THE EFFECT OF DEEP BACK MASSAGE ON LOWER BACK PAIN SCALE IN THIRD TRIMESTER PREGNANT WOMEN

Indah Christiana[1], Diana Kusumawati[2]

[1]Magister of Midwifery, Faculty of Health Sciences, Universitas 'Aisyiyah Yogyakarta, Pendidikan Profesi Bidan, STIKES Banyuwangi, Dsn. Krajan RT 04, RW 01 Desa Sidorejo, Kec. Purwoharjo Kab. Banyuwangi 68483, indahchristiana84@gmail.com.
[2]S1 Keperawatan, STIKES Banyuwangi, Dsn. Krajan RT 003 RW 003 Desa Bengkak, Kec. Wongsorejo Kab. Banyuwangi, kusumawati.diana0609@gmail.com

Abstract

Pregnancy is a stage in a woman's life. The changes that occur include weight gain and an enlarging uterus, causing changes in body posture, which can lead to back pain complaints, particularly during the last trimester of pregnancy. If this back pain is not immediately addressed, it can result in chronic pain. Non-pharmacologically, deep back massage on the sacrum area is one effort to reduce back pain. This study aimed to evaluate the impact of deep back massage on the lower back pain scale in women in their third trimester of pregnancy at Ny.S independent midwifery practice Banyuwangi in 2022. This study used a pre-experimental approach, utilizing a pre and post-test design. The subjects of this study were all pregnant women who experienced lower back pain at Ny.S independent midwifery practice Banyuwangi using a total sampling technique, so a sample of 32 people was obtained. The instrument used was an SOP and observation sheet, and then the Wilcoxon Sign Rank analysis test was conducted. The results showed that before deep back massage was performed, most pregnant women experienced moderate lower back pain, and after deep back massage was completed, most pregnant women experienced mild pain. The Wilcoxon test results obtained ρ value 0.001 < 0.05, meaning deep back massage affects the lower back pain scale in women during their third trimester of pregnancy at Ny.S independent midwifery practice Banyuwangi in 2022. Based on the research results, deep back massage can reduce complaints of lower-back pain, especially during the third trimester of pregnancy. It is suggested that midwives provide education about deep-back massage so that pregnant women can perform it at home to deal with the discomfort they experience while maintaining comfort during daily activities.

Keywords: Deep Back Massage, Lower Back Pain Scale, Third Trimester Pregnancy.

INTRODUCTION

Pregnancy is a stage in a woman's life. Pregnancy will cause a woman's body to experience changes during pregnancy which is an adaptation mechanism for the body to face and prepare for various needs during pregnancy, childbirth and breastfeeding. Increased body weight and enlarging uterus cause changes in body posture, which usually become clear when the gestational age enters the second trimester and becomes more obvious in the third trimester (Fitriani 2019). As the uterus expands, the body's balance point shifts forward, necessitating pregnant women adjust their posture to maintain equilibrium. Consequently, the body attempts to draw the back further rearward, causing an increased curvature (lordosis) in the lower spine. This leads to a shortening of spinal muscles and results in back pain (Fitriana 2019).

Back pain is among the most prevalent issues women encounter in their third trimester of pregnancy. This is caused by tension in the muscles and ligaments of the back, causing back pain and is often felt at the end of pregnancy (Reeder. 2018). Symptoms of back pain also occur because the increase in the hormone relaxin produced during pregnancy will cause the joints of the pelvic bones (pubic, sacroiliac and sacrococcygeal symphysis) to stretch in preparation for the birth process. This situation causes tension in the back and thigh muscles. It can increase the risk of pain (Widatiningsih 2017).

The reported prevalence of back pain ranges widely, from about 50% in the UK and Scandinavia to nearly 70% in Australia. Mantle noted that severe back pain was a complaint for 16% of the women observed in his study, and 36% in Ostgaard et al's study reported significant back pain. Several studies conducted in the province of Lampung related to pregnancy-associated lower back pain show a prevalence ranging from 25% to 90%, with most estimating that about half of pregnant women will experience this discomfort. Of these, a third are expected to endure severe pain, which could diminish their quality of life. Eighty percent of pregnant women who experience back pain during pregnancy report that it impacts their everyday activities, and for 10% of them, the condition is so debilitating that they cannot work (Suwares 2023). From the interview results, it was found that out of 10 people, 80% experienced back pain, this shows that the prevalence of back pain in Mrs. S TPMB is still high.

