindications for performing slow deep breathing such as pneumothorax, hemoptysis, extensive pleural effusion, and cardiovascular disorders.

The case description involved two respondents: Respondent I (Mrs. Y) and Respondent II (Mrs. M), both of whom met the established inclusion criteria. Based on observations and interviews conducted during the data collection phase, both respondents experienced postoperative pain following cesarean delivery. Subjective and objective data were gathered to identify nursing problems related to their condition. Mrs. Y was a 34-year-old housewife with a history of G1P1A0 pregnancy due to premature rupture of membranes (KPD). She gave birth on February 1, 2025, at 1:00 PM. Her pain was described as sharp, localized in the lower abdomen, continuous in nature, and rated at level 7 on the NRS. Mrs. M was a 32-year-old entrepreneur with a G1P0A0 pregnancy, also due to KPD, who delivered on February 1, 2025, at 10:00 AM. She reported similar pain characteristics, with a pain scale of 7, but described the pain as intermittent rather than continuous.

Data collection was conducted through anamnesis, interviews, observation, and documentation studies. The data analysis process employed qualitative methods, including data reduction, data presentation, and conclusion. Ethical considerations were maintained throughout the study, including obtaining informed consent, ensuring anonymity, and maintaining confidentiality to protect the rights and privacy of the participants.

3. RESULTS

Wonogiri dr. Soediran Mangun Sumarso Regional Hospital Wonogiri, is a government-owned general hospital and one of the type B hospitals located in Wonogiri Regency, Central Java. This hospital offers comprehensive health services, supported by specialist and subspecialist doctors, as well as well-equipped medical facilities. Additionally, dr. Soediran Mangun Sumarso Regional Hospital Wonogiri serves as a referral hospital for the Wonogiri region and its surrounding areas.. Inpatient rooms for

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patients include specialized and intensive care units such as ICU/PICU/NICU, Isolation Rooms, and Infant Care Rooms. General patient care rooms include infant care rooms, as well as various classes of care rooms, ranging from super VIP to III class care rooms.

Implementation Results

This implementation is a descriptive study aimed at determining the results of applying slow deep breathing to reduce the pain scale in post-operative cesarean section patients at dr. Soediran Mangun Sumarso Regional Hospital, Wonogiri. The sample in this study consisted of 2 respondents who were Post SC patients in the Jasmine room of dr. Soediran Mangun Sumarso Regional Hospital, Wonogiri. The implementation was conducted directly by the researcher with the respondents. The results of the implementation are as follows:

Table 1. Pain Scale in Post-SC Patients Before Being Given Slow Deep Breathing at dr. Soediran Mangun Sumarso Regional Hospital, Wonogiri

Respondent	Date	Pain Scale	Category
Mrs. Y	February 1, 2025	7	Severe Pain
Mrs. M	February 1, 2025	7	Severe Pain

Table 2 shows that before being given the slow deep breathing therapy, the pain scale on the first day before the intervention was categorized as severe pain. For patients Mrs. Y and Mrs. M, both with a pain scale of 7.

Table 2. Pain Scale in Post-SC Patients After Being Given Slow Deep Breathing therapy at dr. Soediran Mangun Sumarso Regional Hospital, Wonogiri

Respondent	Date	Pain Scale	Category
Mrs. Y	February 2, 2025	3	Mild Pain
Mrs. M	February 2, 2025	2	Mild Pain

Table 2 shows that after slow deep breathing technique, the patients' pain scale was categorized as mild. For patients Mrs. Y with a pain scale of 3, and Mrs. M with a pain scale of 2.

Table 3. Development of Pain Scale in Post-SC Patients Before and After Slow Deep Breathing therapy at dr. Soediran Mangun Sumarso Regional Hospital, Wonogiri

Respondent	Day 1 - February 1, 2025		Day 2 - February 2, 2025	
	Before	After	Before	After
Mrs. Y	7 (Severe Pain)	6 (Moderate Pain)	6 (Moderate Pain)	3 (Mild Pain)
Mrs. M	7 (Severe Pain)	5 (Moderate Pain)	5 (Moderate Pain)	2 (Mild Pain)

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Table 3 showed that the results of applying slow deep breathing had an effect on reducing the pain scale in post-cesarean section mothers on the first and second days.

Table4. Comparison of the Application of the Slow Deep Breathing therapy on the Intensity of Pain in Post-Cesarean Section Mothers

Respondent	Pre-intervention	Post-intervention
Mrs. Y	7	3
Mrs. M	7	2

Table 4 presents data on the pain scale before and after administering the slow deep breathing technique on day 0 and day 1 post-cesarean operation, respectively. Both respondents experienced a decrease in pain scale.

4. DISCUSSION

Pain Scale in Post-SC Patients Before Slow Deep Breathing Implementation

Based on Table 1, it was found that before undergoing slow deep breathing therapy, patients were categorized under severe pain on the post SC day 0 scale. Patient Mrs. Y had a pain score of 7, while patient Mrs. M also reported a pain score of 7. Both respondents complained about surgical wound pain, described as sharp or stabbing, and noted that the pain intensified when moving. Pain is an unpleasant sensory and emotional experience associated with actual or potential tissue damage; it is more than just a single sensation caused by specific stimuli. Unaddressed surgical pain can have severe consequences that hinder the healing process (Hafiah & Safitri, 2022).

According to Umami et al. (2021), pain is the most common issue experienced by patients after undergoing a cesarean section surgery. Patients experiencing high levels of post-surgery pain require special attention, as it may affect their ability to breastfeed and care for their newborns. This aligns with the study conducted by Febiantri & Machmudah (2021), which highlighted that pain following a caesarean section is primarily due to tissue disruption from incisions in the abdominal area, causing changes in tissue continuity and resulting in pain perception. Post-caesarean pain can lead to other complications, such as discomfort during early mobilization due to the intensity of pain experienced after surgery.

