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Combination of Herbal Therapy Compress Ball and Pelvic Tilt Exercisefor Low Back Pain in Third Trimester Pregnant Women

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ABSTRACT

Pregnancy is a normal process that produces a series of physiological and psychological changes in pregnant women. During pregnancy there are changes in anatomical, physiological and biochemical adaptations in the body of pregnant women. Parallel to the gradual increase in body weight during pregnancy and central redistribution there are hormonal influences on the ligament structure. These two factors change the posture of pregnant women to make it lordosis which will then be at risk of back pain. Data analysis using analysis used is the Paired t-Test. Result: The significance value of the pre test and post test is 0.001, meaning that there is a difference in Low Back Pain for Pregnant Women in the Third Trimester before and after the intervention. Thus it can be concluded that there is an effect of giving a combination of Herbal Therapy Compress Ball and Pelvic Tilt Exercise

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1. INTRODUCTION

Pregnancy is a normal process that produces a series of physiological and psychological changes in pregnant women. During pregnancy, changes in anatomical, physiological and biochemical adaptations occur in the body of pregnant women [1]. Parallel to the gradual increase in body weight during pregnancy and central redistribution there is a hormonal influence on the ligament structure. These two factors change the body posture of pregnant women, causing it to become lordosis, which then creates a risk of back pain [2]

Back pain during pregnancy is usually experienced by women at certain times during their pregnancy, usually occurring in the third trimester of pregnancy [2]. Back pain is one of the causes of third trimester discomfort. The cause of Low Back Pain (NPB) from a biomechanical point of view is due to shifting the center of gravity forward increasing knee hyperextension and pelvic instability. These changes increase pressure on the lumbar vertebrae and stress on the paraspinal muscles [3]. The gravitational pressure of the uterus on the large vessels reduces blood flow to the spine and causes lower back pain, especially in late pregnancy [4]. The enlarging uterus and increasing weight cause the muscles to work harder which can cause pressure on the muscles and joints [5] The negative impact of Lower Back Pain (LBP) is that it can have a negative impact on the quality of life of pregnant women due to disruption of daily physical activities, and can continue until post partum and have a negative impact on the psychology of pregnant women so they must receive treatment [6]

Survey results in England and Scandinavia show that 50% of pregnant women experience back pain [7]. Meanwhile, back pain usually occurs in pregnancy, especially in the third trimester, with an incidence varying from 50% in England and Australia to 70% and in Indonesia reaching 60-80% of the180 pregnant women who have been studied experience back pain [8]. The increase in the incidence of pain back pain in pregnant women has been recorded to occur in pregnant women who have a history of back pain in previous pregnancies, increased body mass index, and a history of joint hypermobility [9]. A history of back pain during previous pregnancy is the strongest predictor for the occurrence of back pain in pregnant women [10].

Back pain can interfere with the daily activities of pregnant women. Management of pain in the lower back during pregnancy varies, including pharmacological and non-pharmacological

management [11]. Non-pharmacological treatment is pain management without using drugs. One non-pharmacological treatment to reduce lower back pain during pregnancy can be done with the Herbal Therapy Compress Ball [12]

Herbal Therapy Compress Ball originates from Thailand for hundreds of years as a traditional therapy [13]. This Herbal Therapy Compress Ball is a musculoskeletal, therapeutic and rehabilitative treatment. Herbal Therapy Compress Ball can be used by steaming for 10-15 minutes before use to activate heat conduction and increase blood flow, anti-inflammatory effects from herbal ingredients, and relaxing effects of aromatic essential oils from herbal ingredients. The content of Herbal Therapy Compress Ball varies depending on the availability of herbal ingredients from each region [14]

Apart from that, another non-pharmacological treatment that can also be used is the pelvic tilt exercise, which is a mobility exercise that appears to strengthen or increase muscle flexibility needed to compensate for the increase in abdominal mass and thus maintain normal posture. The purpose of the pelvic tilt movement is to strengthen the gluteus maximus muscles and prevent lumbar hyperlordosis [15]

