

Article

Pelvic Tilt Exercise Against Lower Back Pain For Third Trimester Pregnant Women In Rejang Lebong Regency

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ABSTRACT

Changes that occur during pregnancy may be difficult during pregnancy and during childbirth. Complications during pregnancy include back pain, low back pain, pelvic pain, and shortness of breath. One of the most common discomforts is back pain. Back pain is the most common musculoskeletal problem in pregnant women. It is estimated that 50% to 70% of pregnant women suffer from this problem.

The purpose of this study was to determine the effect of pelvic tilt training on the reduction of back pain in third-trimester pregnant women in the Rejang Lebong Regency. The research variable was back pain in third-trimester pregnant women measured before and after pelvic tilt exercises. The research was conducted in May-July 2020. This type of research is Quasi-Experimental, the results of the sample calculation obtained a sample of 32 people. The statistical test used to see the reduction in back pain before and after Pelvic tilt exercise is non-parametric Wilcoxon. Results of back pain in the third trimester of pregnant women after being given pelvic tilt exercise with $p < 0.005$. There is a difference in back pain in the third trimester of pregnant women after pelvic tilt exercises.

I. INTRODUCTION

Changes that occur during pregnancy may be difficult during pregnancy and during childbirth. Complications during pregnancy include back pain, low back pain, pelvic pain, and shortness of breath. One of the most common discomforts is back pain (Palupi, Kolifah, & Afandi, 2017). Low back pain is a major cause of disability, impairs quality of life and work performance, and is the most common reason for medical consultation (Malarvizhi, Sai Kishore Varma, & Sivakumar, 2017). Back pain often occurs in pregnant women and affects the health condition and quality of life of pregnant women (Katonis et al., 2011).

Back pain is the most common musculoskeletal problem in pregnant women. It is estimated that 50% to 70% of pregnant women suffer from this problem. The causes of the high prevalence of back pain in pregnant women are fatigue, increased joint mobility due to hormonal changes that occur in collagen, pressure from the growing fetus, weight gain, and increased load on the spine that changes body posture (Mirmolaei, Ansari, Mahmoudi, & Ranjbar, 2018).

Back pain is a common complaint that occurs in pregnant women. It is generally characterized by axial discomfort in the musculoskeletal region of the lower lumbar region. This can be caused by a combination of mechanical, hormonal, circulatory, and psychosocial factors. The incidence of lower back pain during pregnancy is estimated to be about 50% in pregnant women during pregnancy. About 80% of pregnant women with low back pain experience problems in their daily activities, household chores, and work. This situation can affect the quality of life of pregnant women and is a serious problem that should not be underestimated (Sabino & Grauer, 2008). Changes in the musculoskeletal system occur when gestational age increases, especially in the third trimester. These musculoskeletal adaptations include: weight gain, shifting of the center due to uterine enlargement, relaxation and mobility. The center of gravity of the body shifts forward and when combined with this weak stretching of the abdominal muscles results in an indentation of the shoulders and a hanging chin. There is a tendency for the muscles to shorten if the abdominal muscles are stretched causing imbalance of the muscles around the pelvis, and additional tension can be felt over the ligaments, causing back pain that is usually sacroiliac or lumbar in origin (Ulfah & Wirakhmi, 2017).

Many women experience back pain during pregnancy. The cause is weight gain, and changes in the specific physiology of the spine. During pregnancy, a woman's body weight increases by 15 to 25 percent; this puts a greater load on the tendons, ligaments, and joints. Further changes, relaxin and estrogen which loosen the ligaments in this state can add to injury. An enlarged uterus and an increase in breast volume shift the body's center of gravity forward. The pelvis tilts simultaneously, and lumbar lordosis increases (Schröder, Kundt, Otte, Wendig, & Schober, 2016). During pregnancy many physiological and musculoskeletal changes occur for fetal development. The abdominal muscles stretch to accommodate the enlarging uterus. The center of gravity shifts upward and forward due to the enlargement of the uterus and breasts which require postural compensation for balance and stability. Lower back pain during pregnancy is the most common third trimester of pregnancy by 40.7% and often occurs in the lower back area of 71.2% (RNV, P, & VPR, 2016).

