

Research Article

Prenatal Exercise Using Gym Ball for Mrs. N in the Third Trimester of Pregnancy to Reduce Lower Back Pain at Independent Midwife Practice Anisa Mauliddina

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Abstract: Pregnancy is a physiological condition in which a fetus develops in a woman's uterus. In the third trimester, pregnant women often experience discomfort such as lower back pain due to the enlarged uterus, which causes changes in posture, particularly an enlarged spine (hyperlordosis). Mrs. N is one of the pregnant women who came to PMB Anisa Mauliddina Sleman with complaints of lower back pain in her third trimester. In this case, midwives play a crucial role in helping alleviate discomfort in pregnant women, one of which is through interventions such as prenatal exercises using a gym ball. Objective: To be able to provide prenatal exercise care with a gym ball to Mrs. N during midwifery care during pregnancy at Independent Midwife Practice Anisa Mauliddina. Methode: The type of research method used is descriptive analytic method with a case study approach. This research instrument used the results of examinations, observations or observations of the author, interviews with clients and supporting data listed in the maternal and child health book owned by the client. The results of research on pain on Ny. N after doing senam gymball 10-15 minutes once every 3 days for 3 days it decreased, starting from the first day pain scale 6 to 2 on day 6. There was a decrease in pain intensity after doing pregnancy exercises with a gym ball on Mrs. N, who was pregnant in the third trimester at Independent Midwife Practice Anisa Mauliddina Godean Sleman.

Keywords: Pregnancy, Gymball, Pain

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1. Introduction

Pregnancy is a period marked by significant physical and psychological changes in a woman's body, beginning at conception and continuing until childbirth. During this time, pregnant women often experience various discomforts, one of the most common being lower back pain, particularly during the second and third trimesters. This condition is associated with increased body weight, uterine enlargement, and the stretching of supporting muscles, influenced by the hormone relaxin, which causes muscles and ligaments to become more relaxed and flexible [1].

In the third trimester, physical discomfort tends to intensify, including symptoms such as back pain, constipation, edema, insomnia, frequent urination, headaches, shortness of breath, and varicose veins. Lower back pain specifically results from the shift in the body's center of gravity and is a common complaint during late pregnancy. Studies have shown that 60–80% of pregnant women in Indonesia experience lower back pain, with approximately 65% reported in the Yogyakarta Special Region. One effective non-pharmacological intervention to alleviate this discomfort is prenatal exercise [2].

Prenatal exercise, or antenatal gymnastics, is a physical activity program specifically designed to help pregnant women prepare physically and mentally for labor. Among its

benefits are improved blood circulation, enhanced muscle balance, reduced swelling and cramping, and strengthened muscles to support the additional weight during pregnancy. When combined with a gym ball, prenatal exercise becomes even more effective in reducing back pain and improving posture through dynamic, low-impact movements [3].

Independent Midwife Practice Anisa Mauliddina is a maternal health facility providing services such as antenatal care, childbirth assistance, postpartum care, and infant immunization. One of its patients, Mrs. N, a 20-year-old housewife and primigravida at 34 weeks and 2 days of gestation, reported experiencing significant lower back pain. She had never previously participated in prenatal exercise. After being introduced to gym ball-based prenatal exercise, Mrs. N reported a reduction in her back pain, and both she and her family showed a cooperative and receptive attitude toward the intervention.

2. Preliminaries or Related Work or Literature Review

Pregnancy is a physiological condition in which a fetus develops in a woman's womb. In the third trimester, pregnant women often experience discomfort such as lower back pain due to the enlargement of the uterus, which causes changes in body posture, especially an increase in the spine (hyperlordosis). Research on pregnant women in various regions in Indonesia has shown that 60-80% of pregnant women experience low back pain during pregnancy [4]. In the Special Region of Yogyakarta, approximately 65% of all pregnant women experience low back pain [5]. Pregnancy exercise is a form of physical exercise specifically designed for pregnant women to prepare themselves physically and mentally for childbirth. Pregnancy exercise provides various benefits, including improving blood circulation, increasing muscle balance, reducing swelling and cramps in the legs, and strengthening muscles to support the additional load during pregnancy. In addition, this exercise also plays a role in maintaining body fitness and reducing assistance due to changes in body posture [6].

