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Complementary Therapy to Treat Back Pain in Pregnant Women: Literature Review

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ABSTRACT

Introduction: Back pain during pregnancy is one of the discomforts that pregnant women often complain about. Even though it is not a serious problem during pregnancy, it can have a negative impact on the quality of life of pregnant women. This study aims to examine complementary care services from several studies that can be provided to pregnant women to treat lower back pain, especially in the third trimester. Method: The method used is to review research related to providing complementary care to pregnant women who complain of back pain in pregnant women. Conclusion: There are 4 complementary methods that can be used to reduce back pain, namely, acupressure techniques, endorphin massage, pelvic rocking, and pregnancy exercises.

KEYWORDS: Endorphin massage, acupressure, pelvic rocking, pregnancy exercises.

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INTRODUCTION

Pregnancy is a physiological process that starts from ovulation, conception, nidation, to the development of the embryo into a fetus in the uterus until term. During the third trimester of pregnancy, pregnant women often experience various complaints that disturb the mother's comfort, such as frequent urination, constipation, difficulty sleeping, and even back pain. The pregnancy process involves various physiological changes, especially physical changes, such as changes in the digestive system, respiratory system, urinary system, musculoskeletal system, respiratory system and others (Rahmah et al., 2021).

Back pain can be caused by shifting the center of gravity to the front, gravitational pressure on the uterus on the vessels reduces blood flow to the spine, causing back pain at the end of pregnancy. The increase in the hormone relaxation gradually increases until the end of pregnancy, resulting in joint looseness which is also thought to be the cause of pain. lower back and hip pain in pregnant women (Carvalho et al., 2017).

Pregnant women with a high body mass index are associated with lower back pain. Being overweight has been identified as a risk factor for back pain. The higher the body weight during pregnancy, the higher the instability in the sacroiliac joints and the increased lumbar lordosis which causes back pain. Pregnant women who experience back pain have a body mass index in the overweight category, around 37 pregnant women out of a total of 61 pregnant women with a body mass index in the overweight category (Lestari, 2020).

Sitting position and activities also contribute to back pain in pregnant women. The hunched sitting position is the one that influences and aggravates the pain the most, namely around 77 (31%). Improving rest patterns when pain occurs, using analgesic drugs, and traditional methods such as massage, stretching and physical exercise are the methods most often used by pregnant women (Manyozo et al., 2019).

Complementary therapy is a non-pharmacological treatment method which aims to improve the level of health including promotive, preventive, curative and rehabilitative by maintaining high quality, safety, and effectiveness. Complementary therapy can be carried out with the aim of perfecting pharmacological treatment that does not conflict with health values and laws in Indonesia (Permenkes, 2017).

Women's Health Services are switching to services with complementary and alternative therapies, one of the causes is dissatisfaction with pharmacological treatment, ignoring holistic approaches and concerns about drug side effects (Eid & Jaradat, 2020). Several types of complementary therapies that are often carried out on pregnant women are, massage, herbal medicine, aromatherapy, yoga, and relaxation techniques (Purba & Sembiring, 2021).

One of the complementary therapies is pregnancy exercise which is considered effective in reducing back pain in pregnant women. Exercise can improve blood circulation, strengthen muscles, stretch joints, and can reduce other disorders during pregnancy such as aches, constipation, and reduce swelling in the legs (Riansih, 2022). Pregnancy exercise training for pregnant women can increase the knowledge and skills of pregnant women in improving quality of life and comfort during pregnancy (Malia et al., 2020).

Supporting factors that need to be considered in making complementary services successful for midwives include knowledge, infrastructure, and the ability to see opportunities for midwives. Meanwhile, inhibiting factors include time, inadequate space, limited human resources, communication, public awareness and knowledge, as well as inadequate and unskilled midwife skills (Novika et al., 2023).

METHOD

The method used was reviewing the results of previous research related to reducing back pain in pregnant women through complementary therapy. A literature review is research that examines or critically analyzes knowledge, ideas or findings contained in academic-oriented literature and concludes theoretical and methodological contributions to the topic of discussion. The data used is secondary data, which is quoted from several articles related to techniques for reducing back pain in pregnant women with complementary therapies. Data analysis uses bibliographic annotation analysis, namely providing conclusions on research that becomes a reference for taking reference sources.

