Journal for Research in Public Health
ISSN 2685-5283 (Print) 2685-5275 (Online)

Journal for Research in Public Health, 21-30
Vol 4 No 1 July 2022
URL: https://jrph.org/

# Effectiveness of the Combination of the Birthing Ball Method and Finger Reflexology To reduce labor pain in women giving birth during the first active phase In the Maternity Room of the Betun Health Center

**Lucia Claritha Leki[1], Yulida Ti'ani[2]**
[1,2] Institute of Health Sciences STRADA Indonesia
**Corresponding author**:**luciaclarithaleki@gmail.com**

**ABSTRACT**

The birth process is identical to the pain that will be experienced. Pain during labor is a physiological process. The high incidence of pain in mothers giving birth, 15% experience mild pain, 35% with moderate pain, 30% with severe pain and 20% of labor is accompanied by very severe pain. This causes birth mothers to want a birth process with minimal pain. There are many ways to reduce labor pain, one of which is using the birthing ball method and finger-held reflexology. The aim of this study was to determine the effectiveness of the combination of the birthing ball method and finger-held reflexology to reduce labor pain. This research is quantitative research with a research design including experimental research. This research is included in the Quasi Experimental type of research with a pre test and post test control group design. The sample in this study was taken using a purposive sampling technique and divided into two groups, one group acting as the treatment group and the other acting as the control group. The research was conducted in the maternity room of the Betun Community Health Center. The results of the study showed that there was a decrease in the degree of pain in the intervention group from a moderate pain scale to a mild pain scale of 30% as proven by the Wilcoxon test. earned value *asymp say.(2 tailed)*=0.020 (<0.05) it can be concluded that there is effectiveness in using a combination of the birthing ball method and finger-held reflexology to reduce labor pain in mothers giving birth during the first active phase in the Betun Community Health Center Maternity Room.

**Keywords**: *Birthing ball, Finger Grasp, Labor Pain*

## INTRODUCTION

The birth process is identical to the pain that will be experienced. Pain during labor is a physiological process. Pain causes frustration and despair, so some mothers worry that they will not be able to go through the birthing process. The high incidence of pain in mothers giving birth, 15% experience mild pain, 35% moderate pain, 30% severe pain and 20% of labor is accompanied by very severe pain (Rejeki, 2014). 67% of mothers are worried about pain during labor, therefore, it is necessary to consider how to deal with this pain. Research in the United States around 70% to 80% of mothers who give birth expect labor to take place without feeling pain, currently 20% to 50% of births At home Private hospitals in Indonesia perform Cesarean section. The current trend is that mothers choose to give birth surgically with cesarean section to avoid pain during normal delivery (Halimatus Sakdiah, 2017). The mother's psychological conditions such as fear, tension and anxiety make the mother more painful (Kennedy, Ruth, & Martin, 2019). (Complementary midwifery: Reducing labor pain with birth ball exercises, Noviyanti et al, 2020).

Efforts to relieve labor pain can be done using pharmacological methods or non pharmacological methods. Considering the potential side effects on the mother and fetus, the use of pharmacological methods in the form of analgesics and anesthesia may not be the first choice for delivery. Many women in labor wish to avoid pain by minimizing the use of pharmacological methods.

Therapy is non-pharmacological, namely the therapy used is without using drugs, but by providing various techniques that can at least slightly reduce the pain when labor arrives. One method that is considered effective for reducing labor pain is the birthing ball method and finger-held reflexology. The birthing ball method is a method of physical therapy or non-pharmacological action that uses a ball made of soft, large plastic and filled with air. (Mirzakhani, et al, 2015). Birthing ball aims stimulate postural reflexes. Sitting on the Birthing Ball will make the mother feel more comfortable (Aprilia, 2011). Birthing ball can reduce pain and anxiety scores (Farrag & Omar, 2018).

Birthing balls help facilitate the labor process, especially during the first stage, and the pressure from the baby's head on the cervix remains constant when the mother gives birth. in

position upright, so that cervical dilatation can occur more quickly (Aprilia, 2011). Birthing balls can help shorten the duration of the first stage (Mathew, et al 2012). Sitting on a birthing ball provides a feeling of comfort (Weiss, 2004). The finger hold relaxation technique can be used to reduce pain with a very simple relaxation method and can be done by anyone who is in contact with the fingers and the flow of energy in the body (Liana, 2008). The aim of this study was to analyze the effectiveness of the combination of the birthing ball method and finger-held reflexology to reduce labor pain in mothers in the first stage of labor phase active in the Betun Community Health Center Maternity Room

## RESEARCH METHODS

This type of research is quantitative, with the research design included in the type of experimental research. Based on the research location, it is clinical research and there are treatments in the research. Based on the data source, it is primary research. The sample for this study was 40 mothers who gave birth from August 5 to August 17 2021 in the Maternity Room of the Betun Community Health Center who met the inclusion and exclusion criteria.

