

Birthing ball therapy to reduce anxiety in mothers with induction of labor

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ABSTRACT

Introduction: Anxiety and discomfort during labor represent the most intense experiences a woman has had in her lifetime. Anxiety in parturient women should be effectively mitigated since elevated anxiety can influence the perception of pain intensity. Anxiety and pain during labor might influence the progression and duration of labor. Methods to alleviate anxiety and labor pain encompass non-pharmacological treatments, such as birthing ball therapy, which can be implemented easily and effectively. **Objectives:** To assess the impact of birthing ball therapy on anxiety and labor pain in primiparous women undergoing induction. **Methods:** quasi-experimental with a pretest-posttest without a control group design. The sampling method employed was incidental sampling, with 23 respondents who met the inclusion criteria. Instrument used Depression Anxiety and Stress Scale (DASS). Data analysis using Wilcoxon test. **Results:** The Wilcoxon test yielded a p-value of 0.000, indicating a significant difference in anxiety levels and labor pain among first-time mums undergoing induction before and after birthing ball therapy. **Conclusion:** Birthing ball therapy influences anxiety and labor pain in first-time parturients undergoing induction at Batang Hospital.

KEYWORDS: anxiety; labor induction; birthing ball therapy

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INTRODUCTION

Childbirth is a sequence of natural processes culminating in the expulsion of the products of conception, namely a baby and placenta, from the uterus of a mother with a full-term pregnancy, either via the birth canal or alternative methods. (Kurniawati, 2017). Anxiety and childbirth pain are the most intense experiences encountered by women during their lifetime (Kundarti et al., 2024; Shahpari et al., 2024). Some women in labor experience anxiety (Permatasari, 2020). The level of anxiety experienced by laboring mothers should be kept to a minimum because a high level of anxiety can influence the subjective perception of pain (Widyastuti & Apriana, 2012). The birthing ball technique is a relaxation strategy used to facilitate the labor process (Delgado et al., 2024; Dewi et al., 2020). The birthing ball exercise is a straightforward physical activity using a ball, designed to alleviate non-pharmacological discomfort and enhance the emotional and psychological aspects of care (Choirunissa et al., 2021; Delgado et al., 2024; Handayani et al., 2024).

Several studies have demonstrated that birthing ball exercises help to strengthen a mother's self-efficacy during labor and can reduce pain. Thus, birthing ball exercises have an impact on increasing pregnant women's confidence in their capacity to cope with childbirth coping mechanisms. Birthing ball exercises can also lessen discomfort (Delgado et al., 2024; Dewi et al., 2020; Ferinawati & Zahara, 2022; Handayani et al., 2024; Miquelutti et al., 2013). Sitting comfortably on the ball and gently rocking facilitates a

sense of ease and aids labor progression by utilizing gravitational forces to enhance endorphin release, as the ball's elasticity and curvature stimulate pelvic receptors, promoting the secretion of endorphins. (Rizki & Anggraini, 2020).

Preliminary research at Batang Regency Hospital revealed that 444 ladies gave birth between May 2021 and July 2021. Induced spontaneous labor occurred in 329 individuals (74.1%), while cesarean delivery was performed in 115 individuals (25.9%). According to data from RSUD Batang, 34.7% of women who delivered vaginally experienced a protracted first stage of labor. Recent interviews with multiple patients experiencing lengthy first-stage labor at Batang Regional Hospital indicated a need for expedited labor progression. They believed that an extended labor process would result in more pain and distress.

The inducement of labor may exacerbate anxiety and induce discomfort, thereby disrupting the mother's psychological well-being if appropriate therapy is not administered. (Sari, 2017). Pain is going to be caused by his or her contractions. The mother will become passive and give up, there will be a drop in concentration, there will be a lack of focus in controlling breathing, and there will be straining that is not correct if the situation is not managed properly (Ekayani, 2017). A reduction in maternal worry and dread enhances the physiological processes of labor, allowing hormones to function properly, so inducing relaxation that diminishes pain perception and elevates maternal happiness with the childbirth experience (Wahyuni & Wahyuningsih, 2016).

METHODS

Design

This research is a quasy experiment research. The research design used Pre and Post-test without control group design.

Research Questions

How effective is birthing ball therapy in reducing anxiety in women giving birth with induction of labor?

Sample and Settings

The sampling technique used was accidental sampling with a sample size of 23 respondents. Respondents in this study were mothers with induction of labor. The Intervention was given for 15 minutes.

Variables

The independent variable in this study is the provision of birthing ball therapy, while the dependent variable in this study is the level of anxiety in labor.

Instruments

The instrument used in this study was the Depression Anxiety and Stress Scale (DASS).

Data Collections

This research was conducted from 15 January to 25 March 2022 at Batang Hospital.

Data Analysis

Data analysis using Wilcoxon test with $p < 0.05$

Ethical Consideration

This research has passed the ethical review test from the Ethics Committee of Karya Husada University Semarang with Ethical Test Number 0306/KEP/UNKAHA/LPPM/I/2021.

RESULTS

Tabel 1 Characteristics of Respondents

Characteristics of Respondents	Frequencies	Percent (%)
Age		
15 - 24	5	21.74
25 - 34	8	34.78
35 - 44	10	43.48
Education		
Elementary School	3	13.04
Junior High School	5	21.74
Senior High School	10	43.48
College	5	21.74
Parity		
Primipara	8	34.78
Multipara	15	65.22

Based on table 1, the majority of respondents as many as 10 people (43.48%) were aged between 35-44 years. As many as 10 respondents (43.48%) had a high school education level. Most of the respondent as many as 15 people (65.22%) had multiparous parity.

