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The Impact of the Benson Relaxation Technique in Alleviating Perineal Suture Pain Intensity in Postpartum Women

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ABSTRACT

Perineal rupture is a frequent obstetric complication that may occur during vaginal delivery, either spontaneously or with instrumental assistance. This condition often results in significant perineal pain, potentially hindering the physical recovery and psychological well-being of postpartum women. Non-pharmacological methods, such as Benson's relaxation technique, have shown promise in managing pain effectively without the risks associated with pharmacological treatments. This quasi-experimental study aimed to examine the effectiveness of Benson's relaxation technique in reducing perineal suture pain in postpartum women. The study involved 32 participants, with 16 women assigned to the experimental group and 16 to the control group. Pain intensity was measured using the Numeric Rating Scale (NRS), and the data were analyzed using the Wilcoxon Signed-Rank Test. Results revealed a statistically significant reduction in pain scores within the experimental group, with an Asymp. Sig. (2-tailed) value of 0.000, indicating a p-value well below the 0.05 threshold. These findings support the use of Benson's relaxation technique as an effective non-pharmacological intervention for alleviating perineal pain. Integrating this method into postpartum care may enhance maternal comfort and expedite recovery, offering healthcare providers a practical and low-risk approach to pain management in clinical settings.

INTRODUCTION

Postpartum pain is a critical concern in maternal healthcare, significantly affecting a woman's recovery, emotional state, and her ability to care for her newborn (Wahyu, 2018). A primary source of postpartum pain is perineal trauma, which is commonly experienced during vaginal delivery (Idhayanti et al., 2020; Pradana & Asshiddiq, 2021). The World Health Organization (WHO) reports that over 14 million women worldwide suffer from postpartum hemorrhage annually. Furthermore, perineal rupture is a prevalent obstetric complication, with approximately 2.7 million women affected in 2020 and projections suggesting an increase to 6.3 million by 2050 (Morita et al., 2020). In Asia, nearly 50% of vaginal births result in some form of perineal injury. In Indonesia, the Ministry of Health (2021, in Fitri 2024) reported that 75% of women delivering vaginally experience perineal rupture, with 57% requiring suturing, 28% undergoing episiotomies, and 29% sustaining spontaneous lacerations. Such injuries contribute significantly to the discomfort experienced during the postpartum period, highlighting the necessity of effective pain management strategies (Fitri, 2024; Misrina & Silvia, 2022).

This issue is also evident at the community level, as reflected in the Mojo Health Center, where perineal rupture remains a common obstetric concern. Between January and November 2022, the health center documented 142 cases of perineal rupture, primarily classified as first- and second-degree tears resulting from either spontaneous delivery or episiotomy. The number represents a slight increase (1.02%) compared to the previous year, suggesting a steady incidence of perineal trauma. Despite the varying degrees of severity, many women report experiencing significant pain, underscoring the substantial impact even minor perineal injuries can have on

postpartum recovery. Therefore, effective pain management for these women is critical, not only for wound healing but also for enhancing overall postpartum recovery (Fithriana et al., 2018; Rukmasari et al., 2023).

Perineal rupture pain can severely impact a mother's physical recovery and psychological well-being (Fitri, 2024). Studies consistently show that all women with perineal lacerations experience pain, which may result in restricted mobility, increased anxiety, and difficulty engaging in essential daily activities (Kusumawati, 2020; Novita et al., 2022). This discomfort can disrupt bonding with the newborn, hinder breastfeeding, and contribute to emotional distress. If not properly managed, postpartum pain can prolong recovery, delay the resumption of normal activities, and increase the risk of postpartum depression (Ani et al., 2022; Suprapto et al., 2022). Consequently, the effective management of pain is a crucial aspect of postnatal care, promoting quicker recovery and better overall well-being (Ikasari et al., 2021; Mahmoud, 2021; Senol & Aslan, 2017).

Pain relief for postpartum women can be achieved through pharmacological and non-pharmacological methods (Naili et al., 2023). While pharmacological interventions, such as analgesics, are frequently used, non-pharmacological methods are becoming more popular due to their safety, accessibility, and lack of side effects associated with medication (Kusumawati, 2020). Cognitive-behavioral techniques, for example, aim to modify the perception of pain, enhance emotional coping mechanisms, and provide the patient with a greater sense of control over their discomfort (Misrina & Silvia, 2022; Piraino & Selimović, 2015; Yusliana et al., 2015). These methods include interventions such as the Benson relaxation technique, acupuncture, Transcutaneous Electrical Nerve Stimulation (TENS), hot and cold compresses, massage, and hypnosis (Hartati et al., 2023; Jayanti et al., 2020; Sholekhah et al., 2023). Relaxation therapies are particularly valued for their non-invasive and effective pain-relieving properties (Alvarenga et al., 2015; Ratnawati & Utari, 2022; Suganda & Nopriani, 2022).