## RESEARCH RESULT

**Table 1.** Frequency Characteristics of Respondents in the intervention group and control group

| No | Characteristics | Intervention Group | | Control Group | |
|---|---|---|---|---|---|
| | | N | % | n | % |
| **1** | Age | | | | |
| | 20-35 years | 17 | 85 | 15 | 75 |
| | >35 years | 3 | 15 | 5 | 25 |
| **2** | Work | | | | |
| | IRT | 9 | 45 | 8 | 40 |
| | Civil servants | 7 | 35 | 5 | 25 |
| | Private | 4 | 20 | 7 | 35 |
| **3** | Parity | | | | |

| | | | | |
|---|---|---|---|---|
| Primigravida | 9 | 45 | 4 | 20 |
| Multigravida | 11 | 55 | 16 | 80 |

Is :

n : number of respondents

% percentage value of the number of respondents

Table 1 shows that based on the characteristics of the respondents in the intervention group, most of them were 20-35 years old, 17 people (85%). Based on the occupation in the intervention group, most of the housewives (IRT) were 9 people (45%). Based on parity, the majority of the intervention group were multigravida, 11 people (55%).

Based on the characteristics of the respondents in the control group, most of them were 20-35 years old, 15 people (75%). Based on the work in the control group, most of the mothers were housewives, 8 people (40%). Based on parity, the control group was mostly multigravida, 16 people (80%).

**Table 2.** Distribution of Pain in the Intervention Group (before intervention and after intervention) and Control Group

| No | The degree of pain felt | Pre Intervention | | Post Intervention | | Control Group | |
|---|---|---|---|---|---|---|---|
| | | n | % | n | % | N | % |
| 1 | No Pain | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | Mild Pain | 5 | 25 | 16 | 80 | 10 | 50 |
| 3 | Moderate Pain | 15 | 75 | 2 | 10 | 8 | 40 |
| 4 | Severe Pain | 0 | 0 | 2 | 10 | 2 | 10 |

Based on table 2, it shows that from the intervention group of 20 research subjects, 15 research subjects (75.0%) felt moderate pain before being given the intervention. And after the intervention was carried out, namely giving the Birthing ball method and finger holding

reflexology to reduce the pain scale from moderate pain by 15 people (75.0%) to 2 people (10%). There were 2 (10%) research subjects who experienced an increase in the pain scale to severe pain after being given the intervention.

Based on the table above, it shows that from the intervention group of 20 research subjects, 16 research subjects (80.0%) felt mild pain after the birthing ball and finger holding reflexology. Meanwhile, in the control group of 20 research subjects, there were 2 research subjects (10%) experiencing severe pain who were not given a birthing ball or finger grip.

**Table 3.** Distribution of pain in the intervention group before and after treatment based on parity

| No | Degree of pain felt | Pre intervention | | | | Post intervention | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | First pregnant | | Multigravida | | First pregnant | | Multi pregnant | |
| | | N | % | N | % | N | % | N | % |
| 1 | No Pain | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | Mild Pain | 4 | 20 | 1 | 5 | 5 | 25 | 11 | 55 |
| 3 | Moderate Pain | 5 | 25 | 10 | 50 | 2 | 10 | 0 | 0 |
| 4 | Severe Pain | 0 | 0 | 0 | 0 | 2 | 10 | 0 | 0 |

Based on table 3, it shows that from the intervention group of 20 research subjects, 10 research subjects (50.0%) felt moderate pain before being given the intervention in the multigravida group compared to 5 people (25%) in the primigravida group. And there were also 4 people (20%) who felt mild pain before the intervention was given in the primigravida group compared to 1 person (5%) in the multigravida group. After being given intervention to decline the degree of pain felt by the multigravida group was mild pain for 11 people (55%) and at primigravida mild pain to 5 people (25%). There is an increase in the degree of pain in primigravida Initially there were no respondents who experienced severe pain after

the intervention, there were 2 people (10%) in the primigravida group who experienced an increase in the degree of pain.

