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The Effect of Prenatal Yoga on Reducing Back Pain Intensity in Third Trimester Pregnant Women

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ABSTRACT

Low back pain is caused by physiological changes during pregnancy, including maternal weight gain, spinal lordosis, decreased abdominal muscle strength, weight changes, and relaxation-mediated joint laxity. Pregnant women reported 16% of back pain during the first 12 weeks of pregnancy, 67% at 24 weeks, and 93% at 36 weeks. Management of back pain during pregnancy varies, one of which is doing prenatal yoga. This study aimed to determine the effect of applying prenatal yoga on reducing the intensity of back pain in third-trimester pregnant women. This type of research uses case studies. The population in this study was third-trimester pregnant women who experienced back pain with a sample of 3 third-trimester pregnant women. Data analysis in this research uses SOAP (Subjective, Objective, Analysis, and Management). The results of midwifery care show that back pain in pregnant women is reduced after doing prenatal yoga. This research concludes that there is an effect of applying prenatal yoga on reducing the intensity of back pain in pregnant women in the third trimester.

Keywords: Prenatal Yoga, Back Pain

1. INTRODUCTION

Maternal and child health issues are international problems whose handling is included in the SDGs (Sustainable Development Goals). The 2030 SDG target is for the Maternal Mortality Rate (MMR) to reach 70 per 100,000 live births and the Infant Mortality Rate (IMR) to reach 12 per 100,000 live births. The number of maternal deaths in 2021 was 7,389 in Indonesia. This number shows an increase compared to 2020, which was 4,627 deaths. Based on the causes, most maternal deaths in 2021 were related to COVID-19 with 2,982 cases, hemorrhage with 1,330 cases, and hypertension in pregnancy with 1,077 cases. The maternal mortality rate to date (2022) has reached 207 per 100,000 live births, which is above the Strategic Plan target of 190 per 100,000 live births (Kemenkes RI., 2021).

Efforts to accelerate the reduction of the MMR are carried out by ensuring that every mother has access to quality maternal health services, such as maternal health services, delivery assistance by trained health workers at health facilities, postpartum care for mothers and babies, special care and referrals in case of complications, and family planning services, including postpartum contraception (Kemenkes RI., 2021).

The coverage of K4 maternal health services in 2021 in Indonesia was 88.8%. In addition to pregnancy, other efforts to reduce maternal and infant mortality include encouraging every delivery to be assisted by trained health workers, namely obstetricians and

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gynecologists (SpOG), general practitioners, and midwives, carried out in health care facilities. In 2021, 90.9% of deliveries were assisted by health workers in health care facilities. The coverage of complete postnatal visits in Indonesia was 90.7% (Kemenkes RI., 2021).

K1 and K4 coverage in Lampung Province tends to fluctuate. Compared to the annual targets set by the Ministry of Health ( ), K1 coverage has reached the target of 96.15%, while K4 coverage has not yet reached the target of 92.19% of the K4 target of 94%. The causes of maternal deaths in Lampung Province in 2021 were hemorrhage in 39 cases, hypertension in 27 cases, infection in 5 cases, circulatory system disorders in 2 cases, metabolic disorders in 2 cases, heart disease in 8 cases, COVID-19 in 82 cases, and others in 22 case (Dinkes Provinsi Lampung, 2021).

The coverage of childbirth by health workers in Lampung Province in 2021 was 93.2%, which has not yet reached the target of 94%. In East Lampung Regency, the coverage was 83.9%. The coverage of postnatal care visits in Lampung Province in 2021 was 90.96%, still below the expected target of 95%. In East Lampung Regency, the coverage was 80.74% (Dinkes Provinsi Lampung, 2021).

Pregnancy is a natural process experienced by every woman in the reproductive cycle. Pregnancy begins with conception and ends with the onset of labor. There are several complications during pregnancy, such as nausea, vomiting, constipation, urinary disorders, swelling of the legs and feet, and back pain. Lower back pain is likely caused by physiological changes during pregnancy, including weight gain, spinal lordosis, decreased abdominal muscle strength, weight distribution changes, and joint weakness mediated by relaxation . This increases shear forces throughout the lower back and pelvic joints, thereby increasing the risk of lower back pain during pregnancy (Holden et al., 2019).

High prevalence of back pain during pregnancy has been reported in Europe, America, Australia, China, including mountainous regions of Taiwan and rural areas of Africa, as well as among upper-class women in Nigeria. Among women who experience back pain during pregnancy, approximately 16% reported back pain during the first 12 weeks of pregnancy, 67% at week 24, and 93% at week 36 . Based on a study conducted on 869 pregnant women in the United States, the United Kingdom, Norway, and Sweden, the prevalence of lower back pain in pregnant women was around 70-86% (Gutke et al., 2017).

