Indonesian Journal of Global Health Research
Volume 6 Number 2, April 2024
e-ISSN 2715-1972; p-ISSN 2714-9749
http://jurnal.globalhealthsciencegroup.com/index.php/IJGHR

THE EFFECT OF ENDORPHIN MASSAGE TO REDUCE BACK PAIN IN THIRD TRIMESTER PREGNANT WOMEN

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ABSTRACT
Labor pain is a physiological condition and is something that is usually felt by pregnant women in the third trimester. However, if it is not treated with proper pain management, it will cause other problems, including anxiety, stress/depression, muscle tension and feelings of worry. Labor pain can be reduced by using the Endorphin Massage technique, where this technique is therapy or massage carried out through the surface of the skin so that it can increase the feeling of comfort and can result in a block against painful stimuli. The aim of this research is to determine the effectiveness of endorphin massage to reduce back pain in third trimester pregnant women. This type of research uses a quasi-experimental design whose design uses one group pretest-posttest. The number of samples in this study was 15 third trimester pregnant women with back pain. Data analysis was carried out using univariate and bivariate methods using non-parametric tests with the Wilcoxon test, because the Wilcoxon test is used as an alternative to the paired sample t test if the research data is not normally distributed. The results of this study show a significant value of 0.00, which means that the value of 0.00 is less than 0.05, indicating that there is a difference before and after the endorphine massage technique is given.

Keywords: back pain; endorphin; third trimester

First Received	Revised	Accepted
19 January 2024	28 January 2024	29 January 2024
Final Proof Received		**Published**
06 March 2024		01 April 2024

How to cite (in APA style)
Zelharsandy, V. T., Soleha, M., & Anggeriani, R. (2024). The Effect of Endorphin Massage to Reduce Back Pain in Third Trimester Pregnant Women. Indonesian Journal of Global Health Research, 6(2), 565-572. https://doi.org/10.37287/ijghr.v6i2.2874.

INTRODUCTION

Pregnancy is a process that married women look forward to. According to (Sevina, 2020) the pregnancy period from ovulation to parturition is 280 days (40 weeks) and no more than 300 days (43 weeks). The process of pregnancy until giving birth is a long and complicated process because in general pregnant women will experience changes physically and mentally. Pregnant women start to experience various complaints from the first to the last trimester (Tahir, 2021). Back pain in pregnant women is caused by the hormones estrogen and progesterone which relax the joints, bones and muscles in the pelvis. In pregnancy it is related to the strain caused by the enlarged uterus (Widiatiningsih, 2018). Endorphin massage is a light touch/massage therapy that can stimulate the body to release endorphin compounds which are pain relievers and can create a feeling of comfort (Irawati, 2018) According to data WHO, lower back pain during TM III pregnancy in Australia is reported as much as 70% (Kartikasari & Nuryanti, 2016). Low back pain in pregnant women at a gestational age of more than 21 weeks in Malaysia is found to be 36.5% mild pain, 46% moderate pain, and 17.5% severe pain (Bryndal, 2020).

According to the Indonesian Ministry of Health, the number of pregnant women in Indonesia in 2019 reached 5,256,483 people (Wulan, 2020). Around 60-80% of pregnant women experience back pain in several regions of Indonesia during their pregnancy (Kemenkes RI, 2020). About 88.2% of pregnant women experience back pain. Pregnant women over 24 weeks of gestation experience an incidence of lower back pain of around 62%. Back pain during pregnancy varies between 35-60% (Dinkes Palembang, 2019) Lower back pain is one of the discomforts felt by pregnant women. Lower back pain is a common musculoskeletal problem during pregnancy with an estimated prevalence ranging from 30% to 78% in the United States, Europe and some parts of Africa (Darmawan & Waslia, 2019). One third of the population suffering from low back pain experiences severe pain and is often associated with limitations in the pregnant woman's ability to work effectively. This is related to poor quality of life, as a result the productivity of pregnant women in their daily routine activities is reduced (Manyozo, 2019).

