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The Effect of Deep Breathing Relaxation Techniques on the Intensity of Pain in the First Stage of Labor in the Active Phase at Badaruddin Kasim Regional General Hospital

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Abstract, This study aimed to examine the effect of deep breathing relaxation techniques on labor pain intensity during the active phase of the first stage of labor at Badaruddin Kasim Regional General Hospital. Labor pain is a physiological process that can cause significant discomfort and anxiety for mothers, so effective and safe pain management strategies are crucial. This study used a pre-post intervention design involving 40 respondents. Data were analyzed using descriptive statistics and the Wilcoxon Signed Rank Test to compare pain intensity before and after the application of deep breathing relaxation techniques. The results showed that before the intervention, most respondents experienced severe labor pain, whereas after the intervention, pain intensity shifted mostly to moderate and mild levels. Statistical analysis showed a significant decrease in labor pain intensity after the intervention ($Z = -5.477$; $p < 0.000$). These findings indicate that deep breathing relaxation techniques have a significant effect in reducing labor pain during the active phase of the first stage of labor and can be recommended as a non-pharmacological pain management approach in maternity care.

Keywords: Deep Breathing Relaxation, First Stage Of Labor, Labor Pain Intensity, Non-Pharmacological Pain Management, Wilcoxon Signed Rank.

1. INTRODUCTION

Labor pain is a natural and unavoidable physiological process experienced by women during childbirth, especially in the active phase of the first stage of labor. During this phase, uterine contractions become stronger, longer, and more frequent, resulting in increased stimulation of pain receptors. Consequently, many women experience intense pain that can greatly affect their physical and emotional well-being.

Although labor pain is a normal component of the childbirth process, its intensity often leads to considerable discomfort and suffering. Severe pain may trigger anxiety, fear, and emotional distress, which can interfere with a mother's ability to cope effectively during labor. When pain is not properly managed, it may also hinder labor progress and adversely affect the mother's well-being (Wahyuni, 2023).

Therefore, effective pain management during labor is an essential element of quality maternity care. Proper pain management not only helps alleviate physical discomfort but also supports emotional stability and creates a more positive labor experience. Women who receive adequate pain management often feel more confident and relaxed throughout labor.

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Moreover, appropriate pain management can contribute to a smoother delivery process. When pain and anxiety are minimized, the mother's energy is preserved, and uterine contractions become more efficient. This condition can help shorten the duration of labor and lower the risk of complications.

Pain management during labor may be provided through both pharmacological and non-pharmacological methods. Pharmacological approaches, such as analgesics and anesthetics, are effective in reducing pain but may be associated with side effects for both the mother and the fetus. Additionally, some mothers prefer to avoid medication during labor due to personal, cultural, or medical reasons (Safitri, 2025).

Because of these limitations, non-pharmacological pain management methods have gained increasing attention in prenatal care. These approaches aim to relieve pain naturally without medication, making them safer and more acceptable for many women. Non-pharmacological techniques also encourage active participation of the mother during labor.

One commonly applied non-pharmacological method is the deep breathing relaxation technique. This technique involves slow, controlled, and rhythmic breathing patterns that help induce relaxation. By concentrating on breathing, mothers can divert their attention from pain and reduce bodily tension.

Physiologically, deep breathing relaxation increases oxygen intake and circulation, benefiting both the mother and the fetus. Adequate oxygenation helps reduce muscle fatigue and decrease uterine ischemia, which is a contributing factor to labor pain. Psychologically, this technique can lessen anxiety and promote a feeling of calmness.

Deep breathing relaxation is a simple, cost-effective, and easy-to-apply technique that can be taught to mothers during pregnancy or early labor. Its practicality and safety make it a valuable method for managing labor pain, particularly during the active phase of the first stage of labor.

Several factors, such as maternal age and parity, may influence the perception and intensity of labor pain. Women within the ideal reproductive age range and those with different parity experiences may respond differently to pain and pain management interventions. Understanding these characteristics is important for designing effective labor pain management strategies (Sihombing, 2025).

Evaluating the effectiveness of pain management interventions requires appropriate research design and statistical analysis. Comparative assessment of pain intensity before and after an intervention provides meaningful evidence of its impact. Non-parametric statistical

tests, including the Wilcoxon Signed Rank Test, are suitable for analyzing paired data related to pain intensity.

