# THE EFFECT OF BACK ACUTE ON PAIN RELIEF IN THE ACTIVE PHASE OF NORMAL STAGE OF LABOR IN THE WORKING AREA OF THE JUA GAEK PUBLIC HEALTH CENTER, SOLOK REGENCY IN 2025.

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**A B S T R A C T**

Most (90%) labors are accompanied by pain. In the active phase, there is an increase in the intensity and frequency of contractions, resulting in a peak pain response. Labor pain can cause various physiological and psychological changes in the mother. One effort to minimize labor pain is by using non-pharmacological methods, namely using back acupressure techniques. This study aims to determine the effect of back acupressure techniques on reducing labor pain in the active phase of the first stage of labor. The type of design in this study was a pre-experimental with a one-group pretest-posttest design. The sample size was 15 respondents. The sampling technique used a purposive sampling method. Data collection techniques used a questionnaire and a Numeric Rating Scale (NRS) pain scale. Data analysis used a paired T-test. The results showed that the average pain intensity of respondents in the group before being given treatment was 7.40 and after being given treatment was 2.33. The results of the data analysis obtained a significance value of $\rho = 0.001$ ($\rho < 0.05$). In conclusion, there is an effect of providing back acupressure techniques on reducing labor pain in the active phase of the first stage of labor.

## I. INTRODUCTION

Labor is defined as the process by which the fetus, placenta, and membranes are expelled from the uterus through the birth canal. Uterine contractions, consistent in frequency, duration, and strength, initiate this process, leading to cervical dilation and opening. As stated by Rohani (2015), the force initially appears small and then increases until the process of expelling the fetus from the mother's uterus is complete. More than 90% of mothers experience tension and stress due to labor pain (WHO, 2019). When the cervix dilates 3 cm during the latent phase and 4–10 cm during the active phase, labor pain is felt. Because of the increased frequency and intensity of contractions, the active phase is when the pain response reaches its peak (Reeder, 2012, in research by Tetti et al., 2018). Murray found that 15% of mothers in labor experienced mild pain, 35% experienced moderate pain, 30% experienced severe pain, and 20% experienced very severe pain among 2,700 mothers in labor (Gondo 2011, in research by Lidia Fitri, et al., 2019).

According to data from the World Health Organization (WHO), of the 295,000 mothers who gave birth by cesarean section in 2023, 33.4% did so because they experienced problems during delivery, and 67.1% did so because they were afraid of giving birth naturally. According to data from the Indonesian Ministry of Health, labor pain was one of the causes of 26.2% of cesarean deliveries in Indonesia in 2022 (Ministry of Health, 2020). Based on a report on cesarean deliveries in West Sumatra Province in 2022, published in Rahmawati's research, 42.8% of deliveries from four hospitals in West Sumatra were cesarean deliveries. Mothers' concerns and inability to endure the pain of normal delivery were among the reasons they chose to seek help with cesarean delivery (Rahmawati, 2022).

Pain during labor is caused by a combination of strong contractions, increased prostaglandins, and stretching and thinning of the cervix, which results in increased activation of the sympathetic nervous system, which can lead to vomiting, excessive sweating, high blood pressure, rapid breathing, rapid pulse, and changes in skin color. Pain during labor can also be exacerbated by certain behavioral changes, including increased anxiety, restricted thinking, groaning, sobbing, hand movements, and muscle tension throughout the body (Bobak 2005, in research by Wan Anita, 2017). Furthermore, hyperventilation, caused by labor pain, can lead to increased blood pressure, decreased intestinal motility, and increased oxygen demand.

Some non-pharmacological methods include hypnobirthing, back massage (Totok Punggung) effleurage, endorphin back massage, relaxation techniques, warm compresses, Mozart music, murottal therapy, acupressure, and aromatherapy (Wan Anita, 2017). And one type of acupressure therapy that can be given to reduce labor discomfort during the first stage is back massage. By providing pressure, vibration, and impact stimulation at certain points on the back related to the body's nerves and energy. Back massage is believed to stimulate the production of endorphins, a natural hormone that can reduce pain. In addition, back massage can also help improve blood circulation, muscle relaxation, and provide a sense of comfort for mothers during the labor process. Several studies in managing labor pain also support that non-pharmacological techniques such as

Sback massage can be an effective alternative, especially for mothers who choose to give birth without drugs and anesthesia. One of the advantages of this Back Acupressure is the minimal side effects, as well as the ability to provide more natural comfort for mothers. (Prianti Ola, 2020).

Based on a preliminary survey conducted by researchers in the Jua Gaek Community Health Center (Puskesmas), a Level 1 health facility in Nagari Cupak, the incidence of cesarean deliveries was quite high in 2022, at 58.5%, and increased again to 59.8% in 2023. Many factors contribute to the decision to undergo a cesarean section, one of which is the inability of mothers in the active phase of the first stage of labor to endure labor pain. This prompted researchers to conduct research in the Jua Gaek Community Health Center's work area, furthermore, it is supported by medical personnel competent in this back acupressure technique.