Back pain in pregnant women occurs during the second and third trimesters and can be caused by breast enlargement, which may lead to muscle tension and fatigue. Bending over while lifting objects can trigger back pain, which is related to increased hormone levels causing cartilage in large joints to become soft, as well as a hyperlordotic spine position. To alleviate or prevent back pain, pregnant women should wear a bra that properly supports the breasts with the correct size. Avoid hyperlordosis, do not wear high heels or sandals, and try to sleep on a firm mattress. Always try to maintain good posture, avoid bending over, and bend your knees when lifting objects. Exercise regularly, do pregnancy exercises or yoga (Tyastuti & Wahyuningsih, 2018).

Prenatal yoga is a modification of basic prenatal yoga, with movements adapted to the condition of pregnant women. Yoga is a physical, mental, and spiritual practice that greatly helps pregnant women in stretching their joints and calming their minds, especially in the third trimester. The movements in prenatal yoga are performed at a slower pace and adapted to the range of motion of pregnant women (Wagiyo dan Putrono, 2016).

A study conducted by Girsang (2022) examined the effectiveness of prenatal yoga on back pain in pregnant women in their third trimester at PMB Rina and PMB Ida in Depok City. The results showed that before prenatal yoga, 31 women (96.9%) in the third trimester experienced moderate back pain, while after prenatal yoga, 29 women (90.6%) experienced mild back pain. The statistical test used in this study was the Wilcoxon test, yielding a significance p-value of 0.00 ($p>0.05$), indicating a significant difference in back pain before and after prenatal yoga (Girsang, 2022).

Efforts that can be made to overcome problems during pregnancy include providing continuous care, commonly referred to as continuity of care (COC). Continuity of care is provided from the time the mother is pregnant, through childbirth and the postpartum period, until the mother decides on her choice of contraception. Pregnancy care that prioritizes continuity of care is very important for women to receive services from the same professional or a small team of professionals, because this way their condition can be monitored properly at all times and they will also feel more confident and open because they are familiar with their caregiver. Midwives are required to provide continuous midwifery services (Continuity of Care) starting from ANC, INC, BBL care, postpartum care, neonatal care, and quality family planning services (Diana, 2017).

Based on the above phenomena and background, the author was interested in conducting continuous midwifery care for Mrs. R, Mrs. N, and Mrs. S at PMB Heni Suraida Rahayu, S.Tr.Keb

2. RESEARCH METHOD

This study used a descriptive method and a case study research design. The research was conducted at PMB Heni Suraida Rahayu, S.Tr.Keb in East Lampung Regency from September to December 2022. The subjects in this study were three pregnant women in their third trimester. Prenatal care was provided twice a week for two weeks. Back pain in mothers was assessed using the NRS (Numeric Rating Scale). Data collection techniques used comprehensive care, providing care from the third trimester of pregnancy to family planning counseling. Data analysis in this study used SOAP. The ethical clearance number for this study is 331/KEPK-TJK/XI/2022.

3. RESULT

Based on the results of the midwifery care assessment obtained from Mrs. R G1P0A0, 32 weeks pregnant, menarche at age 13, last menstrual period (LMP) on January 28, 2022, estimated delivery date (EDD) on November 7, 2022, and gestational age (GA) of 32 weeks. Fetal movement was first felt at 18 weeks of pregnancy. Mrs. N G2P1A0, 33 weeks pregnant, menarche at age 12, LMP 15-2-2022, EDD November 22, 2022, and Mrs. S G2P1A0, 33 weeks pregnant, LMP February 21, 2022, EDD November 28, 2022, came to PMB Heni Suraida Rahayu, STr.Keb to have her pregnancy checked due to complaints of back pain.

Based on the assessment of Mrs. R's data, her vital signs are within normal limits. Her general condition is good, and she is alert and oriented. Vital signs: BP: 120/70 mmHg. HR: 80 beats per minute. RR: 20 breaths per minute. T: 36.5 0 c. Pre-pregnancy weight: 47 kg. Current weight: 56 kg, weight gain: 10 kg. LILA: 24 cm. TFU 30 cm, DJJ 143 x/minute, preskep, lab test results Hb 12.8 gr%. Physical examination results are normal. Mrs. N has normal vital signs, is in good general condition, and is alert and oriented. Vital signs: BP: 120/70 mmHg. HR: 80 beats per minute. RR: 20 breaths per minute. Temp: 36.5°C 97.7°F .c. Pre-pregnancy weight: 44 kg. Current weight: 56 kg, TFU 30 cm, DJJ 145 beats per minute, prescription, Hb 13.5 g%. Mrs. S has normal vital signs, is in good general condition, and is compos mentis. Vital signs: BP 120/70 mmHg. HR: 80 beats/minute. RR: 20 breaths/minute. T: 36.5 0 c. Pre-pregnancy weight: 52 kg. Current weight: 63 kg, fundal height 32 cm, fetal heart rate 142 beats/minute, presc, Hb 12.8 g%. Based on the results of early detection of complications and danger signs in pregnancy, the pregnancies of Mrs. R, Mrs. N, and Mrs. S are not considered high-risk and do not exhibit danger signs.

