Psychology Research and Behavior Management

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ORIGINAL RESEARCH

Hypnobirthing Training for First-Time Mothers: Pain, Anxiety and Postpartum Wellbeing

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Purpose: Childbirth represents a significant life event, bringing about both physical and emotional transformations in a woman's life. Among other psychological aspects associated with childbirth, labor pain, death anxiety, and postpartum depression have garnered significant attention in the field of maternal and reproductive health. This study is intended to evaluate how the effectiveness of hypnobirthing training alleviates labor pain, mitigates death anxiety enhances postpartum well-being reduces labor hours, and how anxiety exacerbates the duration of labor.

Methods: Data were collected from (N = 50) young and middle-aged postpartum women in the outpatient obstetrics and gynecology departments of the Civil Hospital, Waseer Gynecology Hospital and Basic Health Unit Jalal Ballagan in Gujranwala, Pakistan, by using the convenience sampling technique. Out of 50, women were divided into a control (N = 25) and an experimental group (N = 25). They were recruited during their 33 weeks of pregnancy until childbirth for hypnobirthing training. Numerical Pain Rating Scale (NPRS), Templer Death Anxiety Scale (TDAS), and Edinburgh Postnatal Depression Scale (EPDS) were used to collect participants' responses.

Results: Findings proved hypnobirthing training as a catalyst in significantly reducing labor pain, death anxiety, and postpartum depression. Furthermore, the analysis indicated that death anxiety exacerbates the labor duration hours and hypnobirthing decreases the labor hours in the experimental group of women.

Conclusion: It sheds light on the effectiveness of hypnobirthing training to enhance the birthing process. Findings underscore the significance of collaboration between obstetricians, psychologists, and mental health professionals to develop integrated care plans that address both physical and psychological aspects of childbirth.

Keywords: labor pain, death anxiety, postpartum depression, hypnobirthing training, vaginal delivery, first time mothers

Introduction

Childbirth is a natural process experienced by a woman Being unprepared will make a woman feel scared and anxious, especially if it is her first-time giving birth. This is because most first-time mothers lack experience with the end of pregnancy, particularly with labor, and anxiety triggers personal defenses. Hypnobirthing is a method of preparing for birth by altering the image of labor from a stressful and painful experience to a positive one.[1] The brain, not the body, controls pain experience. Pain receptors send signals to the brain, which interprets and prioritizes them. Hypnobirthing techniques, such as relaxation exercises and mind control, help women manage pain and anxiety, not eliminate it, but process it differently, enabling a more natural and less painful delivery experience.[1] Hypnobirthing offers numerous benefits for a positive and empowering childbirth experience. By utilizing relaxation techniques and mind control, women can shorten their labor duration, reduce medical expenses, and manage pain naturally. Hypnobirthing also enhances the sense of control and empowerment, especially for women who have experienced trauma, allowing them to feel more confident and prepared for motherhood. Furthermore, hypnobirthing results in healthy babies and helps new mothers control anxiety and depression, promoting a smoother transition into parenthood.[1]

Hypnobirthing, when practiced consistently during pregnancy, enhances women's readiness for childbirth by transforming the perception of labor from a frightening and dreadful experience to one that is effortless and free of pain. Cognitive behavioral

Received: 13 April 2024
Accepted: 9 August 2024
Published: 22 August 2024

therapies centered on mindfulness have been shown to alleviate perinatal anxiety and depression and to be an effective non-pharmaceutical option for postpartum depression.[2] In a study conducted by,[3] it was shown that MBCT effectively alleviated both symptoms of depression and anxiety in pregnant women who were depressed and also suffered from comorbid anxiety. One randomized controlled trial study aimed to determine the effect of hypnobirthing training on fear of childbirth (FOC), birth pain, birth satisfaction, and birth outcomes. The experimental group that received hypnobirthing training had significantly lower fear of childbirth scores, lower pain scores during labor, shorter delivery periods, lower rates of birth intervention, higher rates of vaginal delivery, and higher scores for birth satisfaction compared to the control group.[4] One study aimed to examine the effectiveness of hypnobirthing in reducing anxiety levels during delivery among pregnant mothers. Results indicated that pregnant mothers who received hypnobirthing had significantly lower anxiety levels compared to those who did not receive hypnobirthing.[5] The study proved the existence of the fact that hypnobirthing is a useful tool in reducing the anxiety levels of early adult mothers during their first labor as it showed a significant effect on the anxiety levels before and after the practice.[6]

Lower percentages of breastfeeding, worse mother and baby bonding, and an increased risk of newborns demonstrating developmental impairments are all connected with postpartum depression.[7] When postpartum depression is not well addressed, it may have negative effects on the mother's health and her infant's ability to sleep, feed, and behave normally.[8] Postpartum depression (PPD) affects around 20% of women in the first three months after giving birth.[9,10]

For pregnant mothers, pain during labor and delivery poses a unique challenge. Labor pain is a subjective experience that is accompanied by contractions in the uterus, cervical canal dilatation, cervical thinning, and fetal decline. The most common cause of discomfort during childbirth is labor, which can cause pain levels that are frequently beyond the limits of physical tolerance. One study assessed the impact of hypnobirthing-based supportive care on labor anxiety, discomfort, time, satisfaction, and expense.[11] Compared to the control group, those in the treatment group reported less discomfort, shorter labor hours, and greater satisfaction with the labor experience. Lowering the cost of labor is another beneficial function played by this service. A quasi-experimental study in which they explored the effect of hypnobirthing educational instruction on labor pain and death anxiety. The intervention greatly lowered the women's fear of giving birth as the findings suggested.[12] One study observed that compared to a control group, women who participated in an experimental group of hypnobirthing had less stress, anxiety, and postpartum depression.[13] Hypnobirthing mothers reported reduced pain and anxiety throughout labor, shorter durations of the second and third stages of labor, and shorter timeframes for first breastfeeding.[14] Anxious mothers tend to have longer early stages of labor. The duration of labor is influenced by the mother's degree of anxiety.[15] Pharmacological therapies are not cheap and have health risks, while aromatherapy, massage, and breathing exercises are less costly and risk-free, according to the research.[16,17]

In the current study, postpartum depression was measured by the Edinburgh Postnatal Depression Scale after one week of childbirth. The EPDS was also applied in the earlier studies to detect postpartum depression. One week after, the depressive symptoms of women are tested by the 10-item EPDS self-report measurement scale. The depression cutoff score in these investigations was 13 on the EPDS.[18,19]

The Numerical Pain Rating Scale was the tool which was used to measure labor discomfort. The rating is made up of 10 points, where 0 means no pain and 10 means the greatest level of suffering.[21,31] This scale was used in many studies to determine the level of labor pain experienced by women.The Templer Death Anxiety Scale, a 15-item quiz that is made specifically for women, was the method of measuring death.[20]

The objective of this study is to provide a comprehensive structure for healthcare professionals that promotes the practice of natural delivery and provides holistic assistance to women, including physical, psychological, and emotional support. This framework aims to improve the well-being of both mother and child, fostering a strong maternal-child attachment.

Materials and Methods

Study Design

This was an intervention-based randomized control trial study to analyze the effectiveness of hypnobirthing training on reducing death anxiety, labor pain and postpartum depression in first-time pregnant women.

Inclusion and Exclusion Criteria

Inclusion criteria for the current study include women with vaginal delivery, women with first childbirth, women with no previous history of mental problems, women with no diagnosis of risky pregnancy and women with age range 15 to 35. Exclusion criteria included women who joined any educational group, women with C-section delivery, women with risky pregnancies, women who used antidepressants and antianxiety medication and women above age 35 years.

