

The Effect of the Use of Birthing Ball on the Progress of First Stage Childbirth on Primigravida

Miftakhul Mu'alimah, Putri
Wahyu Wigati

Kadiri University

Email:
miftakhulmualimah@unik-
kediri.ac.id

ABSTRACT

In Indonesia, the maternal mortality rate is still high, especially in death in maternity mothers, and this is a common problem that must be solved. One of the causes of maternal death is the occurrence of long labor that will be at risk of bleeding with various causes such as uterine atonia, birth canal lacerations, infections, fatigue, and shock. In infants will increase the risk of bleeding, death, trauma, and disease. This long labor can be prevented and pursued by various actions, one of which is non-pharmacological efforts, namely using birthing balls during the labor process, especially during the first stage of labor. This study aims to find out the effect of birthing balls on the progress of the first stage of childbirth on primigravida. This research method is a quasi-experiment with design research posttest *only control design*. Samples in the study of mothers born from April to June 2021 were distinguished between the treatment and control groups. The results showed an effect on the use of birthing balls on the progress of the first stage of labor in a primigravida with a value of $p \text{ value } 0.000 < \alpha 0.05$ with a time difference between the treatment group and control of 2.9 hours. It is expected that pregnant women can prepare for the labor process by increasing knowledge and experience, especially by using the birthing ball from the end of pregnancy.

Received : March 7nd 2022

Accepted : April 11rd 2022

Published : May 27th 2022

Keywords: Birthing ball, First stage of labour, Primigravida

*Copyright © 2022 IIK STRADA Indonesia
All right reserved.*



This is an open-access article distributed under the terms of the Creative Commons Attribution-ShareAlike 4.0 International License.

INTRODUCTION

Labor is how the baby, placenta, and amniotic membranes exit the mother's uterus. Labor is considered normal if the process occurs at a sufficient age of months (after 37 weeks). The labor process passes through four times, at which one is divided into two phases, namely the latent phase and active phase. The latent phase is the period from the beginning of labor to the point when the opening begins to run progressively. The active step is the initial period from the dynamic progress of the entrance to the complete space (Varney, 2017).

According to data from WHO in 2017, noted that every day 810 mothers die from complications of pregnancy and childbirth. At the same time, Indonesia recorded 38 maternal

deaths per day (based on AKI 305). This figure is still relatively high when compared to neighboring countries in the ASEAN region. The latest data from the Ministry of Health in 2017 stated that until the first semester of 2017, there were 1,712 cases of maternal death during childbirth. This figure is still far from reaching the agenda of the Sustainable Development Goals (SDG's) target in 2030, which is 70/100,000 live births.

The maternal cause of death during 2013-2017 was bleeding by 30.3%, hypertension by 27.1%, infection by 7.3%, while long labor by 1.8%, abortus by 1.6%, and others by 40.8%. Other causes are indirect causes, such as cancer, kidney, heart, tuberculosis, or other diseases suffered by the mother (Kemenkes RI, 2018).

From the data above, long labor is one of the causes of maternal death. However, the amount is not as much as bleeding and hypertension. Still, if the long delivery is not immediately treated or prevented before, it will cause complications and emergencies in the mother and baby. Baby. There can be bleeding, shock, and death in the mother, while in infants, there can be fetal distress, asphyxia, and caput. Gustyar (2017) stated that mothers with long labor hospitalized in Hospitals in Indonesia obtained a proportion of 4.3%, which is 12,176 out of 281,050 deliveries.

Long labor is when the first stage active (from 4 cm to opening 10) usually does not exceed 12 hours (WHO, 2018). Another opinion mentions that long labor is a labor process that lasts more than 24 hours, and this problem must be assessed the cause immediately. Factors that affect labor become longer are presentation abnormalities, inadequate contractions, birth canal abnormalities, twin pregnancies, and anemia. (Varney, 2017).

In primigravida, the length of labor at one time has a longer duration than multigravida. The length of the first stage labor in primigravida is about 20 hours, while multigravida is about 14 hours. But not all natural childbirth will end according to average time. Delivery that is not normal due to the prolonged labor.

