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HYPNOBIRTHING AS A NON-PHARMACOLOGICAL INTERVENTION TO REDUCE LABOR PAIN AND ANXIETY: A QUASI-EXPERIMENTAL STUDY

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ABSTRACT

Labor pain and anxiety are major challenges faced by women during childbirth. High levels of stress can disrupt labor progress and lead to increased medical interventions. Hypnobirthing, a technique that utilizes breathing, visualization, and self-hypnosis, has emerged as a holistic and non-pharmacological approach to support laboring women. To evaluate the effectiveness of hypnobirthing in reducing labor pain intensity and maternal anxiety during the first stage of labor. This quasi-experimental study involved 60 primigravida women at Midwife Denik's Independent Practice. Participants were divided into an intervention group (hypnobirthing) of 30 women and a control group (routine care) of 30 women. The intervention group received guided hypnobirthing sessions during the active phase of labor. Pain was measured using the Visual Analogue Scale (VAS), and anxiety was assessed using the Hamilton Anxiety Rating Scale (HAM-A). Data were analyzed using paired and independent t-tests. Results: Women in the hypnobirthing group experienced a significant reduction in both anxiety and pain scores compared to the control group ($p < 0.01$). Hypnobirthing techniques contributed to a more positive and controlled labor experience. Hypnobirthing is an effective non-pharmacological method to reduce labor pain and anxiety. It may be recommended as part of comprehensive antenatal education and labor management.

Keywords: Anxiety, Childbirth, Hypnobirthing, Labor Pain, Maternal Well-being, Non-Pharmacological Intervention

INTRODUCTION

Childbirth is a natural physiological process inherently accompanied by pain and emotional distress (Puspitasari, C. R., et all. (2018). According to the latest data from 2025, approximately 75% of women worldwide report high levels of anxiety due to fear of pain during childbirth. (Allo, R. G., et al. (2025). In Indonesia, the prevalence of pregnant women experiencing anxiety facing childbirth reached 28.7% or the equivalent of 107,000 pregnant women (Heryanti, et al, 2023). This condition, if not managed properly, can trigger a stress response that hinders the progress of labor. (Pratiningsih, D. A. (2024).

Severe labor pain is not only a physical phenomenon, but also a psychological one that affects the mother's cardiovascular and respiratory systems. Increased stress hormones such as catecholamines during the pain period can cause peripheral vascular resistance which risks reducing utero-placental perfusion to the fetus Treasa, A. D., et al. (2025). In addition, severe anxiety often causes pelvic muscle tension, which leads to prolonged labor and an increased risk of avoidable medical interventions. (Allo, R. G., et al. (2025).

In an effort to reduce invasive medical interventions, non-pharmacological methods have become a primary focus in modern maternity care centered on maternal comfort. Hypnobirthing presents itself as a deep relaxation technique that combines breathing,

visualization, and positive affirmations to break the "fear-tension-pain" cycle. A recent study in 2025 showed that hypnobirthing is effective in helping mothers remain calm and confident, enabling the body to optimally produce natural endorphins to reduce pain perception. National Health Service (NHS). (2025).

Although its benefits have been widely reported, the clinical application of hypnobirthing still requires stronger empirical evidence through a quasi-experimental approach in various primary health care facilities. The latest research through the end of 2025 showed a significant difference in pain scores (using the Visual Analog Scale) and anxiety levels in the group receiving the hypnobirthing intervention compared to the control group. Therefore, this study aims to further evaluate the effectiveness of this intervention to improve the quality of midwifery services that are safe, comfortable, and minimally pharmacological. (Juwita, et al, 2025).

This study aims to evaluate the effectiveness of hypnobirthing in reducing maternal anxiety and labor pain during the first stage of labor, contributing to the growing body of evidence on holistic approaches to maternal care.

METHODS

Study Design: Quasi-experimental with a control group. The study was conducted at the Denik Midwife Independent Practice, involving 60 primigravida women with full-term pregnancies. Respondents were divided into an intervention group (hypnobirthing) of 30 women and a control group (routine care) of 30 women. The intervention group participated in a hypnobirthing session, including relaxation breathing, visualization, and affirmations, facilitated by a trained midwife during the active phase of labor. The sampling technique used purposive sampling. Inclusion criteria: singleton pregnancy, spontaneous labor, without complications. Exclusion criteria: high-risk pregnancy, use of pharmacological analgesia, and previous hypnosis training. The intervention group participated in a hypnobirthing session, including relaxation breathing, visualization, and affirmations, facilitated by a trained midwife during the active phase of labor. Instruments , Visual Analogue Scale (VAS) for pain assessment and Hamilton Anxiety Rating Scale (HAM-A) for anxiety assessment. Data Analysis SPSS was used for paired t-tests and independent t-tests. The significance level was set at $p < 0.05$.

RESULTS

Baseline Characteristics Both groups were comparable in age, gestational age, and initial anxiety/pain scores.

Table 1. Characteristics of Respondents

Characteristic	Hypnobirthing Group (n=30)	Control Group (n=30)	p-value
Age (mean ± SD)	26.7 ± 3.4	26.2 ± 3.7	0.63
Gestational Age (weeks)	39.1 ± 1.0	39.0 ± 1.2	0.75
Education (High school)	20 (66.7%)	22 (73.3%)	0.56
Employment (Yes)	12 (40%)	14 (46.7%)	0.61

Source: 2025 research

The table above presents the baseline characteristics of participants in the hypnobirthing group and the control group. All p-values are greater than 0.05, indicating that there are no statistically significant differences between the two groups across any of the measured variables (age, gestational age, education level, and employment status). This homogeneity suggests the randomization process was effective, ensuring that the groups are comparable before the intervention bega.

