

The Effect of Gym Ball on Reducing Low Back Pain, Labor Pain, and Progress in Primigravida Labor

Rosidah Solihah¹, Metty Nurherliyany¹, Sandriani¹, Nayundha Indicasari Putri¹
¹Department of Midwifery, STIKes Muhammadiyah Ciamis, Ciamis, Indonesia

Correspondence Author: Rosidah Solihah

Email: rosidahsolihah11@gmail.com

Address : Jl. K.H Ahmad Dahlan No. 20, Ciamis, West Java, Indonesia, +6282115778614

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ABSTRACT

Introduction: The average third-trimester pregnant woman often experiences lower back pain and it is caused by a shift in the woman's center of gravity and her posture becoming increasingly lordotic due to the growing weight of the uterus, excessive bending, walking without rest, and lifting weights. Pregnancy exercise with a ball or gym ball is an effective way to reduce back pain during the third trimester of pregnancy. In addition to reducing pain during pregnancy and childbirth, the gym ball can also accelerate labor in primigravida and increase the effectiveness of sleep in third-trimester pregnant women. **Objective:** This literature review was conducted to find references related to the Gym Ball in reducing low back pain, labor pain, and labor progress. **Method:** This literature review was conducted using the PRISMA method (Preferred Reporting Items for Systematic and Meta-Analyses). **Result:** Based on the articles that have been analyzed, it can be determined that using the gym ball can reduce lower back pain in the third trimester, ease labor pain, and accelerate the progress of labor in primigravida mothers. **Conclusion:** The gym ball can provide relaxation to the muscles so that it can reduce pain in the back, reduce labor pain, accelerate labor, and improve the mother's sleep quality. Referring to that, it is suggested that all health facilities be able to provide gym ball services, which are given to pregnant women since the third trimester as one of the preparatory activities for childbirth.

Keywords: back pain, gym ball, quick labor

Introduction

Pregnancy is a physiological process that changes the mother and her environment. With pregnancy, the woman's body system undergoes fundamental changes to support the development and growth of the fetus in the uterus during the pregnancy process. In early pregnancy, pregnant women will usually experience changes accompanied by discomfort such as nausea, vomiting, fever, and weakness. In the second and third trimesters, there will

be enlargement of the abdomen, anatomical changes, and hormonal changes that will cause changes in the mother. With the growing mother's stomach accompanied by an enlarged uterus, the mother will experience pain in the lower back along with the emergence of other complaints, including shortness of breath pain, varicose veins, hemorrhoids, constipation, sleep disturbances, and others.

The higher the balance behaviour in the physical, psychological, and spiritual realms, the further it will reduce anxiety during pregnancy and childbirth, when usually the mother will complain of stress due to discomfort during pregnancy, such as lower back pain. If there is back pain (long back pain), the lower back pain will worsen. This is found in pregnant women who are recording their pregnancy. Lower back pain in pregnant women in the second and third trimesters is one of the discomforts of pregnancy. With different pain scales, an increase in gestational age is one of the causative factors (Purnamasari, 2019).

The average third-trimester pregnant woman often experiences lower back pain. This is caused by a shift in the woman's center of gravity and her posture becoming increasingly lordotic due to the growing weight of the uterus, excessive bending, walking without rest, and lifting weights (Arummega, Rahmawati, & Meiranny, 2022). Pain management with pharmacology will be more effective than non-pharmacology, which is an easy and cheap alternative but has side effects that are harmful to the fetus, so proper care is relaxation, relaxation during pregnancy will be a mother's back pain diversion (Kurniawati, Dasuki, & Kartini, 2017).

Following the pregnancy stage, a woman will endure the labor phase, which is immediately followed by childbirth, which is equally painful. In order to open the cervix and move the baby's head toward the pelvis, the uterine muscles must contract, which causes pain. The cervical dilatation, uterine muscle hypoxia during contractions, uterine corpus ischemia, stretching of the lower uterine segment, and cervical nerve compression are all physiological processes that contribute to pain in the first stage of labor.

A small percentage of women experience labor without pain, and almost all women who give birth will feel pain. In the first stage, there are contractions that can suppress the nerve endings, causing pain stimulation, which then affects the mother's trust, causing fear and doubt. In the first stage of the active phase, there will be an increase in pain. There are many ways to deal with this pain; some use warm linen as a pain reliever and prevent an increase in the pain scale (Suryani Manurung, et., al., 2013).