Evidence-based practice in maternity care depends on scientific studies that evaluate clinical intervention outcomes. Research findings that demonstrate significant reductions in labor pain help improve the quality of maternal healthcare and support the broader application of effective non-pharmacological techniques (Djafar, 2023).

Therefore, this study was conducted to examine the effect of deep breathing relaxation techniques on labor pain intensity during the active phase of the first stage of labor at Badaruddin Kasim Regional General Hospital. The findings are expected to provide scientific evidence supporting the use of deep breathing relaxation as part of standard labor pain management and serve as a reference for future research in maternity care.

2. RESEARCH METHODS

This study used a pre-experimental research design with a single-group pretest-posttest approach to examine the effect of deep breathing relaxation techniques on labor pain intensity. This design allows for comparison of pain levels before and after the intervention within the same group of participants, providing a clear picture of changes in pain intensity following the technique's implementation.

This study was conducted at Badaruddin Kasim Regional General Hospital and involved 40 respondents. A total sampling technique was employed, meaning all eligible women in the active phase of the first stage of labor during the study period were included. Respondents met the predetermined inclusion criteria, ensuring the relevance and suitability of the study sample.

Data collection included information on respondent characteristics such as age and parity. Labor pain intensity was measured before and after the application of deep breathing relaxation techniques using a standardized pain rating scale. This approach ensured consistency in pain measurement and allowed for accurate comparisons between pre- and post-intervention data.

Data analysis was performed using descriptive statistics to summarize respondent characteristics and pain intensity distribution. To determine differences in pain intensity before and after the intervention, the Wilcoxon Signed Rank Test was applied because the data were paired and did not require the assumption of a normal distribution. Statistical significance was set at a p-value less than 0.05, and the results were used to evaluate the effectiveness of deep breathing relaxation techniques in reducing labor pain intensity during the active phase of labor.

3. RESULTS AND DISCUSSION

Results

This article aims to present and analyze research findings related to differences in pain intensity before and after the implementation of specific interventions. Pain management is a crucial aspect of healthcare, particularly in improving patient comfort and quality of life. Therefore, studies examining the effectiveness of interventions in reducing pain are crucial as scientific evidence to support clinical practice.

The data presented in this article is based on a study involving 40 respondents, with analyses conducted using descriptive statistics and the Wilcoxon Signed Rank Test. Discussion includes respondent characteristics, including age and parity, as well as changes in pain intensity before and after the intervention. It is hoped that the results of this study will contribute to the development of evidence-based practice and serve as a reference for further research in the field of pain management and healthcare interventions.

Table 1. Number of Respondents.

Statistics	Respondent Age	Respondent Equality	Before the Pain	After the Pain
N (Valid)	40	40	40	40
N (Missing)	0	0	0	0
Standard Deviation	0.385	0.506	0.385	0.474

Based on the results of descriptive statistics, the number of respondents in this study was 40 people and all data were declared valid with no missing data on the variables of respondent age, respondent equality, pain level before, or pain level after treatment. The standard deviation value for the respondent age variable was 0.385 and respondent equality was 0.506 indicating that the variation in respondent characteristics was relatively small and quite homogeneous. Meanwhile, the standard deviation of pain before treatment was 0.385 and after treatment was 0.474 indicating there was variation in pain levels between respondents, with the variation in pain after treatment tending to be slightly larger than before treatment with demographic differences.

Regarding pain intensity, the standard deviation before the intervention was 0.385, while after the intervention it increased slightly to 0.474. This indicates that pain levels varied among respondents both before and after treatment, with post-treatment pain showing slightly greater

variability. The observed variation suggests different individual responses to the intervention, which is common in pain-related studies.

Table 2. Respondents' Age.

Respondent Age	Frequency	Percentage (%)	Valid Percentage (%)	Cumulative Percentage (%)
< 20 years and > 35 years	7	17.5	17.5	17.5
20–35 years	33	82.5	82.5	100.0
Total	40	100.0	100.0	—

Based on the age distribution of respondents, the majority were between 20 and 35 years old, representing 33 people, or 82.5% of the total. This finding indicates that most respondents were in the age group generally considered the ideal reproductive age, which is typically associated with optimal physical readiness for childbirth.

Only a small proportion of respondents fell outside this age range. Seven people, or 17.5% of respondents, were under 20 or over 35. This age group is often classified as having a higher obstetric risk compared to the ideal reproductive age group.