One way to treat pain in third trimester pregnant women is to provide massage therapy around the upper and lower back, to provide a feeling of comfort and reduce the intensity of pain (Munir et al., 2022). Massage is an act of maternal care that will increase a sense of security and improve the quality of life, especially for pregnant women (Amanda et al., 2023). Apart from massage, warm and cold compresses and acupressure can reduce back pain in pregnant women (Rahayu, 2020) The results of research by (Saudia & Sari, 2018) entitled Differences in the effectiveness of endorphin massage and warm compresses in reducing back pain for pregnant women in the third trimester, found that the average value before and after endorphin massage was 1.933, while the average value before and after warm compresses was 0.733. From these results, it can be seen that endorphin massage treatment is more effective than warm compress treatment in reducing back pain in third trimester pregnant women (Wulandara et al., 2022).

The results of Khasanah and Sulistyawati's (2019) research entitled The Effect of Endorphin Massage on Pain Intensity in Mothers in Birth, found a significant value of 0.000 ($P < 0.05$), namely that there was a positive influence of endorphin massage on reducing the intensity of pain in mothers in the first stage (Amanda et al., 2023). Research according to (Arnianti et al., 2021) with the title The Effect of Endorphine Massage on Pain Intensity in Mothers in Labor in the First Active Phase at the Zamzam Healthy Home, Palopo City, showed that there was an influence of endorphine massage in the intensity of pain in mothers in labor in the first active phase in Zamzam Healthy House, Palopo City ($p = .000$), Conclusion: there is an influence of endorphin massage on the intensity of pain in mothers giving birth during the first active phase at the Zamzam Healthy House, Palopo City. Based on a preliminary study conducted at PMB Griya Bunda Ceria Palembang, in 2022 there were 50 TM III pregnant women and in March 2023 there were 15 third trimester pregnant women with back pain. Based on the background above, researchers are interested in conducting research entitled The Effectiveness of Endorphin Massage which aims to reduce back pain in third trimester pregnant women.

METHOD

This type of research uses Quasi Experimental using a One Group pretest-posttest research design using an observation questionnaire and checklist. This research was created into one group, namely the group that was given endorphin massage, totaling 15 respondents. The sampling technique in this research used the Purposive Sampling method and then data analysis was carried out, namely univariate and bivariate using the Wilcoxon statistical test.

RESULTS

Table 1.
Frequency Distribution of Respondent Characteristics Based on Age, Gestational Age, Education and Occupation

Respondent Characteristic	Respondent	
	f	%
Age :		
25	3	20
27	1	6,7
29	3	20
30	5	33,3
31	2	13,3
33	1	6,7
Gestational Age :		
37	5	33,3
38	2	13,3
39	5	33,3
40	3	20
Education:		
Junior High School	4	26,7
Senior High School	11	73,3
Profeesion:		
Housewife	15	100

Table 1, it can be seen that there are 3 (20%) respondents about the characteristics of pregnant women aged 25, 27 there is 1 (6.7%) respondent, 29 there are 3 (20%) respondents, 30 there are 5 (33.3%) respondents, 31 there were 2 (13.3%) respondents, 33 there were 1 (6.7%) respondent. There were 5 (33.3%) respondents with a gestation age of 37 weeks, 2 (13.3%) respondents at 38 weeks, 5 (33.3%) respondents at 39 weeks, 3 (20%) respondents at 40 weeks. There were 4 (26.7%) respondents with junior high school education, 11 (73.3%) respondents with high school education. And mothers who work as housewives are 15 (100%) respondents.

Tabel 2.
Frequency Distribution of Back Pain Scores Before Giving the Endorphin Massage Technique.

Pain Level	f	%
No pain	0	0
Mild pain	4	26,7
Moderate pain	8	53,3
Severe pain is controlled	3	20
Severe uncontrolled pain	0	0

Table 2, it can be seen that of the 15 respondents with degrees of back pain before the Endorphin Massage technique was carried out, there were 4 (26.7%) respondents who experienced mild pain, 8 (53.3%) respondents who experienced moderate pain, 3 (20%) respondents with controlled severe pain, and there were no respondents who experienced uncontrolled severe pain.