Research Materials and Methods

Study Participants

The current study recruited the first-time pregnant women at their 33 weeks of pregnancy using the convenience sampling technique in the outpatient obstetrics and gynecology departments of the Civil Hospital, Waseer Gynecology Hospital and Basic Health Unit Jalal Ballagan in Gujranwala, Pakistan, where they visited for routine checkups. Women who obtained score 13 or greater than 13 on the Edinburgh Postnatal Depression scale and score between 7 and 9 on Templer's Death Anxiety Scale were recruited only for the current study.

Control Group

The control group consisted of pregnant women who volunteered to participate and selected via a randomization method. Instructions and information related to the experiment are delivered to all participants through recruitment blurb. All participants signed informed consent. Information forms, which included socio-demographic and obstetrical information were administered. The Edinburgh Postnatal Depression Scale and Templer Death Anxiety Scale are administered to all participants during their 33rd week of pregnancy. Participants in the control group provided a placebo intervention to replicate the experience of the experimental group, but without the active treatment element. Participants were instructed to read the parenting book according to a prescribed regimen, like the way the experimental group received the hypnobirthing training. The experimenter observed their entire delivery process. Total 25 women were recruited in the control group. Black bracelets were given to participants in the control group to wear during the birthing process.

Experimental Group

The experimental group consisted of pregnant women (n = 25) who volunteered to participate and were selected via a randomization method. All the basic information and instructions related to the experiment were given to participants through recruitment blurb. All the participants in the experimental group completed the informed consent and socio-demographic information. The Edinburgh Postnatal Depression Scale and Templer Death Anxiety Scale are administered to all participants at their 33 weeks of pregnancy. Participants in the experimental group received the actual hypnobirthing training. This group undergo the complete hypnobirthing program, including the specific techniques, practices, and educational components aimed at reducing labor pain, death anxiety, and postpartum depression. The whole experiment was monitored by the experimenter through personal visits to participants' homes and by phone calls for 4 weeks. At the end of the four-week training, blue bracelets were given to pregnant women in the experimental group, which they wore during birth so that other healthcare personnel could identify the patients who had been trained in hypnobirthing. The experimenter observed their entire delivery process.

Study Phases

The present study consisted of three phases of experiment.

First Phase of Study

The first phase of the study involved all the participants in pre-testing. Instructions and information related to the study were delivered to all participants through recruitment blurb. All the participants signed informed consent. Information forms, which included socio-demographic and obstetrical information were administered. The Edinburgh Postnatal Depression Scale and Templer Death Anxiety Scale are administered to all participants at their 33 weeks of pregnancy.

Second Phase of the Study

After two days of analysis of pretesting the groups were formed based on the test score. Women who obtained a score of 13 or greater than 13 on the Edinburgh Postnatal Depression scale and score between 7 and 9 on Templer's Death Anxiety Scale were recruited only for the current study. Participants were recruited by randomized design. Participants in the study were assigned to either the Control group or the Experimental group using a random assignment method facilitated by physical slips containing unique numbers. Prior to participant recruitment, a set of 50 slips were prepared, with 25 slips containing odd numbers and 25 slips containing even numbers. Each slip was labelled with a unique number from 1 to 50. When a participant became eligible for randomization, one slip was randomly selected from the pool of 50 slips. If the number on the selected slip was odd, the participant was assigned to the Control group; if the number was even, the participant was assigned to the Experimental group. After assigning a participant to a group, the corresponding slip was removed from the pool to prevent duplicate assignments. The random assignment process was continued until both the Control and Experimental groups each contained 25 participants, ensuring equal allocation between groups. Documentation of the random assignment process for each participant was maintained to ensure transparency and reproducibility of the study's methodology. This method provided a systematic and unbiased approach to participant allocation, enhancing the validity and reliability of the study findings.

Total 50 first time pregnant women were selected for the current study. The participants were not informed about which group they were in; therefore, a single-blind study design was established.

After forming the group, the hypnobirthing training guide with all written and oral instructions given to the experimental group only. Experimental groups were instructed to follow the hypnobirthing training chart until childbirth according to the instructions. A hypnobirthing training guide was given to each participant in the form of a booklet with four charts to follow. The whole training was divided into three sessions. The first two sessions were delivered in the first week of recruitment about the psychoeducation, therapies for depression, death anxiety and pain management. Third session about the labor meditation therapies that were performed during the labor and birthing process was conducted in the last week before childbirth. The whole experiment was monitored by the experimenter through personal visits to participants' homes and by phone calls for 4 weeks. Blue bracelet was given to experimental group participants, and a black bracelet were given to control group participants for the identification of participants during the birthing process.

Third Phase of the Study

The third phase included a two-time assessment of post-testing. In first time assessment, Numerical Pain Rating Scale and Templer Death Anxiety Scale were administered to both control and experimental group during the transitional phase of first stage of labor pain (where the cervical dilation is 10 cm) before childbirth. In the second assessment, the Edinburgh Postnatal Depression Scale was re-administered to both the control and experimental group after one week of childbirth (see Figure 1).

Measurement Tools

Demographic Form

Demographic form was applied to participants to obtain the socioeconomic (age, education, occupation, income, family type, type of marriage etc.), psychological (emotional social support, history of previous illness, type of mental illness, history of physical and sexual abuse) and obstetrical information.

Numerical Pain Rating Scale

An 11-point scale for self-reporting pain is the Numerical Rating Scale (NPRS-11). Among unidimensional pain scales, it is the most popular. To indicate the severity (or other attribute, if desired) of their pain, respondents use whole numbers (integers 0–10). There are a few separate ways to express the top anchor, but it is 0 for no discomfort and 10 for the greatest conceivable suffering. The standard way of classifying pain is as follows: no pain = 0, mild pain = 1–3, moderate pain = 4–6, and severe pain = 7–10. However, these categories do not accurately represent what patients feel and are not useful for evaluating progress. Intervention outcomes could be targeted using the categories. Both oral (and hence telephone) and visual (for self-completion) administration options are available for the NPRS. There was a strong