Massage therapy is a non-pharmacological therapy that can alleviate back pain in pregnant women. Effleurage massage is a movement using the entire surface of the palm of the hand attached to the parts of the body being rubbed. Perform a stroking movement, moving from the buttocks to the shoulders with a strong movement, then from the shoulders to the buttocks with a lighter movement. Change movements by using circular movements, especially in the sacrum and waist areas. Effleurage massage is done once a day for 5-10 minutes for 3 consecutive days. This therapy reduces muscle tension and discomfort, enhances flexibility, and promotes better blood flow (Darma 2022). Deep back massage or massage of the lower back area. Deep back massage stimulation can produce endomorphin to reduce muscle tension, which is the opposite of the stress response. Providing the deep back massage method reduces complaints of low back pain among pregnant women in the third trimester (Junaida 2021). If the massage is done correctly and appropriately, this method has little risk for the mother and baby. Apart from that, it is also cheaper, more accessible, more effective and without detrimental effects. The American College of Obstetricians and Gynecologists recommends various actions that can be used to prevent and provide therapy for low back pain for pregnant women.

RESEARCH METHODS

This study employed a pre-experimental design with One Group pre-test - Post Test Design. The research focused on the entire population of women in their third trimester of pregnancy who experienced back pain. It used a total sampling technique to find a sample of 32 pregnant women. The research materials used are lubricants such as cream, oil or lotion that is safe and has not expired, small bowls, blankets, washcloths, dry towels and soap. The instrument used is a questionnaire or client pain scale questionnaire before and after the intervention. This

research was carried out at Ny.S independent midwifery practice Banyuwangi in November 2022. The independent variable is a deep back massage, and the dependent variable is back pain.

Table 1. Operational Definition

Variable	Operational Definition	Parameter	Measuring Instrument	Scale
Independent Variable *Deep Back Massage*	Deep Back Massage is pressure on the sacrum, which can reduce muscle tension for 3 – 10 minutes.	1. Massage technique 2. Time to give a massage 3. Frequency of giving massage	-	-
Dependent Variable Back Pain	Subjective responses given by pregnant women before and after being given the deep back massage method	NRS	Questionnaire	Rasio

The data analysis employs a parametric test, specifically the Shapiro-Wilk test, to assess data normality since the sample size in this study is less than 50 individuals. The data follows a normal distribution if the ρvalue is greater than 0.05. Thus, the Paired T-Test should be utilized, but if ρvalue < 0.05, then the data does not have a normal distribution, so use the Wilcoxon test.

RESEARCH RESULT
Table 2. General Data

Characteristics	Frequency	Percentage (%)
Age		
< 20	2	6
20 – 35	29	91
> 35	1	3
Education		
Low	9	28
Intermediate	21	66
Tall	2	6
Work		
Farm workers	7	22
Trader	6	19
Teacher	4	12
Doesn't work	15	47
Gravida		
Primigravida	14	44
Multigravida	18	56
Grandemultigravida	0	0

Table 3. Custom Data

	N	Mean	Std. Deviation	Minimum	Maximum
Pain scale before giving a deep back massage	32	2.1250	.67967	1.00	3.00
Pain scale after being given a deep back massage	32	1.3333	.56466	.00	2.00

Table 3 reveals that out of 32 respondents, before receiving a deep back massage, it was observed that pregnant women typically experienced a moderate level of back pain on average. Meanwhile, after being given a deep back massage, it was found that pregnant women experienced mild back pain on average.

Table 4 Shapiro Wilk Data Normality Test Effect of Deep Back Massage on Back Pain Scale in Trimester Pregnant Women

	Back Pain Scale	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
Giving deep back massage	Back Pain	.414	9	.000	.617	9	.000
	Mild Pain	.455	8	.000	.566	8	.000

Table 4 shows that the parametric test was carried out using the Shapiro-Wilk test, and it was found that the ρvalue was 0.00, where $0.00 < 0.05$, so the data did not have a normal distribution, so the Wilcoxon test was used.

Table 5 Wilcoxon Matc Pair Comparative Test for Providing Deep Back Massage on Back Pain Scale in Third Trimester Pregnant Women

	Pain scale after being given a deep back massage - pain scale before being given a deep back massage
Z	-3.945[a]
Asymp. Sig. (2-tailed)	.001

The Wilcoxon Matc Pair comparison test obtained a ρvalue of 0.001 because $0.001 < 0.05$, so it can be inferred that administering a deep back massage impacts the scale of back pain experienced by women in their third trimester of pregnancy.

