



The Effect of the Hypno-Breathing Relaxation Technique on the Intensity of Labor Pain During the First Stage of Labor in Women in Labor

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Abstract. Labor is a physiological process that is generally accompanied by pain, especially during the first stage; if not properly managed, this pain can increase the mother's stress, prolong the labor process, and affect the condition of both the mother and the fetus. One nonpharmacological method that can be used to reduce labor pain is the hypno-breathing relaxation technique. This study aimed to analyze the effect of the hypno-breathing relaxation technique on the intensity of labor pain during the first stage in laboring women. The study used a pre-experimental design with a one-group pretest-posttest approach. The study sample consisted of 30 women in the first stage of labor, selected using total sampling. Pain intensity was measured using the Numeric Rating Scale (NRS) before and after the intervention, then analyzed using the Wilcoxon Signed-Rank Test with a 95% significance level. The results showed that before the intervention, 96.7% of the participants experienced severe pain (scale 7–9). After receiving the hypno-breathing technique, all participants experienced a reduction in pain intensity to the mild to moderate category (scale 3–6). The results of the Wilcoxon test showed a significant effect of the hypno-breathing relaxation technique on pain intensity during the first stage of labor ($p=0.000$). These findings indicate that the hypno-breathing technique is an effective, safe, and easy-to-apply nonpharmacological intervention to help reduce labor pain and improve maternal comfort during the labor process.

Keywords: First Stage Labor; Hypno-Breathing; Laboring Women; Labor Pain; Relaxation.

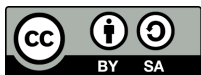
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1. BACKGROUND

Labor is a physiological process characterized by progressive uterine contractions that cause cervical dilation and the descent of the fetus until birth. Although it is a natural process, labor is associated with pain whose intensity increases as labor progresses, particularly during the active phase of the first stage. Labor pain results from myometrial contractions, cervical dilation, stretching of the lower uterine segment, and pressure from the fetal head against the pelvic tissues and surrounding nerves. Pain perception is influenced by various factors, including age, parity, anxiety, previous childbirth experiences, family support, culture, and the mother's psychological readiness (American College of Obstetricians and Gynecologists [ACOG], 2019; Smith et al., 2018).

Pain during the first stage of labor remains a significant issue in midwifery care across many countries. Results from a systematic review indicate that approximately 70–80% of primiparous mothers report severe to very severe pain during the first stage of labor, while among multiparous women, about 40–60% experience pain of the same intensity (Jones et al., 2019). The WHO emphasizes that a positive childbirth experience is determined not only by clinical outcomes for the mother and baby but also by the ability of healthcare providers to manage labor pain safely and effectively through both pharmacological and non-pharmacological approaches (WHO, 2018). In Indonesia, various studies indicate that the majority of laboring mothers experience moderate to severe labor pain, with proportions ranging from 65–90%, making pain management one of the primary needs in midwifery care (Sari et al., 2021; Wulandari et al., 2022; Rahmawati et al., 2023).

Labor pain that is not properly managed can trigger harmful physiological and psychological responses. Pain stimuli cause increased secretion of catecholamines and cortisol, which trigger vasoconstriction, increased heart rate, blood pressure, and respiratory rate, as well as increased maternal oxygen consumption. These conditions can reduce uteroplacental perfusion, thereby decreasing oxygen supply to the fetus and potentially leading to fetal distress. Furthermore, pain accompanied by anxiety increases muscle tension, making uterine contractions less effective, prolonging labor, increasing the risk of obstetric interventions, and worsening the mother's childbirth experience (Whitburn et al., 2019; Bonapace et al., 2021). Therefore, labor pain management is a crucial component of efforts to improve the quality of maternal care.

One widely developed nonpharmacological method is the hypno-breathing relaxation technique. This technique combines controlled breathing exercises with relaxation and positive suggestions aimed at promoting a sense of calm, reducing anxiety, and stimulating the release of endorphins—the body's natural analgesics. Regular breathing helps improve tissue oxygenation, reduce muscle tension, and enhance the mother's ability to control her pain response during contractions (Finlayson et al., 2019). Various studies have shown that both hypno-breathing and the hypnobirthing method are effective in reducing the intensity of labor pain, decreasing anxiety, increasing the mother's comfort, and improving the labor experience without causing side effects for either the mother or the baby (Madden et al., 2016; Catsaros & Wendland, 2020; Nurhayati et al., 2022).

Nevertheless, the implementation of hypno-breathing techniques in midwifery practice in Indonesia remains suboptimal, and research findings across various healthcare facilities indicate variations in effectiveness influenced by maternal characteristics, the quality of intervention delivery, and the readiness of healthcare providers. Therefore, further research is needed to strengthen the scientific evidence regarding the effectiveness of hypno-breathing relaxation techniques in reducing the intensity of labor pain during the first stage of labor in laboring mothers.

