

Effect Of Counterpressure With Birth Ball On Reduction Of Labor Pain In First Stage

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ABSTRACT

The use of a birth ball during labor can reduce pain levels because it stimulates postural reflexes and keeps the muscles and spine in good condition, thereby reducing anxiety, minimal use of pethidine, facilitates descent of the fetal head, reduces the length of the first stage. The purpose of the study was to determine the effect of counterpressure with birth balls on reducing labor pain in the 1st stage of labor. Types of quantitative research and pre-experimental design. The sample were 16 mothers and the sampling technique was Accidental Sampling. The research instrument was observation sheet with univariate and bivariate analysis. Data analysis used paired sample t test. The results showed that there was an effect of counterpressure with birth balls on reducing labor pain in the 1st stage, with p-value 0.000 < 0.05, while the results of the different test with independent t-test obtained p-value = 0.006, which means that there was a difference between the groups that were treated with counterpressure. Birth Ball and what not to do on the reduction of labor pain in the 1st stage. It is hoped that the Sinta Medika Clinic can be an innovation for health services, especially in the field of maternity care to reduce maternal pain in the first stage.

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1. Introduction

A mother who gives birth will feel pain that is very continuous and regular when giving birth. Labor pain is a feeling of discomfort during labor or subjective experience of physical sensations associated with uterine contractions, cervical dilatation and effacement, and fetal descent during labor. According to WHO, most deliveries (90%) are always accompanied by pain which generally feels great, while pain during labor is a common think, the causes of pain during labor include physiological and psychological factors (Rejeki et al, 2014). On average, maternity mothers begin to feel the peak of pain in the first stage of the active phase, namely in the maximal dilatation phase (opening 4 cm to 9 cm) and the deceleration phase (opening 9-10cm). This is because in this phase the frequency and intensity of uterine contractions become more regular, longer, and stronger so that the sensation of pain is felt to increase. In primigravida the first stage lasts for \pm 13 hours, while in multigravida it lasts \pm 7 hours (Saifuddin, 2010).

Labor pain is caused by contractions that take place regularly with increasing intensity and getting stronger and more frequent. Various efforts have been made to reduce pain in labor, both pharmacologically and non-pharmacologically. One of the methods to deal with pain non-pharmacologically is the distraction method with a birth ball which can reduce physiological pain, stress and anxiety (Maryani Tri, 2014). The use of a birth ball during labor can reduce pain levels because it stimulates postural reflexes and keeps the muscles and spine in good condition, thereby reducing anxiety, minimal use of pethidine, facilitates descent of the fetal head, reduces the length of stage 1, increases maternal satisfaction and well-being. (Sriwenda Djuju, 2016).

Birth balls can be used by pregnant women in the 1st stage to a position that helps the progress of labor. The advantages of using this birth ball are increasing blood flow to the uterus, placenta and baby, relieving pressure and increasing the pelvic outlet by as much as 30%, providing comfort for

the knees and ankles, providing counter pressure to the perineum and thighs, working with gravity pushing descent of the baby thereby speeding up the delivery process. Usually, the duration of the first stage of labor in primigravida causes the pain to be felt also longer, plus less information and experience in dealing with labor pain.

Counter pressure is a strong pressure massage by placing the heel of the hand or the flat part of the hand, or also using a tennis ball in the sacrum or lumbar area. The pressure in counter pressure massage can be applied in a straight line or in small circles made during contractions. Mothers who are massaged 20 minutes every hour during labor will be more pain free, can manage fear, create a feeling of comfort, relax and respond positively to the labor process. This is because massage stimulates the body to release pain-reducing hormones, namely endorphins, which causes labor to run more gently, naturally and smoothly (Yuliasari et al, 2015).

Birth ball is a physical therapy ball that helps mothers in the first stage of labor to kneel and lean on the birthball can reduce pain so that mothers are more comfortable, by utilizing gravity can help decrease and rotate the baby's head and make it easier when counter pressure will be applied. When the mother moves, adjusts the position, is able to control her anxiety and has a birth attendant who can help her divert her mind from the perception of pain, the pain will decrease (Aprillia, 2014).

Based on a preliminary survey conducted by researchers, it was found that 8 out of 10 in-partum mothers complained of feeling very severe pain during labor and did not know how to reduce pain during labor. Sinta Medika Clinic. The formulation of the problem in this study is the Effect of Counterpressure with Birth Ball on Reduction of First Stage Pain at Sinta Medika Clinic. The purpose of this study was to determine the effect of counterpressure by reducing labor pain in the first stage at the Sinta Medika Clinic. This type of research is a quantitative study with a quasi-experimental approach with a pretest- post- test with control group design. The research method used is in accordance with the research objective, namely to determine the effect of counterpressure with birth balls on reducing pain in the first stage.

