



Reduction of labour pain with back massage[☆]

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KEYWORDS

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Abstract Labour is the process of opening and thinning of the cervix and the foetus descending into the birth canal. Pain in the first stage of labour is due to cervical dilatation, lower uterine segments, the presence of opposing prisoners, the pull and injury to the muscle tissue and ligaments that support the structure above. Back massage technique is one of the methods to reduce labour pain. The purpose of this study is to determine the effect of back massage on the reduction of labour pain during the active phase. This type of research uses a quasi-experimental design with a non-equivalent control group. The sample of this research was 31 women who were taken by accidental sampling at BPM Yusida Edward Palembang. The instrument used was an observation sheet to measure labour pain. The results of univariate analysis of most mothers experienced severe pain 48.4%, moderate pain 44.4%, pain very severe 3.2% and after back massages most of the mothers felt moderate pain 71%, mild pain 16%, severe pain 13%. Bivariate data analysis techniques used the Kolmogorov–Smirnov normality test and paired sample *T*-test. The conclusion of this study is that back massage influences the reduction of labour pain during the active phase. Therefore, it is recommended for health workers, especially midwives, to improve the quality of childbirth care services using back massage techniques to reduce labour pain in the first stage.

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Introduction

Labour and delivery are regular physiological events. Childbirth is a very long-awaited moment for pregnant women

to be able to feel the happiness of seeing and hugging their babies. But childbirth is also accompanied by pain that makes the coveted pleasure filled with fear and anxiety. Some researchers show that in primitive societies, labour takes longer and is painful, whereas people who have advanced 7–14% deliver without pain and most (90%) deliveries with pain.¹

The labour process is correlated to the pain. Physiologically, pain occurs when the muscles of the uterus contract to open the cervix and push the baby's head towards the pelvis. Pain in the first stage of labour is a physiological process caused by cervical dilatation, hypoxia of the uterine

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muscle during contraction, corpus ischaemia and stretching of the uterine segment and nerve compression in the cervix.²

Pain in labour pain contractions begin from the lower back, then spread to the lower abdomen. Although the levels are different, everyone has experienced the pain, but the reaction is different. Some can hold it in, and some keep whimpering. A mother who is facing childbirth tends to feel scared, especially in primigravida mothers. But when a mother feels very scared, the brain automatically regulates and prepares the body to feel pain, so that pain during labour will be more pronounced. A mother must put pain in the right perspective. The pain will not happen forever. In primigravida mothers, the pain lasts 12–14 h.³

Pain is a natural process in labour. If it is not handled well, it will cause another problem, namely increased anxiety or worry because of lack of knowledge to the mother about the processes that occur when facing labour. So, the production of the hormone adrenaline increases and results in vasoconstriction, which causes maternal blood flow to the foetus to decrease. The foetus will be hypoxic while the mother will experience long labour and can increase systolic and diastolic pressure.⁴

Labour pain is an issue that is very worrying for the mother in parts, especially mothers and usually the most frequently performed to reduce pain is the method of massage, both by health workers, their families and the patients themselves.⁵

A very effective method in overcoming it is with massage, which is one of the non-pharmacological methods that is performed to reduce labour pain. The basic theory of massage is the theory of gate control which is expressed by Melzack and Schaffelberg.⁶ This theory explains about two kinds of small-diameter nerve fibres and large diameter fibres which have different functions. Midwives have a substantial share in reducing non-pharmacological pain. Interventions included in the non-pharmacological approach are psychological analgesia that has been carried out since pregnancy, relaxation, massage, stimulation of the cutaneous, aromatherapy, hypnosis, acupuncture and yoga.^{4,5}

Massage is used to help relax and reduce pain through increased blood flow to the affected areas, stimulates skin touch receptors so that it relaxes muscles, changes skin temperature and generally provides comfortable feelings associated with the closeness of human relations.⁷

Efforts to cope with pain in childbirth have been carried out in various non-pharmacological and pharmacological ways. Non-pharmacological methods include distraction, relaxation techniques, hypnosis, and reducing pain and pharmacological perception, namely the use of analgesic drugs. Non-pharmacological control is cheaper, simpler, effective and without adverse effects. This method can also increase satisfaction during childbirth because the mother can control her feelings and strength.⁸

Massaging is a non-pharmacological method that is without using drugs, safer, simpler, and does not cause adverse effects and refers to the care of the mother dear.⁹ Non-pharmacological methods can also increase satisfaction during childbirth because the mother can control her feelings and strength so that it helps the mother to be more relaxed and comfortable during labour.¹⁰

Table 1 Frequency distribution before treatment.

No.	First stage of labour pain active phase	Total	Percentage (%)
1	Moderate pain	15	48.4%
2	Severe pain	15	48.4%
3	Very heavy pain	1	3.2%
Total		31	100%

Methods

This research is a type of experimental research. This study designed with a non-equivalent control group and the quasi-experiment research has been used. Namely wherein it found at least one variable that was manipulated to study the causal relationship to determine the effect of back massage on pain reduction in mothers in the first phase of the active phase in BPM Yusida Edward Palembang in 2018.¹¹

The population in this study were all first-phase mothers of active phase both primiparous and multiparous at BPM Yusida Edward Palembang in 2018. The sampling technique in this study used consecutive sampling/accidental sampling that met the inclusion and exclusion criteria. The inclusion criteria in this study were normal delivery mothers.