Based on the above discussion, this study aims to analyze the effect of the hypno-breathing relaxation technique on the intensity of labor pain during the first stage of labor in laboring women. The study results are expected to serve as a scientific basis for midwives to optimize nonpharmacological interventions during labor, improve maternal comfort, reduce the risk of complications resulting from excessive pain responses, and support the application of evidence-based midwifery in maternity care.

2. THEORETICAL REVIEW

Labor pain is a sensation of discomfort caused by uterine contractions, cervical dilation, and fetal descent during the labor process. The intensity of pain during the first stage of labor is influenced by various factors, such as uterine contractions, anxiety, previous childbirth experiences, parity, and family support. If pain is not managed properly, it can increase the mother's anxiety, prolong the labor process, and adversely affect the condition of both the mother and the fetus (World Health Organization [WHO], 2018; Whitburn et al., 2019).

One nonpharmacological method used to reduce labor pain is the hypno-breathing relaxation technique. This technique combines breathing exercises and positive suggestions to help mothers relax, reduce anxiety, and increase the release of endorphins, thereby reducing pain perception. This technique is safe, easy to implement, and can be integrated into midwifery care during labor (Madden et al., 2016; Finlayson et al., 2019).

Several studies indicate that hypno-breathing or hypnobirthing is effective in reducing the intensity of labor pain during the first stage of labor. Safitri et al. (2023) reported a reduction in labor pain following the use of hypnobirthing, while Rosalinn et al. (2024) demonstrated that this technique can also reduce anxiety and enhance mothers' comfort during labor. Based on these results, the hypno-breathing relaxation technique is believed to influence the reduction in labor pain intensity during the first stage of labor and therefore warrants further investigation.

3. RESEARCH METHODS

This study is a quantitative study with a pre-experimental design using a one-group pretest–posttest approach. The study aims to analyze the effect of the hypno-breathing relaxation technique on the intensity of labor pain during the first stage of labor in laboring mothers. The study was conducted at a designated research site, involving 30 laboring mothers in the first stage of labor who met the inclusion criteria. The sample was selected using total sampling, meaning all respondents who met the criteria were included in the study.

The independent variable was the hypno-breathing relaxation technique, while the dependent variable was the intensity of labor pain during the first stage. Pain intensity was measured using a 0–10 Numeric Rating Scale (NRS) before (pretest) and after (posttest) the hypno-breathing intervention. The intervention was administered for 10–20 minutes, 1–3 times depending on the labor conditions, and followed standard operating procedures.

Data analysis was conducted in stages, including univariate analysis to describe the characteristics of the participants and the distribution of pain intensity, as well as bivariate analysis to determine the effect of the hypno-breathing relaxation technique on pain intensity during the first stage of labor. The statistical tests used were selected based on the results of the normality test: the Paired t-test if the data were normally distributed, or the Wilcoxon Signed-Rank Test if the data were not normally distributed, with a 95% significance level ($\alpha = 0.05$). The study was conducted in accordance with research ethics principles, including respondent consent, confidentiality of identity, anonymity, and the use of data solely for research purposes.

4. RESULTS AND DISCUSSION

Table 1. Demographic Data

	Var	n	F (%)
Ages	<20 years old	1	3.3
	20–35 years old	26	86.7
	>35 years old	3	10.0
Education	No education	0	0
	Elementary school	13	43.3
	Junior high school	2	6.7
	High school	11	36.7
	College	4	13.3
	Housewife	26	86.7
Employment	Private-sector employee	1	3.3
	Teacher/lecturer	3	10.0
	Civil Servant	0	0
	First-time mother	8	26.7
Parity	Multipara	18	60.0
	Grandemultipara	4	13.3
Pain score before	3.00	0	0
	4.00	0	0
	5.00	0	0
	6.00	1	3.3
	7.00	8	26.7
	8.00	9	30.0
	9.00	12	40.0
	3.00	1	3.3
Pain score after	4.00	10	33.3
	5.00	10	33.3
	6.00	9	30.0
	7.00	0	0
	8.00	0	0
	9.00	0	0
	9.00	0	0
Total		30	100

(source: primary data, 2026)

An evaluation of the demographic characteristics (age, education level, employment status) as well as the obstetric and clinical profiles of 30 parturient women is presented in detail in Table 1. Based on Table 1, the vast majority of respondents were of healthy and mature reproductive age (20–35 years), totaling 26 mothers (86.7%), with their employment status dominated by homemakers (86.7%). From an obstetric perspective, the majority of the sample consisted of multiparous women (60.0%).