During pregnancy, a number of biomechanical and hormonal changes occur that can change the curvature of the spine, balance and gait patterns by affecting major areas of the human body. This can greatly affect the quality of life (Conder, Zamani, & Akrami, 2019). The function of the pelvic bones can be impaired by changes in alignment that occur during pregnancy. Misaligned pelvic bones can cause back pain, urinary incontinence, and other complications (Morino et al., 2019). Lower back pain increases during pregnancy, due to rapid weight gain and shifting of the body's center of gravity, low back pain, and lumbar lordosis. Lower back pain is more common in the second trimester of pregnancy (Yousefabadi, Sarani, Arbabshastan, Adineh, & Shahnavaizi, 2019).

During pregnancy, the pregnant woman's body undergoes dramatic physiological changes that require carefully designed exercises to reduce back pain. A strong back is essential for good posture and proper balance during pregnancy. Some mothers experience back discomfort starting in the second trimester, and it occurs more frequently in the later months of pregnancy. The causes of back pain experienced by pregnant women during pregnancy are (i) weight gain as one of the causes of back pain, because the mother's center of gravity shifts during her pregnancy, (ii) In addition, the sacroiliac joints also stretch due to the enlarged pelvis of the mother or the baby. grow up. (iii) Malposition can cause back pain during pregnancy(Dalsania, 2016).Back pain is a common condition in pregnancy, more than one third of women experience back pain during pregnancy. Back pain increases with increasing gestational age and interferes with work, daily activities, and sleep(Khresheh & Khresheh, 2017). Lower back pain during pregnancy is the most common third trimester of pregnancy by 40.7% and often occurs in the lower back area of 71.2%

II. METHODS

The research design used was a Quasi Experimental design, without control. In this study, pelvic tilt training interventions will be carried out on back pain in third trimester pregnant women in Rejang Lebong Regency. Measurement and data collection were carried out before and after the intervention. The number of samples used in this study were 32 pregnant women. Techniques for taking consecutive sampling, with inclusion criteria: 1) pregnant women in the third trimester, 2) ages 18-35 years, 3) normal pregnant women, 4) pregnant women who experience back pain, 5) the family agrees to the informed consent. While the exclusion criteria for this study were: Mothers who refused to be respondents or grouped out during the intervention. This research has passed an ethical review and obtained an Ethical Clearance Number No.DM.01.04 / 153/3 / VI / 2020 by the Health Research Ethics Commission of the Ministry of Health Bengkulu.

III. RESULT

Table 1 Characteristics of respondents

Characteristics of Respondents	n	%
Age (Year) :		
- < 27 year	18	56,2
- ≥ 27 year	14	43,8
Parity:		
- Primipara	7	21,9
- Multiparous	25	78,1
Education:		
- Junior High School and Senior High School	10	31,2
- Undergraduate	22	68,8
Profession :		
- Work	23	71,9
- Not Work	9	28,1

Table 2 Back pain before and after antervention pelvic tilt

Back Pain	n	%
Back Pain Before Intervention: <i>Pelvic tilt</i>		
- Mild Pain	5	15,6
- Moderate Pain	25	78,1
- Severe Pain	2	6,3
Back Pain After Intervention: <i>Pelvic tilt</i>		
- Mild Pain	2	6,2
- Moderate Pain	20	62,5
- Severe Pain	10	31,3

Table 3 Decreased back pain after intervention pelvic tilt

Back Pain	n	%
Decreased Back Pain After Intervention <i>Pelvic tilt</i>		
- Down	21	65,6
- Not Down	12	34,4

Tabel 4 Normality test results

Data	Mean	SD	p value	95% CI
Age (Year)	1,44	0,504	0,000	1,26-1,62
Profession	1,72	0,457	0,000	1,55-1,88
Education	1,69	0,471	0,000	1,52-1,86
Parity	1,78	0,420	0,000	1,63-1,93

Tabel 5 Differences in the level of back pain before and after pelvic tilt exercise

Measurement	Mean	SD	Z	p	Min-Max
Back Pain					
- Before Intervention <i>Pelvic tilt</i>	1,91	0,466	-4,583	0,000	1-3
- After Intervention <i>Pelvic tilt.</i>	1.25	0,568			0-2

Table 1 shows the characteristics

of respondents, the age characteristics of the majority of the respondents were <27 years old, namely 56.2%, the parity in the multigravida category was 78.1% and at and the education level of the respondents were mostly in the D III / Undergraduate category, namely 68.8 %, most of the respondents' jobs are in the unemployment category, namely 71.9%. In table 2, it is found that in the pelvic tilt group, back pain before the intervention was in the moderate pain category, namely 78.1%, and after the intervention it was in the mild pain category, namely 62.5%. In table 3, it is found that in the pelvic tilt group the reduction in back pain after the intervention was in the down category, namely 65.6%.