Third Trimester of Pregnancy

The third trimester lasts 13 weeks, from week 28 to week 40. During the third trimester, the fetus's organs are formed. By week 40, complete growth and development have been achieved [7]. One of the physiological changes during the third trimester is the baby's descent into the mother's pelvis (lightening) at week 38/month 9. The placenta is almost four times as thick as it was at 18 weeks and weighs 0.5-0.6 kg. Back pain and frequent urination increase. Braxton Hicks movements increase as the cervix and lower uterine segment prepare for labor [8].

Pregnancy Exercises with a Gym Ball

Prenatal exercise is an important form of physical activity for pregnant women to maintain their health during pregnancy. This planned, structured, and repetitive physical activity can improve physical fitness components and is an essential element of a healthy lifestyle. Obstetricians and gynecologists strongly recommend that pregnant women continue or initiate physical activity as part of optimal health [9]. Pregnancy exercise is a form of physical exercise designed to help pregnant women prepare physically and mentally and is beneficial in reducing complaints of back pain during pregnancy [10].

Prenatal exercise is a form of exercise to strengthen and maintain the elasticity of the abdominal wall muscles, ligaments, and pelvic floor muscles associated with childbirth. Having good core strength can improve an individual's balance and stability and minimize the risk of spinal trauma or falls during pregnancy [11]. If low back pain is not promptly treated, it can lead to acute pain. One way to deal with this is by doing regular prenatal exercises, not only for the mother's comfort during pregnancy, but also providing many benefits during childbirth.

The Concept of Pain

According to the International Association for the Study of Pain (IASP), pain is defined as a sensory and emotional experience associated with tissue damage, whether actual or potential. Pain is a form of discomfort that can be experienced by every individual and serves as a protective mechanism for the body against threats, both real and potential. However, pain is subjective and highly individual, as perception and response to pain are influenced by various factors, such as gender, cultural background, past experiences, emotional state, and other psychosocial factors [12].

This pain scale is relatively easy to use because it can be assessed by directly observing the patient's facial expressions, without the need for verbal questioning. This pain scale, developed by Donna Wong and Connie Baker, is known as the Wong-Baker Faces Pain Rating Scale. It is a facial expression-based pain measurement scale used to assist patients, particularly children and individuals. This scale displays a series of facial expressions, ranging from a smiling face at 0, indicating "no pain," to a crying face at 10, representing "the worst pain." Patients are asked to select the facial image that best represents the level of pain they are experiencing. Each facial expression is accompanied by a number indicating pain intensity, making it easier to assess [12].

3. Proposed Method




The research method used was descriptive analytical. Descriptive analytical research attempts to describe a phenomenon, event, or occurrence that is currently occurring. Descriptive research focuses on actual problems as they exist at the time of the research [13]. The type of research method used is descriptive analytic method with a case study approach. This research instrument used the results of examinations, observations or observations of the author, interviews with clients and supporting data listed in the maternal and child health book owned by the client. The research was conducted at the Independent Midwife Practice Anisa Mauliddina Godean Sleman Regency.

4. Results and Discussion

Results

Prenatal Exercises with a Gym Ball for Mrs. N During Midwifery Care During the Third Trimester of Pregnancy to Reduce Back Pain at Independent Midwife Practice Anisa Mauliddina Sleman

Table 1. Observation Results of Pain Scale Evaluation Using the Wong-Baker Face Pain Rating Scale After Prenatal Exercises with a Gym Ball

| Day | Duration | Frequency | Pain Scale Evaluation |
|-----|------------|-------------------|---|
| 1 | 15 minutes | once every 3 days |  |
| 4 | 10 minutes | once every 3 days |  |
| 6 | 15 minutes | once every 3 days |  |

Source: Primary Data, 2024

Based on research results, Mrs. N's lower back pain decreased after doing pregnancy exercises with a gym ball for 10-15 minutes every 3 days, starting on the first day with a pain scale of 6 and decreasing to 2 on day 6.

