

ORIGINAL ARTICLE

The Effect of Using Bellywrap on Changes in Low Back Pain Levels in Pregnant Women in Menganti District, Gresik Regency

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ABSTRACT

Introduction: Pregnant women during pregnancy usually often complain of discomfort, one of which is low back pain, low back pain that is not resolved causes an increase in the intensity of pain after the mother gives birth to her baby, so it is necessary to make non-pharmacological handling efforts with the use of bellywrap. The purpose of the study was to determine the effect of using bellywrap on changes in low back pain levels in pregnant women in Menganti District, Gresik Regency. **Materials and methods:** The research method used one group pre-test and post-test design, a population of 55 pregnant women and a sample of 48 pregnant women, with simple random sampling techniques. Variable independent use of bellywrap and variable dependent changes in low back pain levels in pregnant women. The research instrument used a pain scale observation sheet (NRS). Data analysis using Wilcoxon signed rank test. **Results:** The results of the study found that almost all of them (85.4%) experienced changes in the level of low back pain with a mild category. The results of data analysis with the Wilcoxon test, it was found that $p(0.00) < \alpha(0.05)$ that there was an effect of using bellywrap on changes in low back pain levels in pregnant women in Hulaan Village Menganti District, Gresik Regency. **Conclusion:** The conclusion of this study is that the use of bellywrap can be used as one of the nonpharmacological therapies that can be done by pregnant women in reducing low back pain.

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INTRODUCTION

A pregnant woman during pregnancy experiences changes in her body both physically and psychologically that can cause discomfort. One of the discomforts that is often felt by pregnant women is low back pain. This is due to a significant increase in fetal weight in the uterus (1). Although not all pregnant women experience it, many also experience it in mild to severe levels.

The prevalence of low back pain in pregnant women in the world varies. A pregnant woman during pregnancy experiences changes in her body both physically and psychologically so that it can cause discomfort. One of the discomforts often felt by pregnant women is low back pain. This is due to a significant increase in fetal weight in the uterus (1). Although not all pregnant women experience it, many also experience it in mild to severe levels. While in Indonesia pregnant women who experience back pain reach 60-80%, in East Java

province it is estimated that around 65% of 100% of pregnant women still experience back pain (2). Pregnancy related low back pain is a common complaint among pregnant women. It can potentially have a negative impact on their quality of life. (3). According to research (4) around 70% of pregnant women often experience pain in the waist area or low back pain (LBP) which may occur since the beginning of the trimester, and experience peaks when entering the 2nd and 3rd trimesters. Based on preliminary data in Hulaan Village, Menganti District, Gresik Regency, pregnant women who experience low back pain in 2019 reached 67%, in 2020 it reached 79%, while in 2021 it reached 86%, which means there is an increase in the prevalence of pregnant women who experience low back pain, pregnant women who experience low back pain say the therapy used to reduce pain is to provide topical oil or aromatherapy applied to the pain area, Using massage techniques in the pain area and doing rest to reduce pain, and not much is known about the use of bellywrap (abdominal support) to reduce low back pain.

The impact of low back pain on the mother can cause a mother to be unable to stand or walk for a long time, cause anxiety, fear, pain, tension and interfere with

activities especially if the mother is a worker, and if this problem is not treated then it may interfere with the labor process (5). In addition, low back pain that is not resolved in the long term can cause an increase in pain intensity after the mother gives birth to her water and chronic low back pain will be more difficult and long to cure (6).

Bellywrap is an abdominal support belt that can be useful for reducing lower back pain during pregnancy. The use of abdominal braces aims to limit waist movement and increase abdominal muscles so as to maintain waistbone stability and reduce pain (7,8). Bellywrap or abdominal brace can be used in pregnant women because of the way the abdominal brace works, which is to improve the mother’s posture (9). Based on research conducted said that there was a significant reduction in low back pain for pregnant women before and after the use of abdominal braces and was also supported by Rodrigues & Olga’s research said that abdominal braces are comfortable, safe, inexpensive, and easy-to-do therapies to reduce pain, and obstetricians recommend The use of abdominal braces for pregnant women who experience low back pain to reduce pain (6).