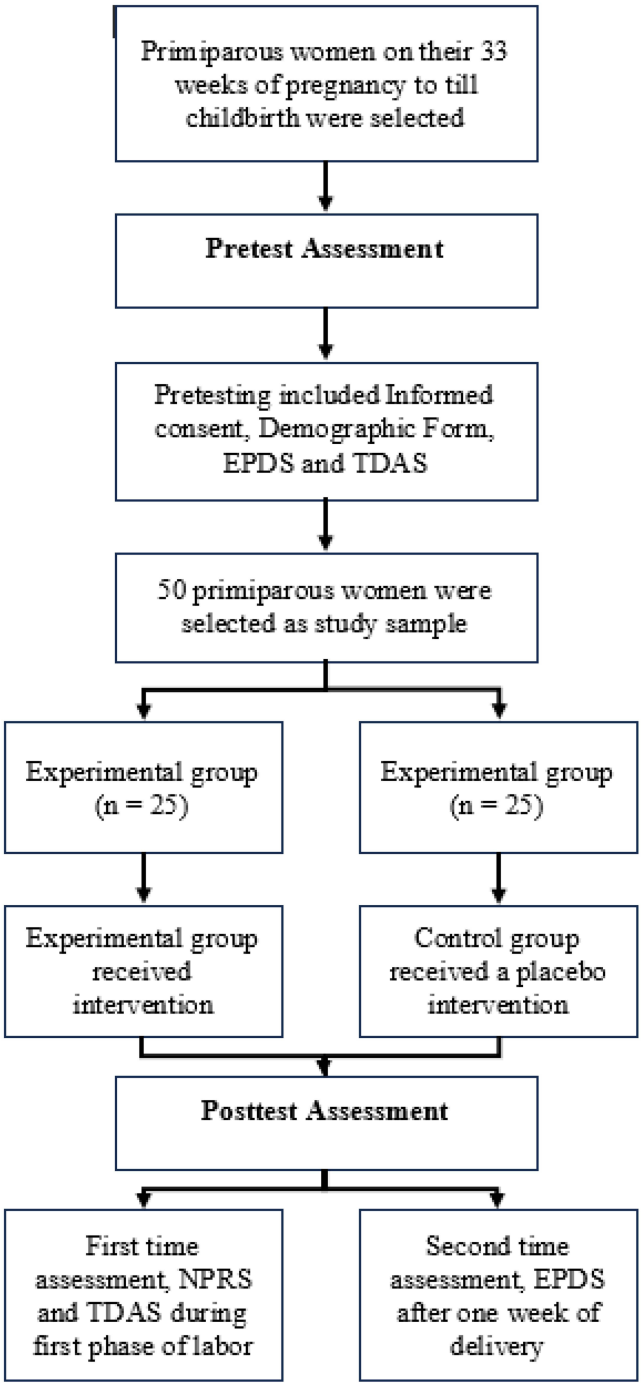

Figure 1 Study Design.

correlation between the NPRS and the VAS, providing convincing evidence of construct validity. Patients with literacy levels of 0.96 and those without literacy levels of 0.95 demonstrated high test–retest reliability.[21]

Templer's Death Anxiety Scale

Templer's death anxiety (DAS) was developed by Templer in 1971. It has 15 yes/no questions, nine of which are positive and the other six are negative. "Yes" and "No" were given a score of 1 (presence of anxiety) and 0 indicates (absence of anxiety), respectively. The overall score ranges from 0 to 15, in which 0 indicates no death anxiety and 15 indicates a prominent level of death anxiety. The DAS had a Cronbach's alpha coefficient of 0.91 in the current investigation.[22]

Edinburgh Postnatal Depression Scale (EPDS)

One week following birth, the Edinburgh Postnatal Depression Scale (EPDS) was used to assess post-partum depression symptoms. The EPDS is a ten-item self-rating questionnaire designed to detect depression in new mothers. It addresses symptoms that have been present for the past seven days.[23] Each question has four different options, with a numerical range of 0 to 3 and a maximum achievable score of 30. Without an asterisk (*), items 1, 2, and 4 are scored as 0, 1, 2, or 3, with 0 being assigned to the top box and 3 to the bottom box. Item number 3, 5–10 (highlighted with an asterisk *) is scored in reverse, with a 3 going to the top box and a 0 going to the bottom box. The EPDS had a Cronbach's alpha coefficient of 0.83 in the current investigation. A depression cut-off of 13 was found to have strong psychometric qualities in postpartum women. To identify suspected cases of postpartum depression, the present study used a standard cut-off of 13 or more.[24]

Hypnobirthing Training Guide

The hypnobirthing training guide with all written and oral instructions given to the experimental group only. Experimental groups were instructed to follow the hypnobirthing training chart until childbirth according to the instructions. A hypnobirthing training guide was given to each participant in the form of a booklet with four charts to follow. The whole training was divided into three sessions. The first two sessions were delivered in the first week of recruitment about the psychoeducation, therapies for depression, death anxiety and pain management. Third session about the labor meditation therapies that were performed during the labor and birthing process was conducted in the last week before childbirth. It aims to create a positive mindset and promote a calm birthing experience. Hypnobirthing involves the use of self-hypnosis, deep relaxation techniques, visualization, breathing exercises, labor meditation techniques and techniques targeting death anxiety, postpartum depression and labor pain to help women achieve a more natural and gentle birth. It focuses on changing the perception of pain and replacing it with feelings of relaxation and control. The technique emphasizes the power of the mind-body connection and the ability to tap into the body's natural birthing instincts. It involves practicing and conditioning the mind through regular relaxation exercises and positive affirmations. By using hypnobirthing techniques, women can enter a state of deep relaxation, which can help reduce the release of stress hormones and promote the production of endorphins, the body's natural pain relievers. It ensures a natural and calmer childbirth.

Statistical Analysis

To test the study hypothesis, the current study used the Statistical Package for Social Sciences (SPSS version 24). The data derived from this study was examined to ascertain the efficacy of hypnobirthing training in mitigating labor pain, reducing death anxiety, and preventing postpartum depression in first-time pregnant women. Descriptive statistics, such as percentages and mean scores, are employed to gather demographic data from participants. The independent sample *T*-test was employed to compare the posttest scores of the experimental and control groups. The paired sample *T*-test was applied to compare the scores within the same experimental group participants over time. The mean differences among different duration hours and death anxiety were compared using one-way ANOVA.

Ethical Consideration

This study was conducted under the approval of Northeast Normal University in China and approved by the Research Committee of the Department of Psychology, Northeast Normal University, China (NENU/PSY/2021028), followed by Declaration of Helsinki. Permission was also granted by the concerned hospitals for data collection. All the participants in this study, including those under the age of 18, were deemed capable of providing informed consent by the ethics committee, and therefore provided consent on their own behalf. The ethics committee's approval ensured that the necessary safeguards were in place to protect the rights and welfare of all the participants, including minors. Detailed information about the nature of the study was given to the participants without showing any partiality. The questionnaires were administered to each participant only after signing the consent form. The participants were given the right to withdraw from participation and terminate at any time they wished. Participants' responses were used for data analyses to investigate the study hypothesis.

Results

Characteristics of Participants

The participants in this study were the women who were admitted for childbirth. Each expected mother received one set of pretest questionnaires. A total of 100 women were recruited for the study. Out of (N = 12) women were excluded with no depression (N = 10) were excluded with second and third pregnancies, and (N = 8) women were excluded with no anxiety score. After that total (N = 70) of women remained. Out of 70 women (N = 16) who withdrew from the study, (N = 4) were excluded who did not complete the questionnaires. A total of (N = 50) women met the criteria of the study and completed the questionnaire, then (N = 25) women were included in the control group, and (N = 25) women were included in the experimental group. A total of 50 women were included in the current study (see Figure 2).

Results reported Socio-demographic, Psychological, Clinical, and Obstetrical Characteristics of participants (Table 1). Demographic characteristics were divided into two groups control and experiment. Frequency and percentage of demographic characteristics like marital status, mother's age, education, occupation, family type, no of abortions, risky pregnancy, social and emotional support, educational group, and duration of the transitional phase of labor of women in control and experimental group were presented separately to make it clearer. The total of both groups was also described. A total of 50 women were selected for the study, among them 25 (50%) were in the control group and 25 (50%) were in the experimental group. The 48 (96%) women were married and 2 (4%) were separated. Results showed

