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Birth Techniques Ball On The Intensity Of Labor Pain In Mothers Giving Birth In The First Stage Of Active Phase

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ABSTRACT

Labor pain is a physiological experience experienced by women during labor due to uterine contractions and cervical dilation. Labor pain management can be carried out pharmacologically or non-pharmacologically. One non-pharmacological method that can be used is the birth control technique. ball. Birth The birth ball is an exercise using a special ball that helps laboring mothers perform pelvic movements, increasing comfort and reducing pain intensity. This study aims to analyze the effectiveness of this birth ball technique. The effect of ball on the intensity of labor pain in mothers in the first stage of labor during the active phase. The study used a quasi-experimental design with a pretest - posttest approach. without control group. A sample of 30 mothers giving birth was selected using a purposive sampling technique. Pain intensity was measured using a Numeric Rating Pain Scale (NRS). The results showed that the average pain score before the intervention was 7.3 ± 1.1 and after the intervention it became 5.1 ± 1.0 with a p value < 0.001 . It was concluded that the birth control technique Ball is effective in reducing the intensity of labor pain in the first active phase.

Keywords: Birth Ball, Labor Pain, Non-pharmacological Methods, First Stage of Labor





1. Introduction

Labor is a physiological process involving regular uterine contractions to push the fetus through the birth canal. This process is often accompanied by intense pain, especially during the first active phase when cervical dilation is rapid.

Labor pain is influenced by various factors, such as uterine contractions, cervical dilation, pressure on pelvic structures, and psychological factors like anxiety and fear. Poorly managed pain can increase maternal stress, increase catecholamine production, and potentially delay labor.

Labor pain management can be achieved through pharmacological and non-pharmacological approaches. Non-pharmacological methods are widely used because they are relatively safe for the mother and fetus and do not cause side effects. One technique that is increasingly being implemented in obstetric practice is the use of birth control ball.

Birth A birthing ball is a large, elastic ball used by laboring mothers to perform various movements, such as sitting, hip rocking, and pelvic rotations. These movements can help increase muscle relaxation, improve fetal positioning, and reduce pressure on the lower back.

This study aims to analyze the effectiveness of birth control techniques. ball on reducing the intensity of labor pain in mothers giving birth in the first active phase.

2. Research Methods

a. Research Design

This study uses a quasi-experimental design with a pretest - posttest approach. without control group.

b. Population and Sample

The research population was mothers giving birth in the first active phase who were treated in the delivery room of Health Center X.

The sample size was 30 respondents selected using purposive sampling technique.

c. Inclusion Criteria

- 1) Mother giving birth in the first active phase (dilation 4–8 cm)
- 2) Single pregnancy
- 3) Normal delivery
- 4) Willing to undergo intervention

d. Research Procedures

- 1) Measurement of pain intensity before intervention (pretest).
- 2) Providing birth techniques ball for 20 minutes.
- 3) Re-measurement of pain intensity after intervention (posttest).

e. Research Instruments

Pain measurement using Numeric Rating Scale (NRS) with a scale of 0–10.

f. Data analysis





Data analysis was performed using:

- Descriptive analysis (mean and standard deviation)
- Paired t- test with a significance level of 0.05

3. Research Results And Discussion

a. Research Result

1) Respondent Characteristics

This study involved 30 mothers in the active phase of first-stage labor who met the inclusion criteria. Respondent characteristics included age, parity, and education level.

Table 1.
Distribution of Respondent Characteristics

Characteristics	n	%
Age		
20–30 years	18	60
31–35 years	9	30
>35 years	3	10
Parity		
Primigravida	17	57
Multigravida	13	43
Education		
Secondary education	19	63
Higher education	11	37

Most respondents were of optimal reproductive age (20–30 years). At this age, physiological adaptation to childbirth is generally better than at older ages. The majority of respondents were also primigravidas, who tend to experience higher pain intensity due to their lack of previous experience with childbirth.

2) Labor Pain Intensity Before Birth Intervention Ball

Pain intensity measurements are carried out before the mother gives birth using the birth technique. ball using a Numeric scale Rating Scale (NRS).