Based on this phenomenon, researchers selected TPMB Bundo, a staff midwife at the Jua Gaek Community Health Center, as their choice for further research on "The Effect of Back Acupressure on Labor Pain in the Active Phase of the First Stage of Labor in the Jua Gaek Community Health Center's Work Area in 2025."

## II. METHODS

This study used a pre-experimental design with a one-group pretest-posttest. The sample size was 15 respondents. Purposive sampling was used. Data collection included a questionnaire and a Numeric Rating Scale (NRS) pain scale. Data analysis used a paired t-test.

The subjects were all women in labor who visited the Bundo Yosti TPMB in the Jua Gaek Community Health Center (Puskesmas) working area. Pre-test data were collected for this group, followed b y intervention and post-test to determine the effect of back acupressure. Data were processed manually and analyzed using univariate and bivariate methods.

## III. RESULT

### 1. Univariate Analysis

**a. Average Labor Pain for Mothers in the First Stage of the Normal Active Phase before Back Acupressure Treatment for Women in the First Stage of the Normal Active Phase at TPMB Bundo Yosti in 2025.**

| | N | Mean | Median | SD | Min-Max |
|---|---|---|---|---|---|
| Pain Intensity before Back Acupressure Treatment | 15 | 7,40 | 8,00 | 1,056 | 6-9 |

Based on Table, the average (mean) pain score for women in the active phase of the first stage of labor before receiving back acupressure was 7.40 with a standard deviation of 1.056. This indicates that most respondents experienced severe pain before receiving the intervention. This score falls within the severe pain category, according to the Numeric Rating Scale (NRS), with a range of 7–10.

**b. Average Labor Pain of mothers in the 1st Normal Active Phase after being given back acupressure treatment to pregnant women in the 1st Normal Active Phase at TPMB Bundo Yosti 2025.**

| | N | Mean | Median | SD | Min-Max |
|---|---|---|---|---|---|
| Pain Intensity after Back Acupressure Treatment | 15 | 2,33 | 3,00 | 0,816 | 1-3 |

Based on Table, the mean pain score for mothers in the active phase of the first stage of labor after back acupressure was 2.33 with a standard deviation of 0.816. This value indicates that the majority of respondents were in the mild pain category, indicating a significant reduction in pain after the back acupressure intervention.

**2. Bivariate Analysis**

The effect of back acupressure on the intensity of labor pain during the first active phase of normal labor before and after treatment

| | mean | Standar deviasi | p value |
|---|---|---|---|
| before and after back Acupressure treatment | **5,067** | **1,100** | **<,001** |

Based on the results of the Paired Sample T-Test statistical test, it was found that the significance value (p-value) was 0.001, which means p <0.05. So the accepted hypothesis is H1, this result indicates that there is a statistically significant difference between the level of pain before and after the back acupressure intervention. In addition, the Recapitulation of Questionnaire Data can be seen that there are confounding factors (Confounding Variables) such as in Respondents 1 and 10 whose maternal pain levels are influenced by age, education and parity. Thus, it can be concluded that back acupressure has a significant effect in reducing labor pain in mothers giving birth in the Normal Active Phase Stage I in the Working Area of the Jua Gaek Community Health Center in 2025.

## IV. DISCUSSION

According to the Endogenous Opiate Theory, proposed by Avron Goldstein, the body contains endorphins, natural chemicals that resemble opiates. The transmission of impulses perceived as pain is influenced by endorphins. According to Andarmoyo (2017), endorphins likely function as neurotransmitters and neuromodulators, preventing pain signals from being transmitted. Physical stimulation, such as massage, can stimulate the release of endorphins. Endorphins bind to opioid receptors in the brain and spinal cord, reducing pain signal transmission and producing a relaxing and comforting effect. Therefore, back acupressure can increase endorphin levels in the body, helping to reduce labor pain (Andarmoyo, 2017, pp. 20–21).

Research by Sari (2019) shows that back acupressure intervention can reduce labor pain in women in the active phase of the first stage of labor with statistically significant results ($p < 0.05$). Another study by (Astuti & Wahyuni, 2021) also found that the use of acupressure techniques can increase comfort, accelerate cervical dilation, and significantly reduce pain intensity.

Researchers assume that this significant reduction in pain is due to the physiological and psychological effects of back acupressure. Physiologically, massage increases blood flow, reduces muscle tension, and stimulates endorphins. Psychologically, this technique provides a relaxing effect that helps mothers better prepare for labor contractions. A supportive intervention environment and good communication approach are also thought to enhance the effectiveness of therapy.

## V. CONCLUSION

There is an effect of providing back acupressure techniques on reducing labor pain during the first active phase at TPMB Bundo Yosti in 2025.

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