The long labor can be prevented by providing comprehensive obstetric care to the mother during the labor process by monitoring the progress of the labor process using partograph observation sheets since entering the active phase. So that if found, the refiner of labor can immediately take appropriate action. (JNPK-KR, 2014).

To prevent the occurrence of prolonged labor, the midwives can make several non-pharmacological efforts during the labor process, namely by doing yoga movements that can be done in the delivery room, breathing techniques, and the use of birth balls (birth balls). The use of this birth ball is a combination of yoga movement techniques, especially pelvic rocking, that can flex the pelvic muscles to help widen the birth canal and make the labor process progress (Zaky, 2016).

A birth ball is not widely known and not yet familiar, even though a birth ball is very effective in speeding up labor. The advantages of these two birth ball uses are that it increases blood flow to the uterus, placenta, and baby, relieves pressure, and increases pelvic outlet by as much as 30% and provides comfort for the knees and ankles provides contriteness to the perineum and erect thighs. This posture works with gravity pushing the baby down, thus speeding up the labor process. The working principle of a birthing ball is that it can increase the size of the pelvic cavity by making a pelvic shaking motion over the ball and slowly swinging the hips forward and backward, right, left, and circularly. the midwives can apply this movement to pregnant women and mothers in the process of childbirth. (Aprilia, 2014).

Research conducted by Rohmah (2016) in Gombang on the application of active birth techniques using a birth ball to advance childbirth is the progress of labor to be faster 2-3 hours (Rohmah, 2017). This research aims to find out the effect of birthing balls on first-stage childbirth on primigravida.

METHOD

This research is a type of Quasi-experiment research with posttest only control design research design. This study was conducted in April 2021 with a sample of 32 respondents with a population of all mothers with a gestational age of 36-40 weeks who carried out labor at 3 PMB (Independent Midwife Practices) in Mojoroto Subdistrict In April - June 2021. Sampling techniques use accidental sampling.

RESULTS

Table 1 Distribution Of Frequency Characteristics Of Respondents Based On Age In Both The Treatment Group And The Control Group

No	Age	Frequency	Percentage (%)
1	<20 years	5	15,6
2	20 -35 years	27	84,4
3	>35 years	-	0
Total		32	100

Table 1 shows the characteristics of respondents based on age that almost all respondents aged 20 - 35 years, which is 84.4%.

Table 2. Distribution Of Frequency Characteristics Of Respondents Based On Occupation In Both The Treatment Group And The Control Group

No	Age	Frequency	Percentage (%)
1	Civil Servant	2	6,2
2	Entrepreneur	12	37,5
3	House Maid	18	56,2
4	Temporary worker	0	0
Total		32	100

Table 2 shows respondents' characteristics based on work that most respondents are not working or as housewives, which is 56.2%.

Table 3. Distribution Of Frequency Characteristics Of Respondents Based On Education In Both The Treatment Group And The Control Group

No	Age	Frequency	Percentage (%)
1	Elementary	14	43,8
2	Middle	14	43,8
3	Higher	4	12,5
Total		32	100

Table 3 shows the characteristics of respondents based on Education that almost some respondents educated in middle and high school are 43.8% each.

Table 4. Difference in Length of First Stage Labor In Primigravida

Group	Labor Progress				Mean Of rank	Sum Of rank	P value (mann whitney)
	Mean	Min	Max	SD			
Treatment	7,2500	6.00	9.00	0.75277	8.66	133.50	0,000
Control	10,1562	8.00	12.00	0.96123	24,34	389.50	

Table 4 showed that the mean value of the length of labor time when I was between the treatment group was 7.2500 and the control group 10.1562. The value of P-value = 0.0000 <

the value of α 0.05, which means that there is a difference in the length of the delivery time of the first stage labor in the treatment and control groups..

