

## CASE STUDY OF LABOR PAIN IN PARTURIENT MOTHERS WITH NON-PHARMACOLOGICAL THERAPY USING DEEP BREATHING RELAXATION TECHNIQUES IN THE PALANGKA RAYA RIVER BASIN 2024

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### Abstract

*Background: The most common problem in laboring women is labor pain. If the problem of pain is not addressed, it will cause anxiety, fear and stress in the mother which will increase the intensity of the pain felt. Increased noradrenaline will reduce blood to the placenta and reduce uterine contractions, thus disrupting the safety of the mother and fetus and the success of vaginal partus. Objective: to be able to provide midwifery care to Mrs. N G2P1A0 pregnant 39 weeks with labor pain in the KIA room UPTD Puskesmas Pahandut Palangka Raya. Methodology: The type of research used is qualitative descriptive with a case study approach method. The design uses field observations. Data collection methods by means of interviews, and analysis of midwifery care documentation. Data analysis was obtained from case study research by making a narrative of the results of observations and descriptions of midwifery care analysis, assessment, formulating diagnoses, planning, implementing, and evaluating midwifery care. This research was conducted in June 2024. Results: the mother is willing to try complementary alternative medicine to treat labor pain, namely by doing Deep Breathing Relax, which is a deep breathing procedure by means of which the patient is arranged in a comfortable position lying in bed, sitting, or standing and asking to relax the abdominal muscles and two hands of the patient on the abdomen under the ribs. inhale deeply through the nose. keep the mouth closed to count 1, 2, 3 then exhale air through the mouth, can be repeated until the contraction pain slowly decreases. Tell the mother that each contraction feels like a wave - a wave of love and affection towards the mother and baby-to-be.*

**Keywords:** Pain, Parturient, Deep Breathing Relax, River Basin

### 1. INTRODUCTION

Labor is exciting, but that excitement can turn into fear and anxiety when a mother feels labor pains as her contractions become more intense [1]. Pain in pregnancy and labor “signals” to inform the mother that she has entered the stage of the labor process. Contractions cause pain in the waist, abdominal area and radiate towards the thighs. These contractions cause the opening of the cervix [2]. World health Organization (WHO), as many as 200 million pregnant and giving birth women experience pain, fear during labor [3]. The United States gets 70% to 80% of women who give birth take place with pain. Various ways are done so that mothers giving birth do not always feel pain and will feel comfortable. The pain that occurs

can affect the mother's condition in the form of fatigue, fear, worry and cause stress. Stress can cause weakening of uterine contractions and result in prolonged labor [4].

The Data Center of the Association of Hospitals throughout Indonesia explained that 15% of mothers in Indonesia experienced labor complications and 22% stated that the labor experienced was a painful labor because they felt severe pain, while 63% did not get information about the preparations that must be made to reduce pain in labor. Lamaze in Bobak stated that 85-90% of labor takes place with pain, and only 10-15% of labor takes place without pain [5]. Efforts to increase a sense of comfort in reducing pain in laboring women in stage I, can be done by using non-pharmacological methods, namely relaxation breathing techniques [6].

Breathing relaxation technique is a pain relief technique that provides the greatest input, maintains sympathetic nervous system components in a state of homeostasis so that there is no increase in blood supply, reduces anxiety and fear so that the mother can adapt to pain during labor [7]. Research by Nurhayani and Anita (2015) "the effectiveness of deep breath relaxation on the pain level of active uterine contractions in the first stage of normal labor at Bahtermas Hospital" [7]. The results showed that the relaxation method is one of the effective non-pharmacological methods to reduce labor pain. The deep breath relaxation technique has a positive effect on reducing the level of contraction pain in patients with normal labor in the first active stage. Pain during labor is a physiological condition that is universally experienced by almost all laboring mothers. Psychologically successful relaxation produces a feeling of health, calm and peace, a feeling of being in control, and a decrease in tension and anxiety. Physiologically relaxation results in a decrease in blood pressure, respiration and heart rate that would otherwise occur.