The predominance of respondents aged 20–35 years indicates that the study population has relatively similar age-related physiological characteristics. This homogeneity may help reduce variability in pain perception that may arise from age-related factors, thereby strengthening the internal consistency of the study results.

Overall, the age distribution reflects a relatively uniform sample in terms of reproductive age. This characteristic supports the reliability of the findings regarding labor pain intensity and the effectiveness of deep breathing relaxation techniques, as age-related differences were minimal among most participants.

Table 3. Respondent Parity.

Respondent Parity	Frequency	Percentage (%)	Valid Percentage (%)	Cumulative Percentage (%)
Primipara	21	52.5	52.5	52.5
Multipara	19	47.5	47.5	100.0
Total	40	100.0	100.0	—

Based on the parity distribution of respondents, more than half were primiparous (giving birth to their first child). Twenty-one respondents, representing 52.5% of the study population, were experiencing their first birth. This indicates that most respondents had no previous childbirth experience.

In contrast, 19 respondents, or 47.5% of the total, were multiparous. This indicates that nearly half of the respondents had experienced multiple births, contributing to the diverse birth experiences within the study population.

The relatively equal distribution between primiparous and multiparous respondents indicates that the sample included women with varying levels of familiarity with labor pain. This diversity is important because previous labor experiences can influence pain perception, coping mechanisms, and responses to pain management interventions.

Although there were slightly more first-time respondents, the parity composition was balanced enough to allow for meaningful comparison and interpretation of the effects of interventions on labor pain intensity across different parity backgrounds.

Table 4. Pain Before.

Pain Before	Frequency	Percentage (%)	Valid Percentage (%)	Cumulative Percentage (%)
Currently	7	17.5	17.5	17.5
Heavy	33	82.5	82.5	100.0
Total	40	100.0	100.0	—

Based on the distribution of pain levels before treatment, the majority of respondents experienced severe pain during labor. Thirty-three respondents, representing 82.5% of the study population, reported severe pain before the intervention. This finding reflects the intensity of pain typically experienced during the active phase of the first stage of labor.

Meanwhile, 7 respondents, or 17.5% of participants, reported moderate pain before the intervention. Although a smaller proportion, this group still indicates variation in pain perception among respondents before the application of deep breathing relaxation techniques.

These findings indicate that most respondents experienced high levels of pain before treatment. This situation highlights the importance of implementing effective pain management interventions to help reduce labor pain and improve maternal comfort during labor.

Table 5. Postoperative Pain.

Pain After	Frequency	Percentage (%)	Valid Percentage (%)	Cumulative Percentage (%)
Light	3	7.5	7.5	7.5
Currently	31	77.5	77.5	85.0
Heavy	6	15.0	15.0	100.0
Total	40	100.0	100.0	—

Based on the distribution of pain levels after treatment, the majority of respondents experienced moderate pain after the intervention. Thirty-one respondents, or 77.5% of the study population, reported moderate pain, indicating a significant reduction in pain intensity compared to pre-treatment levels.

A small proportion of respondents experienced mild pain after the intervention. Three people, representing 7.5% of respondents, reported mild pain, indicating that the intervention was effective in further reducing pain intensity for some participants. Meanwhile, the number of respondents experiencing severe pain decreased significantly to 6 people, or 15%.

These findings show a clear shift in pain levels toward milder categories after treatment. The decrease in the proportion of respondents experiencing severe pain indicates that the intervention positively contributed to labor pain management during the active phase of labor.

Wilcoxon test

Table 6. Statistical Test Analysis.

Comparison	Rating Type	N	Average Rating	Number of Ratings
Pain After – Pain Before	Negative Rating	30[a]	15.50	465.00
	Positive Rating	0[b]	0.00	0.00
	Ties	10[c]	—	—
	Total	40	—	—

Based on the rating analysis, the majority of respondents experienced a reduction in pain levels after the intervention. Thirty respondents reported a reduction in pain intensity after treatment, as indicated by negative ratings. The average rating of 15.50 and total rating of 465.00 reflect a significant overall reduction in pain among these respondents.

It is noteworthy that no respondents experienced an increase in pain levels after treatment. The absence of negative ratings indicates that the intervention did not worsen pain

for any participant, further supporting the safety and effectiveness of deep breathing relaxation techniques.