Discussion

Prenatal exercise with a gym ball was performed on Mrs. N during her third trimester of pregnancy at the Anisa Mauliddina Midwifery Center. Mrs. N is a 20-year-old primigravida, 34 weeks and 2 days pregnant. She came to the Anisa Mauliddina Midwifery Center with her husband for a routine prenatal checkup. She complained of increasing back pain as her pregnancy progressed. This complaint is a common form of physiological discomfort in the third trimester of pregnancy, resulting from anatomical and hormonal changes that affect the body's systems, including the musculoskeletal system. These changes primarily affect the axial skeleton and lower back muscles, leading to tension and pain.

Prenatal care with a gym ball was provided as an effort to reduce Mrs. N's back pain through non-pharmacological therapy. The midwife provided education and guidance on performing prenatal exercise using a gym ball. The prenatal exercise with a gym ball was taught directly to Mrs. N through demonstrations, and after the training, she was immediately put into practice so she could perform it independently at home.

The implementation of pregnancy exercise movements using a gym ball refers to the SOP at Anisa Mauliddina's Independent Midwife Practice. It begins with a sitting technique on a gym ball while rotating the pelvis to the right, left, front, and back, each for two counts. This aligns with the opinion expressed [13] that one of the gym ball exercises, pelvic rocking, involves shaking the pelvis to the right and left, forward and backward, and rotating. The movements in pregnancy exercise play a role in strengthening the abdominal muscles, thereby preventing excessive tension in the pelvic ligaments, which is one of the causes of back pain. Furthermore, pregnancy exercise activities also stimulate the release of endorphins in the body, which function as natural analgesics and provide a calming effect [2].

To assess back pain, Mrs. N's pain level was first assessed using the Wong Baker Faces Pain Rating Scale. Pain can be measured using the Wong Baker Faces Pain Rating Scale, a measuring tool often used to assess pain levels. In this measurement, patients were asked to choose a number from 0 to 10 to describe their level of pain, with higher numbers indicating greater pain intensity.

Mrs. N, assisted by her husband, performed prenatal exercises routinely every three days for 10-15 minutes. On the first day, Mrs. N complained of increased pain (pain score 6). She then performed prenatal exercises with a gym ball for 15 minutes. On the fourth day, Mrs. N reported increased pain (pain score 4). She performed prenatal exercises with a gym ball for 10 minutes, and on the sixth day, she reported only mild pain (score 2). This demonstrates a change in pain intensity, from intense to mild pain. After one week of regular prenatal exercises, mothers reported a decrease in back pain, indicating that prenatal exercises with a gym ball are an effective intervention in reducing back pain [14]. Furthermore, prenatal exercise with a gym ball performed every three days during pregnancy has been shown to provide significant physical and psychological benefits for both mother and fetus, compared to pregnant women who do not engage in any physical activity at all.

Mrs. N's regular prenatal exercise with a gym ball and her husband is an effective non-pharmacological intervention that increases fitness, improves posture, and reduces back pain, while also preparing the mother for childbirth. This approach aligns with the midwifery philosophy that women and family partnerships play a crucial role, namely by establishing a partnership between midwives, pregnant women, and families. A strong partnership ensures more holistic care, is responsive to the mother's needs, and improves her comfort and preparedness for childbirth [15].

5. Conclusions

There was a decrease in pain intensity after doing pregnancy exercises with a gym ball on Mrs. N, who was pregnant in the third trimester at Independent Midwife Practice Anisa Mauliddina Godean Sleman Regency.

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