DISCUSSION

Experiencing back pain is a common occurrence for pregnant women. The frequency of these back pain complaints tends to increase as women progress into their third trimester of pregnancy. This is due to the increasing size of the fetus, causing the weight of gravity to move forward. When pregnant women do activities that are too strenuous, complaints of back pain can worsen.

Pain is complex, so many factors influence it, including age. In this study, most mothers were between 20 and 35 years old. Age has a relationship with a person's experience of pain. Someone older will usually be more experienced and able to respond to stressors than someone younger. Each person will have their way of interpreting the pain they feel, and how they react to pain can result from the many incidents of pain they experience (Hadriani. 2022). In general, lower back pain will start to occur in women between the ages of 20 and 24 years and will reach its peak when they are over 40 (Sukeksi 2018). This research agrees with (Mardiana 2021) that the age and education of the respondents obtained can be seen from the majority being between 20 - 35 years old and most of their education is high school, making it easier to receive the information provided.

Based on the characteristics of the 32 respondents, most of them did not work or were housewives. Someone who works as a housewife is more susceptible to experiencing back pain due to the mother's activities or work being too busy, especially for pregnant women in their first pregnancy, because they have to do housework, which can result in back pain (Nufus 2014).

Research indicates that multiparous and grand multiparous mothers are more likely to experience back pain than primiparous mothers. This is due to their weaker muscles, which cannot adequately support the enlarging uterus. Without support or support, the uterus looks saggy, and the back becomes increasingly elongated. Weakness in the muscles in the abdomen is generally experienced by grand multiparas (Fithriyah 2020). The risk of back pain increases with the number of pregnancies and births a woman has compared to primiparous women. Parity will significantly increase the risk of experiencing back pain. The risk of experiencing back pain increases with the frequency of pregnancies and childbirths a woman goes through (Demang 2020). Low back pain can significantly hinder a pregnant woman's ability to carry out everyday tasks like self-care, walking, sitting, and participating in sexual activity. These functional restrictions can lead to a decreased quality of life and lower productivity among expecting mothers.

Complaints of back pain can be reduced very effectively by providing massage methods. Massage involves applying pressure with the hands to soft tissues, such as muscles, tendons, or ligaments, without altering or moving the position of joints. The aim is to alleviate pain, induce relaxation and enhance blood flow. Fundamental techniques encompass circular motions executed by the palms, forward and backward pressing and pushing movements using force, patting, squeezing, and twisting. Each method applies varying pressure levels, directions, speeds, hand positions, and movements to achieve the intended impact on the underlying tissue (Tarsikah 2017).

A study by the National Birthday Trust involving 1,000 women revealed that 90% reported experiencing the advantages of relaxation and massage in alleviating pain. Two small-scale studies suggest that massage may provide benefits for pregnant women. Women who received regular massage during pregnancy experienced reduced anxiety, decreased back pain, and could sleep more soundly than women who did not receive massage. The group that received

massage also had fewer complications during labor and lower stress hormone levels. Women who received massage experienced reduced anxiety reduced back pain, and a significantly shorter labour time (Junaida 2021).

Based on research conducted by researchers at Ny.S Independent Midwifery, it is clear that providing the deep back massage method has a good effect on pregnant women's low back pain scale. This can be seen from the decrease in the scale of low back pain experienced by pregnant women and the absence of severe low back pain experienced by pregnant women after being given the deep back massage method. Research conducted by Alloya, A (2016) on the different effects of pregnancy exercises with warm compresses and massage shows that the impact of massage is more influential in reducing the intensity of pain, which will make pregnant women relax and feel comfortable, because massage stimulates the body to release compounds. Endorphins, which are natural relievers.

Back massage is a technique that involves the application of gentle pressure with the hands to soft tissues, typically muscles, tendons, and ligaments, without altering or moving joint positions. It aims to alleviate pain, induce relaxation, and enhance blood circulation, and this method is non-invasive. Pharmacology can increase patient satisfaction because mothers can control their feelings and strengths (Arummega 2022). The reduction in pain intensity is linked to the gate-control theory, which suggests that skin stimulation, like massage, triggers the activation of A-beta sensory nerve fibres. As a result, pain intensity decreases following a back massage.