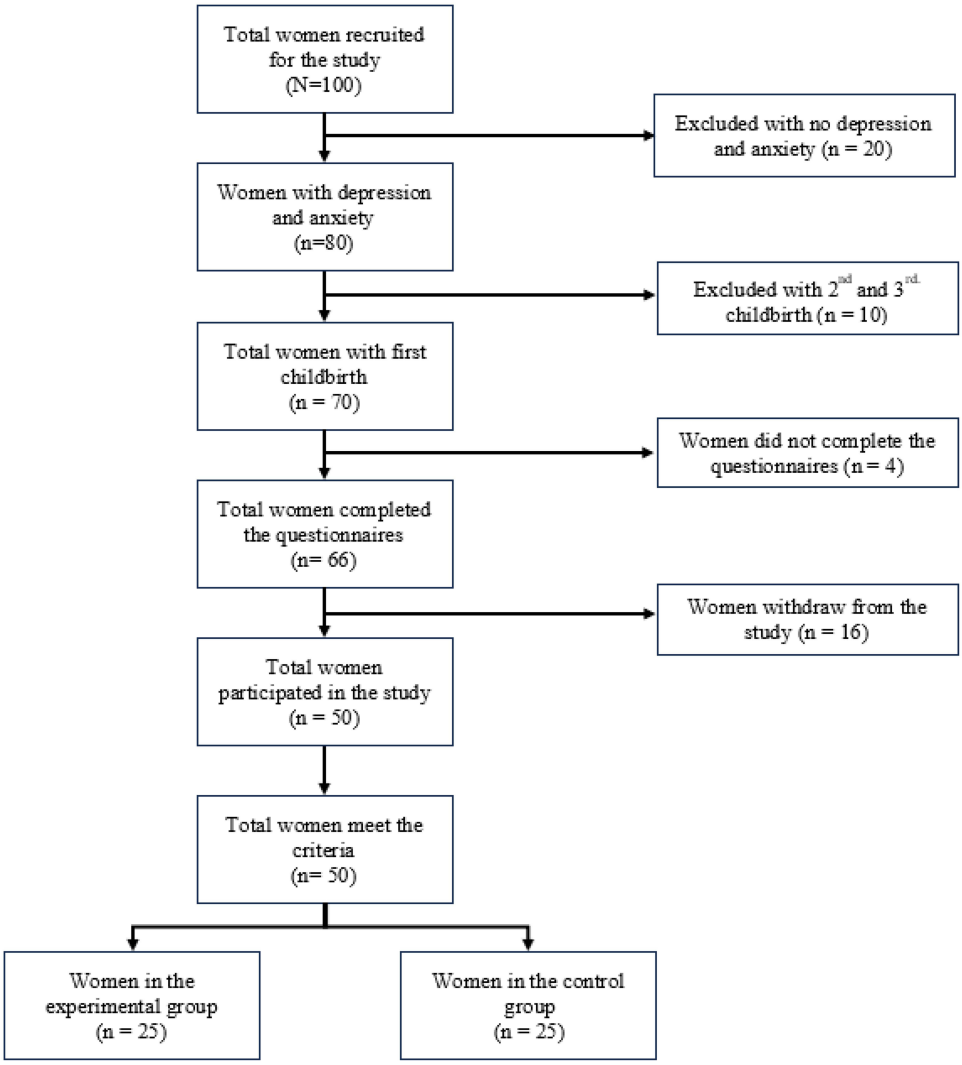

Figure 2 Flow chart of Participants.

Table 1 Descriptive Analysis of Socio-Demographic, Psychological, Clinical and Obstetrical Characteristics

Demographics		Type of Groups				Total (n=50)	
		Control Group (n=25)		Experimental Group (n=25)			
		F	%	*F*	%	*F*	%
Age							
	15–20	6	24	4	16	10	20
	21–25	6	24	10	40	16	32
	26–30	13	52	11	44	24	48
	31–35	0	0	0	0	0	0
Marital Status							
	Married	23	92	25	100	48	96
	Widow	0	0	0	0	0	0
	Divorced	0	0	0	0	0	0
	Separated	2	8	0	0	2	4
Education							
	High School	3	12	4	16	7	14
	College	6	24	6	24	12	24
	Undergraduate	6	24	9	36	15	30
	Graduation	6	24	6	24	12	24
	Postgraduate	4	16	0	0	4	8
Occupation							
	Public Sector Employee	7	28	1	4	8	16
	Private Sector Employee	2	8	4	16	6	12
	Self-employee	3	12	1	4	4	8
	Unemployed	0	0	0	0	0	0
	Housewife	8	32	12	48	20	40
	Student	5	20	7	28	12	24
Monthly Income							
	None	13	52	19	76	32	64
	20–40	1	4	5	20	6	12
	41–60	8	32	1	4	99	18
	61–80	3	12	0	0	3	6
Family Type							
	Nuclear	10	40	7	28	17	34
	Joint	15	60	18	72	33	66
No of Abortion							
	None	20	80	21	84	41	82
	1	4	16	3	12	7	14
	2–5	1	4	1	4	2	4
Educational Group							
	Yes	0	0	0	0	0	0
	No	25	100	25	100	50	100
Risky Pregnancy							
	Yes	0	0	0	0	0	0
	No	25	100	25	100	50	100

(*Continued*)

Table 1 (Continued).

Demographics		Type of Groups				Total (n=50)	
		Control Group (n=25)		Experimental Group (n=25)			
		F	%	*F*	%	*F*	%
Type of Delivery							
	Vaginal	25	100	25	100	20	100
	C-section	0	0	0	0	0	0
Duration of Labor							
	1–5 hours	0	0	11	44	11	22
	6–10 hours	9	36	13	52	22	44
	11–15 hours	9	36	1	4	10	20
	16–20 hours	7	28	0	0	7	14

that (48%) of women were between the age ranges of 26–30 and (30%) were from the undergraduate degree. It also shows that (40%) of women were housewives, and they mostly lived in nuclear families (66%). Furthermore, results indicated that (82%) of women had no history of abortion and (100%) did not join any educational group. All the women (100%) had vaginal delivery, and no women (100%) had risky pregnancy (1.3%). Lastly, results presented that (44%) of women experienced 6–10 hours of duration of labor.

The mean, standard deviation, and t-value for the experimental and control group on labor pain, death anxiety, and postpartum depression are shown in (Table 2). Results indicated a difference in labor pain with $t(48) = 15.1$, $p < 0.001$. Women in the control group ($M = 8.0$, $SD = 0.64$) experienced more labor pain than women in the experimental group who received hypnobirthing training ($M = 5.0$, $SD = 0.75$) during the transitional phase of the first stage of labor. Women in the control group with their first vaginal delivery are more vulnerable to severe labor pain during the transitional phase of labor. The women in the experimental group had reduced labor pain due to their participation in hypnobirthing training throughout their pregnancy. This training taught them how to change their perception of labor from being painful and challenging to being nonthreatening. They were also able to apply this technique during labor. By practicing regular meditation, visualization, and deep relaxation techniques, women can reduce the labor pain often connected with childbirth.

Results indicated a significant difference in death anxiety with $t(38) = 26.7$, $p < 0.001$ (see Table 2). Women in the control group with the first vaginal delivery ($M = 10.2$, $SD = 0.59$) experienced more death anxiety than women in the experimental group who received hypnobirthing training ($M = 3.7$, $SD = 1.05$) during the transitional phase of the first stage of labor. Hypnobirthing helped women in the experimental group how to control their anxiety through positive talk and relaxation exercises. Women in the control group did not receive any training about controlling their anxiety, so they reported higher scores on the death anxiety scale.

Table 2 Mean, Standard Deviation and T-Value for Posttest Comparison Between Control and Experimental Group on Labor Pain Death Anxiety and Postpartum Depression

Variables	Control Group		Experimental Group		*T (df)*	*P*	95% CI		Cohen's d
	M	*SD*	*M*	*SD*			*U*	*L*	
Labor pain	8.0	0.64	5.0	0.75	15.1(48)	<0.001	3.4	2.6	4.3
Death Anxiety	10.2	0.59	3.7	1.05	26.7(38)	<0.001	6.9	5.9	7.6
Postpartum Depression	14.5	1.35	11.8	0.37	9.51(27)	<0.001	3.2	2.1	2.7

Abbreviations: M, mean; SD, standard deviation; L, lower limit; U, upper limit.