2. Method

The population in this study were all mothers giving birth at the Sinta Medika clinic taken from the average delivery visit during the study period, namely from August - October 2021 as many as ± 32 mothers giving birth in the first active phase at the time of the study. The sampling technique in this study uses the accidental sampling method, where this sampling is done by taking cases or respondents who happen to exist or are available in a place according to the research context (Notoatmodjo, 2012). Researchers did not test the validity and reliability of the Face pain rating scale because this instrument is a standardized and reliable pain scale measuring instrument and has been used in previous labor pain studies. Bivariate analysis in this study was used to analyze the effect of counterpressure with birthball on reducing labor pain in the first stage of active phase by using a paired T-test statistical test.

3. Results and Discussion

3.1 Maternal pain in first stage before Counterpressure with Birth Ball

Table 1
Distribution of Pain Frequency in first stage labor before and after Counterpressure with Birth Ball (Intervention Group)

Pregnancy pain (pretest)	Frequency	%
Mild pain	0	0
Moderate pain	5	31,3
Severe pain	11	68,7
Amount	16	100
Pregnancy pain (posttest)	f	%
Mild pain	7	43,7
Moderate pain	9	56,3
Severe pain	0	0
Amount	16	100

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The table shows that most of the mothers who gave birth in the first stage before Counterpressure with Birth Ball experienced severe pain levels as much as 68.7% and moderate pain as much as 31.3%. After being given Counterpressure treatment with Birth Ball, the pain in the first stage of labor experienced a change, namely that most of the mothers experienced moderate pain levels as much as 56.3% and mild pain as much as 43.7%.

3.2 Maternal pain in the first stage of labor without Counterpressure with Birth Ball

Table 2.

Distribution of Pain Frequency in the first stage of labor in the control group

Pregnancy pain (pretest)	Frequency	%
Mild pain	0	0
Moderate pain	5	31,3
Severe pain	11	68,7
Amount	16	100
Pregnancy pain (postest)	Frequency	%
Mild pain	7	43,7
Moderate pain	9	56,3
Severe pain	0	0
Amount	16	100

Based on table 4.2 above, it is known that the first stage of labor in the control group before the counterpressure with Birth Ball was not performed, most of them experienced a level of severe pain as much as 68.7% and moderate pain as much as 31.3% and after most experienced a moderate level of pain as much as 56.3% and severe pain as much as 18.7%.

Table 3.

Normality Test for First Stage of Labor Pain at Sinta Medika Clinic

t	Treatment	P.value	Information
	Pretest	0,107	Normal distribution
	Posttest	0,100	Normal distribution
Treatment	No	P.value	Information
	Pretest	0,107	Normal distribution
	Posttest	0,692	Normal distribution

Based on the results of the normality test using Shapiro Wilk, the results obtained for all variables with a p value > 0.05, which means the distribution is normal, then the test used is a parametric test with a paired sample t test to prove whether or not there is an effect of Counterpressure with Birth Ball on Decrease in labor pain in the first stage, then continued by conducting an independent sample t test to see the difference between the treated and non-treated groups. Based on the results of statistical tests regarding the Effect of Counterpressure with Birth Ball on Reduction of First Stage Labor Pain at Sinta Medika Clinic, it can be seen in the table below

Table 4.

The Effect of Counterpressure with Birth Ball on Reduction of First Stage of Labor Pain in the Experiment/Treatment Group

Treatment group	Mean	Standar devisiasi	Median (Min-max)	P value
Before	6,31	1,621	7,00 (4-9)	0,000
After	3,56	1,209	4,00 (2-6)	

Table shows the results of the paired sample t test, the average value (mean) of pain before being given treatment is 6.31 and after being given 3.56, and the significance value shows a p-value of 0.000 which means p-value < α which indicates there is The Effect of Counterpressure With Birth Ball on Reduction of First Stage of Labor Pain at Sinta Medika Clinic.

Table 5.

The Effect of Counterpressure with Birth Ball on Reduction of First Stage of Labor Pain at Sinta Medika Clinic (Control Group)

Group without treatment	Mean	Standar devisiasi	Median (Min-max)	P value
Before	6,31	1,621	7,00 (4-9)	0,084
Aftern	5,00	1,549	5,00 (2-8)	

Table shows the results of the paired sample t test, the average value (mean) of pain before being given treatment is 6.31 and after being given 5.00, and the significance value shows a p-value of 0.084 which means $p\text{-value} < \alpha$ which indicates there is no influence.

Table 6.