Based on the results of observations made on third trimester pregnant women who experienced low back pain, pregnant women generally complained that they wanted to reduce the pain, either pharmacologically or non-pharmacologically. Based on this, researchers are interested in developing simple non-pharmacological techniques that can be done by everyone, are easy and simple and have no risks. The problem formulation for this research is whether there is "Effect of the Combination of Herbal Therapy Compress Ball and Pelvic Tilt Exercise on Low Back Pain of Pregnant Women in the Third Trimester

2. METHOD

This type of research is pre-experimental. The pre-experimental method is a form of experimental research that manipulates independent variables, the selection of research subjects is carried out non-randomly, and does not have a control group or comparison group. The research design used was One Group Pre-Test and Post-test Design, where the researcher conducted a pre-test before carrying out the intervention and then carried out a post-test after the intervention was carried out. The instrument used in this research is the Numeric Rating Scale (NRS). And the analysis used is the Paired t-Test.

3. RESULTS AND DISCUSSION

Results

Based on research that has been carried out aimed at seeing the effect of the combination of Herbal Therapy Compress Ball and Pelvic Tilt Exercise on Low Back Pain in Pregnant Women in the Third Trimester with a total of 32 respondents, the author can explain the research results as follows :

Univariate Analysis

Table 1 Frequency Distribution of Respondent Characteristics

No	Characteristics	Frequency (f)	Presentation (%)
1	**Age**		
	<20 Years	1	3.1
	20-35 Years	27	84.4
	>35 Years	4	12.5
2	**Education**		
	Elementary School	0	0
	Junior high school	4	12.5
	Senior High School	22	68.8
	College	6	18.8
3	**Work**		
	Farmer	2	6.3
	Self-employed	12	37.5
	Private employees	10	31.3
	Civil servants	8	25.0

4	Parity		
	Primigravida	13	40.6
	Multigravida	19	59.4
	Total	**32**	**100**

Based on the table above, it can be seen that the majority of respondents are 20-35 years old, 27 people (84.4%), in the educational group, the majority have high school education, 22 people (68.8%). Based on work, the majority work as entrepreneurs, 12 people (37.5%). Meanwhile, the majority of parity were multigravida, 19 people (59.4%).

Table 2 Frequency Distribution of Pre Test Pain and Post Test Pain

Variable	Frequency (f)	Presentation (%
Pre Test		
Severe Pain	10	31.3
Moderate Pain	22	68.8
Post Test		
Severe Pain	6	18.8
Mild Pain	26	81.3
Total	**32**	**100**

Based on table 2, it can be seen that the majority of pain in the pre-test was moderate pain, namely22 people (68.8%). Meanwhile, the majority of post-tests were mild pain, 26 people (81.3%).

Bivariate Analysis

Table 3 Difference between Pre-Test Pain and Post-Test Pain Combination of Herbal Therapy Compress Ball and Pelvic Tilt Exercise for Low Back Pain in Pregnant Women in ThirdTrimester

Information	n	Descriptive Statistics	Paired t-Test		
		M (Std. D)	t	df	Sig (2-tailed)
Pre Test	32	5.44 (1.43)	6.874	31	0.001*
Post Test	32	2.97 (2.07)			

Based on table 3, it can be seen that the significance value of the pre test and post test is 0.001, meaning that there is a difference in Low Back Pain for Pregnant Women in the Third Trimester before and after the intervention. Thus it can be concluded that there is an effect of giving a combination of Herbal Therapy Compress Ball and Pelvic Tilt Exercise.

Discussion

Based on table 4, it can be seen that the significance value of the pre test and post test is 0.001, meaning that there is a difference in Low Back Pain for Pregnant Women in the Third Trimester before and after the intervention. Thus it can be concluded that there is an effect of giving a combination of Herbal Therapy Compress Ball and Pelvic Tilt Exercise. This figure shows a decrease in the average intensity of pain before being given Herbal Therapy Compress Ball and Pelvic Tilt Exercise.