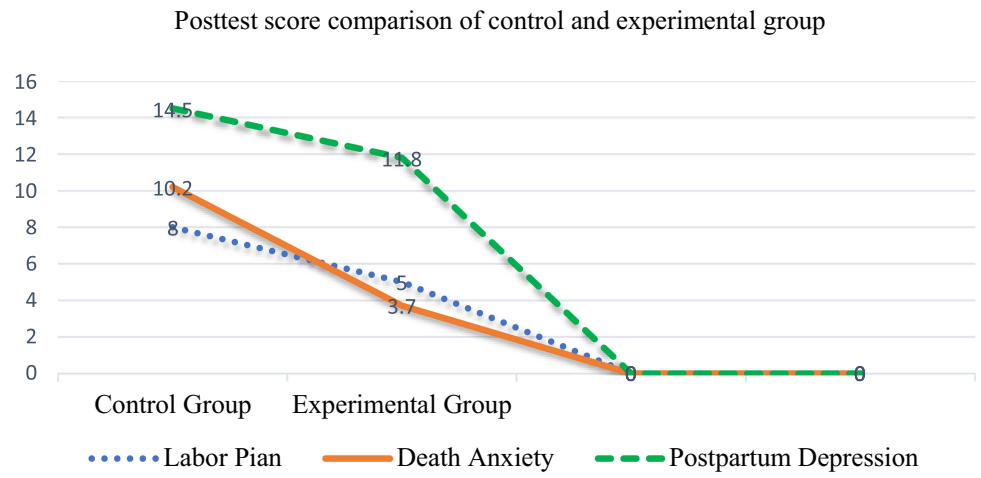

Figure 3 Posttest Comparison of variables.
Notes: Mean differences in posttest scores of labor pain, death anxiety, and postpartum depression in control and experiment groups.

Analysis indicated a significant difference between the control and experimental group in postpartum depression mean score with t (27) = 9.51, p < 0.001 (Table 2). Women in the control group (M = 14.5, SD = 1.35) had a higher risk of postpartum depression than women in the experimental group with the first vaginal delivery (M = 11.8, SD = 0.37) after one week of childbirth. The mean score of women in the experimental group was less than the mean score of women in the control group reflecting that women in the control group had a higher risk of postpartum depression than the women in the experimental group. Women in the experimental group learned different therapies to mitigate the symptoms of depression more effectively.

In conclusion, women in the experimental group who had hypnobirthing training reported lower levels of labor pain, death anxiety, and postpartum depression compared to the women in the control group who did not get any instruction to manage these conditions (see Figure 3).

A paired-sample *t*-test was performed to compare the scores of death anxiety and postpartum depression in pre-test and post-test settings (Table 3). There was a significant difference in death anxiety between the pretest (M = 10.0, SD = 0.20) and posttest (M = 3.86, SD = 1.05) conditions; t (24) = 30.07, p =< 0.001. These findings indicate that death anxiety exhibits significant differences in average values across the pretest and post-testing settings. The post-test score for death anxiety is lower than the pretest score. The data in Table 3 demonstrated that hypnobirthing training had a substantial impact on decreasing death anxiety among women in the experimental group.

Results indicated a significant mean difference in postpartum depression scores in pretest and post-testing conditions. There was a significant difference in postpartum depression in the scores for pretest (M = 14.5, SD = 1.78) and posttest (M = 11.89, SD = 0.374) conditions; t (24) = 7.59, p =< 0.001. These results suggest that postpartum depression has a significant mean difference in the pretest and post-testing conditions (Table 3). The post-test score for postpartum

Table 3 Mean, Standard Deviation and T-Value for Pretest and Posttest Score on Death Anxiety and Postpartum Depression Within Experimental Group

Groups							95% Confidence Interval	
		M	*SD*	*t*	*Df*	*P*	*L*	*U*
Pair 1	Pretest DA	10.0	0.20	30.7	24	<0.001	5.85	6.70
	Posttest DA	3.86	1.05					
Pair 2	Pretest EDPS	14.5	1.78	7.59	24	<0.001	1.98	3.45
	Posttest EDPS	11.8	0.374					

Abbreviations: M, mean; SD, standard deviation; L, lower limit; U, upper limit.

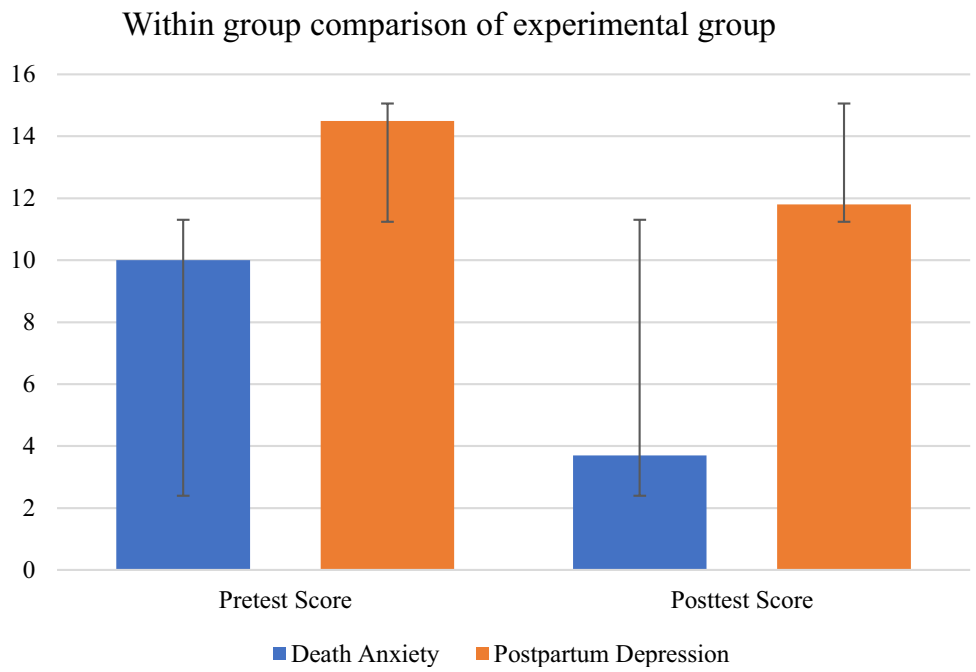

Figure 4 Pretest and Posttest comparison of the experimental group.
Notes: Pretest and posttest mean score comparison of death anxiety and postpartum depression of the experimental group. Error bars represent SEM.

depression of women who received hypnobirthing training is less than the pretest score of women who did not receive intervention training. It indicates that hypnobirthing training has a significant effect in reducing the postpartum depression of women in the experimental group. The graph shown the mean difference in the pretest and posttest of death anxiety and postpartum depression (see Figure 4).

The mean, standard deviation, and F value for death anxiety across the duration of labor groups are shown in Table 4. Results indicated significant mean differences across durations of labor groups on death anxiety with $F(3, 46) = 9.13$, $p < 0.001$. Findings revealed that 11–15 hours ($M = 9.30$, $SD = 2.2$) of duration of labor exhibited a higher level as compared to 6–10 hours ($M = 8.04$, $SD = 3.4$) and 1–5 hours ($M = 3.72$, $SD = 1.0$) of duration of labor. The value of partial η^2 was 0.37 (>.05) which indicated a large effect size. Post-hoc comparison indicated significant mean differences of each group with other groups (Table 4).

