



BIRTH BALL EXERCISE ON LABOR PAIN RELIEF : CASE REPORT

Binda Emillya Tari Agusthea ^{1*}, Ida Widiawati ², Rika Resmana ³

^{1,2,3} Departement of Midwifery Poltekkes Ministry Health Bandung.
bindaemillyatariagusthea@student.poltekkesbandung.ac.id

Abstract, Background: *During the first stage of labor, there is a process of dilatation, namely the contraction of the uterus which causes the cervical ostium to open and move the fetus towards the birth canal. The contractions that occur will cause the pain that starts from the lower back area and then spreads to the mother's lower abdomen. The efforts to relieve the labor pain can use the pharmacological and non-pharmacological methods. One of the non-pharmacological efforts is physical the therapy using the birth ball method.*

Objective: *The purpose of this study is to determine the effect of Birthing Ball on decreasing the intensity of pain experienced by mothers in labor.*

Methods : *This study uses a literature review method.*

Result : *The results of this study indicate that the application of evidence based in reducing the intensity of pain in inpartu mothers using a birth ball is considered effective. This can be seen from the results of pain scale measurements conducted before and after the intervention. In the pre-test results, it was concluded that the mother experienced pain at number 7 which means severe pain. Meanwhile, after the intervention, and the post-test was carried out, the mother's score was at number 6 which means moderate pain. In plain view, it can be concluded that there is a decrease in pain intensity on Mrs.Rani after the intervention.*

Conclusion : *The Birth Ball method has an effect on decreasing the pain in maternal labor.*

Key words: *labor, pain, birth ball*

Background

Labor is the physiological process that is indicated by the existence of contraction and the open of cervix to release the infant. During the 1st stage labor there is a dilatation process which is a uterine contraction which causes a cervical ostium to open and move the fetus towards the birth canal. That occurred contraction causes a pain that is commenced from the lower back areas to then spread to mother's lower abdomen [1].

The labor pain can be caused by some factors. First, the contracted cervical muscle causes a dilatation, cervical depletion, and cervical ischemic as an effect of myometrium artery that contracting. Usually the mother

feels the pain during the contraction and will not feel so during the intervals among the contractions. Second, the pain is caused by pelvic base muscle strain which comes when the pregnancy approaches the second stage, the pain occurs in vagina, rectum and perineum, around the anus which is caused by the stretching on the lower birth canal and the decrease is on the lowest part of the fetus. Third, it is caused by the psychological condition. The pain causes an anxiety. Anxiety, fear, and strained will trigger the production of prostaglandin hormone so that it causes a stress which can affect the body ability to withstand the pain [2]. The occurred pain also can affect the mother condition which causes the exhaustion, anxious, fear

and causes a stress. Those things will cause an anxiety if it is not solved, the stress and fear will cause an increase of pain intensity that is experienced by the mother [3]. The anxiety and fear will cause a pain so that it makes the uterus muscle becomes stronger and harder. The anxiety and fear also trigger the release of adrenalin hormone that causes the cervix becomes hard so that it causes the slow process of labor [4]. Physiologically the labor pain starts to occur on active latent 1st stage. The peak of the pain occurs on the active phase where the open part reaches 10 cm. in this phase the contraction becomes stronger and the duration becomes longer so that it will cause a rising pain [5].

The effort to stop the labor pain can use a pharmacological or non -pharmacological method [6]. The non-pharmacological pain relief method is more recommended for pregnant mothers [7]. The mother care during the 1st stage also should be given, one of them is by giving the relaxation technique. One of the relaxation techniques and non-pharmacological action in the pain treatment during the labor that is by using the birth ball. Birth ball is a physical therapy ball which helps the 1st stage inpartu mother into a helping position of the labor progress and can be used in any position. One of its movement is by sitting on the ball and wiggling that makes a comfort and it helps the labor progress by utilizing the gravity while increasing the endorphin hormone release. The elasticity and the curve part of the ball stimulate the receptor on pelvis which is responsible to secrete the endorphin [8].

Methods

The literature used in this case report was conducted by article review that is sourced from PubMed, and Google Scholar. The relevant articles is obtained by applying the keywords *Birthing Ball*, *Birth Ball*, *Labor Pain* with Boolean Operator “OR” and “AND”. The relevant journal articles is selected based on the inclusion criteria which includes the publication limit of 10 years which is between 2011 until 2022, *full-text*, the research design is the Literature Review and Sistematic Review, in English or Indonesian Language.

Result and Discussion

The characteristics of respondents include: age 30 years, multigravida with a gestational age of 38 weeks. The intervention was carried out during the I active phase for 30 minutes at the time of contraction and pain assessment was carried out before and after birtball using the Numeric Rating Scale (NRS).

The mother tells that she feels a heartburn that spreads out to her pelvis so that it causes the pain. After the measurement of pain level by using the *Numeric Rating Scale (NRS)* 0-10 with 0 is no pain, 1-3 is light pain, 4-6 is medium pain, 7-9 is heavy pain and 10 is severe pain, on the *test* result that is conducted before the intervention to mothers shows a score of 7 which indicates a heavy pain.