Based on research conducted entitled the effect of zinger officinale compress ball therapy on the intensity of Low Back Pain, it is stated that ginger therapy can reduce the intensity of lower back pain in pregnant women in the third trimester, because the essential oil from ginger is warm which can increase flow. One of the pain management strategies is cutaneous stimulation. The application of this complementary therapy combines the warm compress method with herbal ingredients which is implemented through the Herbal Therapy Compress Ball [14]. Changes in pain intensity due to the provision of Herbal Therapy Compress Ball therapy are also supported by other research. Physiologically, lower back pain is caused by heat, namely causing dilation of blood vessels, reducing blood viscosity, reducing muscle tension, increasing tissue metabolism and increasing capillary permeability. This response to heat is also provides a relaxing effect on the body [15].

Physiologically, heat causes low back pain to dilate blood vessels, reduce blood viscosity, reduce muscle tension, increase tissue metabolism and increase capillary permeability. This warm response also has a relaxing effect on the body [16]. This provides comfort and a sense of security because it uses a bladder with the appropriate temperature (38-40oC) with a temperature that has been set in such a way that it is not too hot and irritates the skin. This research on giving Herbal Therapy

Compress Ball for lower back pain to pregnant women in the third trimester is in line with other research which collaborates the warm compress method, herbal therapy and has been proven to have a significant influence on reducing the intensity of lower back pain for pregnant women in the third trimester [17]. The effectiveness of providing non-pharmacological therapy to treat pain complaints in the form of warm compress therapy is also supported by other research which states that non-pharmacological warm compress therapy has a significant influence on reducing the intensity of lower back pain in third trimester pregnant women. Warm compress therapy can be an obstacle in the delivery of pain stimulation into the body. So sufferers of lower back pain in third trimester pregnant women can use the non-pharmacological Herbal Therapy Compress Ball as an alternative pain treatment [13].

The cause of Low Back Pain (NPB) from a biomechanical perspective is due to shifting the center of gravity forward increasing knee hyperextension and pelvic instability. These changes increase pressure on the lumbar vertebrae and stress on the paraspinal muscles. The gravitational pressure of the uterus on the large vessels reduces blood flow to the spine and causes back pain, especially in late pregnancy. The enlarging uterus and increasing weight cause the muscles to work harder, which can cause pressure on the muscles and joints. One of the causes of Low Back Pain (NPB) is hormonal changes which cause changes in the supporting and connecting soft tissue resulting in decreased muscle elasticity and flexibility so that the muscles become stiffer and tense easily [11].

The etiology of lower back pain in pregnancy is drastic weight gain, uterine growth which causes changes in body posture, repetitive stretching, increased levels of the hormone estrogen in the ligaments which causes changes in the supporting and connecting soft tissue (connective tissue) resulting in decreased elasticity and muscle flexibility [16]. Lower back pain in pregnancy is an unpleasant condition due to the enlargement of the uterus and increasing body weight causing the muscles to work harder so that it can cause stress on the muscles and joints which is influenced by several factors, namely the mother's age, parity, gestational age, work, exercise and history. previous pain [18].

During pregnancy, light to moderate exercise can be given to pregnant women, namely stretching movements that are safe for pregnant women, such as lumbar flexion exercises. One of the lumbar flexion exercise movements is the pelvic tilt exercise. Opinions say this exercise is significant in reducing lower back pain in pregnant women [14]. This research is in line with research regarding the differences before and after pelvic tilt exercises on back pain in third trimester pregnant women

4. CONCLUSION

The results of the Paired t-Test can be seen that the significance value of the pre-test and post-test is 0.001, meaning that there is a difference in Low Back Pain for Pregnant Women in the Third Trimester before and after the intervention. Thus it can be concluded that there is an effect of giving a combination of Herbal Therapy Compress Ball and Pelvic Tilt Exercise.

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