



The Effect of Labor Massage on Pain and Quality of Life of Pregnant Women

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Abstract

This study aims to analyze the effect of labor massage on pain and quality of life of pregnant women. This study uses a quantitative design with a simple linear regression approach involving 100 maternity mothers as a sample. The results of the analysis showed that the variable of labor massage had a positive and significant influence on the pain of maternal quality of life, with a regression coefficient of 0.181 and a regression equation of $Y = 17.473 + 0.181X$. The results of hypothesis testing showed that the t-count value (2.065) was greater than the t-table (1.660) and the significance value of 0.042 was less than 0.05, which means that childbirth massage had a significant effect on the quality of life of pregnant women. The Gate Control Pain theory is used to explain that labor massage can activate the body's natural pain control mechanisms. These findings support the use of massage as one of the effective non-pharmacological methods to reduce pain and improve the mother's quality of life during childbirth. Based on these results, it is suggested that childbirth massage can be applied routinely as part of maternity care in health facilities.

Keywords:

Maternity Massage,
Pain,
Quality of Life,
Maternity.

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INTRODUCTION

Labor is a complex physiological process and is often accompanied by significant pain. Labor pain is one of the most profound and challenging experiences faced by women, and it can affect the overall quality of life of a maternity mother. Various methods have been developed to manage this pain, including pharmacological and non-pharmacological interventions. Among non-pharmacological approaches, labor massage, specifically endorphin massage, has gained attention as an effective method to reduce pain intensity and improve comfort during labor (Arnianti et al., 2021; Naution et al., 2022; Wulandari & Mulyati, 2022).

Endorphin massage works by stimulating the release of endorphins, which are known as the body's natural pain-relieving hormones. Research shows that this massage can significantly reduce pain during the active phase of labor. For example, a study found that endorphin massage had a significant effect on reducing pain intensity in pregnant women, with the results of statistical analysis showing a $p < 0.05$ (Dewi, 2023; Khasanah & Sulistyawati, 2020; Nisak et al., 2023). Thus, endorphin massage not only functions as a relaxation technique, but also as an intervention that can improve the quality of life of maternity mothers by reducing the pain experienced.

In addition to endorphin massage, other techniques such as sacral massage and oxytocin massage have also been researched for their effects on labor pain. Sacred massage, for example, has been proven to be effective in reducing pain during labor by providing a sense of comfort and relaxation to the mother (Berliana, 2022, NINGSIH et al., 2023). Meanwhile, oxytocin massage can help smooth the delivery process and increase breast milk production, which also contributes to the quality of life of mothers after childbirth (Nurfadilah Neneng, 2023). As such, a variety of massage techniques can be used complementarily to manage pain and improve the overall labor experience.

The quality of life of a maternity mother is not only affected by pain management, but also by emotional support and a comfortable delivery environment. Research shows that a supportive environment, including the use of complementary therapies such as aromatherapy and music, can contribute to pain reduction and increased comfort during labor (Sholehah et al., 2020; Suryani & Yulaikah, 2016; Yunika et al., 2023). Therefore, it is important to consider a holistic approach to maternity care, which includes massage techniques, emotional support, and a supportive environment.

In this context, this study aims to explore the effect of labor massage, especially endorphin massage, on pain and quality of life of pregnant women. By understanding the relationship between massage techniques and pain management, it is hoped that it can provide better insights for health workers in designing effective interventions to support maternal delivery. This study will also discuss the importance of health education for pregnant women regarding the benefits of massage as a pain management method that can be applied during childbirth.

METHOD

This study uses a quantitative method with a simple linear regression analysis approach to determine the effect of labor massage on pain and quality of life of pregnant women. The sample used was 100 maternity mothers who were selected using the purposive sampling technique, namely maternity mothers who received a childbirth massage during the delivery process. Data was collected through filling out questionnaires by maternity mothers. The collected data will be analyzed using simple linear regression, where the independent variable is labor massage, and the dependent variable is the level of pain of maternal quality of life. This study aims to find out how much the influence of childbirth massage on the dependent variable. This study also ensures that research ethics are followed by prioritizing voluntary consent from participants and maintaining the confidentiality of the data obtained.

RESULT AND DISCUSSION

Validity Test

Table 1. Validity Test of Pain Variables for Maternal Quality of Life

Statement	Calculate	Table	Validity
I felt very heavy pain during the delivery process.	0,4896	0,1966	Valid
The pain I experienced affected my comfort during the delivery process.	0,5032	0,1966	Valid
I feel satisfied with the medical care I received during the delivery process.	0,5087	0,1966	Valid
I was able to return to normal activities easily after the delivery process.	0,4083	0,1966	Valid

I feel that my physical condition has recovered enough to carry out my daily routine after giving birth.	0,5050	0,1966	Valid
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Based on the results of the validity test presented in Table 1, all statements related to the variables of pain and quality of life of the maternity showed a calculated r value greater than the r of the table (0.1966). This indicates that all statements in the questionnaire are valid and can be used to measure the variables in question. This validity ensures that the instruments used can provide accurate and reliable results to describe the pain and quality of life of the mother during and after the labor process.