The research instrument used was an observation sheet to assess the pain scale using a Numerical Rating Scale which is the most effective scale used when assessing pain intensity before and after the intervention to determine the effect of back massage on reducing labour pain in the first phase of active phase.¹²

Analisis data using univariate to generate distribution and percentage of each variable and bivariate analysis will be conducted on two variables that are expected having association or correlation. The statistical test used is the paired sample *T*-test, which is to find out whether there are differences in the average of two paired samples, the two samples that are taken are the same sample but have two data, paired *T*-test is a parametric statistic because of that as the rules in parametric statistics of research data must be normally distributed using Kolmogorov–Smirnov.

Massage is a massage technique in the form of gentle, slow, and long strokes. This technique has a relaxing effect. Lightly rub and without intense pressure by gently rubbing with both palms and fingers on the back for 30 min with a frequency of 40 times rubbing per minute.¹³

Results

Research has been conducted on 31 respondents who met the inclusion criteria. Pain intensity was taken i.e. before and after given treatment with massage for 30 min.

According to Table 1 showed that 31 respondents were taken prior to treatment more experiencing severe pain at the first five people (48.4%), moderate pain for first five people (48.4%), and those with very severe pain were one person (3.2%).

According to Table 2 showed that 31 respondents were taken after treatment carried out more experiencing

Table 2 Frequency distribution after treatment.

No.	First stage of labour pain active phase	Total	Percentage (%)
1	Mild pain	5	16%
2	Moderate pain	22	71%
3	Severe pain	4	13%
Total		31	100%

moderate pain was 22 people (71%) compare mild pain was five people (16%), and those who experienced severe pain were four people (13%).

According to Table 3 paired samples test that the results of significance (2-tailed) are 0.000 is smaller than α (0.05), which indicates that there is influence. Massage back to the first stage of labour pain relief the active phase in BPM Yusida Edward Palembang in 2018.

Discussion

Research is done in BPM Yusida Edward Palembang Year 2018. Using a non-equivalent control group design with quasi-experimental approaches and techniques accidental sampling. This study aims to determine the relationship between the dependent variable (labour pain in the first phase of active phase) with the independent variable (back massage), as well as this study using the Kolmogorov-Smirnov normality test and paired *T*-test with a sample size of 31 first-stage maternal mothers. Active at BPM Yusida Edward Palembang 2018.

Based on the results of the study through univariate analysis, the results of pain before treatment were more severe, namely 15 people (48.4%) than moderate pain, 15 people (48.4%), those with very severe pain, one person (32%). While the results of pain were taken after treatment, they experienced more moderate pain, namely 22 people (71%) than mild pain as many as 5 people (16%), and those who experienced severe pain four people (13%).

Bivariate analysis showed normality test results using Kolmogorov-Smirnov obtained a significance value of $0.165 > \alpha$ (0.05), it can be concluded that the residual values were normally distributed after a normality test was performed a statistical test using paired sample *T*-test results

obtained significance (2-tailed) that is $0.000 < \alpha$ (0.05) which means that there is an effect of back massage to reduce labour pain when active phase I. The technique used is a massage using the palms and fingers with a circular and elongated movement pattern on the back done every contraction and carried out for 30 min with a frequency of 40 times rubbing.

This study is in line with the theory of Mander⁵ because labour is a very worrying problem for mothers of birth, especially primigravida mothers, and usually the most often done to reduce pain is the massage method, both by health workers, the patient's family and the patient himself.

This research is in line with Asmadi⁸ because touch is a method commonly used in labour to help reduce pain. This is believed to stimulate the release of endorphin hormones, reduce the production of the hormone catecholamine, and stimulate the results of afferent nerve fibres in blocking the transmission of pain stimuli (gate control theory), thereby helping to reduce labour pain.

The study is in line with research by Aryani et al.¹⁴ concluded that massage for 30 min on the shoulder and back were in at birth mothers of the first stage of the active phase may reduce pain and may give psychological support to the process of childbirth.

As well as results of research Aryani et al.¹⁴ found mothers who massage backs have lower pain intensity 29.62 points from those, not in the massage, the value $\rho = 0.001$ which means there is the effect of massage on the back of the intensity of pain and levels of maternal endocrine first phase active.

Based on the results of the study, researchers assume that back massage is done to reduce labour pain is very helpful in maternity mothers. Massage back by putting hands into her back for 30 min can stimulate hormone expenditure endorphin, which the hormone can block pain message higher, thus reducing the sensation of pain. Management of non-pharmacological pain reduction is care done by midwives as care for mothers, where mothers will feel comfortable, and this care can reduce feelings of anxiety, fear, tension and ultimately able to reduce labour pain when the active phase.

1. The frequency distribution of labour pain in the active phase I before giving back massage was 31 respondents in mothers who experienced severe pain as much as 48.4%, moderate pain as much as 48.4% and those experiencing

Table 3 Effect of back massage on reduction of pain in the first phase of active labour in maternity women at BPM Yusida Edward Palembang in 2018.

		Paired samples test Paired differences							
		The mean	Std. deviation	Std. error mean	95% confidence interval of the difference		<i>T</i>	Df	Sig. (2-tailed)
					Lower	Upper			
Pair 1	Pre- test-post- test	1.93548	1.96529	.35298	1.21461	2.65636	5.483	30	.000

very severe pain as much as 3.2% in BPM Yusida Edward Palembang in 2018.

2. The frequency distribution of labour pain in the active phase I after having given back massage was 31 respondents to women who had moderate pain as much as 71%, mild pain as much as 16% and those who experienced severe pain that was as much as 13% at BPM Yusida Edward Palembang in 2018.
3. There is an effect of back massage on the reduction of labour pain in the active phase of the first phase of maternity in BPM Yusida Edward Palembang in 2018 based on paired sample *T*-test results of significance ρ value: $0.000 < \alpha$ (0.05).

Conflict of interest

The authors declare no conflict of interest.

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