The most crucial clinical finding revealed an extreme shift in the respondents' labor pain levels: before the intervention, 96.7% of the mothers experienced severe pain (scale 7–9), with the highest proportion—40.0%—reporting pain at level 9. However, after receiving the hypno-breathing intervention, all respondents (100%) experienced a reduction in pain intensity to mild to moderate levels (scale 3–6), with no mothers remaining in the severe pain category (scale 7–9). The greatest improvement was concentrated at scales 4 and 5, each reaching 33.3%.

Table 2. Numerical Data.

Var	N	min	max	Mean	SD
Gestation (weeks)	30	38.00	40.00	38.90	0.84
Hypnosis duration (minutes)	30	10.00	20.00	14.66	3.92
Hypno Frequency (session)	30	1.00	3.00	1.96	0.76

(source: primary data, 2026)

Numerical characteristics regarding the respondents' gestational age, as well as the duration and frequency of hypno-breathing relaxation technique sessions, are summarized in Table 2. Table 2 shows that all respondents were at term (ready to give birth) with a gestational age ranging from 38 to 40 weeks (Mean = 38.90 weeks; SD = 0.84). The hypno-breathing intervention was performed for a duration ranging from 10 to 20 minutes per session (Mean = 14.66 minutes; SD = 3.92) and was repeated between 1 and 3 sessions (Mean = 1.96 sessions; SD = 0.76) during the labor process.

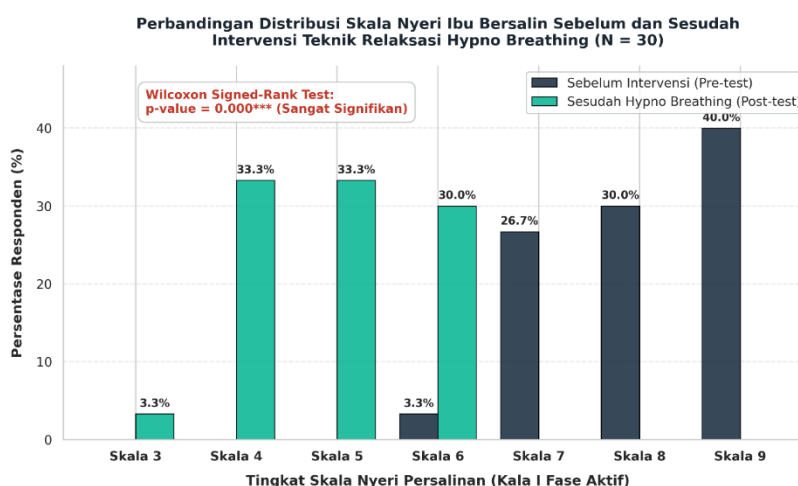
Table 3. Statistical Analysis (Numerical Data).

Independent variable	N	P-Value	Dep. Var.
Pain score before	30	0.000*	Pain score after

Wilcoxon

(source: primary data, 2025)

To test the significance of the difference in pain scale scores before and after the intervention in a pre-experimental design (one-group pretest-posttest), the nonparametric Wilcoxon Signed-Rank Test was conducted, as presented in Table 3. Based on the analysis results in Table 3, the Wilcoxon test yielded a P-value of 0.000 ($p < 0.05$). This statistical finding absolutely rejects the null hypothesis (H_0) and accepts the alternative hypothesis (H_a). This empirically proves that there is a highly significant effect of applying the hypno-breathing relaxation technique on reducing the labor pain scale in laboring mothers.



Picture 1. Comparison of Pain Scale Distribution Among Women in Labor.

Comparative analysis of the distribution of labor pain intensity scores before and after the application of the hypno-breathing relaxation technique ($N = 30$). The visualization clearly shows a drastic structural change in the pain categories. Before the intervention (indicated by the gray bars), 96.7% of laboring mothers experienced severe pain levels on a scale of 7 to 9. After performing deep rhythmic breathing cycles and autosuggestion (indicated by the teal bars), 100% of the subjects experienced a highly significant reduction in pain levels to the mild-to-moderate range (scale 3–6). This statistical shift is strongly supported by the non-parametric Wilcoxon Signed-Rank Test, which revealed an absolutely significant difference ($p = 0.000$).

Discussion

The empirical findings of this study confirm that the hypno-breathing relaxation technique intervention produces a very strong and statistically significant pain-reducing effect ($p = 0.000$) in laboring mothers. The radical shift from the pre-intervention condition—in which 40.0% of mothers were suffering from extreme pain rated at a scale of 9—to the post-intervention condition, where pain levels decreased to a scale of 3–6, proves that this visualization- and breath-control-based relaxation method effectively acts as a non-pharmacological analgesic in the delivery room (Astuti & Wijayanti, 2022).