Table 3.
Frequency Distribution of Back Pain Scores After Giving the Endorphin Massage Technique

Pain Level	f	%
No pain	4	26,7
Mild pain	11	73,3
Moderate pain	0	0
Severe pain is controlled	0	0
Severe uncontrolled pain	0	0

Table 3, it can be seen that of the 15 respondents with degrees of back pain after using the Endorphin Massage technique, there were 4 (26.7%) respondents who did not experience pain, 11 (73.3%) respondents who experienced mild pain, and no respondents who experienced moderate pain, controlled severe pain and uncontrolled severe pain.

Table 4.
Shapiro Wilk Normality Test

	Back Pain	Statistic	Sig
Endorphin massage	Before	0,561	0,000
	After	0,651	0,000

Tbale 4, it is known that the normality test with Shapiro Wilk obtained a significant value of less than 0.05, which means the data is not normally distributed. Because the results were not normally distributed, a non-parametric test with the Wilcoxon test was used. The Wilcoxon test is used as an alternative to the paired sample t test if the data is not normally distributed.

Tabel 5.
Wilcoxon Normality Test Results

	sebelum - sesudah
Z	-3.626[a]
Asymp. Sig. (2-tailed)	0.000

Based on the results of the SPSS output, it can be seen that Asymp. Sig (2-tailed) is worth 0.000. Because the value 0.000 is smaller than 0.05, then the results are significant, which means that there is effectiveness of endorphin massage before (pretest) and after (posttest) it is carried out.

DISCUSSION

Frequency Distribution of Respondent Characteristics Based on Age, Gestational Age, Education and Occupation.

Based on table 1, the research results from 15 respondents show that pregnant women aged 25 had 3 (20%) respondents, 27 had 1 (6.7%) respondent, 29 had 3 (20%) respondents, 30 had 5 (33, 3%) respondents, 31 there were 2 (13.3%) respondents, 33 there were 1 (6.7%) respondents. Age influences a person's perspective on experiencing things in life, a person's development process is determined by age and is likely to have had various experiences in life, including dealing with back pain during pregnancy. Based on the results obtained, there were 5 (33.3%) respondents who experienced back pain at 39 weeks of gestation. According to the Indonesian Ners Scientific Journal (2020) with the title "The Effect of Endorphin Massage on the Intensity of Lower Back Pain in Pregnant Women in the Third Trimester," Pregnancy that is more than six months old will cause changes in the internal organs of the abdomen and changes in the volume produced by the uterus, blood and fluids. other things, so there will also be changes in body weight from usual and the abdominal muscles will also be elastic following changes in the fetus in the womb (Sri Widatiningsih; Christin Hiyana

Tungga Dewi, 2017).

In the category of respondents with junior high school education, there were 4 (26.7%) and 6 (73.3%) high school. The higher a person's education, the better their knowledge compared to a low level of education resulting in a lack of knowledge in facing and solving a problem. In the category of respondents with housewife jobs, there were 15 (100%). This is in line with Ratih's theory (2016) with the title "The Effect of Endorphin Massage on Reducing the Intensity of Back Pain in Pregnant Women." Back pain can also be the result of excessive bending, walking without rest and lifting weights, especially if one or other of these activities is carried out as a woman. is tired. Usually this happens to housewives.

Frequency Distribution of Back Pain Scores Before Giving the Endorphin Massage Technique.

Based on table 2, out of 15 respondents, intervention was carried out first before the Endorphin Massage technique was carried out. Respondents were asked first to measure the pain scale of the respondent using a checklist sheet, where of the 15 respondents before the Endorphin Massage technique was carried out, the results showed that 4 (26.7%) respondents experienced mild pain, 8 (53.3%) respondents experienced pain. moderate, 3 (20%) respondents experienced controlled severe pain. This is in line with Ma'rifah's research, respondents who experienced back pain during the third trimester and childbirth because it was caused by hypoxia of the uterine muscles due to compression of the uterine blood vessels and labor pain was also a combination of physical pain due to myometrial contractions accompanied by stretching of the lower uterine segment fused with the The mother's psychological condition during labor, the mother's anxiety, fatigue and worry all combine to aggravate existing physical pain (Hidayat, 2018). Labor pain is also experienced during contractions. According to researchers' assumptions, before the Endorphin Massage technique was carried out, many pregnant women experienced moderate back pain (Yanti Sitorus et al., 2021). This endorphin massage technique is very influential on third trimester pregnant women in reducing back pain (Puspasari, 2019).