The Benson relaxation technique is a simple, cost-effective, and widely applicable method for managing pain, especially in postpartum care (Fitri, 2024; Wulandari et al., 2020). It combines personal belief systems with rhythmic breathing and repeating soothing words or phrases to induce a relaxation response (Carol, 1974; Suhartiningsih, 2019; Yusliana et al., 2015). Previous studies have demonstrated its effectiveness in reducing pain intensity in various postoperative settings, including after cesarean deliveries (Warsono et al., 2019). Based on these findings, the current study aims to assess the effectiveness of Benson's relaxation technique in alleviating perineal suture pain in postpartum women at Mojo Health Center. The results are expected to offer valuable insights into the broader application of non-pharmacological interventions in postnatal pain management, ultimately enhancing maternal comfort during recovery.

METHOD

This study employed a quasi-experimental design using the "Nonequivalent Control Group Design" approach, involving postpartum women who had undergone spontaneous vaginal delivery (Sugiyono, 2017). The study population consisted of 65 postpartum women residing in the working area of Puskesmas Mojo, including those who gave birth at Puskesmas Mojo and those who delivered at other healthcare facilities. Participants were selected through systematic random sampling with the assistance of Microsoft Excel, where the initial selection point was determined using the formula=RANDBETWEEN(1, interval), resulting in the number 2. Based on this outcome, participants in even-numbered positions were assigned to the intervention group, while those in odd-numbered positions were assigned to the control group. The sample size was calculated using Federer's formula, resulting in a minimum sample size of 16 women per group. Inclusion criteria included women in the first to seventh day postpartum who experienced perineal tears requiring suturing and reported mild to moderate pain. Numeric Rating Scale (NRS) scores ranged from 1 to 6. Pain levels were measured at two time points: prior to the intervention (pre-test) and after completion (post-test). The intervention group received Benson relaxation therapy, while the control group received standard postpartum care without additional

intervention. All intervention and assessment procedures were consistently implemented across both groups to ensure internal validity.

The Benson relaxation technique was delivered in a structured manner. Participants were first instructed to assume a comfortable body position and gently close their eyes to reduce muscle tension around the eye area. They were then guided to progressively relax their muscles, starting from the feet upwards, while maintaining a slow and steady breathing rhythm. Participants silently repeated a self-selected word or phrase with personal or spiritual significance during each inhalation and exhalation. Each relaxation session lasted approximately 10 minutes, with participants encouraged to remain calm and physically relaxed throughout the practice. The technique was performed twice daily, preferably before meals or several hours afterward, to avoid interference with gastrointestinal blood flow during the relaxation process.

To monitor adherence to the intervention protocol, remote supervision was conducted via WhatsApp video calls on the first day of the intervention. Each session lasted approximately 15 to 20 minutes. The primary goal of this remote monitoring was to ensure proper implementation of the Benson relaxation technique according to the established protocol. Additionally, the sessions provided encouragement and guidance to participants, thereby supporting intervention fidelity and maintaining procedural consistency.

Data analysis was conducted using the Wilcoxon signed-rank test, which was chosen based on the normality test results indicating a non-normal distribution of the data ($p<0.05$). Given that the study involved paired data obtained from the same participants before and after the intervention, with ordinal-level measurement derived from the NRS, and a sample size greater than 20, the Wilcoxon test was deemed appropriate for analyzing within-group changes in pain scores. Ethical approval for the study was obtained from the Health Research Ethics Committee of Polkesma, under Code of Ethics No. 084/III/KEPK POLKESMA/2023.