**Table 4.** Distribution of pain in the intervention group before and after treatment based on age

| No | Degree of pain felt | Pre intervention | | | | Post intervention | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | 20-35 years | | >35 years | | 20-35 Year | | >35 years | |
| | | N | % | N | % | N | % | N | % |
| 1 | No Pain | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | Mild Pain | 5 | 25 | 0 | 0 | 13 | 65 | 3 | 15 |
| 3 | Moderate Pain | 12 | 60 | 3 | 15 | 2 | 10 | 0 | 0 |
| 4 | Severe Pain | 0 | 0 | 0 | 0 | 2 | 10 | 0 | 0 |

Based on table 4, it shows that of the 20 respondents in the intervention group, 12 people (60%) in the 20-35 year age group experienced moderate pain before being given the intervention. After being given the intervention, the degree of pain decreased to mild pain, 13 people (65%). Meanwhile, in the age group >35 years, the degree of pain decreased to mild pain in 3 people (15%).

**Table 5**. Effectiveness of the combination of the birthing ball method and handheld finger reflexology technique to reduce pain in the Betun Community Health Center Maternity Room in 2021

| **Birthing ball** | **Pain scale** | | | | **Total** | | | |
|---|---|---|---|---|---|---|---|---|
| | Mild pain | | Moderate/severe pain | | | | **WITH** | Asymp. Sig. (2-tailed) |
| | F | % | F | % | F | % | | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Intervention** | 16 | 80,0 | 4 | 20,0 | 20 | 100 | -2,324[b] | 0,020 |
| **Control** | 10 | 50,0 | 10 | 50,0 | 20 | 100 | | |
| **Amount** | 26 | | 14 | | 40 | | | |

Table 5 shows that the incidence of mild pain occurred more frequently in the intervention group of 16 people (80.0%) who carried out a combination of the birthing ball method and finger grasp reflexology. After carrying out the Wilcoxon test earned value *asymp say.(2 tailed)*=0.020 (<0.05), then statistically it shows the effectiveness of the combination of the birthing ball method and handheld finger reflexology to reduce labor pain in mothers during the first active phase.

## DISCUSSION

The results of the research show that there is an effectiveness of the combination of the birthing ball method and finger-held reflexology to reduce labor pain in mothers giving birth during the first active phase. Statistical analysis shows p=0.02 (<0.05), which means there is effectiveness of the combination of the two methods in reducing labor pain. The degree of pain decreased from moderate pain to mild pain by 30% in mothers aged 20-35 years. According to Hurlock, at reproductive age (20-35 years) there is maximum response readiness both in adapting to certain things and little by little it decreases as you get older. Apart from that, at reproductive age they are more open to other people and usually they will exchange experiences about the same things they have experienced. (Hurlock, 2002).

The reduction in pain in the first stage of labor occurred after intervention was carried out in the form of birth ball exercises which were carried out for thirty minutes and observed using a visual analog scale to determine the degree of pain in mothers in the active phase of first stage labor who were treated. According to Graston in Rumbin, stated that significantly more severe levels of pain were felt between primiparous and multiparous parties regarding 1st stage labor pain, the majority of multiparas experienced severe levels of pain. Primigravidas experience the process of cervical flattening occurring earlier than opening, so the labor process takes longer compared to multigravidas. Table 3 shows that the multigravida mother before being given treatment had a moderate pain scale and after being

given the intervention there was a decrease in the pain scale to mild pain. However, 5 people experienced moderate pain before the intervention was given to primigravida mothers and after the intervention there was a decrease in pain in some people so that the degree of moderate pain in primigravidas became 2 people, and there was an increase in the degree of pain to severe pain in several primigravida mothers. This is due to differences in the pain threshold of each birth mother. The discomfort felt by some primigravida mothers is also caused by the body position which supports gravity and accelerates cervical dilatation so that they feel tolerable pain after a combination of these two methods. The use of a birth ball facilitates the birthing mother to carry out physical movements that are patterned with pelvic rocking (shaking the pelvis). Pelvic rocking can strengthen the abdominal and waist muscles, reduce pressure on the waist, reduce pressure on the bladder, help the mother relax so that it can reduce tension which has an impact on reducing the labor pain felt by the mother.

This proves the benefits of providing the birthing ball method and handheld finger reflexology which can help mothers in labor to reduce labor pain and provide a sense of comfort during the birthing process. The use of a birthing ball allows the birthing mother to experience a faster delivery because it can help the process of lowering the fetus' head into the pelvic inlet. The use of the birthing ball method and finger-held reflexology, apart from reducing pain, also helps mothers in labor feel comfortable during the birthing process and speeds up the delivery process.

