

# Smarter Hypnobirthing Intervention to Reduce Anxiety and Improve Maternal Birth Outcomes among Primigravid Women in Samarinda, Indonesia

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## ABSTRACT

Anxiety among primigravida women is a serious concern that can affect maternal mental health, prolong labor, intensify pain, and trigger obstetric complications. Non-pharmacological interventions such as Smarter Hypnobirthing offer an integrative approach that combines relaxation techniques, positive affirmations, education, and family support. This study aimed to evaluate the effectiveness of Smarter Hypnobirthing in reducing anxiety levels among primigravida pregnant and postpartum women in Samarinda, Indonesia. A quasi-experimental design with a pre-post test and control group was employed. A total of 40 participants were equally assigned to the intervention group (n=20) and the control group (n=20). The intervention group received the Smarter Hypnobirthing program, while the control group received only basic midwifery counseling. Anxiety levels were measured before and after the intervention using standardized instruments. The intervention group demonstrated a significant reduction in anxiety scores ( $\Delta = -8.15$ ;  $p < 0.001$ ), whereas the control group showed only a minor and non-significant decrease ( $\Delta = -1.15$ ;  $p = 0.082$ ). Posttest comparisons between groups revealed a meaningful difference (14.20 vs. 20.75;  $p < 0.001$ ). Smarter Hypnobirthing effectively reduces anxiety among primigravida pregnant and postpartum women. This approach has the potential to serve as an innovative, non-pharmacological intervention that promotes maternal well-being, aligning with the global agenda of the Sustainable Development Goals (SDGs).

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## INTRODUCTION

Pregnancy and childbirth are natural processes experienced by every woman (Fadlilah & Christiani, 2025). However, for first-time mothers (primigravida), pregnancy is often accompanied by heightened levels of anxiety (Maryuni, 2020). Maternal anxiety during pregnancy not only affects the mother's psychological well-being (Annisya et al., 2024) but also has a significant impact on delivery outcomes (Alini et al., 2024). Evidence suggests that elevated anxiety levels are associated with prolonged labor, increased pain intensity, and a higher risk of obstetric complications (Ayuni et al., 2024; Jannah et al., 2024; Ulfah et al.,

2024). These findings emphasize that maternal anxiety remains a critical issue requiring serious attention in maternal health services.

According to the Indonesian Ministry of Health, approximately 20–30% of pregnant women experience anxiety during pregnancy (Arikalang et al., 2023). The prevalence of emotional anxiety among expectant mothers has been reported at 29.2%, while postpartum women experience it at around 16.5% (Pratama et al., 2024). Moreover, 15–23% of pregnant women report anxiety that may negatively affect both maternal and neonatal health (Apriza et al., 2024). In Indonesia, the overall prevalence of maternal anxiety is estimated at 28.7%, with primigravid women being more vulnerable as childbirth approaches (Nurbaiti et al., 2025). These data indicate that maternal anxiety continues to pose a major challenge in maternal and child health in Indonesia (Apriza et al., 2024; Ariestantia et al., 2017; Arikalang et al., 2023; Nurbaiti et al., 2025; Pratama et al., 2024; Ulfah et al., 2024).

In Samarinda, East Kalimantan, antenatal care coverage is relatively high. Nevertheless, specific approaches to addressing maternal anxiety remain limited, particularly non-pharmacological interventions. This highlights the urgent need for innovative strategies that can enhance maternal well-being while preventing anxiety-related obstetric complications.

One promising approach is Smarter Hypnobirthing, an advanced adaptation of conventional hypnobirthing methods. This program integrates relaxation techniques, maternal education, and digital tools, including guided relaxation audios and self-monitoring of anxiety levels. The method combines relaxation, breathing, visualization, positive affirmations, and hypnosis (Ardan et al., 2021; Ariestantia et al., 2023; Nurbaiti et al., 2025; Ulfah et al., 2024). Compared to standard techniques, Smarter Hypnobirthing is designed to help mothers—including in the postpartum period—manage anxiety more effectively, thereby preparing them to face childbirth with calmness and confidence (Ardan et al., 2021, 2022; Lidia & Ardan, 2023; Sari et al., 2019). International studies have consistently demonstrated the effectiveness of hypnobirthing in reducing maternal anxiety and improving the childbirth experience (Buran & Aksu, 2022; Uludağ & Mete, 2021; Yaqoob et al., 2024). However, in Indonesia, particularly in East Kalimantan, its application remains limited, and its benefits have not been fully realized.