Table 2. Comparison of Pain and Anxiety Scores Before and After Intervention

Outcome Measure	Group	Pre-Test (Mean ± SD)	Post-Test (Mean ± SD)	p-value (Paired t-test)
VAS Pain Score	Hypnobirthing	7.8 ± 1.1	4.5 ± 1.2	< 0.001
	Control	7.9 ± 1.0	7.4 ± 1.3	0.067
HAM-A Anxiety Score	Hypnobirthing	22.5 ± 3.6	13.2 ± 3.4	< 0.001
	Control	22.7 ± 3.4	21.5 ± 3.6	0.09

Source: 2025 research

The Hypnobirthing Group showed highly statistically significant reductions in both pain ($p < 0.001$) and anxiety ($p < 0.001$) from pre-test to post-test.
The Control Group showed no statistically significant changes in either pain ($p = 0.067$) or anxiety ($p = 0.09$).

Table 3. Between-Group Comparison of Post-Test Scores (Independent t-test)

Outcome Measure	Hypnobirthing (Mean ± SD)	Control (Mean ± SD)	p-value (Independent t-test)
VAS Pain Score	4.5 ± 1.2	7.4 ± 1.3	< 0.001
HAM-A Anxiety Score	13.2 ± 3.4	21.5 ± 3.6	< 0.001

Source: 2025 research

The Hypnobirthing Group reported significantly lower pain scores (VAS Pain Score: 4.5 ± 1.2) compared to the Control Group (7.4 ± 1.3), with a p-value of < 0.001. The Hypnobirthing Group also demonstrated significantly lower anxiety levels (HAM-A Anxiety Score: 13.2 ± 3.4) compared to the Control Group (21.5 ± 3.6), with a p-value of < 0.001.

DISCUSSION

The findings of this study reinforce the effectiveness of hypnobirthing as a non-pharmacological intervention for reducing both labor pain and maternal anxiety. As demonstrated in Table 2, participants in the hypnobirthing group experienced a substantial decrease in pain scores from a mean of 7.8 to 4.5, with a statistically significant p-value of < 0.001. In contrast, the control group showed only a slight, non-significant reduction in pain (from 7.9 to 7.4; $p = 0.067$). This indicates that the relaxation and visualization techniques provided during hypnobirthing may actively assist in reducing the subjective perception of pain.

A similar trend was observed with anxiety levels. The hypnobirthing group experienced a marked reduction in HAM-A anxiety scores from 22.5 to 13.2 ($p < 0.001$), compared to the control group's relatively minor improvement (22.7 to 21.5; $p = 0.09$). These results suggest that hypnobirthing provides not only physical but also psychological support during the birthing process.

Between-group comparisons using independent t-tests further emphasized these findings. Post-intervention pain scores in the hypnobirthing group were significantly lower than those in the control group (4.5 vs. 7.4; $p < 0.001$). Anxiety scores were also significantly lower in the hypnobirthing group post-intervention (13.2 vs. 21.5; $p < 0.001$). This supports

the assertion that hypnobirthing is more effective than standard care in managing maternal discomfort during labor

These align with prior studies, such as that by Werner et al. (2013), who noted significant decreases in labor-related anxiety and improved coping ability among women practicing hypnobirthing. Similarly, Madden et al. (2016) in their Cochrane review concluded that hypnosis-based interventions, including hypnobirthing, were associated with reduced use of pharmacologic pain relief and higher maternal satisfaction.

In addition, Fairbrother and colleagues (2021) found that antenatal hypnobirthing programs significantly improved women's perceived self-efficacy and emotional preparedness for childbirth, contributing to a calmer and more controlld labor experience. A qualitative study by Finlayson et al. (2019) also emphasized that women who practiced hypnobirthing described their births more positively and reported feeling more in control and less fearful.

Physiologically, hypnobirthing techniques may influence the neuroendocrine response by promoting the release of oxytocin and endorphins, which are natural pain relievers and mood stabilizers. By minimizing the activation of the sympathetic nervous system and enhancing parasympathetic responses, hypnobirthing enables a more relaxed state conducive to efficient labor progress. This aligns with the fear-tension-pain theory, which postulates that reducing fear and anxiety can alleviate muscle tension and pain.

In summary, this study contributes valuable empirical evidence to support the implementation of hypnobirthing in clinical settings. Given its effectiveness, safety, and cost-efficiency, hypnobirthing can be integrated into antenatal education and midwifery care models. Future studies with larger sample sizes and diverse populations are recommended to generalize the findings and explore long-term maternal and neonatal outcomes.

In the study's findings, the internal factors that influenced the incidence of stunting in young mothers were a history of infection with a significance value of 0.048 (sig 0.05), exclusive breastfeeding with a significance value of 0.023 (sig 0.05), and history of LBW with a significance value of 0.601 (sig > 0.05). Therefore, it is desired that various sectors establish health services for teenagers and integrate under-five monitoring to minimize the risk of early marriage and developmental abnormalities in children under 5, as well as continuously check the health of pregnant women.

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