The participants in the 1–5 hours of labor duration group exhibited a lower mean death anxiety score ($M = 3.72$, $SD = 1.0$), suggesting a comparatively lower level of death anxiety within this subgroup. This finding aligns with the broader trend observed in the post hoc comparison, where this group was ranked as having the lowest death anxiety levels among the four labor duration categories. The smaller standard deviation further indicates a higher degree of consistency in death anxiety scores within this group. In contrast, participants in the 6–10 hours of labor duration group demonstrated a notably higher mean death anxiety score ($M = 8.04$, $SD = 3.4$). This increase in the mean score, coupled with a larger standard deviation, suggests a greater variability in death anxiety experiences within this group. The post hoc comparison

Table 4 The Mean, Standard Deviation and One-Way Analysis of Variance in Death Anxiety Across Duration of Labor Groups

	1–5 hours		6–10 hours		11–15 hours		16–20 hours				
Variable	***M***	***SD***	***M***	***SD***	***M***	***SD***	***M***	***SD***	***F* (3,46)**	***η²***	**Post-Hoc**
Death Anxiety	3.72	1.0	8.04	3.4	9.30	2.2	5.57	3.2	9.1***	0.37	1<2<3

Note: ***p<0.001.
Abbreviations: M, mean; SD, standard deviation; L, lower limit; U, upper limit.

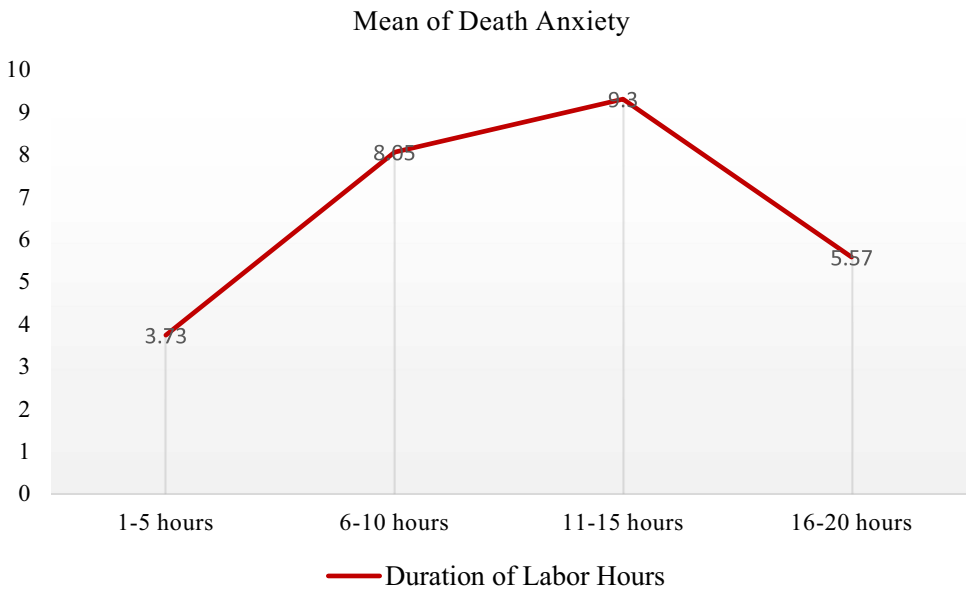

Figure 5 Mean differences for death anxiety and duration of labor.
Notes: Significant differences in death anxiety across various durations of labor, with a strong effect size. This implies that as the duration of labor increases, the level of death anxiety tends to increase as well.

reveals that this group falls second in the hierarchy, indicating an intermediate level of death anxiety compared to the other groups.

Moving to the 11–15 hours of labor duration group, participants in this category displayed the highest mean death anxiety score (M = 9.30, SD = 2.2) among all the labor duration groups. This suggests a substantial elevation in death anxiety levels for individuals experiencing labor durations within this range. The post hoc comparison emphasizes that this group ranked highest in death anxiety, indicating a potentially significant impact of prolonged labor on psychological well-being. Lastly, participants with a labor duration of 16 hours and above exhibited a mean death anxiety score of (M = 5.57, SD = 3.2). According to post hoc comparison, the score is notably lower compared to the 11–15 hours group. This suggests an attenuated level of death anxiety in individuals with the longest labor durations (see Table 4). The standard deviation implies a moderate degree of variability in death anxiety scores within this group, highlighting that experiences can still differ among individuals with extensive labor. Graph shown the significant difference in death anxiety across various durations of labor hours (see Figure 5).

The *t*-test revealed a statistically significant difference in the duration of labor pain between the experimental group (those who received hypnobirthing training) and the control group (see Table 5). The average duration of labor pain in the experimental group (M = 1.60, SD = 0.577) was lower than that in the control group (M = 2.50, SD = 0.53). The t-value *(df* = 48), 5.3 yielded a p-value of 0.001, which suggests a substantial and statistically significant distinction between the two groups. These findings indicate that undergoing hypnobirthing training has a significant effect on decreasing the duration of labor pain hours. The effect size, quantified by Cohen's d, is significant (d = 0.569), highlighting the practical importance of the results. The confidence interval (CI) for the mean difference (1.27 to 1.27) excludes zero, providing additional evidence that hypnobirthing training is substantially associated with a shorter length of labor duration compared to the control group (see Table 5).

Table 5 Mean, Standard Deviation and T-Value for Control and Experimental Group on Duration of Labor Pain

	Control Group		Experimental Group		*T* (*df*)	*P*	95% CI		Cohen's d
Variables	***M***	***SD***	***M***	***SD***			***U***	***L***	
Duration of Labor Pain	2.52	0.53	1.60	0.577	5.3(48)	<0.001	1.27	0.56	1.5

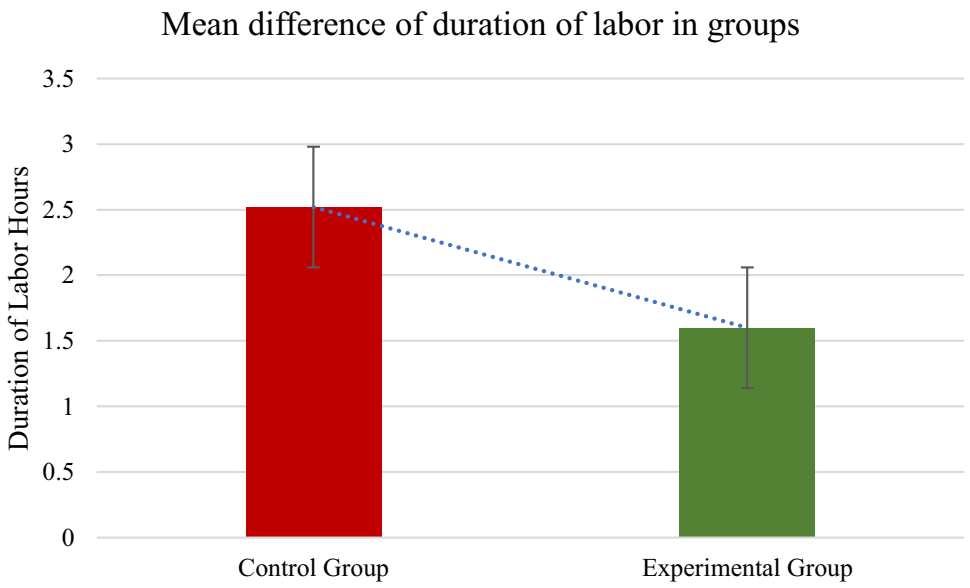

Figure 6 Means difference of groups.
Notes: Mean difference in the duration of labor pain in the control and experimental group, which indicates that the experimental group, which received hypnobirthing training had a shorter duration of labor pain than the control group. Error bars represent SEM.

Graph showed a significant mean difference in duration of labor between control and experimental group. This shows that women in the experimental group who underwent hypnobirthing training had a lower mean difference in labor hours as compared to the control group who did not receive hypnobirthing training (see Figure 6).