Furthermore, this study aligns with the Sustainable Development Goals (SDGs), particularly the target of improving maternal health (Mayangsari et al., 2022). Beyond its direct impact on pregnant women's well-being, the study has the potential to inform evidence-based policies aimed at strengthening maternal and child health services. By empowering midwives, pregnant women, and postpartum mothers, the program is expected to foster sustainable maternal health autonomy.

Overall, this research not only contributes to the growing body of evidence regarding the effectiveness of Smarter Hypnobirthing in Indonesia but also proposes an innovative, integrative, and technology-based intervention model that can be adapted in other regions with similar needs.

## METHODS

This study employed a quasi-experimental design with a pre–posttest control group approach. This design was selected as it enables the comparison of changes in anxiety levels among primigravid pregnant and postpartum women who received the Smarter Hypnobirthing intervention with those in a control group who did not receive the intervention. In this way, the effectiveness of the intervention could be evaluated more objectively through the differences between pretest and posttest results across the two groups.

The research framework consisted of two groups: (1) the intervention group (S1), comprising respondents who received the Smarter Hypnobirthing program, and (2) the control group (S2), consisting of respondents who only received standard midwifery counseling. Measurements were conducted prior to the intervention (K1 and K3) and after the intervention (K2 and K4). The difference between pretest and posttest scores in the intervention group was denoted as Y1, while in the control group it was denoted as Y2. The comparative effectiveness of the intervention relative to the control group was measured as Y3.

The study population included all primigravid pregnant and postpartum women attending maternity clinics in Samarinda City during 2025. The inclusion criteria were: (1) residing in Samarinda City and willing to participate as respondents, (2) being primigravida, (3) having a desired pregnancy, and (4) experiencing mild to moderate anxiety. Exclusion criteria included: (1) pregnant or postpartum women unable to communicate effectively, and (2) women with a history of mental disorders or depression.

Sample selection was performed using a simple method while accounting for potential dropout. The total sample size was 40 respondents, evenly divided into two groups: 20 in the intervention group (10 pregnant women and 10 postpartum women) and 20 in the control group (10 pregnant women and 10 postpartum women).

The research procedure began with respondent screening based on the inclusion and exclusion criteria. Eligible participants were then allocated into either the intervention or control group. A pretest was conducted for both groups, followed by the administration of Smarter Hypnobirthing to the intervention group. After the intervention was completed, a posttest was administered to all respondents to assess changes in anxiety levels.

## RESULTS AND DISCUSSION

A total of 40 respondents participated in this study, consisting of 20 in the intervention group and 20 in the control group. Each group included 10 primigravid pregnant women and 10 postpartum women. No participants dropped out during the study period; therefore, all data were included in the final analysis.

**Table 1.** Characteristics of Respondents

Characteristics	Intervention (n=20)	Control (n=20)	Total (n=40)	P-value
Pregnant women	10 (50%)	10 (50%)	20 (50%)	0,624
Postpartum women	10 (50%)	10 (50%)	20 (50%)	
Age (mean ± SD), years	27,4 ± 3,8	27,1 ± 3,5	27,2 ± 3,6	

Characteristics	Intervention (n=20)	Control (n=20)	Total (n=40)	P-value
Baseline anxiety score (mean ± SD)	22,3 ± 3,1	21,9 ± 2,8	–	

The distribution of respondents between the intervention and control groups was relatively balanced in terms of pregnancy status (50% pregnant women and 50% postpartum women in each group) and age (mean age approximately 27 years). The average baseline anxiety scores were also comparable between the two groups (22.35 vs. 21.90), with no statistically significant difference ( $p = 0.624$ ). This indicates that the baseline conditions across groups were sufficiently homogeneous, thereby ensuring the validity of post-intervention comparisons.

**Table 2.** Comparison of Pretest and Posttest Anxiety Scores

Group	Pretest (mean ± SD)	Posttest (mean ± SD)	Δ Mean (Penurunan)	p-value
Intervention	22,35 ± 3,10	14,20 ± 2,45	-8,15	<0,001*
Control	21,90 ± 2,85	20,75 ± 2,60	-1,15	0,082

\*Note:  $p < 0.05$  considered statistically significant

In the intervention group, the mean anxiety score decreased significantly by 8.15 points ( $p < 0.001$ ) following the implementation of Smarter Hypnobirthing. In contrast, the control group demonstrated only a 1.15-point reduction, which was not statistically significant ( $p = 0.082$ ). These findings indicate that Smarter Hypnobirthing had a substantial effect in reducing anxiety levels, whereas standard midwifery counseling alone was insufficiently effective

**Table 3.** Comparison of Posttest Anxiety Scores Between Groups

Variable	Intervention (n=20)	Control (n=20)	p-value
Anxiety Score	14,20 ± 2,45	20,75 ± 2,60	<0,001*

Following the intervention, a highly significant difference in anxiety scores was observed between the intervention and control groups (14.20 vs. 20.75;  $p < 0.001$ ). This finding reinforces the evidence that the reduction in anxiety was not solely due to natural progression or basic midwifery counseling, but was specifically attributable to the Smarter Hypnobirthing intervention.