Table 2. Validity Test of Childbirth Massage Variables

Statement	Calculate	Table	Validity
The intensity of my pain decreased after getting a labor massage.	0,3440	0,1966	Valid
Childbirth massage helped me feel more comfortable during the labor process.	0,3681	0,1966	Valid
I was satisfied with the delivery massage process that was carried out.	0,3672	0,1966	Valid
The labor massage was done according to my expectations.	0,4599	0,1966	Valid
I needed less analgesic medication after getting a labor massage.	0,5220	0,1966	Valid
Childbirth massage reduced my dependence on pain relievers.	0,6265	0,1966	Valid

Based on the results of the validity test presented in Table 2, all statements related to the birth massage variable show a calculated r value greater than the r of the table (0.1966), which means that all statements in the questionnaire are valid and can be used to measure the birth massage variable. This shows that the instrument used can accurately describe the effect of labor massage on comfort, satisfaction, and reduction of dependence on analgesic drugs during labor, as well as the intensity of maternal pain.

Reliability Test

Table 3. Reliability Test

Variable	Reference Value	Cronbach's Alpha	Conclusion
Y	0,7	1,246874006	Reliable
X	0,7	1,198412504	Reliable

Based on the results of the reliability test presented in Table 3, the Cronbach's Alpha values for variable Y (pain and quality of life of the mother) and variable X (maternity massage) respectively showed values greater than the reference value of 0.7, namely 1.2468 and 1.1984. This shows that both variables in this study have a high level of reliability, which means that the instruments used can provide consistent and reliable results to measure these variables in this study. Thus, the instruments used are declared reliable.

Classic Assumptions

1. Normality Test

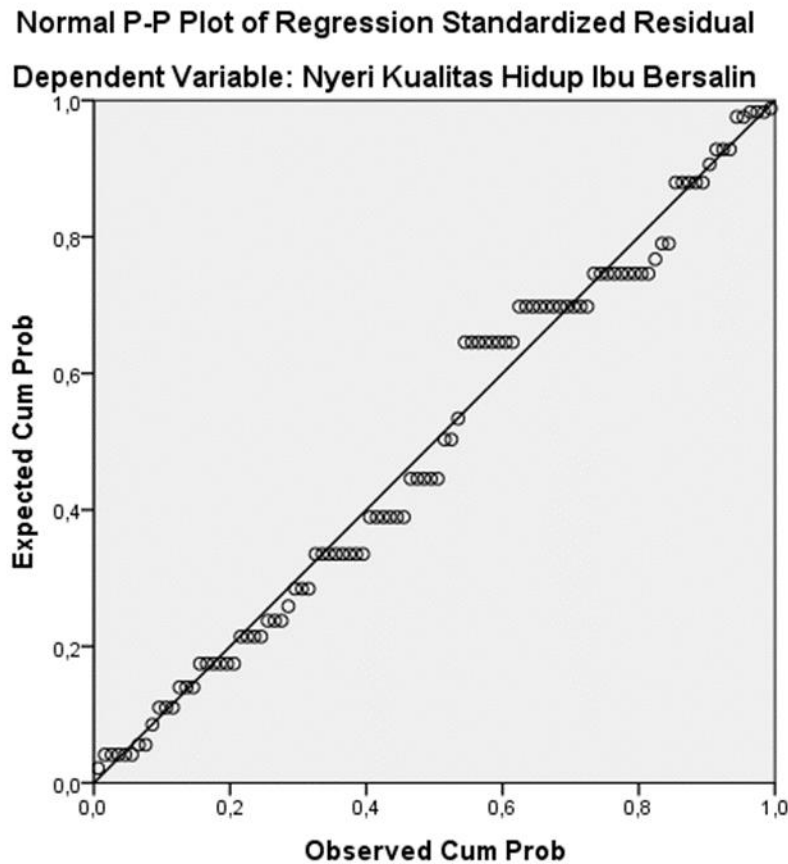


Figure 1. Normality Test

Source: SPSS Output

Based on the Normal P-P Plot displayed, it can be seen that the data points spread along the diagonal line and consistently follow the direction of the diagonal line from point 0 to 1, without any significant deviation, so it can be concluded that the residual data for the variable "Pain of Maternal Quality of Life" is normally distributed and meets the assumption of normality required for subsequent statistical analysis.

2. Heterokedasticity Test

Based on the scatterplot shown, the pattern of the distribution of data points does not form a specific pattern (such as wavy, widening and then narrowing, or forming other systematic patterns), the dots are randomly spread both above and below the number 0 on the Y axis, and evenly distributed on the X axis (Regression Standardized Residual), so it can be concluded that there is no heteroscedasticity problem in the regression model and the data meets the assumption of homoscedasticity.