MATERIALS AND METHODS

Desain and samples

In this study using a pre-experimental design with one group pre-test and post-test, to determine the effect of using bellywrap on changes in low back pain levels in pregnant women in Hulaan Village, Menganti District, Gresik Regency. This study did not use a control group, only used an experimental group. The population in this study was 55 pregnant women with a large sample of 48 respondents with a simple random sampling technique. The inclusion criteria in this study were: physiologically pregnant women and not in a long-distance relationship with their husband.

This study was conducted for 3 weeks using a bellywrap type maternity support belt. The research instrument used is in the form of a pain scale observation sheet (NRS) to determine the level of pain of pregnant women subjectively.

Data collection techniques

In the first week of the study, respondents were given an observation sheet or pre-test to assess the level of low back pain before using the bellywrap. Next, respondents were given a maternity support belt type bellywrap along with an explanation of how to use the bellywrap, which respondents had to use for around 2-3 hours every day for 3 weeks. Furthermore, at the beginning of the 4th week, a post-test was carried out on respondents to assess the level of low back pain after

using the bellywrap for 3 weeks.

Data analysis

The data analysis used in this study was the Wilcoxon Signed Rank Test with significance level value p Value $< \alpha$ (0.05).

Ethical Clearence

This research has received ethical permission from the Brahmanda Lentera Chakra Institute with number 001.2/007/I/EC/KEP/LCBL/2023.

RESULTS

Based on Table I showed that of the 48 respondents of pregnant women in Hulaan Village, Hulaan District, Menganti Regency, most (60.4%) pregnant women were not at risk (21-35 years), most (72.9%) pregnant women had multigravida pregnancies (>2 children), most (64.6%) of the 3rd trimester gestational age (28-40 weeks) were pregnant women.

Table I: Characteristics of pregnant women by age, parity and gestational age in Menganti District, Gresik Regency in 2023

No.	Character-istics	Criteria	Frequency (percentage)
1	Mother’s Age	No Risk (20-35 Years)	29 (60.4 %)
		At Risk (<20 and >35 Years)	19 (39.6 %)
2	Parity	Primigravida	13 (27.1 %)
		Multigravida	35 (72.9 %)
3	Gestation-al Age	2nd trimester (13-27 weeks)	17 (35.4 %)
		3rd trimester (28-40 weeks)	35 (64.4 %)

(Source: Primary Data, 2023)

Based on Table II showed that of the 48 respondents of pregnant women in Hulaan Village, Hulaan District, Menganti Regency before the use of bellywrap, almost all (81.3%) pregnant women experienced moderate low back pain.

Table II: Low back pain levels in pregnant women before the use of bellywrap in Menganti District, Gresik Regency in 2023

No	Low back pain level	N	%
1	No pain	0	0
2	Light	5	10,4
3	Keep	39	81,3
4	Heavy	4	8,3
5	It’s so heavy	0	0

(Source: Primary Data, 2023)

Based on Table III showed that of the 48 respondents of pregnant women in Hulaan Village, Hulaan District, Menganti Regency after the use of bellywrap, almost all (85.4%) pregnant women experienced low back pain levels with lightweight category.

Table III: Low back pain levels in pregnant women as early as the use of bellywrap in Menganti District, Gresik Regency in 2023

No	Low back pain level	N	%
1	No pain	3	6,3
2	Light	41	85,4
3	Keep	4	8,3
4	Heavy	0	0
5	It's so heavy	0	0

(Source: Primary Data, 2023)

Based on Table IV The results of the statistical Wilcoxon test obtained a p-value of 0.00 and p-value < $\alpha = 0.05$, it can be concluded that H0 is rejected and H1 is accepted which means there is an influence on the use of bellywrap on changes in the level of low back pain in pregnant women in Hulaan Village, Menganti District, Gresik Regency.