The results of this study demonstrate that Smarter Hypnobirthing was effective in reducing anxiety levels among primigravid pregnant and postpartum women compared to the control group, which only received routine midwifery counseling. The intervention group experienced a mean reduction of 8.15 points, which was statistically significant ( $p < 0.001$ ), while the control group showed only a minor and nonsignificant decrease of 1.15 points ( $p = 0.082$ ). Moreover, posttest comparisons between groups further confirmed a meaningful difference, providing strong evidence that Smarter Hypnobirthing made a tangible contribution to reducing maternal anxiety.

These findings are consistent with international studies reporting that hypnobirthing methods enhance maternal calmness, reduce fear, and alleviate anxiety during pregnancy and labor (Buran & Aksu, 2022; Uludağ & Mete, 2021; Yaqoob et al., 2024). The underlying mechanism is primarily associated with relaxation techniques, controlled breathing, positive affirmations, and light hypnosis, which influence the autonomic nervous system and reduce physiological stress responses. Within the Smarter Hypnobirthing framework, this approach is enriched with technology-based education and family support, making the intervention more comprehensive than conventional relaxation techniques alone.

The relatively homogeneous baseline conditions between the intervention and control groups strengthen the validity of attributing the observed differences to the intervention itself. This is crucial, as pregnancy-related anxiety, particularly among primigravid women, has been linked to adverse maternal and neonatal outcomes, including prolonged labor, heightened pain, and increased obstetric complications (Anggraini et al., 2023; Ayuni et al., 2024; Jannah et al., 2024; Nurbaiti et al., 2025; Ulfah et al., 2024; Yusuf, Anugerah, et al., 2017; Yusuf, Hadisaputro, et al., 2017). Thus, this study provides scientific evidence that non-pharmacological interventions such as Smarter Hypnobirthing are highly relevant for maternal health services.

A notable strength of this research lies in the development of the SMARTER framework (Spiritual Management of Relaxation Therapy), which integrates physical, psychological, spiritual, and social support dimensions. Family involvement, particularly from husbands, played a vital role in fostering a sense of security and enhancing maternal confidence. This holistic approach distinguishes Smarter Hypnobirthing from earlier studies that predominantly focused on the mother as an individual, often overlooking the role of social context and interactive technology.

The practical implications of this study are significant. First, Smarter Hypnobirthing could be implemented as a standard non-pharmacological intervention to address maternal anxiety during pregnancy and the postpartum period. Second, the findings align with the Sustainable Development Goals (SDGs), particularly Goal 3 on improving maternal health. Third, as this study is grounded in local data from Samarinda, it provides contextually relevant scientific evidence to inform regional health policy and strengthen the quality of midwifery services.

Nevertheless, several limitations should be noted. The relatively small sample size and the study's restriction to a single urban setting may limit the generalizability of the results. Future research with larger populations, extended intervention periods, and simultaneous assessment of psychological and physiological variables is recommended to strengthen the validity of the findings.

In conclusion, this study highlights Smarter Hypnobirthing as an innovative, effective, and scalable non-pharmacological intervention for maternal care. By empowering midwives, mothers, and families, the intervention not only reduces maternal anxiety but also contributes to sustainable maternal health autonomy.

## CONCLUSION

This study provides evidence that Smarter Hypnobirthing is effective in reducing anxiety levels among primigravid pregnant and postpartum women compared to basic midwifery counseling. The intervention group experienced a significant decrease in anxiety scores, while no meaningful change was observed in the control group. These findings indicate that relaxation-based techniques, positive affirmations, and the integration of educational and family support can generate tangible improvements in maternal psychological well-being. The novelty of this study lies in the integration of the SMARTER framework (Spiritual Management of Relaxation Therapy), which combines physical, psychological, spiritual, and social dimensions. Accordingly, the intervention does not solely focus on mothers as individuals but also empowers families as primary sources of support. From a practical perspective, the findings highlight the potential of Smarter Hypnobirthing to enhance the quality of midwifery care through the application of a simple, safe, and effective non-pharmacological approach. Furthermore, the results align with the Sustainable Development Goals (SDGs), particularly in improving maternal and child health outcomes. Despite limitations related to the small sample size and restricted geographic coverage, this study establishes a crucial foundation for future research and for developing evidence-based maternal health policies.

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