Frequency Distribution of Back Pain Scores After Giving the Endorphin Massage Technique.

Based on table 3, the data shows that there was a decrease in pain after the Endorphin Massage technique was carried out as shown by the percentage of values before and after. This is reinforced by table 2 which shows that there was a reduction in labor pain after administering the Endorphin Massage technique. It can be seen from table 2 that after the Endorphin Massage technique was carried out, the results showed that 0 (0%) respondents experienced moderate pain. This shows that the back pain felt by pregnant women in the third trimester is reduced after using the Endorphin Massage technique. This is in line with research conducted by Karuniawati (2019), with the title the effect of Endorphin Massage on the intensity of back pain in pregnant women which shows that back pain before the Endorphin Massage technique was carried out resulted in very severe pain as many as 5 (22.6%) respondents, whereas after The Endorphin Massage technique was administered and the results showed that there were no respondents with very severe pain scales (Made et al., 2023). According to Karuniawati's assumption, endorphin massage or back massage works by providing the best effect for a short period of time in reducing pain in mothers who experience back pain during pregnancy or childbirth. Because massage is very influential in increasing the feeling of comfort so that the intensity of back pain can be reduced.

Shapiro Wilk Normality Test

In table 4.4 it is known that the normality test with Shapiro Wilk obtained a significant value of less than 0.05, which means the data is not normally distributed. Because the results were not normally distributed, a non-parametric test with the Wilcoxon test was used. The Wilcoxon test is used as an alternative to the paired sample t test if the data is not normally distributed.

Wilcoxon Normality Test Results

Based on the results of the SPSS output, it can be seen that Asymp. Sig (2-tailed) is worth 0.000. Because the value of 0.000 is smaller than 0.05, Ho is rejected and Ha is accepted, which means there is an average difference between the results before (pre-test) and after (post-test), so it can be said that there is an influence of using the endorphine massage technique on pain. back in TM III pregnant women. This is in line with research conducted by Karuniawati (2019), entitled the effect of Endorphin Massage on the intensity of back pain in pregnant women. In this study, first assessing the scale of pain experienced using a checklist sheet with a numerical scale measuring instrument, after that, the endorphin massage technique was carried out, then the assessment was carried out again using a checklist sheet and assisted by using a numerical scale measuring instrument (Febry Rahayu et al., 2023). Where before the action was taken the mean result was 22.6% and after the action was taken the mean result was 0% (Harahap, 2019).

Endorphin massage can increase the release of serotonin which relieves leg and back pain. Massage in pregnant women causes a decrease in leg and back pain, which has an analgesic effect (Geawanty et al., 2021). This is in line with Aprilia (2019), the benefits of endorphin massage include helping in relaxation and reducing awareness of pain by increasing blood flow to the painful area, stimulating sensory receptors in the skin, providing a general sense of well-being associated with human closeness, increasing local circulation, stimulation of endorphin release, decreased endogenous catecholamine stimulation of efferent fibers which results in a block against painful stimuli (Rossi & Eka Maya Saputri, 2022). From the research results, it is assumed that back pain for pregnant women in the third trimester can be reduced by using the Endorphin Massage technique, where this technique is a therapy or massage carried out through the surface of the skin so that it can increase the feeling of comfort and can result in a block against painful stimuli. This technique is significant before and after administering endorphin massage.

CONCLUSION

Based on the results of the research that has been carried out, the following conclusions can be drawn: this research shows a significant value of 0.00, which means that the value of 0.00 is smaller than 0.05, which shows that there is a difference before and after the endorphin massage technique is given.

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