Psychologically, during the labor process, the mother experiences the contraction or a uterus muscle movement which stretches and then shortened, so that it can give a pain. The labor pain due to the contraction of uterus causes a dilatation and the depletion of cervix and ischemia uterus due to the myometrium contraction. The pain on 1st stage of labor is a heavy pain that is experienced by the mother in a long period. The number of primigravida labor mother that experiences a heavy pain is 46%, 64% experiences a medium and light pain, meanwhile on multigravida 37% of labor mother experiences a heavy pain, and 63% experiences a medium and light pain. A severe pain that occurs during the labor can make the mother feels worry and anxious. The relationship between the pain and anxiety is complex and interplay. The anxiety can increase the pain, and pain can also cause an anxiety.[11]

After conducting the *pre-test* on mother and it is obtained for a result that the mother experiences a heavy pain, therefore the health workers give an intervention by asking the mother to sit on the *birth ball* and wiggling it and it is done in the straight body position and sit so that it makes the mother feels comfortable. *Post-test* uses *Numeric Rating Scale (NRS)* on the first 30 minutes, and the mother tells that the pain that she feels has

decreased, and before the intervention is given, the score is 7, but on the *post-test* it 6 which means it is a medium pain and the mother experiences a pain intensity decrease from the pre intervention.

The physiology of those things is during the contraction and labor relaxation, labor mother needs something that can ease the pain. The birth ball method is one of the methods of labor pain reduction which will give a stimulus to the activity that is experienced by the mother through a movement so that the mother will focus on patterned movement activities that can ease the pain and anxiety in facing the labor. By giving the *birth ball* method to labor mother of active 1st stage, the pain that is experienced by the mother has decreased due to the intention shifting toward the pain and the patterned activities done by the mother. However, the pain decrease will not cause a decrease of his contraction. The his contraction that is experienced by the mother is a normal thing that occurs on labor mother so that if the his contraction is disturbed, many mothers who want to give birth will experience a long period of labor.

Conclusion

The application of *evidence based* in decreasing the pain intensity on inpartu mothers using *birth ball* is claimed to be effective. This can be seen from the measurement scale result of pain that is conducted in pre intervention and post intervention. On the *pre-test* result, it can be concluded that the mother experiences a pain on score of 7 which indicates a heavy pain. Meanwhile on post intervention, and after the *post-test*, it obtains the score of mother on 6 which indicates a medium pain. In plain view, it can be concluded that there is a decrease of pain intensity on Mrs.Rani after she gets an intervention.

obtains a result of pain decrease which is on

References

- 1 Rosdahl CB. Buku Ajar Keperawatan Dasar. Jakarta: EGC; 2014.
- 2 Afroh FJ & Sudarti. Teori Pengukuran Nyeri & Nyeri
- 3 Persalinan. Yogyakarta: Nuha Medika; 2012
- 4 Heni S. Akupresur Untuk Kesehatan Wanita Berbasis Hasil Penelitian. Yogyakarta: Unimma Press; 2018
- 5 Anik M. Ilmu Kesehatan Anak dan Kebidanan. Jakarta: CV. Agung Seta; 2010.
- 6 Rukiyah AY & Yulianti L. Asuhan Kebidanan IV Patologi Kebidanan. Jakarta: Trans Info Media; 2012.
- 7 Kurniawati A, Dasuki D, & Kartini F. Efektivitas Latihan Birth Ball Terhadap Penurunan Nyeri Persalinan Kala I Fase Aktif On Primigravida. Jurnal Ners dan Kebidanan Indonesia, ISSN 2354-7642, 1–10.
<https://ejournal.almaata.ac.id/index.php/JN/KI/article/view/341/0>
- 8 Yeung MPS, Tsang KWK, Yip BHK, Tam WH, Ip WY, Hau FWL, et al. Birth ball for pregnant women inlabour research protocol: a multi-centre randomised controlled trial. BMC Pregnancy Childbirth.2019;19(1):153
- 9 Yunarsih, Erna S, Dyah IK. Birth Ball The Effect Of Exercise On The Reduction Of Labor Pain When I Phase I Active. *The 3rd Joint International Conferences*, Vol. 3, No. 1
- 10 Lusi L. Efek Penggunaan Birth Ball Untuk Ibu Hamil Dalam Persalinan: Literature Review. Tunas-Tunas Riset Kesehatan, Vol 10 No 1, DOI: <http://dx.doi.org/10.33846/2trik10103>
- 11 Lailiyana, Yeni A, Melly W. Pengaruh Penggunaan Birth Ball Terhadap Tingkat Kecemasan Dan Intensitas Nyeri Ibu Bersalin Di Klinik Pratama Bhakti Kota Pekanbaru Tahun 2017.
<https://osf.io/hbr7z/download/?format=pdf>