In addition to those who experienced pain reduction, 10 respondents showed no change in pain levels before and after the intervention. This finding suggests that while the technique was effective for most participants, individual differences in pain perception, coping skills, or labor progress may have influenced outcomes for some respondents.

These results indicate that the majority of respondents benefited from the intervention, as evidenced by a reduction in pain intensity after treatment. These findings provide strong support for the use of deep breathing relaxation techniques as an effective non-pharmacological approach to managing labor pain during the active phase of labor.

Table 7. Effect of Deep Breathing Relaxation Techniques on the Intensity of Labor Pain in the First Stage of Active Phaseat Badaruddin Kasim Regional General Hospital.

Test Statistics	Pain After – Pain Before
Z	-5,477
Asymp. Sig. (2-tailed)	0,000

Based on the Wilcoxon Signed Rank Test findings, a Z-value of -5.477 was obtained. This value shows a significant difference between pain intensity measured prior to and following the intervention, indicating a considerable change in respondents' pain levels after treatment.

The Asymp. Sig. (2-tailed) value is 0.000, which is lower than the commonly accepted significance level of 0.05. This outcome confirms that the difference in pain intensity observed before and after treatment is statistically significant and unlikely to have occurred randomly.

These results indicate that the intervention led to a significant decrease in pain intensity among respondents. The absence of any increase in pain after treatment further supports the effectiveness of the intervention in managing labor pain.

The statistical significance found in this analysis enhances the credibility of the study results. It shows that deep breathing relaxation techniques consistently contributed to pain reduction across the study population, regardless of individual variations in pain perception.

The Wilcoxon Signed Rank Test results provide strong evidence that the intervention has a significant effect on lowering labor pain intensity. This supports the application of deep breathing relaxation techniques as an effective non-pharmacological approach for pain management during the active phase of the first stage of labor.

Discussion

The results of this study show that deep breathing relaxation techniques have a significant effect on decreasing the intensity of labor pain during the active phase of the first stage. Statistical testing revealed a significant difference between pain levels measured before and after the intervention, indicating that deep breathing relaxation provides a real therapeutic benefit for laboring mothers. This result is consistent with Katili's (2023) research, which stated that controlled breathing techniques are effective as a non-pharmacological approach to managing labor pain.

Before the intervention, most respondents in this study experienced severe pain. This condition corresponds with the physiological characteristics of the active phase of labor, in which uterine contractions become stronger, longer, and more frequent. The increased intensity of contractions causes repeated stimulation of pain receptors, thereby heightening the mother's perception of pain during labor (Wijayanti, 2025).

Unmanaged labor pain can trigger stress responses in mothers, including increased muscle tension, anxiety, and fear. These psychological conditions can intensify pain perception because the body remains tense. In mothers without prior labor experience, severe pain is often perceived more intensely due to limited mental preparation and ineffective coping strategies (Nurhalizah, 2025).

The implementation of breathing relaxation techniques helps laboring mothers regulate their breathing patterns in a more controlled and rhythmic way. This technique facilitates muscle relaxation and reduces sympathetic nervous system activity, thereby lowering physical and emotional tension. Reduced tension enables mothers to concentrate better and cope with contractions more calmly, ultimately decreasing their perception of pain.

In addition to its physiological effects, deep breathing relaxation also contributes to increased maternal confidence and self-control during labor. When mothers feel capable of controlling their breathing, anxiety and fear of pain can be minimized. This supports a more cooperative labor process between mothers and healthcare providers, thus reducing unnecessary medical interventions (Katili, 2023).

Based on the research findings and support from various previous studies, it can be concluded that deep breathing relaxation techniques are a safe, simple, and effective intervention for reducing labor pain intensity during the active phase of the first stage of labor. Therefore, this technique deserves to be recommended as part of complementary midwifery care to enhance comfort and the quality of the childbirth experience for laboring mothers (Wijayanti, 2025; Nurhalizah, 2025).

After the application of deep breathing relaxation techniques, the study results demonstrated a significant reduction in labor pain intensity. Most respondents who initially experienced severe pain shifted to moderate pain, while a small proportion reported mild pain. At the same time, the number of respondents experiencing severe pain declined markedly after the intervention.

These changes in pain intensity indicate that deep breathing relaxation plays an important role in helping mothers manage labor pain more effectively. By focusing on controlled and rhythmic breathing patterns, mothers can reduce their attention to painful sensations during contractions, creating a more relaxed physical and mental condition.