Simple Linear Regression Analysis and Hypothesis Testing

Table 4. Simple Linear Regression Analysis and Hypothesis Testing Coefficientsa

Type	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant) Childbirth	17,473	2,355		7,420	,000
Massage	,181	,087	,204	2,065	,042

a. Dependent Variable: Pain in the quality of life of the maternity

Source: SPSS Output

Based on the results of a simple linear regression analysis, a constant value of 17.473 and a regression coefficient of Childbirth Massage of 0.181 were obtained, resulting in the equation $Y = 17.473 + 0.181X$. The results of the hypothesis test showed a calculated t-value (2.065) > t-table (1.660) and a significance value of 0.042 < 0.05, which means that the Childbirth Massage variable had a positive and significant effect on Maternal Quality of Life Pain, where each increase of one unit of Childbirth Massage will increase the Maternal Quality of Life Pain by 0.181 units.

This study aims to analyze the effect of labor massage on pain and quality of life of pregnant women. Based on the results of a simple linear regression analysis, it was found that the variable of childbirth massage had a significant positive influence on the quality of life of maternity mothers, with a regression coefficient of 0.181. The regression equation is $Y = 17.473 + 0.181X$, which shows that every increase of one unit in the provision of maternity massage will improve the quality of life of the maternity by 0.181 units. The results of hypothesis testing also support this finding, with a t-count value of 2.065 which is greater than the t-table of 1.660 and a significance value of 0.042 which is smaller than 0.05. Thus, it can be concluded that labor massage has a positive and significant effect on the pain and quality of life of the maternity mother.

The theory used to underlie this research is the Gate Control Pain Theory which was first introduced by Melzack and Wall in 1965. In this theory, they explain that there is a mechanism in the spinal cord that acts like a "gate" that regulates the flow of pain signals to the brain. When the pain signal is more dominant, this gate opens and causes more pain to be felt. Conversely, if the non-pain signal such as massage is stronger, the gate will close, reducing the intensity of the pain felt. In the context of childbirth, this theory provides an explanation for why labor massage can be an effective intervention in reducing pain experienced by mothers in childbirth. According to Mortazavi et al. (2012), non-pharmacological approaches, such as massage or other sensory stimulation, can affect this "gate" mechanism for natural pain relief without the need for the use of medications. Therefore, labor massage not only provides a sense of comfort, but also plays a role in activating the body's natural pain control system.

The results of this study show that childbirth massage can function as a form of non-pharmacological stimulation that is effective in reducing the intensity of labor pain, which in turn has a positive effect on the quality of life of pregnant women. The Pain Gate Control Theory provides a solid basis for explaining this phenomenon, as massage performed on specific areas of the body can send out non-pain signals that block or reduce the influence of pain signals heading to the brain. It can also reduce muscle tension, improve blood circulation, and reduce anxiety which often increases the perception of pain in the mother. In other words, labor massage not only relieves pain, but also provides profound psychological benefits for mothers who are facing the labor process.

Furthermore, the theory of labor pain reveals that labor pain is a complex physiological condition, involving both mechanical and psychological aspects. Akadri et al. (2019) classified labor pain into two main phases: the first phase involving cervical dilation and the second phase involving the baby's expulsion process. The intensity of this pain is greatly influenced by factors such as maternal parity, fetal size, baby position, and the level of social support that the mother receives during the delivery process. The study linked psychological factors, such as anxiety and

social support, as elements that can influence the perception of pain experienced by mothers. Along with these findings, Retni et al. (2023) and Durmuş & Eryılmaz (2022) also show that psychological factors have a significant influence on pain perception, and that support from close ones, such as a partner or medical personnel, can reduce maternal anxiety, which in turn can lower the level of pain felt.

The relationship between the results of this study and the theories used further emphasizes the importance of non-pharmacological interventions in helping mothers cope with the labor process better. Childbirth massage not only provides physical effects in the form of reducing pain intensity through the "gate control" mechanism, but also serves as a source of emotional support that can relieve anxiety and increase maternal comfort. This shows that labor massage plays a role not only in reducing physical pain, but also in improving the psychological well-being of the maternity mother, which overall contributes to the improvement of the mother's quality of life during the labor process.

The importance of the results of this study lies in its application in nursing and midwifery practice. Providing a childbirth massage to a maternity mother can be an easy-to-implement method and does not require high costs, but it can provide great benefits in improving the comfort and quality of life of the mother during childbirth. This approach can also be an alternative for mothers who may not be able or unwilling to use pharmacological methods such as painkillers.

CONCLUSION

Based on the results and discussion above, it can be concluded that childbirth massage has a significant positive influence on the quality of life of maternity mothers. The theory of Gate Control Pain and the concept of labor pain provide a strong scientific basis to explain the mechanism of the effect of labor massage on pain reduction and improvement of maternal quality of life. Therefore, labor massage can be used as an effective method in helping mothers manage labor pain in a natural and holistic way.

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