Discussion

The purpose of this research was to examine the effectiveness of hypnobirthing training in reducing labor pain, death anxiety, and postpartum depression in women who had their first vaginal, and to find out whether these factors were alleviated by the practice. In previous studies hypnobirthing was mostly used for the management of labor pain and stress and few studies used hypnobirthing training for postpartum depression. This study will fill the gap in the literature by designing hypnobirthing training for reducing labor pain, death anxiety, and postpartum depression by adding some new therapies according to these factors in first-time pregnant women undergoing vaginal delivery. Furthermore, most studies have measured the intensity of labor pain after childbirth, leading to recall bias that impacts the results.The current investigation measured labor pain and death anxiety during the transitional phase of the first stage of labor and postpartum depression after one week of childbirth to ensure the reliability of intensity of these factors. Furthermore, by excluding participants with factors that could independently affect the outcomes of interest, this study minimizes confounding variables, thereby increasing the internal validity of the study. This makes it more plausible that any observed differences between the control and experimental groups are due to the hypnobirthing training rather than other factors. The goal of hypnobirthing is to help women feel more prepared for giving birth by changing their mental image of labor from a terrifying and painful experience to a peaceful and pleasant one. Furthermore, the objective of this research is to provide a framework for healthcare practitioners that encourages natural childbirth while offering physical, psychological, and emotional support to women, to enhance the well-being and mental and physical health of the baby and mother, as well as foster a strong bond between them. This study also had theoretical support as the theory of gate control states that a non-noxious stimulus can activate the gate control mechanism and reduce pain when applied to a person experiencing a painful (noxious) stimulus.[25] This non-noxious stimulus can include soothing, light rubbing, gentle massage, water immersion, mobility and positions, and warm and cold packs. For mothers to manage their anxiety and depression, the self-control model suggests that they should follow a three-step process: self-monitoring, self-evaluation, and self-administration of consequences. This will help them develop healthy beliefs and habits that will benefit their children's mental and physical well-being. They are also better able to deal with negative emotions like

sadness, worry, pain, and tension as a result.[26] The behavioral and cognitive models state that one may manage their pain by taking part in healthful activities. The most effective way to engage the Central Nervous System Control mechanism, which involves diverting or concentrating the woman's attention during labor is to use relaxation techniques, yoga, auto-hypnosis, visualization, breathing, and cognitive restructuring. This system incorporates all behavioral and cognitive techniques that are used to alter the experience of pain, including relaxation, attention diversion, hypnosis, yoga, meditation, aromatherapy, breathing, music, and prenatal education.[27]

The study hypothesis was "During the first phase of labor, there will be a significant difference in the posttest score of labor pain in the experimental and control groups". Findings showed that compared to the control group, the experimental group of women reported much less discomfort during labor. The women were able to master their labor pains with the support of hypnobirthing techniques, which included meditation and relaxation techniques. Previous studies, such as the study by,[11] which investigated the effects of hypnobirthing-based supportive care on labor anxiety, pain, length, satisfaction, and spending, lend credence to these findings. In this research, participants in the intervention group reported greater levels of satisfaction with their labor experience and decreased levels of anxiety, length of pain, and expense associated with this process. The expense of labor is significantly reduced because of this care. The second research by[14] examined 60 pregnant women and found that those who used hypnobirthing to give birth had less pain and fear throughout the process, as well as shorter labor lengths in the second and third stages of labor and initial nursing periods.

The hypothesis of the research stated that there would be a significant difference in the post-test score of death anxiety between the experimental and control groups during the first stage of labor. The results indicated that women in the experimental group had lower levels of death anxiety in comparison to those in the control group. The women exhibited anxiety management throughout the whole labor phase due to their hypnobirthing training. The results of this study are consistent with previous research by,[28] which found that hypnobirthing had several positive effects on the women who participated in the study. These included lower levels of fear of giving birth (both during vaginal or spontaneous delivery), better labor experiences, and fewer reported difficulties with childcare.

The research hypothesis was that there would be a significant difference in the posttest score of postpartum depression between the experimental and control groups during the initial phase of labor. The results indicated that the experimental group had a decreased likelihood of experiencing postpartum depression compared to the control group. Previous studies have provided evidence that supports the conclusions of this study, including that hypnobirthing was shown to be successful in an evaluation by,[13] the control group of women had higher levels of anxiety and stress, while the experimental group had reduced levels of postpartum depression symptoms.

Comparing groups based on labor length, this research used a one-way analysis of variance to look for patterns of death anxiety. There were statistically significant variations in the groups' levels of death anxiety according to the length of labor. Based on the data, the study's hypothesis "there would be a significant difference in the duration of labor pain concerning death anxiety" holds weight. The results showed that compared to other groups, women experiencing labor pain between 11 and 15 hours were more likely to experience anxiety about dying. Death anxiety grew with the number of hours spent laboring and then began to decrease after reaching a high, according to the results. There were statistically significant variations in the means of the diverse groups when compared using post hoc analysis. Similarly, according to,[29] there is a correlation between anxiety and labor that lasts too long. The duration of the first stage of labor is associated with mothers who experience acute anxiety.[15]

The present research used *t*-test analysis to compare the two groups' labor durations.The results showed a statistically significant difference, suggesting that the experimental group that got hypnobirthing training had a shorter labor than the control group that got no intervention at all. This proves that hypnobirthing significantly cuts down on the time spent in discomfort during labor. The results provide credence to the study hypothesis, which states that the length of labor pain would vary significantly between the experimental and control groups. The results of the present study are consistent with previous studies like, according to a study, the hypnobirthing and the duration of the first stage of labor had a significant association with shorter labor duration.[30] One randomized controlled trial study aimed to determine the effect of hypnobirthing training on fear of childbirth (FOC) and labor duration found that the experimental group that

received hypnobirthing training had significantly lower fear of childbirth scores, lower pain scores during labor, and shorter delivery periods compared to the control group.[4]

The strengths of this study include first, that hypnobirthing is a relatively modern concept in the context of traditional birthing practices, and this research offers a scientific basis for its application. Second, the study addresses specific psychological aspects of childbirth, offering targeted interventions through hypnobirthing training. Third, utilizing a control and experimental group allows for comparative analysis, enhancing the reliability of the findings regarding the effectiveness of hypnobirthing training. Fourth, by excluding participants with factors that could independently affect the outcomes of interest, this study minimizes confounding variables, thereby increasing the internal validity of the study. This makes it more plausible that any observed differences between the control and experimental groups are due to the hypnobirthing training rather than other factors.

Limitations and future research recommendations, including a longitudinal aspect to assess the sustained impact of hypnobirthing training on postpartum well-being, could add depth to the research. Comparing hypnobirthing with other birth preparation techniques could further elucidate its unique benefits and challenges. Expanding the study to include a wider range of participants from different backgrounds and healthcare systems could validate the effectiveness of hypnobirthing across diverse populations.

Conclusion

The study conclusively demonstrates the efficacy of hypnobirthing training in significantly alleviating labor pain, reducing death anxiety, and diminishing the risk of postpartum depression among postpartum women. By highlighting the correlation between death anxiety and prolonged labor, it further substantiates the potential of hypnobirthing techniques to shorten labor hours, offering a more comfortable birthing experience. These findings advocate for a multidisciplinary approach, involving obstetricians, psychologists, and mental health professionals, to incorporate hypnobirthing into standard care practices. This integrated care model not only addresses the physical challenges of childbirth but also tackles psychological stressors, thereby promoting the holistic well-being of the mother during the pivotal phase of childbirth.

Acknowledgment

The authors thanked Dr. Adnan from Civil Hospital, Dr. Waseer from Waseer Gynecology Hospital, Sundas SanaUllah from Basic Health Unit Jalal Ballagan, and especially Hanish Sethi, who volunteered his time to assist in data collection, for their participation in the study. The study's authors also expressed their gratitude to all the women who gave their consent and made it possible.