Table 2.
Distribution of Pain Intensity Before Intervention

Pain Scale	n	%
Moderate pain (4–6)	8	27
Severe pain (7–8)	17	57





Pain Scale	n	%
Very severe pain (9–10)	5	16

The average pain score before the intervention was 7.3 ± 1.1 , which is considered severe pain. This indicates that most women experiencing significant pain during the active phase of the first stage of labor.

Pain during this phase is caused by increasingly strong uterine contractions and rapid cervical dilation. In addition to physiological factors, anxiety and psychological stress can also exacerbate pain perception.

3) Labor Pain Intensity After Birth Intervention Ball

After giving birth, the mother performs the birth technique ball for 20 minutes, pain intensity was re-measured.

Table 3.
Distribution of Pain Intensity After Intervention

Pain Scale	n	%
Mild pain (1–3)	6	20
Moderate pain (4–6)	19	63
Severe pain (7–8)	5	17

The average pain score after the intervention was 5.1 ± 1.0 .

This shows that most respondents experienced a decrease in pain levels from severe pain to moderate pain.

4) Birth Techniques Ball

Table 4.
Comparison of Pain Scores
Before and After Intervention

Measurement	Mean \pm SD	Difference
Before intervention	7.3 ± 1.1	
After the intervention	5.1 ± 1.0	-2.2

A mean decrease in pain score of 2.2 points indicates a clinically meaningful change. The results of the paired t- test show: $p < 0.001$

This shows that the birth technique the ball has a significant effect on reducing the intensity of labor pain.

b. Discussion





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The results of the study showed that the birth technique the birth ball is effective in reducing the intensity of labor pain in mothers in the first active phase of labor. The average reduction in pain score of 2.2 points indicates that the use of the birth ball is effective in reducing labor pain in mothers in the first active phase. The ball has a significant effect in increasing the mother's comfort during the labor process.

Birth techniques the ball works by helping the laboring mother perform rhythmic pelvic movements. This movement can increase the flexibility of the pelvic joints and help speed up the descent of the fetal head into the pelvic cavity. Furthermore, this movement can reduce pressure on the lumbar region, thus helping to alleviate lower back pain often experienced during labor.

Physiologically, the use of birth control the ball can increase blood flow to the uterus and placenta, helping to improve tissue oxygenation. This can help reduce muscle tension and promote relaxation for the laboring mother.

In addition to the physiological benefits, the use of birth control the birth ball also has positive psychological effects. Women who actively move during labor tend to feel more comfortable and in control of their bodies. This can reduce anxiety and help reduce the perception of pain.

Gate's theory. Control Theory of Pain, which states that mechanical stimulation of the body can inhibit the transmission of pain impulses to the central nervous system. Pelvic movements when using birth control the ball provides sensory stimulation that helps reduce the perception of pain.

Birth techniques the ball also helps improve the fetus's position for optimal labor. A good fetal position can accelerate cervical dilation, shortening labor.

Birth effectiveness the ball can also be influenced by several factors such as the mother's anxiety level, previous childbirth experiences, and support from health workers during the delivery process.

➤ **Implications in Midwifery Services**

The results of this study show that the birth technique the birth ball can be an effective non-pharmacological method for labor pain management. Therefore, healthcare workers, especially midwives, need to educate pregnant women about the benefits of using a birth ball. ball during the labor process.

Health service facilities such as community health centers and hospitals also need to provide birth facilities. ball as part of efforts to improve the quality of mother-friendly delivery services.

4. Conclusion And Suggestions

a. Conclusion





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Birth techniques the birth ball has been proven effective in reducing the intensity of labor pain in mothers giving birth in the first active phase. The use of birth Ball can be a safe and effective non-pharmacological method in labor pain management.

b. Suggestion

- 1) Health workers can integrate birth techniques ball in maternity services.
- 2) Health care facilities need to provide birth facilities ball in the delivery room.
- 3) Further research is recommended to use an experimental design with a control group.

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