Research by Fitri et al (2019) "the relationship of deep breathing techniques to reducing the intensity of active phase I pain at the Jambu Mawar Pratama Clinic" [8]. The results showed that deep breathing techniques were effective in reducing the intensity of labor pain. In addition to reducing pain intensity, deep breath relaxation techniques can also increase blood oxygenation so that oxygen levels in the blood will increase. Based on the results of the recap of childbirth in the register book in the VK room UPTD Puskesmas Pahandut in May 2024, the coverage of birth mothers was 22 people. Where when asked by the author to 5 mothers in labor, 4 mothers said severe pain during labor, and 1 mother said mild pain and did a walk while breathing quickly during contractions. Most of the actions taken by mothers to overcome pain by doing the right side and left side position. It can be seen that mothers do not know the deep breathing technique to reduce pain during labor. So that there are still many mothers who feel pain, anxiety and fear during labor and do not know how to do deep breath relaxation techniques during labor. Based on this background, the authors are interested in taking a case report "How is midwifery care for physiological delivery mothers Mrs. N Age 24 years at UPTD Puskesmas Pahandut Kota Palangka Raya 2024".

## 2. METHODOLOGY

The type of research used is descriptive qualitative with a case study approach method. As for the design using field observations. Data collection methods were carried out by means of interviews, and analysis of midwifery care documentation. Data analysis was obtained from case study research by making narratives from the results of observations and descriptions of midwifery care analysis, assessment, formulating diagnoses, assessing formulating midwifery diagnoses, planning, implementing, and evaluating midwifery care. Research and assessment of this case study was conducted in June 2024 in the MCH Room of the UPTD Puskesmas Pahandut Palangka Raya. This health center is located not far from the Kahayan River

Watershed (DAS) in Palangkaraya City, Central Kalimantan and many people still live and do daily activities along the river.

### 3. RESULTS

#### [1] Article Review

*Table 1: Article Summary*

No	Journal	Title	Purpose	Research Method	Results	Reason for Choosing Article
1	Authors: Juistira Safitri, Sunarsih, Dewi Yuliasari [9]  Year of Publication: 2020  Country: Indonesia  Journal Name: Journal of Global Public Health  Database: Google Scholar	Relaxation Therapy (Deep Breathing) in Reducing Labor Pain	The aim of the research is to determine the effect of relaxation therapy (deep breathing) in reducing labor pain.	The type of quantitative research with a quasi-experimental approach. The sampling technique used is purposive sampling. The target of the research is all mothers in labor during the first stage of dilation from 4 to 7 cm, with a sample size of 30 individuals. The research was conducted at the Independent Midwifery Practice in Bandar Lampung City from February 16 to June 30, 2019. Data collection using observation sheets, bivariate data analysis with t-tests.	The research results show that the average labor pain before relaxation therapy (deep breathing) is 6.7 with a standard deviation of 0.8. The average labor pain after relaxation therapy (deep breathing) is 4.3 with a standard deviation of 0.9, and the p-value is < 0.001. There is an influence of relaxation therapy (deep breathing) in reducing labor pain. To the midwife, to provide non-pharmacological therapy in reducing labor pain through relaxation therapy. (deep breathing).	The results of the research and its discussion can be used in midwifery care.
2	Author: Aris Widiyanto, et al. [10]	Literature Review: The Effectiveness of Deep Breathing Relaxation	Objective: This research aims to determine the	Method: This research employs a literature review method using	Results: Five articles explain that deep breathing relaxation techniques can	The results of the research and its discussion can be used