Table IV: Analysis of the effect of using bellywrap on changes in low back pain levels in pregnant women in Menganti District, Gresik Regency in 2023

	With	Asymp Sig. (2-tailed)
Low back pain level before and after bellywrap use	-6782 ^b	0.00

DISCUSSION

Based on Table II showed that of the 48 respondents of pregnant women in Hulaan Village, Hulaan District, Menganti Regency before the use of bellywrap, almost all (81.3%) pregnant women experienced low back pain levels with medium category. Low back pain is a problem that is often complained by pregnant women as they get older in pregnancy where the burden of a pregnant woman will increase so that it will cause a feeling uncomfortable.

In addition to gestational age, many factors affect the occurrence of low back pain in pregnant women such as maternal age, parity, daily activities and others. Low back pain that is not treated immediately can have an impact that disturbs a pregnant woman, for example, it can cause a mother to be unable to stand or walk for a long time, easily, tired, cause anxiety, pain, tension and interfere with daily activities. In addition, low back pain that is not resolved in the long term can cause an increase in pain intensity after childbirth and cause chronic low back pain that will more difficult and long to heal (6). The results of this study are in accordance with research conducted before the massage intervention, most (60%) pregnant women experienced low back pain levels of pregnant women with medium scale.

Based on Table III showed that of th 48 respondents of pregnant women in Hulaan Village, Hulaan District, Menganti Regency after the use of bellywrap, almost all (85.4%) pregnant women experienced low back pain

levels with lightweight category. The use of bellywrap is one of the non-pharmacological efforts to reduce the level of low back pain in pregnant women the way bellywrap works is to improve the mother's posture thus reducing the pain felt by the mother. In an effort to reduce the level of low back pain non-pharmacologically, one of them can be done with the use of bellywrap. This is supported by Rodrigues & Olga's research said that abdominal braces are comfortable, safe, inexpensive, and therapeutic clothing that is easy to do to reduce pain, and obstetricians recommend the use of abdominal braces for pregnant women who experience low back pain to reduce pain (10).

Based on Table II and Table III there is a change in the level of low back pain before and after using Bellywrap. And based on the results of the Wilcoxon statistical test, p-value of 0.000 is obtained where the p-value < $\alpha = 0.05$, it can be concluded that H0 is rejected and H1 is accepted, which means there is an influence on use bellywrap on changes in low back pain levels in pregnant women in Hulaan Village, Menganti District, Gresik Regency. The use of bellywrap can be done from 12 weeks gestation to the final stage of labor which aims to reduce low back pain, support the baby's position more optimal during pregnancy, and provide a comfortable and safe delivery experience (11). In the use of bellywrap can be done every day with no more than two hours to 3 hours in a row to reduce pain by increasing abdominal muscles thus maintaining the stability of the lumbar bone (12).

Bellywrap is an abdominal support belt that can be useful for reducing lower back pain during pregnancy. The use of abdominal braces aims to limit waist movement and increase abdominal muscles so as to maintain waist bone stability and reduce pain. Bellywrap or abdominal brace can be used in pregnant women because of the way the abdominal brace works, which is to improve the mother's posture (9).

There was a significant reduction in low back pain for pregnant women before and after the use of abdominal braces and was also supported by Rodrigues' research & Olga said that abdominal braces are comfortable, safe, inexpensive, and therapeutic clothing that is easy to do to reduce pain, as well as specialist doctors The content recommends the use of an abdominal brace for pregnant women who experience low back pain to reduce pain. Zahari et al., 2023 also said low back pain can be reduce with improve core stability and lumbar stabilization using belly wrap by controlling multifidus and transversus abdominis muscle (13).

CONCLUSION

The summary of the results of this study is as follows:
a. The level of low back pain in pregnant women in Hulaan Village, Menganti District, Gresik Regency

before the use of bellywrap almost entirely (81.3%) experienced low back pain with a moderate category.

b. The level of low back pain in pregnant women in Hulaan Village, Menganti District, Gresik Regency after the use of bellywrap almost all (85.4%) experienced low back pain in the mild category.

c. There is an effect of using bellywrap on changes in low back pain levels in pregnant women in Hulaan Village, Menganti District, Gresik Regency which is shown by the results of the Wilcoxon test obtained p-value (0.000) < α (0.05).

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