The difference between the 1st stage of labor pain given treatment and without treatment

Group	Mean	Standard deviation	P value
Treatment	3,56	1,209	0,006
Without Treatment	5,00	1,549	

Table shows the results of the independent t-test of the sample test, the average value (mean) of pain in the treatment group is 3.56 and the group without treatment is 5.00, and the significance value shows a p-value of 0.006 which means $p\text{-value} < \alpha$ which indicates there is a difference in the 1st stage of labor pain that is given treatment and without treatment. This is in line with the results of research from Kurniawati, et al (2017) showing the average labor pain in the group given birth ball exercises was 4.5 lower than the control group 5.4 with a p-value of 0.01. Multivariate analysis of model 4 obtained an R^2 value of 0.49 which means that the birth ball exercise and support from husband and family contribute to labor pain, which is 49%. Another study conducted by Pasongli, Rating, Pesak (2014) showed the results of labor pain before counter pressure massage was on a scale of 9-10 (100%) and after counter

pressure massage the pain decreased the most on a scale of 3-6 as many as 13 respondents (86,7%). Data analysis showed a significance less than 5% ($p=0.000 < 0.05$) so it can be seen that counter pressure massage can effectively reduce pain intensity in the first stage of the active phase. On average, maternity mothers begin to feel the peak of pain in the first stage of the active phase, namely in the maximal dilatation phase (opening 4cm to 9 cm) and the deceleration phase (opening 9-10cm). This is because in this phase the frequency and intensity of uterine contractions become more regular, longer, and stronger so that the sensation of pain is felt to increase. In primigravida the first stage lasts for ± 13 hours, while in multigravida it lasts ± 7 hours (Saifuddin, 2010).

Birth balls can be used by pregnant women in the 1st stage to a position that helps the progress of labor. The advantages of using this birth ball are increasing blood flow to the uterus, placenta and baby, relieving pressure and increasing the pelvic outlet by as much as 30%, providing comfort for the knees and ankles, providing counter pressure to the perineum and thighs, working with gravity pushing decrease in the baby so that it accelerates the delivery process (Djuju, 2013).

The stages of labor are divided into 4 stages, namely: In the first stage, which is called the opening stage, the cervix opens until it dilates 10 cm. The second stage is also known as the production stage. Because of his strength and strength the mother pushes the fetus out until it is born. In the third stage or when the placenta separates from the uterine wall and is delivered. The fourth stage starts from the birth of the placenta and lasts 1 hour. At that time, it was observed whether there was no postpartum hemorrhage (Sarwono, 2010). The first stage of labor begins with the appearance of labor contractions characterized by progressive cervical changes and ends with complete cervical dilatation. This time is divided into 2 phases, namely the latent phase and the active phase. The latent phase is the phase that begins at 0 cm cervical dilatation until the cervical dilatation reaches 3 cm.

In this phase, uterine contractions increase. The frequency, duration, and intensity are every minute, 15-20 seconds long with sufficient intensity to 5-7 minutes, 30-40 seconds long and with strong intensity. The active phase begins at 4 cm cervical dilatation and ends until cervical dilatation reaches 10 cm. In this phase, uterine contractions become effective, marked by an increase in the frequency, duration and strength of contractions, from 4 cm to 10 cm. In primigravida the first stage of labor usually lasts for approximately 20 hours. In multigravida it lasts about 14 hours. Pain caused

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by uterine contractions and cervical dilatation. The longer you feel the pain, the stronger it will be. The peak of pain occurs in the active phase where the dilatation is complete to 10 cm. The intensity of pain during labor affects the psychological condition of the mother, the delivery process, and the well-being of the fetus. (Eko, 2015). Usually, the duration of the first stage of labor in primigravida causes the pain to be felt also longer, plus less information and experience in dealing with labor pain. So the risk of experiencing greater fatigue which results in a response to anxiety, tension, fear and even panic. Anxiety and fear in the labor process cause the release of stress hormones, namely adrenaline and ketocholamines which provide a stiff and tense response in the body, muscles and cells (Eko, 2015).

This condition makes most mothers choose the fastest and easiest way to relieve pain, namely sectio caesarea surgery without clear indications and also ask to use painkillers such as epidural anesthesia which increases the risk of morbidity and mortality in mother and baby. The use of epidural anesthesia and painkillers can have adverse side effects including fetal hypoxia, risk of neonatal respiratory depression, decreased

4. Conclusion

The distribution of the frequency of mothers giving birth in the first stage before Counter pressure with Birth Ball mostly experienced severe pain levels as much as 68.7% and moderate pain as much as 31.3%. The distribution of the frequency of the first stage of labor after being given Counter pressure treatment with Birth Ball. The pain of the first stage of labor experienced a change, namely that most of the mothers experienced moderate pain levels as much as 56.3% and mild pain as much as 43.7%. Based on the results of the statistical paired sample t test, the p-value is 0.000 < 0.05, which means that there is an effect of Counter pressure with Birth Ball on Reduction of First Stage Labor Pain at Sinta Medika Clinic. While the results of the different test with independent t-test obtained p.value = 0.006, which means that there is a difference between the groups who performed Counter pressure with Birth Ball and those who did not.

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