NoJournal	Title	Purpose	Research Method	Results	Reason for Choosing Article
Year of Publication: 2021 Country: Indonesia Journal Name: Journal of Health Research Database: Google Scholar	Techniques in Laboring Mothers During Stage I	effectiveness of breathing relaxation techniques in reducing pain intensity in mothers during the first stage of labor.	secondary data from previous studies, which are published journals that meet the criteria established by the research, namely through systematic inclusion and exclusion criteria, as well as searches using Online Databases..	help reduce the intensity of pain in laboring mothers during the first stage of labor by using a pain scale. This allows healthcare providers to educate and train mothers to use deep breathing relaxation techniques to alleviate first-stage labor pain. Conclusion: The conclusion of this literature review is that deep breathing relaxation techniques are effective in reducing pain intensity in laboring mothers during the first stage of labor, and thus can be included in nursing interventions for the nursing diagnosis of pain discomfort.	in midwifery care..
3 Authors: Vidayawati, Ageng Septa Rini, Rizkiana Putri [10] Year of Publication: 2021 Country: Indonesia Journal Name: Journal of Health Research	Midwifery Care for Pain Management in Laboring Mothers Through Deep Breathing and Oxytocin Massage	The aim of this care is to observe the reduction of labor pain in Stage I through deep breathing relaxation and oxytocin massage.	he method in this case study uses SOAP management and observation sheets, with the NRS instrument. Care was provided to 2 mothers in labor during the Active Phase of Stage I. Respondent 1 practiced deep breathing relaxation, and respondent 2 received oxytocin massage..	The results of this study indicate a decrease in labor pain scores during the Active Phase of Stage I before and after the intervention. The deep breathing relaxation method reduced severe pain from a score of 7 to moderate pain with a score of 4, while the oxytocin massage reduced severe pain from a score of 7 to mild pain with a score of 2. It can be concluded that both deep	The results of the research and its discussion can be used in midwifery care.

NoJournal	Title	Purpose	Research Method	Results	Reason for Choosing Article
	Database: Google Scholar			breathing relaxation and oxytocin massage can effectively reduce labor pain.	

## [2] Midwifery Care Outcomes

Based on the assessment of midwifery care on Mrs. N aged 24 years G2P1A0 pregnant 39 weeks inpartu kala I active phase which was carried out on June 03, 2024 at 09.30 WIB in the KIA Room UPTD Puskesmas Pahandut Kota Palangka Raya obtained subjective data. Mother came saying she was 9 months pregnant, complaining of low back pain radiating to the lower abdomen, starting from 02. 00 WIB, the pain is felt more often, and regularly, namely in 10 minutes the frequency of contractions can appear 3-4 times with a contraction duration of about 40-45 seconds, there is a little mucus mixed with blood from the birth canal but no water has come out, since feeling pain can still do light activities such as sitting and walking a little.

The results of the examination based on objective data obtained the mother's general condition is good, BP: 110/ 70 MmHg, S: 37.1 °C, N: 84x/min, breathing 24 x/min. The results of the internal examination at 09.30 WIB the mother entered the labor process and had entered the opening of 7 cm, thin portio, amniotic fluid was still intact, palpable baby's head (front left small fontanel), Hodge III head decline, adequate contractions (4 times in 10 minutes for 48 seconds), DJJ 134 x/minute. Based on the subjective and objective data, the data analysis obtained is Mrs. N, 24 years old with the problem of pain in the waist and lower abdomen during contractions, her needs are IEC of maternal needs during labor and non-pharmacological therapy to reduce labor pain. Management of actions that can be taken in midwifery care on Mrs. F, namely:

- A. Inform the mother and family about the results of the examination that the mother's general condition is good, 39 weeks gestation, blood pressure 110/70 mmHg, pulse 84x/min, temperature 37.1 0C, breathing 24 x/min, The results of the internal examination at 09.30 WIB the mother is in labor and has entered the opening 7 cm, thin portio, amniotic fluid is still intact, palpable baby's head (front left small fontanel), adequate contractions (4 times in 10 minutes for 48 seconds), DJJ 134 x/min. Rationalization: Patients have the right to know everything related to their current situation, the plan of action to be taken and the risks of the action [11.]

Evaluation:

"Mother and family know the results of the examination".

- B. Explaining to the mother about the discomfort experienced, namely abdominal pain and low back pain radiating to the lower abdomen are signs of labor and normal things happen because contractions help to progress labor such as opening the cervix, lowering the fetal head until the birth process and providing moral support to the mother not to worry about her situation.