DISCUSSION

Effectiveness of Acupressure Techniques at Points BL23, GV 3 and GV 4 in Reducing Lower Back Pain in the Third Trimester of Pregnancy at the Jelakombo Jombang Community Health Center

This research was conducted by (Permatasari, 2019) at the Jelakombo Health Center in the working area of Jombang Regency, East Java in 2018, which was a quasi-experimental research by conducting before and after tests (pretest and posttest). The sample in this study was divided into a control group and a treatment group, each consisting of 22 third trimester pregnant women. The treatment group will be given stimulation and pressure on 3 points for 1-5 minutes, which is done 2 times a week for 3 weeks. The points to be pressed are Point BL 23 (Shensu) which is located on the 2 left and right fingers of the GV meridian, up to the second lumbar border; The GV 3 point can be found between the third and fourth lumbar; and GV Point 4 is located between the second and third lumbar. Pain scale was measured using the Numeric Visual Analog Scale (VAS) and data analysis used the Wilcoxon test ($n<0.05$).

The research results showed that the back pain experienced by respondents was divided into 3 levels, mild pain, moderate pain, and severe pain. Before the intervention there were 2 (6.7%) pregnant women with severe pain, 14 (60%) pregnant women with moderate pain and 6 (33.3%) pregnant women with mild pain. And after being given acupressure intervention at points BL23, GV 3 and GV 4 to 22 pregnant women, it was found that there was a decrease in the level of pain, no group of pregnant women experienced severe pain, 6 (13.3%) pregnant women had moderate pain and 16 (13.3%) pregnant women experienced moderate pain. 86.7%) pregnant women with mild pain.

Based on data analysis using the Wilcoxon test before receiving acupressure intervention, the average score was 4.27 and after receiving the intervention it decreased to 2.13. This shows that there is a significant n-Value of 0.001, which means there is a change in the mean value in the group of third trimester pregnant women with back pain before and after being given acupressure intervention.

One of the complementary therapies to reduce pain is acupressure by pressing, massaging, or stimulating certain points, causing an increase in the production of endorphin hormones. The BL 23 point, GV 3 point and GV 4 point are acupressure points that can create a natural feeling of relaxation while also limiting pain because the pain receptors have been blocked. This happens because when the acupressure points are stimulated, muscle tension is reduced, blood circulation increases, and the body's life force energy (qi) helps the healing process.

Effectiveness of Pelvic Rocking Using a Birthing Ball for Back Pain in Third Trimester Pregnant Women

This research was conducted by (Cantika et al., 2023) which is research with a pre-experimental design using a One Group Pre-test Post-test design by comparing the scores before and after being given treatment and analyzing using the Wilcoxon Test. This research was conducted at 2 midwife practices, namely the Independent Midwife Practice (PMB) Rabiah and PMB Husniyati which are in Palembang City in 2023. The respondents in this research were 33 pregnant women in the third trimester of multigravida pregnancy. The sampling was taken using accidental sampling by determining inclusion and exclusion criteria. Pain scale measurements using VAS and SOP Pelvic rocking to test the effectiveness of pelvic rocking using a birthing ball.

Table 1. Frequency Distribution of Back Pain Levels of Pregnant Women Before and After Pelvic Rocking using a Birthing Ball

Pain Level	Before		After	
	n	%	n	%
No Pain	0	0	5	15.2%

Mild Pain	3	9.1%	28	84.8%
Moderate Pain	26	26%	0	0
Severe Pain	4	12.1%	0	0
Total	33	100%	33	100%

Based on the table above, there are significant results related to reducing back pain in pregnant women who do pelvic rocking using a birthing ball. Before using pelvic rocking, 26 (78.8%) respondents had moderate back pain, and 4 (12.1%) pregnant women experienced severe back pain. However, after the pelvic rocking procedure there was a visible change in that 28 (84.8%) pregnant women had mild pain, and 5 (15.2%) pregnant women no longer felt back pain. Data analysis using the wilcoxon test showed a correlation result of -5.172b with a ρ value of 0.000 ($\rho \leq 0.05$). So, this means that there is a significant effect on reducing the level of back pain in third trimester pregnant women by using the pelvic rocking technique using a birthing ball.

Back pain in pregnant women can be caused by hormonal changes during pregnancy, which cause changes in the supporting and connecting tissues resulting in a decrease in elasticity and muscle flexibility in the back area (Suryani & Umami, 2019). Apart from that, changes in body posture that occur along with the increase in the weight of the uterus result in a shift in the mother's gravity to the back of the legs which is indicated by the change in the pregnant woman's body posture to Lordosis, in addition to the increased mobility of the sacroiliac and sacrococcygeal joints which causes back pain (Fitriani, 2018).

One way to reduce back pain is to use pelvic rocking intervention using a birthing ball. Using a birthing ball accompanied by pelvic rocking can stimulate postural reflexes and care for the muscles in the spine, thereby reducing back pain for pregnant women. Using the birthing ball is done by sitting on the ball with your legs spread and feeling comfortable, your body is upright and rotating the birthing ball with three movements: rotating clockwise, in a figure eight shape, right to left and vice versa, each movement is carried out for approximately the duration 2-3 minutes.