DISCUSSION

Based on the study results, it is known that the average length of first stage labor primigravida mothers is given treatment using a birthing ball which is 7.25 hours. While in primigravida, mothers who do not use a birthing ball, which is 10.15 hours, there is a difference of 2.9 hours between the group given treatment and those not. The results of statistical tests showed the result of p value 0.000 is less than the value of α 0.05 so that there is an influence on the use of Birthing Ball on the progress of first stage childbirth in primigravida.

First stage labor is a time of labor that is characterized by the discharge of mucus mixed with blood (bloody show) because the cervix begins to open (dilation) and flatten (effacement) (Sondakh, 2013). Kala 1 is divided into two parts, namely the latent phase and the active phase. The latent phase is the initial phase of the cervical opening when the opening is 1 -3 cm. In contrast, the most extensive cervical dilation occurs in the active phase, and the fetus's presentation part descends further into the pelvis. In primipara, women are expected to experience dilation of at least 1 cm/hour and multipara mothers 1.5 cm/hour. According to Friedman, the mother's average length of active phase delivery time is 5.8 hours or 348 minutes, and this active phase starts from the opening of 4 -10 cm. (Walsh, 2017).

The progress or length of labor is not the same as each other, nor does it affect the age of first pregnant and giving birth. As in the study results above, almost all respondents aged 20-35 years, but between the treatment group and the control group, there is a difference in the length of first stage labor. The passage strongly influences the size of first stage delivery: birth canal, Passenger: conception results (fetus and placenta), Power: maternal strength (his and straining Power), Psyche: psychological mother (anxiety and readiness to face labor), Position: Position of the mother during childbirth, Helper and Companion.

In this study, one of the factors studied was passage and position. In this passage and position, the mother was given treatment by giving therapy using the birthing ball to strengthen the abdominal and waist muscles. Besides, it can reduce pressure on the abdomen, reduce stress on the bladder, help the mother relax to relieve tension that impacts reducing the pain of labor felt by the mother. Physical movement patterned with pelvic rocking is also beneficial to increase the pelvic outlet by 30%. It facilitates stretching of the perineum without much pressure and optimizes oxygen flow and blood circulation to the fetus due to an upright sitting position. Physical movement patterned with pelvic rocking is also effective for the decline of the fetus to the pelvic floor due to the effects of gravity. so that the fetus can descend easily and quickly during the labor process and labor pain will be reduced (Aprillia, Yessie 2017).

Kurniawati (2017), in her research, stated that the group of women who did birth ball exercise experienced a shorter delivery, low analgesic use, and low incidence of sectio caesaria. Sriwenda's research (2016) proved that the length of the active phase of labor was 30% shorter. The resistance during the second period of delivery decreased significantly in the group that carried out the exercise. Meanwhile, research from Indrayani (2016) stated that the mother's position is also very influential on the adaptation of anatomy and physiology of childbirth. The upright position also provides some advantages. Changing the position offers comfort, makes fatigue reduced, and smooths blood circulation. A good position includes sitting on top of the gym ball (birthing ball), standing, squatting, walking. The upright position allows for the decline of the bottom part of the fetus. Birthing ball also has other benefits, including reducing the incidence rate when lengthened, accelerating cervical cancer, stimulating uterine contractions, widening the pelvis's diameter, and accelerating the decline of the fetal head (Zaky, 2016).

So in this study, it can be concluded that the use of a birthing ball during labor precisely in the active phase is very influential on the progress of the birthing ball. Labor because when the mother sits on the Birthing ball, the mother tends to move to open the birth canal with a movement to rotate the pelvis and open the thighs to flex the muscles around the pelvis and help the cervix dilate optimally..

CONCLUSION

There is an influence on the use of birthing balls on first-stage childbirth on primigravida. From the treatment group and the control group, there was a difference of 2.9 hours when passing the first delivery. The average control group took 10.15 hours, while the treatment group took 7.25 hours.