Funding

This research was funded by the National Natural Science Foundation of China (21YJCZH056) and the Natural Science Foundation of Jilin Province 20220101296.

Disclosure

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

References

1. Mongan M. *HypnoBirthing: The Mongan Method*. Souvenir Press Limited; 2016.
2. Mammenga E, Hansen KA. Complementary and alternative treatments for postpartum depression. *South Dakota Med*. 2021;74(11):506–512.
3. Zemestani M, Fazeli Nikoo Z. Effectiveness of mindfulness-based cognitive therapy for comorbid depression and anxiety in pregnancy: a randomized controlled trial. *Arch Womens Ment Health*. 2020;23(2):207–214. doi:10.1007/s00737-019-00962-8
4. Buran G, Aksu H. Effect of hypnobirthing training on fear, pain, satisfaction related to birth, and birth outcomes: a randomized controlled trial. *Clin Nurs Res*. 2022;31(5):918–930. doi:10.1177/10547738211073394
5. Jayanti AF. Perbedaan Keikutsertaan Hypnobirthing dengan Tingkat Kecemasan Ibu Hamil dalam Menghadapi Persalinan di Kabupaten Sidoarjo. *J Keperaw Muhammad*. 2019;4(2):1.

6. Asmarany K. Efektifitas penerapan hypnobirthing dalam menurunkan tingkat kecemasan ibu hamil trimester tiga menjelang persalinan anak pertama di usia dewasa awal. *JPPP*. 2017;1(1):37–45. doi:10.21009/JPPP.011.06
7. Slomian J, Honvo G, Emonts P, Reginster JY, Bruyère O. Consequences of maternal postpartum depression: a systematic review of maternal and infant outcomes. *Womens Health Lond Engl*. 2019;15:174550651984404. doi:10.1177/1745506519844044
8. O'Connor E, Rossom RC, Henninger M, Groom HC, Burda BU. Primary care screening for and treatment of depression in pregnant and postpartum women: evidence report and systematic review for the US preventive services task force. *JAMA*. 2016;315(4):388. doi:10.1001/jama.2015.18948
9. O'Hara MW, McCabe JE. Postpartum depression: current status and future directions. *Annu Rev Clin Psychol*. 2013;9(1):379–407. doi:10.1146/annurev-clinpsy-050212-185612
10. Shorey S, Chee CYI, Ng ED, Chan YH, Tam WWS, Chong YS. Prevalence and incidence of postpartum depression among healthy mothers: a systematic review and meta-analysis. *J Psychiatr Res*. 2018;104:235–248. doi:10.1016/j.jpsychires.2018.08.001
11. Uludağ E, Mete S. The effect of nursing care provided based on the philosophy of hypnobirthing on fear, pain, duration, satisfaction and cost of labor: a single-blind randomized controlled study: the effect of nursing care on the labor process and cost. *Health Care Women Internat*. 2021;42(4–6):678–690. doi:10.1080/07399332.2020.1835916
12. Bülez A, Soğukpınar N, Sayıner FD. A quasi-experimental study to assess hypnobirthing educational intervention on labor pain and fear of childbirth—the case of Eskisehir/Turkey. *Int J Childbirth*. 2020;10(3):167–178. doi:10.1891/IJCBIRTH-D-19-00008
13. Beevi Z, Low WY, Hassan J. The effectiveness of hypnosis intervention in alleviating postpartum psychological symptoms. *Am J Clin Hypnos*. 2019;61(4):409–425. doi:10.1080/00029157.2018.1538870
14. Atis FY, Rathfisch G. The effect of hypnobirthing training given in the antenatal period on birth pain and fear. *Complementary Therapies in Clinical Practice*. 2018;33:77–84. doi:10.1016/j.ctcp.2018.08.004
15. Lubis NL, Sinambela M. The correlation of the level of anxiety of nulliparous women to the length of the first stage of spontaneous labor at private maternity clinics in the working area of delitua puskesmas, deli serdang district in 2013; 2017.
16. Hosseni SF, Pilevarzadeh M, Vazirinasab H. Non-pharmacological strategies on pain relief during labor. *Biosci Biotech Res Asia*. 2016;13(2):701–706. doi:10.13005/bbra/2087
17. Hu J, Brettle A, Jiang Z, Zeng Y. A systematic review and meta-analysis of the effect of massage therapy in pain relief during labor. *J Nurs*. 2017;6(4):1–14.
18. Priya T, Kaushal S, Dogra P, Dogra V. Prevalence and risk factors of postpartum depression in sub-Himalayan region. *Med J Armed Forces India*. 2022;S0377123721003129. doi:10.1016/j.mjafi.2021.12.003
19. Wang W, Ling B, Chen Q, Xu H, Lv J, Yu W. Effect of pre-administration of esketamine intraoperatively on postpartum depression after cesarean section: a randomized, double-blinded controlled trial. *Medicine*. 2023;102(9):e33086. doi:10.1097/MD.0000000000033086
20. Khajoei R, Dehghan M, Heydarpour N, Mazallahi M, Shokohian S, Azizzadeh Forouzi M. Comparison of death anxiety, death obsession, and humor in nurses and medical emergency personnel in COVID-19 pandemic. *J Emerg Nurs*. 2022;48(5):559–570. doi:10.1016/j.jen.2022.02.004
21. Breivik H, Borchgrevink PC, Allen SM, et al. Assessment of pain. *Br J Anaesth*. 2008;101(1):17–24. doi:10.1093/bja/aen103
22. Templer DI, Ruff CF. Death anxiety scale means, standard deviations, and embedding. *Psychol Rep*. 1971;29(1):173–174. doi:10.2466/pr0.1971.29.1.173
23. Cox J, Holden J. *Perinatal Mental Health: A Guide to the Edinburgh Postnatal Depression Scale (EPDS)*. Royal College of Psychiatrists; 2003.
24. Eberhard-Gran M, Eskild A, Tambs K, Opjordsmoen S, Ove Samuelsen S. Review of validation studies of the Edinburgh Postnatal Depression Scale. *Acta Psychiat Scandinav*. 2001;104(4):243–249. doi:10.1111/j.1600-0447.2001.00187.x
25. Astokorki A, Mauger AR. Tolerance of exercise-induced pain at a fixed rating of perceived exertion predicts time trial cycling performance. *Scand J Med Sci Sports*. 2017;27(3):309–317. doi:10.1111/sms.12659
26. Fuchs CZ, Rehm LP. A self-control behavior therapy program for depression. *J Consul Clin Psychol*. 1977;45(2):206. doi:10.1037/0022-006X.45.2.206
27. Chaillet N, Belaid L, Crochetière C, et al. Nonpharmacologic approaches for pain management during labor compared with usual care: a meta-analysis. *Birth*. 2014;41(2):122–137. doi:10.1111/birt.12103
28. Werner A, Uldbjerg N, Zachariae R, Rosen G, Nohr E. Self-hypnosis for coping with labour pain: a randomised controlled trial. *BJOG*. 2013;120(3):346–353. doi:10.1111/1471-0528.12087
29. Amidu N, Alhassan M, Issah H, et al. Perceived stress and anxiety in women during labour: a case of Tamale West Hospital, Tamale, Ghana. *Asian J Med Health*. 2018;11(2):1–10. doi:10.9734/AJMAH/2018/40373
30. Widiawati I. Melahirkan nyaman dan cepat dengan Hypnobirthing. *Care*. 2019;7(1):45–52.
31. Mahalan N, Smitha MV. Effect of audio-visual therapy on pain and anxiety in labor: a randomized controlled trial. *Europ J Obstet Gynecol Reprod Biol*. 2023;20:100240. doi:10.1016/j.eurox.2023.100240