Furthermore, massage can effectively induce physical and mental relaxation, diminish pain and enhance pain treatment's efficacy by releasing endorphins that inhibit the transmission of pain signals. However, endorphin levels vary among individuals, causing different people to perceive the same stimulus differently (Darma 2022). This explains why some individuals do not experience reduced pain after a back massage. Based on the facts, theories and studies above, deep back massage reduces pain intensity in third-trimester pregnant women.

CONCLUSIONS AND SUGGESTIONS
Conclusions
The back pain scale experienced by women in their final trimester of pregnancy before being given a deep back massage is that the average pregnant woman experiences moderate back pain. After being given a deep back massage, the average pregnant woman experiences mild back pain. After carrying out the Wilcoxen Matc Pair test, the ρ value was 0.00 because 0.001 < 0.05. Hence, it can be inferred that Deep Back Massage impacts the back pain scale experienced by women in their final trimester of pregnancy.

Suggestions
It is best if midwives can provide information and teach about deep back massage to pregnant women so that if they experience back pain, they can do deep back massage to reduce the pain they feel.

THANK-YOU NOTE

BIBLIOGRAPHY

Arummega, Melati Nur., Rahmawati, Alfiah., Meiranny, Arum. 2022. "Factors Affecting Back pain In Pregnant Trimester III : A Literatur Review." *Oksitosin : Jurnal Ilmiah Kebidanan* 9 (1): 14-30. doi:10.35316/oksitosin.v9i1.1506 .

Darma, Ika Yulia., Zaimy, Silvi. 2022. "Efektivitas Kombinasi Massage Effleurage dan Deep Back Massage Terhadap Penurunan Nyeri Persalinan Kala I Fase Aktif." *Jurnal Medika Udaya* 11 (11): 46-50. doi:10.24843.MU.2022.V11.i11.P08.

Demang, M. G. G & F. Y. 2020. "Pengaruh Senam Hamil Terhadap Penurunan Nyeri Punggung Bawah Pada Ibu Hamil Trimester II dan III." *Jurnal Kebidanan* 5 (2): 56-61. doi:https://doi.org/10.35874/jib.v9i2.5.

Fithriyah, Rizki Dyah Haninggar, & R. S.D. 2020. "Pengaruh Prenatal Massage Terhadap Penurunan Nyeri Punggung Pada Ibu Hamil Trimster III (Di Desa Ceweng, Kecamatan Diwek Kabupaten Jombang." *Jurnal Kebidanan* 10 (2): 36-43.

Fitriana, Budi Lala., Vidayanti, Venny. 2019. "Pengaruh Massage Effleurage dan Relaksasi Nafas Dalam Terhadap Nyeri Punggung Ibu Hamil Trimester III." *Bunda Edu-Midwifery Journal (BEMJ)* 2 (2): 1-6.

Fitriani, L. 2019. "Efektivitas Senam Hamil dan Yoga Hamil Terhadap Penurunan Nyeri Punggung Pada Ibu Hamil Trimester III di Puskesmas Pekkabata." *J-KESMAS : Jurnal Kesehatan Masyarakat* 4 (2): 72-80. doi:Https://Doi.Org/10.35329/Jkesmas.V4i2.246.

Hadriani., Sarliana., Ismawati, Suci. 2022. "Pijat Hamil dan Relaksasi Nafas Dalam Menurunkan Nyeri Punggung Ibu Hamil Trimester III." *Napande : Jurnal Bidan* 1 (1): 48-56. doi:https://doi.org/10.33860/njb.v1i1.1050 .

Junaida, Rahmi. 2021. "Penerapan Deep Back Massage Terhadap Pengurangan Nyeri Persalinan Kala 1." *Jurnal Ilmiah Kesehatan* 5 (2): 48-53. doi:https://doi.org/10.58813/stikesbpi.v5i2.23 .

Mardiana, H.R. 2021. "Perbedaan Penurunan Skala Nyeri Punggung Pada Ibu Hamil Trimester III Dengan Senam Hamil Di Desa Seduri Kecamatan Mojosari Mojokerto." *Jurnal Kesehatan Hesti Wira Sakti* 9 (1): 71-76. doi:https://doi.org/10.47794/jkhws.

Maulana, A. F., & Sofiyanti, S. 2023. "Pengaruh Deep Back Massage Terhadap Intensitas Nyeri Persalinan Pada Ibu Inpartu Kala 1 Fase Aktif : Laporan Kasus Berbasis Bukti." *Jurnal Kesehatan Siliwangi* 3 (3): 362-373.