Meanwhile, pelvic rocking intervention can be carried out with five movements, consisting of: bounce ball movement, pelvic circle (rotate clockwise), pelvic tilt (front and back), side to side (right and left hips) and hip circle, each movement This can be done for 2-3 minutes or until you feel comfortable.

Endorphin Massage Against Lower Back Pain and Anxiety in Third Trimester Pregnant Women in Rejang Lebong Regency

This research by (Kurniyati & Bakara, 2021) using a pre-experimental design without control, in this study respondents were given an endorphin message intervention for back pain and anxiety in third trimester pregnant women. The sample in this study consisted of 32 pregnant women with inclusion criteria: third trimester pregnant women, aged 18-35 years, normal pregnancy, experiencing back pain, experiencing anxiety. All respondents signed informed consent as respondents and have received ethical clearance from the Health Research Ethics Commission of the Ministry of Health, Bengkulu.

The results showed a decrease in the mean lower back pain scale from 2.06 ± 0.43 (Mean ± SD) to 1.22 ± 0.42 (Mean ± SD). The results of statistical tests with a value of ρ=0.001 mean that there is a significant change in the average pain scale in the endorphin massage intervention before and after the endorphin massage.

Endorphin massage stimulates opiate (endorphin) receptors in the brain and spinal cord, which can normalize heart rate and blood pressure, as well as improve the body's condition to become more relaxed by triggering a feeling of comfort through touching the skin. Endorphin massage can also increase the hormone serotonin which can relieve leg and back pain, especially in pregnant women.

Endorphins themselves are protein molecules produced by cells in the nervous system and other parts of the body, which work together with sedative receptors to reduce pain. Endorphins are known as polypeptides consisting of 30 amino acid units. Hormones such as corticotrophin, cortisol and catecholamines produced by the body can reduce stress and eliminate pain.

The Relationship between Pregnancy Exercise and Back Pain in Pregnant Women in the Third Trimester

One of the discomforts that pregnant women often experience is back pain. Back pain does not only occur in certain trimesters but can be experienced throughout pregnancy up to the postpartum period. Some women who experience back pain before pregnancy have a higher risk of experiencing back pain during pregnancy.

This research by (Megasari, 2015) is a quantitative analytical result with a cross sectional research design, namely wanting to know the relationship between pregnancy exercise and back pain. The sample in this study was 47 pregnant women in the third trimester who visited the Fatmawati Maternity Home.

The research results showed that 21 (44.7%) pregnant women did routine pregnancy exercise, and 26 (55.3%) pregnant women did not participate in pregnancy exercise. Meanwhile, there were 16 (61.5%) pregnant women who experienced back pain out of a total of 26 pregnant women who did not participate in pregnancy exercise. The following are the results of analysis using chi-square with a p-value of 0.05 as follows:

Table 2. Univariate analysis of the relationship between pregnancy exercise and back pain

No	Pregnancy exercise	Back pain		Total	p value	OR
		Yes	No			
1	Yes	0 (0,0%)	21 (100%)	21 (100%)	0,000	2,600
2	No	16 (61,5%)	10 (38,5%)	26 (100%)		
Total		16 (34%)	31 (66%)	47 (47%)		

Based on the results of the chi-square test, it was found that the p-value = 0.000, which means there is a significant relationship between pregnancy exercise and back pain, while the OR value was 2.600, which means that mothers who do not do pregnancy exercise have a 2.6 times risk of experiencing pain, back of pregnant women who take part in pregnancy exercise.

One method that can increase comfort during pregnancy is by doing light exercise such as pregnancy exercises. Pregnancy exercise can strengthen and maintain the elasticity of the abdominal wall muscles, ligaments, and pelvic floor muscles that are associated with the birthing process.

Pregnancy exercise can also reduce various other disorders during pregnancy such as varicose veins, back pain, and muscle and joint pain; increases stamina during labor, strengthens and tightens the muscles most affected by pregnancy such as the pelvic muscles, abdominal muscles, and waist muscles. A pregnancy exercise program that is carried out properly and regularly can improve body posture, due to the influence of the expanding uterus and stomach, causing the pelvic area to shift forward. This is because pregnancy exercise movements can help tighten the muscles of the buttocks, back, shoulders and stomach.

CONCLUSIONS

One of the discomforts during pregnancy is back pain, back pain can disrupt the activities and comfort of pregnant women throughout most of the pregnancy, even into the postpartum period. Management of back pain can be done by non-pharmacological methods or by complementary methods. Complementary methods that can be used include pregnancy exercises, endorphin massage, pelvic rocking, and acupressure. These complementary methods can be used as a treatment method to reduce back pain in pregnant women.

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