## CONCLUSION

The birthing ball method and finger-held reflexology are effective in reducing labor pain in mothers giving birth during the first active phase. This technique is one way to divert the attention of the birthing mother from the pain she is feeling so that the mother is not stressed and the mother's anxiety is reduced. When a mother in labor focuses her attention on the pain she is feeling, this will affect her perception of pain, which will cause the pain she feels to increase. This can be overcome by distraction, namely efforts to divert a person's pain to another stimulus. Birth Ball is a method of reducing pain using distraction techniques, namely diverting the mother's attention to other things so that she can reduce her awareness of pain and even increase her threshold/tolerance for pain.. So it is necessary to use a

combination of the birthing ball method and handheld finger reflexology during childbirth. Based on this research, it can be analyzed that there is an effectiveness of the combination of the birthing ball method and finger-held reflexology to reduce pain during labor between the intervention group and the control group, because these two methods are able to divert the pain felt by the mother in labor and switch to another stimulus. The combination of these two methods can be used by health institutions as a non-pharmacological method to help reduce labor pain so as to create a safe and loving birth for the mother.

## REFERENCES

Aprilia Y. Rileks nyaman dan aman saat hamil dan melahirkan. Jakarta: Gagas Media; 2010.

Anik Maryunani. (2010). nyeri dalam persalinan. Jakarta: CV trans Info Media

Bandiyah, S. 2012. Kehamilan, Persalinan & Gangguan Kehamilan. Yogyakarta: Nuha Medika.

Doaa Mustafa Ramadan, S., Hanan, A., & Nahed, K. (2019). Effect of Birthing Ball Exercises during Pregnancy on the First Stage Progress of Labor. International Journal of Nursing. http://ijnnet.com/journals/ijn/Vol_6_No_2_December_2019/6.pdf

Fatimah, S. SiT, M. K., & Prasetya lestari, S. ST, . M. Kes. (2019). Pijat Perineum (S. Desy Rachmawati (Ed.); 2019th ed.). PUSTAKA BARU PRESS.

Farrer, H. 2013. Perawatan Maternitas. Jakarta: Penerbit Buku Kedokteran EGC

Gau M-L, Chang C-Y, Tian S-H, Lin K-C. (2011). Effects of Birth Ball Exercise on Pain and Self-Efficacy during Childbirth: a Randomised Controlled Trial in Taiwan. Midwifery [Internet]. 2011 Dec;27(6):e293–300.

Hau & Kwan Ws Chan S, Li W. (2011). The Birth Ball Experience: Outcome Evaluation of The Intrapartum Use of Birth ball. HKJGOM [Internet]. 2011;11(1):59–64

Hooman,M.,et all (2015). Vol 16. Pharmacogenetics in electroconvulsive therapy and adjunctive medications. https://doi.org/10.2217/pgs.15.57

Leung RW, Li JF, Leung MK, et al. Efficacy of birth ball exercises on labour pain management. Hong Kong Med J. 2013;19(5):393-399. doi:10.12809/hkmj13392

Mander, R. 2012. Nyeri Persalinan. Jakarta: Penerbit Buku Kedokteran EGC.

Mochtar, Rustam. 2012. Sinopsis Obstetri : Obstetri Fisiologi, Obstetri Patologi. Edisi ketiga. Jakarta : EGC.

Noviyanti,dkk (2020).Vo.14. Kebidanan komplementer: Pengurangan nyeri persalinan dengan latihan birth ball. Holistik Jurnal Kesehatan. http://ejurnalmalahayati.ac.id/index.php/holistik/article/view/2876

Somayeh, M., Robab Latifnejad, R.,Ramin. S.,Leila. K.,(2015). Effect of birth ball on labor pain relief: A systematic review and meta-analysis.The Journal of obstetrics and gynaecology research. 30 September 2015 https://doi.org/10.1111/jog.12802

Sulistyawati dan Nugraheny. 2013. Asuhan Kebidanan pada Ibu Bersalin. Yogyakarta: Salemba Medika.

Surtiningsih , Kun Aristiati, S., Sri,W.,( 2017). Efektivitas Pelvic Rocking Exercises terhadap Lama Waktu Persalinan pada Ibu Primipara. Jurnal Ilmiah Kesehatan (JIK) Vol X, No 2, September 2017 ISSN 1978-3167, E-ISSN 2580-135X

Wiknjosastro. 2010. Buku panduan Praktis Pelayanan Kesehatan Maternal dan Neonatal, Edisi 1. Cet. 12. Jakarta : Bina Pustaka.