Before determining the statistical test, the data normality test was conducted beforehand. The data normality test was carried out on the Difference in Lower Back Pain in Third Trimester Pregnant Women between Pelvic Tilt Exercises in Rejang Lebong Regency to see the distribution of data normality. Table 4 shows the results of the data normality test using the Shpiro-Wilk statistical test. The results of the normality test in Table 3 show that the p value is mostly less than 0.00. These results can be concluded that the data are not normally distributed, so the appropriate statistical test to do is to use non-parametric statistics.

The statistical test used to see the reduction in back pain before and after Pelvic tilt exercise is non-parametric Wilcoxon, because the results of the data distribution test are not normal. The statistical test results of the difference in the mean back pain in the Pelvic tilt group are shown in table 5 for back pain in the Pelvic tilt group between before the intervention and after the intervention, the z value was -4.583 and the p value <0.005, this result means that there was a decrease in back pain before the intervention. and after Pelvic tilt exercise there was a significant difference.

I. DISCUSSION

In table 5 above shows the results of research on third trimester pregnant women who experience back pain after being given Pelvic tilt exercise intervention, the p value is <0.005, this result means that there is an effect of Pelvic tilt intervention on reducing back pain in third trimester pregnant women. The results of this study illustrate that the Pelvic tilt affects Primigravida lower back pain and sleep quality(RNV et al., 2016).

The Back Pain Reducing Program (BPRP) showed a significant reduction in back pain rates after 12 weeks of treatment. The BPRP program consists of health education, distribution of pamphlets, videotapes containing exercise demonstrations, reports on exercise activities and telephone calls. Health education in the form of an explanation of the anatomy and function of the vertebrae, normal pelvic changes during pregnancy, and proper posture to prevent back pain given to antenatal classes. Gymnastics is carried out at home each regularly 5-7 times per week(Shah et al., 2015)

Giving pelvic tilt for three weeks for pregnant women in the second trimester is effective for reducing low back pain, strengthening the muscles of the abdomen, pelvis, and back to improve posture. because increasing gestational age the mother will make weight gain gradually, and changes in hormonal influence on muscle structure during pregnancy. Both of these factors lead to changes in body posture in pregnant women. The greater the likelihood of sacroiliac joint instability and increased lumbar lordosis, the greater the pain(Rani, Harmayetty, & Kusumaningrum, 2020)

Exercise programs that use muscle strength are useful for rehabilitation of low back pain and help support the spine. Increasing the flexibility of the tendons of the muscles and ligaments in the back increases range of motion and aids functional movement. Exercise increases blood flow and nutrients to the soft tissues in the back, improves the healing process and reduces stiffness that can lead to back pain(Gordon & Bloxham, 2016). Pelvic tilt exercises are very good to do to tighten muscles and ligaments that support internal organs, reduce tension, improve posture, improve circulation, reduce low back pain in pregnant women(Dalsania, 2016).Patients who experience back pain after pelvic tilt experience decreased back pain(Minicozzi, Russell, Ray, Struebing, & Owens, 2016).Pelvic tilt exercises increase capillary blood flow, thereby increasing the oxygen delivered to tissues to prevent lactic acid accumulation and by increasing capillary blood flow, muscle strength(Yousefabadi et al., 2019)

II. CONCLUSION

The results showed that there was a significant effect of pelvic tilt training on reducing back pain in third trimester pregnant women. Pelvic tilt exercises can be performed as an

alternative to relieving back pain and lumbar lordosis in pregnant women who suffer from back pain during pregnancy, as well as an alternative to reducing back pain with and not using chemical pain relievers during pregnancy.

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