Based on the results of the third trimester examination, no abnormalities or complications were found in the pregnancies of the three patients. Based on subjective and objective assessments, it was found that Mrs. R, who was 32 weeks pregnant, Mrs. S, who was 33 weeks pregnant, and Mrs. N, who was also 33 weeks pregnant, experienced discomfort in the form of back pain.

The management of cases involving Mrs. N, Mrs. R, and Mrs. S with complaints of back pain is the provision of health education related to discomfort in the third trimester of pregnancy, which is caused by uterine enlargement that leads to lordosis posture and

increased body weight that causes muscles to work harde thereby causing stress on muscles and joints.

4. DISCUSSION

One of the discomforts experienced by pregnant women in the third trimester is lower back pain. The contributing factors include breast enlargement, which can cause muscle tension and fatigue; bending over when lifting objects; increased hormone levels, which cause the cartilage in the large joints to soften; and hyperlordosis of the spine. One way to alleviate or prevent this is by exercising regularly, doing prenatal exercises or yoga (Tyastuti & Wahyuningsih, 2018).

The back pain experienced by Mrs. R, Mrs. N, and Mrs. S is caused by uterine enlargement, which leads to lordosis posture, and increased body weight, which causes the muscles to work harder, resulting in stress on the muscles and joints.

To alleviate or prevent back pain, pregnant women can engage in regular exercise, prenatal gymnastics, or yoga. The benefits of prenatal yoga, often referred to as prenatal yoga, include helping to overcome back pain and preparing the body by strengthening and maintaining the elasticity of the abdominal wall muscles, ligaments, and pelvic floor muscles associated with the birthing process. It also helps to improve posture. Good posture during pregnancy and childbirth can alleviate common complaints in pregnant women, promote normal fetal positioning, and reduce shortness of breath caused by an enlarged abdomen. Relaxation and stress management. Achieve complete body relaxation through contraction and relaxation exercises. Perfect relaxation is necessary during pregnancy and childbirth. Master breathing techniques that play an important role in childbirth and during pregnancy to accelerate body relaxation through deep breathing, as well as to overcome pain during contractions. To improve blood circulation (Suananda, 2018)

Prenatal Yoga is an exercise designed specifically for pregnant women to prepare for childbirth by practicing breathing, posture, and muscle training. Prenatal Yoga has many benefits for pregnant women. In addition to keeping pregnant women healthy and fit, pregnancy exercises also have benefits, one of which is to reduce muscle tension that can cause pain in the back and waist. Prenatal yoga is also one of the efforts to alleviate back pain during pregnancy, in addition to pharmacological treatment. By also practicing proper body mechanics during pregnancy, which involves maintaining good posture to accommodate the physical changes in the pregnant woman, particularly the lordosis of the spine, pregnant women can continue their pregnancy with minimal complaints such as back pain and prepare for a healthy, comfortable, smooth, and low-trauma delivery (Rosita et al., 2022).

After evaluating Mrs. R, Mrs. N, and Mrs. S following three weekly prenatal yoga sessions over three weeks, it was found that the back pain experienced by these three pregnant women had decreased. This is indicated by the pain scale experienced by the patients, namely Mrs. R, who had a pain scale of 5 before doing prenatal yoga and a pain scale of 2 after prenatal yoga. Mrs. N had a pain scale of 5 before doing prenatal yoga and a pain scale of 2 after prenatal yoga, and Mrs. S had a pain scale of 4 before doing prenatal yoga and a pain scale of 1 after prenatal yoga. This indicates that prenatal yoga is effective in reducing back pain complaints in pregnant women in the third trimester.

In the midwifery care cases of Mrs. R, Mrs. N, and Mrs. S that the author conducted, back pain problems were found in the third trimester of pregnancy. Therefore, the author used complementary yoga therapy. Yoga is one management option to reduce back pain in pregnant women and can prevent perineal lacerations during childbirth.