Rationalization:

Pain stimulation in labor is caused by uterine contractions, cervical opening and at the end of the first stage by stretching the vagina and pelvic

floor because the fetus is already in the pelvic floor [12]. Labor pain is a physiological condition that is generally experienced by almost all laboring women. Pain comes from uterine contractions and cervical dilatation. With increasing frequency of uterine contractions, the pain felt will also be stronger. The peak of pain occurs in the active phase of the first stage [13]. Labor is generally accompanied by pain due to uterine contractions. The intensity of pain during labor can affect the labor process, and the well-being of the fetus. Labor pain can stimulate the release of chemical mediators such as prostaglandins, leukotrienes, thromboxane, histamine, bradykinin, substance P, and serotonin, will evoke stress that causes the secretion of hormones such as catecholamines and steroids with the result of vasoconstriction of blood vessels so that uterine contractions weaken. Excessive secretion of these hormones will cause uteroplacental circulation disorders resulting in fetal hypoxia [14].

Evaluation:

"Mom understood the explanation given"

- C. Explain to the mother when the reopening check will be carried out, namely if there is an indication of the progress of signs of labor in the mother such as rupture of the membranes, there is a feeling that the mother is unbearable again wanting to relieve herself such as defecation and other indications.

Rationalization:

According to JNPK-KR (2017), Vaginal Toucher (VT) checks are carried out every 4 hours in the latent and active phase of the first stage. VT checks will be performed more frequently if signs of complication are found. Recording the progress of labor in the form of cervical opening and lowering the bottom of the fetus will be recorded using a partograph starting in the active phase I (cervical opening from 4 to 10cm). VT examination is considered to be able to determine the progress of labor or delay of labor through the use of partographs (crossing the alert/action line) and help decision making and care plans during labor so that maternal and infant outcomes are better. Other methods that can be used to measure the progress of labor besides VT examination include observation of fetal head descent by abdominal palpation, monitoring the frequency and strength of contractions, observing the appearance and behavior of the laboring mother [15]. Maternal behavior cues that can be observed include the active phase of labor, hiss that arises is getting stronger and more regular, the duration of 49-90 seconds, the mother's desire to strain and defecate at the end of the first stage. There is pressure on the anus, the perineum protrudes and the vulva opens in the second stage of labor (JNPK-KR, 2017).

Evaluation:

"Mom understood the explanation given"

- D. Explain the basic needs of mothers in labor, namely :
- Oxygen: take the bra off / reduce its tightness, change the mother's clothes with clothes that are not tight.
  - Nutrition: provide adequate food and drink intake so that the mother has the energy to expel during labor.
  - Elimination: advise the mother not to hold back urination or defecation because a full bladder can affect uterine contractions and interfere with the descent of the fetal head to the pelvic floor.



- Rest and sleep: while waiting for the contractions to get stronger and more frequent, the mother can rest so that the mother is not exhausted during the labor process. When lying down, encourage the mother to sleep on her left side to speed up the opening and not press the inferior vena cava.
- Personal Hygiene: during the labor process, the midwife cleans the genital area (vulva-vagina, anus).
- Mobilization: The mother is asked to keep doing activities such as walking outside the room to help speed up the process of lowering the head.
- Labor Pain: ways to reduce labor pain are to reduce pain from its source, provide strong alternative stimuli, and reduce negative mental/emotional reactions and physical reactions of the mother to pain.
- Perineal suturing (if needed): in performing perineal suturing, midwives need to pay attention to the principles of sterility and maternal care.
- The need for a standardized labor process.