REFERENCES

- Aprillia, Yessie. 2014. *Gentle Birth Balance : Persalinan Holistik mind, Body and Soul*. Bandung : Qanita.
- Aprilia, Y. 2011. *Birthing Ball*. <http://mynaturalchildbirth.org/birthing-ball>.
- Dyah Renaningtyas, Edi Sucipto, Adevia Maulida Chikmah. 2013. Hubungan Pelaksanaan *Pelvic Rocking* Dengan *Birthing Ball* Terhadap Lamanya Kala I Pada Ibu Bersalin Di Griya Hamil Sehat Mejasem.
- Fidatul Jamila, Yana Agus S, Zummatul Atika. 2019. Pengaruh *Pelvic Rocking Exercises* Menggunakan *Birthing Ball* Pada Ibu Bersalin Kala I Terhadap Kemajuan Dan Lama Persalinan. *Jurnal Ilmu dan Teknologi Kesehatan*, Vol. .12 No. 1 ISSN 2086-8510 (Print), ISSN 2655-5875 (Online).
- Ika Yulia Darma, Nurul Abdillah. 2020. Penerapan Teknik *Active Birth* Menggunakan *Birth Ball* Terhadap Kemajuan Persalinan Kala I Pada Ibu Bersalin. *JIK (Jurnal Ilmu Kesehatan)* Online ISSN: 2597-8594 Print ISSN: 2580-930X Jurnal homepage: <https://jik.stikesalifah.ac.id>.
- Kementerian Kesehatan RI. 2018. *Profil Kesehatan Indonesia Tahun 2015*. <http://www.depkes.go.id/Profil> Data Kesehatan Indonesia Tahun 2018.
- Kemenkes RI. *Profil Kesehatan 2015*. , (2016).
- Kurniawati, Ade. 2017. *Efektivitas Latihan Birth Ball terhadap Penurunan Nyeri Persalinan Kala I Fase Aktif pada Primigravida*. *Jurnal Ners dan Kebidanan Indonesia*. ISSN 2354-7642 (Print), ISSN 2503-1856 (Online).
- Lailatul Khusnul Rizki, Fritria Dwi Anggraini. 2019. Efektivitas *Pelvic Rocking Exercise* Terhadap Kemajuan Persalinan Dan Kejadian Robekan Perineum Di Pmb Mei Kurniawati Surabaya. *Midwifery Journal* |Vol. 5, No. 1, Januari 2020, hal 9-12.
- Masbait, Sahtria Ningsih, dkk. 2015. *Penurunan Nyeri Persalinan Kala I Fase Aktif Sebelum dan Setelah Dilakukan Pelvic Rocking dengan Birthing Ball pada Ibu Bersalin di RB Rahayu Ungaran Tahun 2015*.
- Meri Wiliandari, Yona Desni Sagita. 2021. Pengaruh Terapi Birthball Pada Primigravida Terhadap Lamanya Persalinan Kala I Di Pmb Meri Wiliandari Dan PMB Sri Wartini

Kecamatan Padang Ratu Kabupaten Lampung Tengah Tahun 2021. Jurnal Maternitas Aisyah (JAMAN AISYAH) Universitas Aisyah Pringsewu e-ISSN : 2721-1762 p-ISSN : 2721-1770 Volume 2 Issue 2.

- Prawirohardjo, S. 2009. *Ilmu Kebidanan*. Jakarta: Yayasan Bina Pustaka Sarwono Prawirohardjo.
- Sondakh, Jenny J.S. 2013. *Asuhan Kebidanan Persalinan dan Bayi Baru Lahir*. Jakarta : Erlangga.
- Sriwenda, 2016. *Efektifitas Latihan Birth Ball terhadap Efikasi Diri Primipara dengan Persalinan Normal*. Jurnal Ners dan Kebidanan Indonesia. ISSN 2354-7642.
- Varney, H. 2017. *Buku Ajar Asuhan Kebidanan*. Ed. 14. Jakarta : EGC.
- World Health Organization. 2018. *Global Health Observatory (GHO) data : Maternal Mortality*. http://www.who.int/gho/maternal_health/mortality/maternal_mortality.
- Zaky, N. H. (2016). Effect of pelvic rocking exercise using sitting position on the birth ball during the first stage of labor on its progress. *IOSR Journal of Nursing*.