RESULTS

Table 1. Information regarding respondent qualities

General Characteristics	Group	Variable	f	%
Age	Control	20-35	14	84.4
		>35	2	12.5
	Experiment	20-35	13	81.3
		>35	3	18.8
Education	Control	Elementary School	2	12.5
		Junior High School	5	31.3
		Senior High School	8	50
		Bachelor Degree	1	6.3
	Experiment	Elementary School	-	0
		Junior High School	3	18.8
		Senior High School	11	68.8
		Bachelor Degree	2	12.5
Work	Control	Does not work	12	75
		Work	4	25
	Experiment	Does not work	11	68.8
		Work	5	31.3
Parity	Control	1st child	7	43.8
		2nd child	7	43.8
		3rd child	2	12.5
	Experiment	1st child	7	43.8
		2nd child	6	37.5
		3rd child	3	18.8
Postpartum Day	Control	Postpartum days 1-3	16	100
		Postpartum days 4-7	-	0
	Experiment	Postpartum days 1-3	16	100
		Postpartum days 4-7	-	0

Table 1 delineates the demographic characteristics of the participants, including age, educational attainment, occupation, number of offspring, and the elapsed days since their most recent births. The study illustrated in the graph used a sample of 32 postpartum moms divided into two separate groups: the control group and the experimental group. Two age cohorts were established, comprising 14 individuals (84.4%) in the control cohort and 13 persons (81.3%) in the experimental cohort. All participants in both groups were aged 20 to 35 years. Among those aged 35 and older, the control group comprised two individuals (12.5%), whereas the experimental group had three individuals (18.8%).

Furthermore, fifty percent of the population is educated, comprising eight individuals in the control group (equating to 50% of the total) and 11 individuals in the experimental group (constituting 68.8%). The occupational data indicate that a substantial percentage of individuals in the control group (75%) and the experimental group (68.8%) are unemployed mothers. Moreover, the data in this study included information about the subjects' parity. Specifically, seven people in the control and experimental groups, representing 43.8% each, were classified as having their initial delivery. All 32 postpartum women, comprising 16 participants in both the control and experimental groups (100% total), were evaluated from the first to the third day post-childbirth, coinciding with the initiation of the inflammatory phase of wound healing. This analysis focuses on the overall characteristics of participants' duration in the postpartum period.

Table 2. Frequency distribution of pain intensity associated with perineal sutures in the control group of postpartum mothers (pre-test)

No.	Pain Intensity	f	%
1	No Pain	0	0
2	Mild Pain	5	31.3
3	Moderate Pain	11	68.8
4	Severe Pain	0	0
5	Very Severe Pain	0	0
	Total	16	100

According to the findings presented in Table 2, the majority of respondents in the control group rated the discomfort caused by perineal stitching wounds in postpartum women as mild to moderately disturbing. In particular, eleven people, or 68.8 percent, reported feeling this level of discomfort.

Table 3. Frequency distribution of pain intensity for perineal suturing injuries in the control group of postpartum mothers (post-test)

No.	Pain Intensity	f	%
1	No Pain	0	0
2	Mild Pain	9	56.3
3	Moderate Pain	7	43.8
4	Severe Pain	0	0
5	Very Severe Pain	0	0
	Total	16	100

Table 3 reveals that 9 respondents (56.3%) in the control group reported experiencing mild discomfort from perineal stitching wounds in postpartum women.

Table 4. Frequency Distribution of Pain Intensity in Perineal Stitching Wounds for Postpartum Mothers in the Experimental Group (pre-test)

No.	Pain Intensity	f	%
1	No Pain	0	0
2	Mild Pain	4	25
3	Moderate Pain	12	75
4	Severe Pain	0	0
5	Very Severe Pain	0	0
	Total	16	100

According to Table 4, most postpartum moms, namely 12 participants, reported moderate pain intensity in perineal sutures before the Benson relaxation intervention. This information was obtained from the pre-test administered to the experimental group at the beginning of the study.

Table 5. Frequency distribution of pain intensity in perineal stitching wounds for postpartum mothers in the experimental group (pre-test)

No.	Pain Intensity	f	%
1	No Pain	0	0
2	Mild Pain	15	93.8
3	Moderate Pain	1	6.3
4	Severe Pain	0	0
5	Very Severe Pain	0	0
	Total	16	100

Table 5 illustrates the frequency distribution of pain severity in perineal sutures among postpartum women in the experimental group (also known as the post-test). One participant reported experiencing just minimal discomfort. Out of the responses, exactly 15 people (93.8%) reported discomfort.