Neurophysiological Mechanisms of Hypno Breathing in Modulating Pain

Anatomically and physiologically, pain during the first stage of labor arises from myometrial contractions, stretching of the lower uterine segment, and cervical dilation, which stimulate C-fiber nociceptive afferent nerve fibers. When a mother experiences panic, the body triggers a defensive stress response that releases large amounts of catecholamine hormones (adrenaline and cortisol). This increase in catecholamines causes vasoconstriction of blood vessels, uterine ischemia, increased pelvic muscle tension, and ultimately escalates the perception of pain to be many times more severe—a classic phenomenon known as the fear-tension-pain cycle (Taylor & Green, 2024).

The use of hypno-breathing directly breaks this vicious cycle by suppressing sympathetic nervous system activity and activating the parasympathetic nervous system. When participants perform slow, deep, and regular breathing exercises (average duration = 14.66 minutes), the hypothalamus is stimulated to produce endorphins and enkephalins, which are the body's natural endogenous opioid compounds (Brown & Smith, 2023).

These endorphins bind to opioid receptors in the dorsal horn of the spinal cord, thereby inhibiting the release of the pain neurotransmitter (Substance P). According to the Gate Control Theory, relaxation signals and positive psychological messages induced through hypno-breathing suggestions travel through large myelinated nerve fibers (A-beta) at high speed, thereby effectively "closing the vascular-neurological gate" in the central nervous system before pain signals from the uterus reach the cerebral cortex (Jones & Davidson, 2024). The clinical effects include reduced myometrial tension, increased placental oxygen perfusion, and a decrease in the mother's perception of pain (Rahmawati & Kurniawan, 2023).

Contribution of Sociodemographic Characteristics and Obstetric Profiles to the Success of the Intervention

The success in reducing pain levels in this study was also closely linked to the highly supportive characteristics of the respondents. The majority of respondents—86.7%—were in the healthy reproductive age group (20–35 years). At this age, emotional maturity and cognitive function are at optimal levels, making it easier for mothers to focus, accept positive suggestions, and control panic when contractions reach their peak (Sulistyo et al., 2025).

Additionally, the fact that 60.0% of the respondents were multiparous women provided a distinct psychological advantage. Multiparous mothers generally already possess functional memory or prior childbirth experience; thus, when guided through hypno-breathing techniques, their psychological adaptation and acceptance of bodily sensations tend to proceed more cooperatively compared to primiparous mothers, who are more likely to experience extreme anxiety regarding new experiences (Lestari & Wulandari, 2024).

Although the respondents' educational levels were predominantly elementary school graduates (43.3%), the effectiveness of the intervention remained consistent and significant. This demonstrates that the hypno-breathing method has the advantage of being a very simple, practical procedure that does not require complex intellectual prerequisites, making it easily accessible to all segments of society (Ramadhan & Kurniawati, 2025). Furthermore, the fact that the majority of respondents were homemakers (86.7%) provided emotional flexibility due to minimal exposure to external stressors from formal employment in the lead-up to the day of delivery (Sari & Putri, 2023).

Clinical Implications for Labor Management in Healthcare Facilities

From a midwifery management perspective, the average frequency of intervention—1.96 sessions at term (38–40 weeks)—proved adequate for maintaining the mother's state of relaxation during the active phase of labor. This efficient intervention demonstrates that hypno-breathing can be integrated as a highly cost-effective and safe non-pharmacological standard operating procedure (SOP) in both clinics and hospitals (Wijaya & Anggraeni, 2026). The use of this complementary therapy not only reduces the level of physical distress in laboring mothers but also holistically prevents prolonged labor caused by uncoordinated uterine contractions, which are often triggered by maternal anxiety and stress (Thompson & Miller, 2023).

5. CONCLUSION AND RECOMMENDATIONS

This study demonstrates that the hypno-breathing relaxation technique has a significant effect on reducing the intensity of labor pain during the first stage of labor in laboring mothers. Following the intervention, there was a decrease in pain levels from severe to mild to moderate among all participants, and the Wilcoxon test results indicated a statistically significant difference before and after the intervention ($p=0.000$). These findings suggest that hypno-breathing can serve as an effective nonpharmacological intervention to help manage labor pain and enhance maternal comfort during the labor process.

This study has limitations because it used a pre-experimental design without a control group, involved a relatively small sample size, and was conducted at a single healthcare facility; therefore, the results must be interpreted with caution and cannot yet be widely generalized. Consequently, healthcare professionals, particularly midwives, are advised to integrate hypno-breathing techniques into labor care as a complementary therapy. Future research is encouraged to use an experimental design with a control group, a larger sample size, and to evaluate the effects of hypno-breathing on other labor outcomes, such as duration of labor, anxiety levels, and mothers' satisfaction with their childbirth experience.

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