Pain Scale in Post-SC Patients After Slow Deep Breathing Implementation

Based on Table 2, after undergoing slow deep breathing therapy, both

patients' pain levels dropped significantly. On the first postoperative day, patient Mrs. Y's pain level decreased to a score of 3, while Mrs. M's pain level dropped to a score of 2. Pain is a personal and subjective experience, and no two individuals perceive pain in the same way. Pain complaints can cause discomfort, interfering with daily activities. One possible intervention is practicing relaxation techniques, which reduce sympathetic nervous system activity, restore balance to the body, normalize pupil dilation, hearing, blood pressure, heart rate, respiration, circulation, and relax muscles (Pangestu et al., 2022).

Caesarean section (CS) is a method of delivery involving an incision in the uterus through the abdominal wall, aimed at minimizing risks to both mother and fetus during pregnancy or labor and ensuring maternal and fetal health (Melani et al., 2023). Due to the surgical procedure, patients often experience discomfort due to pain, which is subjectively perceived as an unpleasant sensory and emotional experience related to actual or potential tissue damage (Multazam et al., 2023).

Combining pharmacological and non-pharmacological interventions has proven effective in managing pain. Non-pharmacological pain management methods include affective touch, therapeutic touch, acupressure, deep breathing relaxation (slow deep breathing), music therapy, imagination techniques, distraction, hypnosis, cold or warm compresses, cutaneous massage stimulation, and Benson relaxation (Morita et al., 2020). Among these, slow, deep breathing is one of the most commonly used and accessible non-pharmacological techniques for alleviating pain. It involves teaching patients how to perform deep, slow breaths (maximizing inhalation) and gradually exhale (Delyka et al., 2022).

This aligns with the study by Elimanafe et al. (2024), which showed that pre-intervention assessments revealed 16 respondents experiencing moderate pain and one respondent with mild pain. After implementing slow deep breathing, 11 respondents still experienced moderate pain, while six reported only mild pain.

Development of Pain Levels in Post-SC Patients Before and After Slow Deep Breathing Implementation

According to Table 3, applying the slow deep breathing technique significantly reduced pain levels in both patients. For example, Mrs. Y's pain score was initially 7 on day 0 post-surgery but decreased to 6 after the intervention and further dropped to 3 on day 1. Similarly,

Mrs. M started with a pain score of 7, reduced to 5 after the intervention, and reached a score of 2 on day 1. The technique was applied over two days, each session lasting approximately 5–10 minutes. Slow deep breathing stimulates the central nervous system—specifically the brain and spinal cord—to produce endorphins, which act as natural pain inhibitors (Rustini et al., 2022).

Several studies have shown that deep breathing relaxation effectively reduces post-operative pain. Significant pain reduction occurs within 5–10 minutes of applying the technique, helping lower heart rate, blood pressure, respiratory rate, and muscle tension (Cole, 2021). This finding supports the study by Delyka et al. (2022), which observed 32 respondents. Initially, all were categorized under moderate pain, but after the intervention, 27 reported mild pain, while five remained in the moderate category.

Comparison of Pain Intensity in Post-Section Cesarean Mothers Before and After Slow Deep Breathing Implementation

As shown in Table 4, both respondents experienced significant reductions in pain scores after receiving slow deep breathing therapy. Respondent Mrs. Y began with a pain score of 7 on day 0 post-operation and saw it drop to 3 on day 1. Meanwhile, Mrs. M's pain score fell from 7 to 2 within the same timeframe. Both participants reported feeling less pain and more relaxed after learning how to apply the technique independently.

This aligns with the findings of Safitri & Mualifah (2022), who stated that slow deep breathing helps relax skeletal muscles affected by spasms caused by increased prostaglandin levels, promoting vasodilation and improving blood flow to ischemic areas, thereby reducing pain. Slow deep breathing aims to reduce tension and anxiety, enhancing self-awareness by focusing attention on respiration. This technique regulates the components of the sympathetic nervous system, ultimately lowering pain levels (Sanjaya et al., 2024).

5. CONCLUSION

Based on the application of the slow deep breathing technique in reducing pain scale in post-cesarean section mothers at dr. Soediran Mangun Sumarso Regional Hospital Wonogiri, concludes that both respondents experienced severe pain before undergoing the slow deep breathing technique. After the intervention, both respondents reported a reduction in pain intensity, with their pain levels categorized as mild. The study also found that all

respondents experienced a decrease in pain levels after implementing the slow deep breathing technique. Additionally, a comparison of pain levels before and after the intervention revealed a significant decline in pain among post-cesarean mothers at the hospital. For instance, patient Mrs. Y's pain level decreased from 7 to 3, while patient Mrs. M's pain level dropped from 7 to 2.

For the community, it is recommended to practice the slow deep breathing technique independently as a non-pharmacological pain therapy. For hospitals, the findings of this research can serve as input for evaluation and potentially implementating non-pharmacological pain management techniques, such as slow deep breathing for post-cesarean mothers.

AUTHOR CONTRIBUTIONS

The author contributes in conceptualization, data collection and analysis Indri Magfiroh Rahmawati, Zulfa Mahdiatur Rasyida, Sumardi. Writing and manuscript revisions: Indri Magfiroh Rahmawati.

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CONFLICT OF INTEREST

The authors declare that there are no conflicts of interest in this research.

DATA AVAILABILITY STATEMENT

The data are available from the corresponding author upon reasonable request.

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