The prenatal yoga sessions were conducted during the first visit of the pregnant women. Before performing prenatal yoga, the pain scale was assessed using the Numeric Rating Scale (NRS). Prenatal yoga was performed three times a week for four weeks, with each session lasting 20 minutes. After performing prenatal yoga, the researcher reassessed the pain scale. Based on the examination results, Mrs. R's pain scale before prenatal yoga showed a pain scale of 5, and after prenatal yoga, it showed a pain scale of 2. Mrs. N's pain scale before prenatal yoga showed a pain scale of 5, and after

prenatal yoga, it showed a pain scale of 2, and Mrs. S's pain scale before prenatal yoga showed a pain scale of 4, and after prenatal yoga, it showed a pain scale of 1.

The results of this study are in accordance with the statement by Mardiyanti, Ariesta, Anggasari (2021), which states that the third trimester of pregnancy is the final trimester, lasting from the 28th to the 40th week. The discomfort that occurs can be caused by the increase in the size of the baby, hormonal changes, and various other changes that occur as the pregnant woman's body prepares for the birth of the baby. Some conditions that often make pregnant women uncomfortable during the third trimester are upper and lower back pain caused by breast enlargement, which can result in muscle tension, fatigue, a hunched posture when lifting objects, increased hormone levels causing the cartilage in the large joints to soften, and a hyperlordotic spine position (Mardiyanti & Anggasari, 2021).

The results of this study are in line with Tyastuti's (2018) theory, which states that low back pain during pregnancy is an unpleasant condition caused by the enlargement of the uterus and increased body weight, which causes the muscles to work harder, thereby causing stress on the muscles and joints (Tyastuti & Wahyuningsih, 2018).

The results of this study are in line with the journal review conducted by the author. Research conducted by Selma C Holden (2019). Prenatal Yoga for Back Pain, Balance, and Maternal Wellness: A Randomized, Controlled Pilot Study. Prenatal yoga was conducted for 12 weeks. The results of this study indicate that prenatal yoga is effective in reducing back pain in pregnant women.

The results of this study are in line with the research by Nurul Aini Rahmawati (2021) entitled "Prenatal Yoga Effectively Reduces Lower Back Pain in Pregnant Women." This study used a quasi-experimental design with a one-group pretest-posttest design using a Numeric Rating Scale (NRS) measurement tool. Based on the statistical test results using the Wilcoxon test, a significance value of 0.000 ($p>0.005$) was obtained. Therefore, it can be concluded that prenatal yoga has an effect on lower back pain in pregnant women (Rahmawati et al., 2021).

The results of this study are supported by Mu'alimah's (2021) study, The Effect of Prenatal Yoga on Back Pain in Pregnant Women in the Third Trimester. This study is a pre-experimental study with a one-group pretest-posttest design. The results of this study show that 0.000 is smaller than 0.05, thus Ho is rejected and H1 is accepted, meaning that there is an effect of prenatal yoga on back pain in pregnant women in their third trimester (Miftakhul Mu'alimah, 2021).

The results of this study are also similar to those of Wulandari (2020). Prenatal Yoga to Reduce Back Pain in Pregnant Women in Their Third Trimester. This was a quantitative study using a single intervention group with a sample of 18 pregnant women in their third trimester, selected using purposive sampling. The instrument used to measure back pain was the Numeric Rating Scale (NRS) with bivariate analysis using the Wilcoxon test. The results showed a p-value of 0.000, indicating that prenatal yoga has an effect on back pain in pregnant women in the third trimester (Dyah Ayu Wulandari, Euis Ahadiyah, 2020).

The theory states that lower back pain or low back pain during pregnancy is a normal condition often experienced by pregnant women, which can cause discomfort during pregnancy due to the enlargement of the uterus and increased body weight, causing the muscles to work harder and thus causing stress on the muscles and joints (Tyastuti & Wahyuningsih, 2018).

The results of the analysis on pregnant women Mrs. N, Mrs. R, and Mrs. S, who experienced back pain discomfort, showed that prenatal yoga was administered during pregnancy as planned. The results of prenatal yoga for pregnant women showed no discrepancy between the results and the theory.

The evaluation results indicate that prenatal yoga is highly effective in reducing back pain in pregnant women. Based on this, the researchers conclude that yoga exercises have proven beneficial for women suffering from anxiety, depression, stress, back pain, and sleep disorders. Yoga during pregnancy is beneficial

for improving flexibility, physical strength, and breath control.

CONCLUSION

Based on the results of the midwifery care provided, prenatal yoga was found to be effective in reducing back pain in pregnant women in the third trimester.

RECOMMENDATIONS

Health workers, especially midwives, should continue to improve the quality of their services in order to provide better care in accordance with midwifery standards and keep up with developments in health science so that they can apply midwifery care in accordance with theory, from pregnancy, childbirth, postpartum, and newborn care to family planning. Additionally, it is hoped that prenatal yoga therapy can be considered as a complementary non-pharmacological therapy to address discomfort during the third trimester of pregnancy, particularly in reducing back pain during pregnancy.

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