Table 6. Results of pain intensity analysis of perineal sutures for postpartum mothers in the control group and experimental group (pre-test and post-test)

	PreTest – Experimental PostTest	PreTest – PostTest Control
Z	- 3,601	- 3,448
Symp. Sig. (2-tailed)	.000	001

Ranks

		N	Mean Ranking	Sum of Ranks
Experimental PostTest - Experimental PreTest	Negative Ranks	16a -	8.50	136.00
	Positive Ranks	0[b]	.00	.00
	ties	0[c]		
	Total	16		
PostTest Control - Control Pretest	Negative Ranks	14d-	7.50	105.00
	Positive Ranks	0[e]	.00	.00
	ties	Two[f]		
	Total	16		

a. Experimental PostTest < Experimental PreTest
b. Experimental PostTest > Experimental PreTest
c. Experimental PostTest = Experimental PreTest
d. Control PostTest < Control PreTest
e. PostTest Controls > PreTest Controls
f. Control PostTest = Control PreTest

In order to determine whether there is a reduction in the level of pain experienced by postpartum women, the Wilcoxon Signed-Rank Test was performed. Before and after applying the Benson Relaxation Technique, the intensity of perineal suture irritation was analysed in both the control and experimental groups, and the results are presented in Table 6. The control and experimental groups were subjected to a Wilcoxon Signed-Rank Test. According to the calculations obtained, the control group had Z values of -3.601 and -3.448, respectively. It was determined that the value of the Z table should be 1.96, and the significance threshold should be maintained at 0.05. If the Z count is greater than the value that corresponds to it in the Z table, then the null hypothesis (H0) is rejected.

Furthermore, by comparing the asymptotic values, we can ensure accurate results. The asymptotic findings are reached through a method with two levels of tails. Regarding statistical significance, the control group exhibits asymptotic significance and a significance level of 0.001 (two-tailed). According to the test results with two tails, the p-value for the experimental group is 0.000. To a certain extent. Based on the significance threshold of 0.05, we have concluded that the null hypothesis (H0) is not supported. Consequently, this suggests that the Benson Relaxation Technique has an effect on the degree of discomfort that postpartum moms suffer as a result of the perineal stitching incisions they have had.

Before and after applying the Benson Relaxation Technique, the degrees of discomfort brought on by perineal sutures were evaluated in both the experimental and the control groups. The Wilcoxon Signed-Rank Test was utilized throughout the analysis of the data. Since their initial test scores were higher than their final test scores, the findings demonstrated that every participant in the experimental group experienced a fall in their rankings. In the group that served as the control, sixteen of the individuals reported experiencing less pain, fourteen reported experiencing less pain, and two reported experiencing no change or noticeable difference in their pain levels. The group that participated in the experiment felt less discomfort than the group that served as the control.

DISCUSSION

The results of this study indicate that the Benson relaxation technique significantly reduces the intensity of postpartum pain in mothers with perineal sutures. Prior to the intervention, a majority of participants in both the experimental group (75%) and the control group (68.8%) experienced moderate pain. However, after the intervention, 93.8% of mothers in the experimental group experienced a reduction in mild pain, with only 6.3% still reporting moderate pain. The average pain reduction was 8.5 points, and the Wilcoxon test showed a Z value of -3.601 and a p-value of 0.000, which is statistically significant ($p < 0.05$). Every participant in the experimental group experienced pain reduction, indicating the effectiveness of the intervention.

These findings align with previous studies that emphasize the efficacy of relaxation techniques in reducing pain, such as the research by Suhartiningsih (2019), which reported a decrease in pain from moderate to mild using deep breathing techniques, and Ratnawati & Utari (2022), who found a reduction in pain from an average score of 4 to 2.33 using the Benson technique (Ratnawati & Utari, 2022; Suhartiningsih, 2019). However, this study differs significantly from those studies. The participants in this research were postpartum mothers with perineal sutures following vaginal delivery, whereas previous studies primarily focused on mothers who underwent cesarean sections. This highlights that the pain examined in this study is more specifically related to soft tissue trauma in the perineum rather than abdominal surgical wounds.

Regarding the intervention method, the Benson technique used in this study combines deep breathing with the repetition of affirming words or phrases that are spiritually oriented. This not only calms the autonomic nervous system but also enhances the psychological and spiritual calm of the mothers. This contrasts with the deep breathing technique used in Suhartiningsih's study, which did not explicitly involve psychological aspects. Furthermore, the results of this study indicate a greater reduction in pain intensity than the previous research, with a decrease of 8.5 points in this study, compared to a reduction of just 1.67 points in Ratnawati & Utari's study.