Table 2 Distribution of Anxiety Level Before and After Birthing Ball Therapy

The variable	Birthing Ball Therapy			
	Before		After	
	N	%	N	%
Normal	0	0	5	21.7
Mild Anxiety	7	30.4	13	56.5
Moderate Anxiety	4	17.4	3	13.0
Severe Anxiety	12	52.2	2	8.7
Total	23	100.0	23	100.0

Based on table 2, anxiety before therapy was given birthing ball therapy 12 respondents (52.2%) showed severe anxiety, 7 respondents (30.4%) experienced mild anxiety, 4 respondents (17.4%) experienced moderate anxiety and there were no respondents who did not experience anxiety. After birthing ball therapy, 2 respondents (8.7%) experienced severe anxiety, 3 respondents (13.0%) experienced moderate anxiety, 13 respondents (56.5%) were categorized as experiencing mild anxiety and 5 respondents (21.7%) were classified as experiencing normal anxiety.

Table 3 Distribution of Anxiety Level Before and After Birthing Ball Therapy

Variabel	N	Median	Std. Deviasi	Min	Max	Mean Rank	p-value
Anxiety							
Before Birthing Ball Therapy	23	7,00	1,696	4	9	0,000	0,000
After Birthing Ball Therapy	23	5,00	1,584	2	9	10,50	

Based on Table 3, it can be seen that the lowest anxiety scale is 4 and the highest is 9. The level of anxiety after birthing ball therapy is obtained the mean value is 5.00 with a standard deviation of 1.584. The lowest anxiety scale is 2.0 and the highest is 9.0. The results of statistical analysis with the Wilcoxon test in Table 1 obtained an average value of anxiety level before birthing ball therapy of 0.000 and after birthing ball therapy of 10.50. The Wilcoxon test results obtained a p-value of $0.000 \leq 0.05$ so it can be concluded that there is a difference in anxiety levels before and after birthing ball therapy.

DISCUSSION

Anxiety during the initial stage of labor with induction is a common condition encountered by women in childbirth. Anxiety before childbirth is associated with the mother's apprehension preceding the event (Rahmawati, 2018). If anxiety is not managed adequately, it may result in trauma. The thoroughness of the information presented, its delivery method, and the appropriate therapy for the circumstances can better equip the mother and enable her to anticipate all potential occurrences during childbirth, thereby alleviating feelings of anxiety and fear and reducing the likelihood of trauma (Domínguez-Solís et al., 2021; Hua et al., 2024; Kundarti et al., 2024; Widyastuti & Apriana, 2012).

This labor ball therapy is performed for approximately 15 minutes when the woman is not experiencing discomfort. The results showed that anxiety during Stage I of labor, after birth ball therapy and induction, would decrease. The results of research conducted by Anggun Sri Anggraeni and Yenny Aulya in 2021 entitled 'The Effect of Birth Ball Therapy on Anxiety Levels and Decreased Pain Intensity in Primiparous Maternity Mothers at Stage I of the Active Phase' showed that birth ball therapy significantly affects anxiety levels and decreased pain intensity in active phase I maternity mothers in Bandung City (Anggraeni et al., 2021).

The disparity in anxiety levels among laboring mums at stage I before and after the implementation of birthing ball treatment during induction. The study's results indicate a p-value of 0.000, demonstrating a significant change in anxiety levels among laboring mums in stage I before and after birthing ball therapy.

Anxiety during labor arises from psychological variables that significantly influence the progression of labor (Kundarti et al., 2024; Miquelutti et al., 2013). Some expectant mums suffer anxiety due to concerns and imagery over the smoothness of labor, the survival of the infant, and societal perceptions that regard childbirth as a precarious wager between life and death (Permatasari, 2020). Anxiety in parturient women should be effectively mitigated since elevated anxiety levels can disrupt the birth process (Widyastuti & Apriana, 2012).

Anxiety manifests during the labor process (Mahalan & Smitha, 2023). The nature of anxiety is subjective, as individuals experience varying degrees of anxiety (Kundarti et al., 2024). Anxiety in pregnant women will escalate throughout pregnancy till delivery. Nevertheless, anxiety must be mitigated, and interventions are essential, one of which is birthing ball therapy. Birthing ball therapy is said to alleviate anxiety by enhancing blood circulation, thereby offering a sense of comfort to the mother. (Astuti et al., 2021; Delgado et al., 2024; Handayani et al., 2024).

Strengths and Limitations

This study has a number of limitations, including the absence of a control group, the absence of confounding variables that have been investigated, and the absence of biomarker tests that have been utilized to identify whether or not there is a decrease in hormones in assessing the decrease in labor anxiety.

Implications for Practice

It is hoped that in the future, researchers will make use of biomarkers to demonstrate that birthing ball therapy is beneficial in lowering anxiety in women who are in the process of giving birth. Several potentially confounding factors, including faith and culture, financial status, nutrition, the amount of time spent resting, and psychological factors, may be linked to reduced levels of anxiety during birth.

CONCLUSIONS

According to the findings of the research, the p-value is 0.000, which indicates that there is a distinction in the degrees of anxiety experienced by first-time laboring mums who employed induction of labor before and following the implementation of birthing ball therapy. It is planned that a study will be conducted on the mechanism of anxiety levels and labor pain by using measures of hormone levels to determine the degree of addition and reduction that occurs in the body. This will be done to determine the amount of anxiety and labor pain.

Conflict of Interest Statement

None

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