Mustafa, Sri Resky., Khalida Z.S. 2022. "Efektivitas Deep Back Massage dan Effleurage Massage terhadap Penurunan Intensitas Nyeri Persalinan Kala I Fase Aktif pada Ibu Primipara di Puskesmas Batang." *Jurnal Ilmiah Perawatan dan Kebidanan Holisticare* 6 (1): 24-31. doi:https://doi.org/10.54184/jikkhc.v6i1.227 .

Ningtyas, Septi Fitras., Mudhawaroh. 2022. "Analisis Pemberian Teknik Deep Massage terhadap Penurunan Nyeri pada Ibu Bersalin Kala 1 Fase Aktif." *Jurnal Kebidanan Harapan Ibu Pekalongan* 9 (1): 54-61. doi: https://doi.org/10.37402/jurbidhip.vol9.iss1.174 .

Nufus, H., Mulana, N. 2014. "Hubungan Nyeri Punggung Dengan Tingkat Stres Ibu Hamil." *Midwifery Journal of STIKES Insan Cendekia Medika Jombang* 8 (1): 1-5.

Puspasari, Heny. 2019. "Pengaruh Endorphine Massage Pada Pengurangan Rasa Nyeri Punggung Pada Ibu Hamil Trimester III Di Pmb Cicih Rukaesih Tahun 2018." *Jurnal Ilmiah Indonesia* 4 (3): 59-71.

Putri, N. L. P. S. W. P., Suarniti, N. W., & Budiani, N. N. 2020. "Pengaruh Akupresur Titik Bladder 23 Terhadap Intensitas Nyeri Punggung Bawah Ibu Hamil Trimester III Di UPTD Puskesmas I Denpasar Utara." *Jurnal Midwifery Update (MU)* 2 (2): 75-83. doi:Https://Doi.Org/10.32807/Jmu.V2i2.91.

Reeder. 2018. *Keperawatan Maternitas: Kesehatan Wanita, Bayi & Keluarga. Alih bahasa Yati Afiyanti dkk.* Jakarta: EGC.

Rosita R, Lowa MY. 2020. "Efektifitas Deep Back Massage dan Effleurage Massage terhadap Penurunan Intensitas Nyeri Persalinan Kala I Fase Aktif Pada Ibu Primipara Di Puskesmas Jumpandang Baru Makassar." *Jurnal Keperawatan Muhammadiyah* 5 (1): 207-216. doi:10.30651/jkm.v5i1.4760.

Sukeksi, N. T., Kostania, G., & Suryani,. 2018. "Pengaruh Teknik Akupressure Terhadap Nyeri Punggung Pada Ibu Hamil Di Wilayah Puskesmas Jogonalan I Klaten." *Jurnal Kebidanan dan Kesehatan Tradisional* 3 (1): 1-7. doi:https://doi.org/10.37341/jkkt.v3i1.

Suryanti, Yuli., Lilis, Dewi Nopiska., Harpikriati. 2021. "Pengaruh Kompres Hangat terhadap Nyeri Punggung Ibu Hamil Trimester III di Puskesmas Sekernan Ilir Tahun 2020." *Jurnal Akademika Baiturahhim Jambi* 10 (1): 22-30. doi:doi: http://dx.doi.org/10.36565/jab.v10i1.264.

Susanti, Ari., Susilawati, Elly., Febriani, Wike Suci. 2019. "Efektifitas Deep Back Massage dan Counterpressure Massage Terhadap Intensitas Nyeri Persalinan Kala I DFase Aktif Di PMB Yusnimar Kota Pekanbaru Tahun 2019." *Jurnal Ibu dan Anak* 7 (1): 55-63. doi:https://doi.org/10.36929/jia.v7i1.225 .

Suwares, Fara Millinia., Wardiyah, Aryanti., Rilyani. 2023. "Aplikasi Senam Yoga Pada Penurunan Nyeri Punggung Pada Ibu Hamil." *The Journal Of Mother and Child Health Concerns* 3 (1): 21-28. doi:https://doi.org/10.56922/mchc.v3i1.366 .

Tarsikah, Silfiana, Emy. 2017. "Penerapan Teknik Mekanika Tubuh Untuk Mengurangi Nyeri Punggung Pada Ibu Hamil Trimester II dan III." *Maternal and Neonatal Health Journal* 1 (1): 1-6.

Widatiningsih, Sri, & Dewi, C,H,T. 2017. *Praktik Terbaik Asuhan Kehamilan.* Yogyakarta: Trans Medika.