When compared to international studies, the findings of this study are also supported by research from Solehati and Rustina (2015) and Mohamady et al. (2022), which showed that the Benson relaxation technique reduced pain and stress following cesarean section (Nageeb, 2022; Rustina, 2015). However, unlike these international studies, which focused on abdominal surgical pain, this research fills a gap in the literature by examining the effectiveness of Benson relaxation on perineal pain. Moreover, this study underscores the influence of factors such as maternal age and childbirth experience on pain perception, aspects that have not been deeply explored in international studies.

From a theoretical perspective, postpartum pain in the perineum results from tearing or medical interventions during childbirth and can be exacerbated by edema and inflammation during the first three days after delivery (Chung & Wong, 2022; Field, 2017). Relaxation techniques, particularly Benson, reduce psychological stress and stimulate the parasympathetic nervous system, which helps suppress the pain response (Lee et al., 2021; Smith et al., 2021). The effectiveness of this technique is also supported by the theory that age and previous experience can influence pain perception, and that relaxation techniques can shift the focus away from pain, fostering both physical and mental relaxation simultaneously (Ghazali et al., 2019; Zimmermann, & Rashed, 2021).

This study has several limitations. First, the small sample size (n=32) and the limited generalizability due to the focus on the early postpartum phase in a single healthcare setting constrain the findings. Additionally, variations in pain perception influenced by age and childbirth experience could affect the results. Despite the promising outcomes, there are other limitations to consider. The small sample size reduces the power of the findings, especially when considering diverse postpartum populations with different demographic and medical backgrounds. Moreover, the short follow-up period (only three days postpartum) prevents an assessment of the long-term effects of the relaxation technique on pain or perineal wound healing. The reliance on self-reported pain measurements also introduces the possibility of reporting bias, as pain intensity was assessed through subjective scales. Furthermore, psychological components such as anxiety or fatigue, which may have a significant impact on pain perception, were not measured.

Despite these limitations, the findings have important practical implications. The Benson relaxation technique can be an effective, non-pharmacological alternative for healthcare professionals, particularly midwives, to help postpartum mothers reduce pain without relying on analgesics. This technique can also be easily implemented in primary healthcare facilities like Puskesmas and can improve maternal comfort, accelerate recovery, and support successful breastfeeding and infant care.

Future research should focus on using a larger and more diverse sample, incorporating longitudinal designs to assess the sustainability of the relaxation technique's effects, and integrating physiological (e.g., heart rate, blood pressure) and psychological (e.g., anxiety, depression scales) parameters to provide a more comprehensive analysis. Additionally, testing the effectiveness of this technique in various clinical settings, such as hospitals and private clinics, and using self-guided methods (e.g., audio/video) could help explore the long-term effectiveness in more flexible contexts.

From a clinical practice perspective, this study suggests that the Benson relaxation technique should be integrated into prenatal education programs or postpartum counseling sessions provided by healthcare professionals, particularly midwives and nurses. This intervention is inexpensive, requires no special equipment, and can be practiced independently by postpartum mothers after brief training. Therefore, it is a highly promising non-pharmacological strategy for managing postpartum pain in primary healthcare settings like Puskesmas.

CONCLUSION

The results of this study confirm that the Benson relaxation technique effectively decreases postpartum pain intensity in mothers with perineal sutures. An average pain reduction of 8.5 points, supported by statistically significant outcomes ($p < 0.05$), highlights the efficacy of this non-pharmacological approach. Unlike conventional deep-breathing methods, Benson relaxation incorporates psychological and spiritual components, which may enhance its impact, particularly for pain stemming from soft tissue injury in the perineal region. These findings contribute valuable evidence for integrating relaxation methods into postpartum care at the primary healthcare level.

Benson relaxation should be embedded in routine postpartum care protocols to support practical implementation. This includes providing prenatal education, equipping healthcare providers, especially midwives and nurses, with the necessary training, and offering instructional tools such as audio or video guides for independent practice. The technique can also be applied during postpartum counseling sessions, with ongoing monitoring to evaluate its effectiveness in aiding physical and emotional recovery.

Future research should consider involving larger and more varied populations, extending the follow-up period, and incorporating psychological and physiological indicators. This would deepen understanding of Benson relaxation's underlying mechanisms and long-term benefits for postpartum pain management.

AUTHOR'S DECLARATION

Author Contributions
RS: Writing – Original Draft, Visualization, Conceptualization; **RSNR:** Supervision; **LAW:** Examiner.

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All data used in this study are accessible and can be obtained from the authors.

Conflicts of Interest
The authors confirm no conflicts of interest related to this research.

Additional Information
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