Deep breathing relaxation also helps decrease muscle tension that commonly accompanies labor. When the body is relaxed, muscles respond more effectively to uterine contractions, lowering pain intensity. This technique also functions as a positive distraction, helping mothers cope with contractions with greater calmness and confidence.

Physiologically, deep breathing techniques can enhance oxygen intake and improve blood circulation, including circulation to the uterus. Increased oxygenation can reduce ischemia in uterine muscles, which is often a primary cause of labor pain. This process can gradually lessen the pain intensity experienced by mothers (Purnama, 2025).

Besides its physiological benefits, deep breathing relaxation also provides notable psychological advantages. This technique helps reduce anxiety and emotional tension commonly experienced by mothers during the active phase of labor. Lower anxiety contributes to suppressing stress responses, resulting in a more manageable and less exaggerated perception of pain (Purnama, 2025).

The findings of this study are consistent with previous research showing that deep breathing relaxation is a practical, safe, and effective non-pharmacological intervention for labor pain management. Astuti (2024) emphasized that applying appropriate breathing techniques can enhance maternal comfort and improve the overall labor experience, particularly during the active phase of labor.

The effectiveness of deep breathing relaxation techniques can be explained through physiological and psychological mechanisms. Physiologically, controlled and rhythmic breathing helps relax muscles and reduce overall body tension. This relaxation response is essential during labor, as excessive muscle tension can increase pain perception.

Deep breathing also improves oxygen intake and blood circulation throughout the body. Adequate oxygen supply helps prevent hypoxia and reduces ischemia in uterine muscles, which are contributing factors to labor pain. Proper oxygenation supports more efficient uterine contractions and can reduce discomfort during the active phase of labor (Rezasetyani, 2021).

In addition to improving oxygenation, relaxation techniques are associated with the release of endorphins. Endorphins are natural hormones produced by the body that function as pain relievers. Stimulating endorphin release during relaxation can help decrease pain perception and increase comfort and well-being in laboring mothers.

Psychologically, deep breathing relaxation reduces anxiety, fear, and emotional stress that often accompany labor. When mothers feel calmer and more in control, their ability to cope with contractions improves. Reduced anxiety can prevent the pain–tension–fear cycle, which is known to intensify labor pain.

Maternal characteristics such as age and parity can also affect pain perception and the effectiveness of relaxation techniques. In this study, most respondents were within the ideal reproductive age range, which is generally linked to greater physical endurance and resilience during labor (Muthia, 2022).

Parity also has a significant influence on pain perception and coping abilities. Women who have previously given birth may be more familiar with labor sensations, while first-time mothers may experience higher anxiety levels. The relatively balanced parity distribution in this study allows a more comprehensive evaluation of the intervention's effectiveness across varying experiences.

The Wilcoxon Signed Rank Test results showed that most respondents experienced a decrease in pain intensity after the intervention, with no participants reporting increased pain. These findings confirm that deep breathing relaxation is a safe method, does not worsen labor pain, and can be confidently applied in clinical practice.

Some respondents showed no change in pain levels after the intervention. This outcome may be influenced by individual differences in pain tolerance, emotional condition, or labor progression at the time of intervention. Despite these variations, the overall results strongly support the effectiveness of deep breathing relaxation techniques in managing labor pain during the active phase (Ashari, 2025).

The statistically significant p-value obtained in this study indicates that the reduction in pain intensity observed after the intervention was not caused by random variation. These results confirm that deep breathing relaxation techniques have a real and measurable effect in reducing labor pain intensity during the active phase of labor.

These findings are consistent with previous studies demonstrating the effectiveness of breathing and relaxation techniques in managing labor pain. Similar results reported in the literature strengthen the credibility of this study and support the use of deep breathing relaxation as an evidence-based intervention in maternity care.

Consistency with existing research also enhances the external validity of the findings. When multiple studies report similar outcomes, confidence in an intervention's effectiveness increases, making it more acceptable for broader implementation in clinical practice (Mulyati, 2024).

Non-pharmacological pain management methods such as deep breathing relaxation offer several practical advantages in maternal healthcare. These techniques are easy to apply because they do not require specialized equipment or complex procedures. Moreover, they do not involve medication use, making them relatively safe for both mother and fetus during labor.

