



## The Relationship Between Physical Activity of Pregnant Women and the Incident of Low Back Pain during the Third Trimester

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### ABSTRACT

Low back Pain is a common complaint among pregnant women, especially in the third trimester, due to physiological and biomechanical changes during pregnancy. Physical activity is thought to be associated with lower back pain. This study aimed to determine the relationship between physical activity and the incidence of low back pain during the third trimester. This study used an analytical design with a cross-sectional approach. The study sample consisted of 65 pregnant women in their third trimester selected using a purposive sampling technique. Data were collected through interviews using a physical activity questionnaire and a pain scale. Data analysis used the chi-square test. The results showed that pregnant women with heavy physical activity had a lower incidence of back pain was 72.7%, while light physical activity was 38.5%. The statistical test results showed a p value of 0.014 ( $p < 0.05$ ). It was concluded that there is a significant relationship between physical activity of pregnant women and the incidence of low blood pressure during the third trimester.

**Keywords:** *Physical Activity, Pregnant Women, Low Back Pain, Trimester III*

### 1. INTRODUCTION

Pregnancy is a physiological condition that causes various changes in a woman's body, both hormonal and biomechanical. These changes can lead to various physical complaints during pregnancy, one of which is low blood pressure, back pain or lower back pain.

Low back Pain in pregnancy usually occurs due to changes in the body's center of gravity, weight gain, and stretching of ligaments due to the influence of the hormone relaxin





. This complaint most often occurs in the third trimester due to the increasing size of the uterus, which puts pressure on the spine and back muscles.

Physical activity of pregnant women can also influence the emergence of low blood pressure complaints. back Pain . Excessive physical activity can increase pressure on the spine, while too little physical activity can cause weakness in the muscles that support the spine.

Several studies have shown that balanced and controlled physical activity during pregnancy can help maintain muscle strength and reduce the risk of low back pain.

This study aims to determine the relationship between physical activity of pregnant women and the incidence of low birth weight. back pain during the third trimester .

## 2. RESEARCH METHODS

### a. Research Design

This study uses an analytical design with a cross-sectional approach .

### b. Population and Sample

The research population was all pregnant women in their third trimester who underwent pregnancy check-ups at Community Health Center X.

The research sample consisted of 65 pregnant women selected using purposive sampling technique .

### c. Inclusion Criteria

- 1) Pregnant women in their third trimester
- 2) Single pregnancy
- 3) Willing to be a respondent

### d. Research Variables

- 1) Independent variables is physical activity of pregnant women
- 2) Dependent variable is low incident back pain

### e. Data collection

Data is collected through:

- 1) Interviews using a physical activity questionnaire
- 2) Measuring pain levels using a pain scale

### f. Data analysis

The analysis was performed using:

- 1) Descriptive analysis
- 2) Chi-square test with a significance level of 0.05.





### 3. RESEARCH RESULTS AND DISCUSSION

#### a. Research result

##### 1) Respondent Characteristics

This study involved 65 pregnant women in their third trimester who underwent prenatal checkups at a health care facility. Respondent characteristics included maternal age, parity, and gestational age.

**Table 1. Respondent Characteristics**

Characteristics	n	%
<b>Mother's age</b>		
<20 years	6	9.2
20–35 years	44	67.7
>35 years	15	23.1
<b>Parity</b>		
Primigravida	28	43.1
Multigravida	37	56.9
<b>Gestational Age</b>		
28–32 weeks	20	30.8
33–36 weeks	25	38.5
>36 weeks	20	30.7

Most respondents were in the healthy reproductive age group of 20–35. This age group has relatively better musculoskeletal health compared to those at the extreme ages.

##### 2) Distribution of Physical Activity of Pregnant Women

Physical activities carried out by pregnant women are categorized into light, moderate, and heavy activities based on the intensity of household work and daily activities.

**Table 2. Distribution of Physical Activity**

Physical Activity	n	%
Light	26	40
Currently	28	43.1
Heavy	11	16.9





Most pregnant women engage in moderate physical activity such as walking, light housework, and daily activities that do not require much energy.

### 3) Back Incident Pain in Pregnant Women

Low back Pain is a complaint often experienced by pregnant women, especially in the third trimester due to changes in body posture and weight gain.

**Table 3. Low Back Distribution Pain**

Back Incident Pain	n	%
Experiencing pain	39	60
No pain	26	40

As many as 60% of pregnant women experience low blood pressure. back pain in the third trimester . This shows that back pain is a fairly common complaint during pregnancy.

### 4) Back Pain Intensity Level

**Table 4. Low Back Intensity Pain**

Pain Intensity	n	%
Mild pain	18	27.7
Moderate pain	14	21.5
Severe pain	7	10.8
No pain	26	40

Most pregnant women experience mild to moderate pain.

### 5) The Relationship Between Physical Activity and Low Back Pain

**Table 5. Relationship Analysis**

Physical Activity	Low Back Pain	No Pain	Total
Light	10	16	26
Currently	18	10	28
Heavy	8	3	11
<b>Total</b>	<b>36</b>	<b>29</b>	<b>65</b>





The results of the analysis using the chi-square test show the values:  $p = 0.014$ . Because  $p < 0.05$ , there is a significant relationship between physical activity of pregnant women and the incidence of low birth weight. back pain.

## b. Discussion

The results of the study showed that physical activity has a significant relationship with the incidence of low back Pain in pregnant women in the third trimester . Pregnant women who engage in heavy physical activity have a higher risk of experiencing lower back pain than those who engage in light or moderate physical activity.

Physiological changes during pregnancy cause weight gain and a forward shift in the body's center of gravity. This increases pressure on the lumbar spine and back muscles. Of the hormone relaxin during pregnancy cause ligaments to loosen, reducing joint stability. This combination of hormonal and biomechanical changes can trigger lower back pain.

Excessive physical activity such as lifting weights, standing for too long, or doing heavy household chores can increase pressure on the spine and worsen back pain complaints.

Excessive physical activity is also not recommended because it can weaken the muscles that support the spine. Weak muscles can increase the risk of musculoskeletal disorders during pregnancy.

Balanced physical activity is essential for pregnant women. Activities such as walking, prenatal gymnastics, or stretching can help strengthen back muscles and improve flexibility.

Apart from physical activity, several other factors can also influence the incidence of low blood pressure. back pain in pregnant women, including:

- 1) weight gain during pregnancy
- 2) mother's posture
- 3) previous history of back pain
- 4) duration of standing or working
- 5) back and abdominal muscle strength

The findings of this study are in line with various previous studies which stated that excessive physical activity during pregnancy can increase the risk of musculoskeletal disorders including low back pain. back pain .

The results of this study indicate that healthcare professionals need to educate pregnant women about safe physical activity during pregnancy. Appropriate physical activity can help maintain maternal health and reduce the risk of back pain during the third trimester .





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Educational programs such as pregnancy classes and pregnancy exercises can be an effort to increase mothers' knowledge about the importance of balanced physical activity during pregnancy.

#### 4. CONCLUSION AND SUGGESTIONS

##### a. Conclusion

There is a significant relationship between physical activity of pregnant women and the incidence of low birth weight. back Pain during the third trimester . Pregnant women who engage in heavy physical activity have a higher risk of experiencing lower back pain.

##### b. Suggestion

- 1) Pregnant women are advised to do light to moderate physical activity regularly.
- 2) Health workers need to provide education about safe physical activity during pregnancy.
- 3) Further research can examine other factors that influence the occurrence of low back pain in pregnant women.

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