Fear caused by labor pain can cause other problems, namely stress, which causes the excessive release of hormones such as catecholamines and steroids. This hormone can cause tension in smooth muscles and vasoconstriction of blood vessels. This can result in decreased contractions in the uterus, decreased uteroplacental circulation, reduced blood and oxygen flow to the uterus, and the emergence of uterine ischemia, which makes pain impulses multiply. There are many ways to get rid of this pain, starting from warm compresses to yoga and pregnancy exercises. Pregnancy exercise with a ball or gym ball is an effective way to reduce back pain during the third trimester of pregnancy (Kusumawati & Jayanti, 2018).

Gym Ball is an exercise ball used for exercise during pregnancy that aims to help reduce back pain, reduce pain during contractions, reduce anxiety, and reduce pain during labor. In addition to reducing pain during pregnancy and childbirth, the gym ball can also accelerate labor in primigravida and increase the effectiveness of sleep in third-trimester pregnant women (Rosyaria, 2022).

According to a study, bearing weight, pain, and functional disorders that occur in the lower back will experience an increase in pain reduction if stabilization is performed using a

ball (Chung, Lee, & Yoon, 2013). In addition to eliminating or reducing pain, exercise using a birth ball or gym ball can increase the effectiveness of opening the cervix during childbirth. When done on primiparas and during the third trimester of pregnancy, this will make the birth canal open wider and more elastic (Sriwenda & Yulinda, 2017). If viewed from this research, the exercise using the gym ball has an influence on the progress of labor (Sutisna, 2021).

Apart from the Gym Ball, there is a birth ball called the Peanut Ball, the shape of which is similar to a bean. The use of this Peanut Ball will make the mother feel comfortable before giving birth (Eprila, Aprilina, & Wahyuni, 2021). Another study concluded that using balls during the third trimester and labor is effective at reducing pain, disability, and increasing range of motion (Balakrishnan, Yazid, & Of, 2016). In order to achieve this, coaching should be provided to pregnant women, particularly primigravidas. Counseling is a type of coaching for pregnant women that informs mothers that physical activity, such as pregnancy gymnastics or Gym Ball, is important to prepare for a smooth delivery both physically and mentally (Widyaningsih, Zainal, Oktaviani, & Aprilia, 2022).

Objective

The purpose of this literature review is to determine the effectiveness of gym balls for low back pain in pregnant women, labor pain, and labor progress based on five previous research studies.

Method

The preparation of this literature review uses the PRISMA (Preferred Reporting Items for Systematic Review and Meta-Analyses) method by collecting a number of publications related to Gym Ball for Back Pain, Labor Pain, and Labor Progress, with reference to several publications.

The inclusion criteria for this article were national journals published within the last 5 years, which were accessed through internet searches. This article was obtained from Google Scholar, which contained as many as 5 articles with the keywords "gym ball for pregnant women, back pain, fast delivery.

The following is the literature strategy contained in the schematic below:

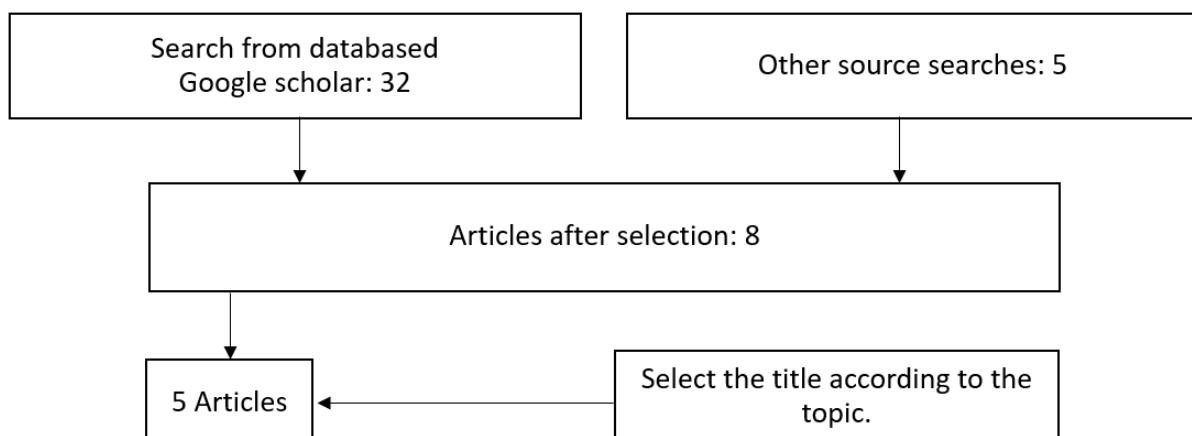


Figure 1. The PRISMA Diagram

Result

Table 1. Analysis of Literature Review Result

	Author	Title	Method	Purpose	Result
1	(Feva Tridiyawati, Mariyani, & Resi Galaupa, 2022)	Combination of Murottal Al-Qur'an Therapy, Surah Ar-Rahman, and Gym Ball Exercise in Reducing Labor Pain.	Pre-experimental study using a static group comparison research design.	To determine the effectiveness of the combination of Murottal Al-Qur'an, Surah Ar-Rahman, and Gym Ball Exercise in reducing labor pain.	From the results of this study, it was found that there was Gym Ball guidance on the progress of primigravida labor in the first active phase with a p-value of 0.001 (p-value 0.05). So that it is recommended for health facilities to provide gym ball services for pregnant women starting in the third trimester.
2	(Widyaningih et al., 2022)	Implementation of Pregnancy Exercise with a Gym Ball in Padang Pelawi Village, Sukaraja District.	Pre-experimental with pre-test and post-test.	Knowing the benefits of and how to exercise during pregnancy with a gym ball.	Able to provide information to pregnant women about the benefits and methods of pregnancy through a counseling session that is attended by 10 participants.
3	(Irfana, 2020)	Comparison of Pregnant Women Who Exercise with a Gym Ball and Pregnant Women Who do Pregnancy Exercises to Reduce Back Pain.	Quasi experiment with pre-test and post-test.	Knowing the comparison between pregnant women doing exercise with a gym ball and mothers doing pregnancy exercises.	The results of this study indicate that the p-value = 0.000 <0.05 there is a decrease in lower back pain in third trimester pregnant women after doing the gym ball exercise.
4	(Salamah & Putri, 2022)	The Relationship of The Use of Gym Ball to The Long Time Labor.	Cross sectional with total data collection techniques.	To determine the relationship between the use of the gym ball and the duration of labor.	Mothers giving birth with a normal first stage of labor and using a gym ball were 89 (78.8%), and mothers who gave birth with an abnormal length of first stage were 0 (0%) mothers who did not use a gym ball.

5 (Sutisna, 2021)	The Influence of Gym Ball Guidance on the Progress of Childbirth in Primigravida Mothers.	Pre-experimental research design using an intact group comparison design.	To determine the effect of gym ball guidance on labor progress in primigravida mothers in the first stage of the active phase.	In this study, there was an effect of gym ball guidance affects the progress of labor for primigravida mothers in the first stage of the active phase, as evidenced by the T-test with p-value = 0.000 (p-value <0.05).
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Discussion

Gym Ball can be done by pregnant women who are entering their third trimester to treat back pain due to changes and to reduce labor pain and speed up delivery in primigravidas (Sulistiyaningsih & Niamah, 2022). Pain is an uncomfortable feeling that is very subjective, and only people who experience it can describe and evaluate the pain. In general, pain can be defined as a feeling of discomfort, whether light or heavy. Some people who feel pain will also experience fear and stress (Haryati & Handayani, 2020).

The condition of back pain during pregnancy and pain during childbirth makes mothers fearful and anxious, and for this reason many of them choose the fastest and easiest way to get rid of this pain. Many efforts can be made by mothers to reduce or prevent back pain and labor pain. Mothers need to be given exercises and sports such as gym ball, pregnancy exercises, or other physical exercises (Rosyaria, 2022). Low back pain can be reduced by effective stabilization exercises using a ball instead of moving on the floor (Balakrishnan et al., 2016).

The use of a gym ball in labor can promote head descent and speed up the duration of labor. With him getting stronger and the mother often doing gym ball exercises in her pregnancy, it will make the mother feel comfortable during labor (Rakizah, Rahmawati, & Kadarsih, 2023). During the first active phase, many mothers have used the Gym Ball during pregnancy, during labor, the mother will experience rapid progress in labor (Haryati & Handayani, 2020). The Gym Ball method has been practiced everywhere and is proven to have benefits besides reducing labor pain, accelerating labor, and maintaining muscles that help in the spine. This will be a birth therapy or birth therapy for primigravida mothers (Salamah & Putri, 2022).

Gym Ball is the one sport that doesn't require mother strength, stimulates postural reflexes, and maintains the muscles that support the spine. One of the Gym Ball exercise movements, which involves sitting on a ball and shaking the pelvis, is considered capable of providing comfort to the lower back, speeding up labor, and improving the mother's sleep quality (Irawati, Susanti, & Haryono, 2019).

Conclusion

From the results of this study, it can be concluded that the gym ball can provide relaxation to the muscles so that it can reduce pain in the back, reduce labor pain, accelerate labor, and improve the mother's sleep quality. Referring to this conclusion, it is suggested that all health facilities be able to provide gym ball services, which are given to pregnant women since the third trimester as one of the preparatory activities for childbirth.

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