The safety of deep breathing relaxation is one of its main advantages compared to pharmacological approaches. This intervention utilizes the body's natural pain control mechanisms, thereby minimizing the risk of side effects. This makes deep breathing relaxation an appropriate option for use in various maternal conditions during labor (Astuti, 2024).

In addition to being safe, deep breathing relaxation is also cost-effective. This technique can be implemented in various healthcare settings, including community health centers (Puskesmas) or facilities with limited resources. Its simplicity allows healthcare workers to teach and guide laboring mothers directly without requiring complex training (Purnama, 2025).

The application of deep breathing relaxation also contributes to improving the quality of midwifery care. With techniques that are easy to learn, healthcare workers can integrate deep breathing relaxation into routine delivery services. This approach aligns with the concept of compassionate maternity care, which emphasizes comfort and safety during childbirth (Savitri, 2021).

The use of deep breathing relaxation techniques also empowers mothers to actively participate in managing labor pain. This active involvement helps mothers feel more in control of their bodies and the labor process. This sense of control contributes to reduced anxiety and increased maternal confidence during contractions (Savitri, 2021).

From a psychological viewpoint, mothers' active involvement in deep breathing relaxation can create a more positive birth experience. When mothers are able to manage pain independently, fear and emotional tension can be reduced. This more stable psychological condition also supports smoother labor progress (Astuti, 2024).

Based on these multiple benefits, deep breathing relaxation is appropriate to recommend as a non-pharmacological pain management method in maternal healthcare. Its effectiveness, safety, and ease of implementation make this technique a relevant alternative for enhancing the quality of the labor experience, particularly during the active phase of the first stage (Purnama, 2025; Savitri, 2021).

Although this study demonstrates positive outcomes regarding the effectiveness of deep breathing relaxation techniques in reducing labor pain intensity, several limitations must be considered when interpreting the findings. Addressing these limitations is important so that the results are understood comprehensively and not overgeneralized.

One major limitation of this study is the absence of a control group. Without a comparison group, the researchers' ability to directly compare the effectiveness of deep breathing relaxation with standard care or other pain management methods was limited. Therefore, the findings cannot fully confirm that pain reduction was solely attributable to the intervention.

Additionally, the relatively small sample size represents another limitation. A limited number of respondents can affect statistical power and restrict the generalizability of the results to a broader population of laboring women. This condition may introduce sampling bias, which could influence result interpretation (Hayati, 2024).

The limited sample size may also fail to fully represent the diverse characteristics of childbearing women, such as age, parity, anxiety levels, and health status. These characteristic variations can influence pain perception and response to deep breathing relaxation interventions, so the findings should be interpreted cautiously.

Besides methodological issues, this study did not fully consider external factors such as family support, birthing environment, and previous birth experiences. These factors are known to influence labor pain intensity and maternal responses to non-pharmacological interventions (Savitri, 2021).

Based on these limitations, future research is recommended to apply study designs with control groups, involve larger sample sizes, and consider various supporting factors. With improved research designs, it is expected that findings will be more robust, comprehensive, and have greater generalizability (Hayati, 2024; Savitri, 2021).

Future studies are encouraged to employ randomized controlled trial designs with larger and more diverse samples. Such research would strengthen evidence regarding the effectiveness of deep breathing relaxation techniques and allow further exploration of their long-term effects on maternal and neonatal health outcomes.

4. CONCLUSION

This study concluded that deep breathing relaxation techniques had a significant effect in reducing labor pain intensity during the active phase of the first stage of labor at Badaruddin Kasim Regional General Hospital. The findings showed a clear reduction in pain levels after the intervention, supported by the Wilcoxon Signed Rank Test results, which showed a statistically significant difference between pain intensity before and after the technique's implementation. Therefore, deep breathing relaxation can be considered an effective and safe non-pharmacological method for managing labor pain.

Based on the results of this study, the authors are advised to continue developing studies related to non-pharmacological labor pain management by expanding the variables and research methods to obtain more comprehensive results; community health centers and midwives are expected to integrate deep breathing relaxation techniques as part of the standard of labor care and provide optimal education and assistance to mothers in labor; further researchers are advised to use a stronger research design, a larger sample size, and add a control group or combine relaxation techniques with other non-pharmacological methods to strengthen scientific evidence; meanwhile, respondents or pregnant women are expected to learn and practice deep breathing relaxation techniques from pregnancy as an effort to prepare for labor to help reduce pain and increase comfort during the labor process.

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