Rationalization :

The physiological needs of laboring women are a basic need in laboring women that must be met so that the labor process can run smoothly and physiologically. The basic needs of laboring mothers that must be considered are [16]:

a. Oxygen

Fulfillment of oxygen needs during the labor process needs to be considered by midwives, especially in the first and second stages, where the oxygen that the mother breathes is very important for fetal oxygenation through the placenta (Kurniarum, 2016).

b. Nutrition

Nutritional needs during labor, from some research results there are actually no restrictions. Encourage the mother to get intake (snacks and drink water) during labor and the process of delivering the baby. Encourage family members to offer drinks and snacks frequently during labor.

c. Elimination

For elimination needs, the bladder should be emptied every 2 hours during labor as well as the number and timing of urination should be recorded. Check the bladder before checking the fetal heart rate (JNPK-KR, 2017).

d. Rest and sleep

The need for rest and sleep that can be met is when there are no contractions, the midwife can provide an opportunity for the mother to try to relax without emotional and physical stress. The mother can also do other fun things to unwind, or if possible, the mother can sleep. In the second stage, the mother should try not to be sleepy.

e. Personal Hygiene

Personal hygiene needs, can be done by midwives, among others: cleaning the genital area (vulva-vagina, anus), and facilitating the mother to bathe to maintain body hygiene. There is no prohibition on bathing for mothers who are in labor. Some cultures even require the mother to bathe to purify the body, because the process of giving birth is a sacred process and contains deep spiritual meaning.

## f. Mobilization

The need for mobilization and the need for positioning, the mother can change positions during labor, but not lying on her back for more than 10 minutes. This mobilization can help the baby's head fall and shorten labor time (JNPK-KR, 2017).

## g. Labor Pain

Labor pain is the subjective experience of physical sensations associated with uterine contractions, cervical dilation and thinning, and fetal descent during labor. Pain during labor will differ from one to another. Some ways to reduce labor pain are to reduce pain at the source, provide strong alternative stimuli, and reduce negative mental/emotional reactions and the mother's physical reactions to pain.

## h. Perineal suturing (if required)

Perineal suturing is one of the physiological needs of laboring mothers. In performing perineal suturing, midwives need to pay attention to the principles of sterility and maternal care.

The need for a standardized delivery process Getting a standardized delivery midwifery care service is the right of every mother. This is one of the physiological needs of laboring mothers, because standardized delivery assistance can improve the natural/normal delivery process.

Evaluation:

"Mother understood the explanation given"

- E. Teaching mothers and families complementary therapies to reduce labor pain, namely with breathing relaxation techniques when there are contractions because it can reduce tension, increase physical and emotional relaxation. The deep breathing procedure that has been carried out is that the patient is arranged in a comfortable position lying in bed, sitting, or standing and asks to relax the abdominal muscles and the patient's two hands on the abdomen under the ribs. inhale deeply through the nose. keep the mouth closed until the count of 1.2.3 during inspiration. concentration and make the mother comfortable and tell the mother every contraction feels like there are waves - waves of love and affection for the mother and baby-to-be. The steps of the deep breath relaxation technique are as follows:

- Create a calm environment
- Try to stay relaxed and calm

By modifying other nonpharmacological measures including distraction. Distraction is an act of diverting the patient's attention to other things outside of pain. Thus, it is hoped that the patient will not focus on pain anymore and even increase tolerance to pain).

- Take a deep breath from the nose and fill the lungs with air through a count of 1,2,3.
- Slowly, the air is exhaled through the mouth while feeling the upper and lower extremities relax.
- Encourage breathing at a normal rhythm three times.
- Inhale again through the nose and exhale through the mouth.
- Advise to repeat the procedure until the pain feels reduced.



- Repeat it 15 times, with a short break after every 5 times.

Rationalization:

The decrease in pain levels occurs when a laboring mother experiences pain and practices deep breathing relaxation, which is responded to by the brain through the cerebral cortex and then transmitted to the hypothalamus. The hypothalamus releases Corticotrophin Releasing Factor (CRF), which stimulates the pituitary gland to inform the adrenal medulla to increase the production of Proopiomelanocortin (POMC), leading to an increase in enkephalins. The pituitary gland produces endorphins as neurotransmitters that can influence mood to become relaxed. The increase in endorphins and enkephalins causes the body to relax and reduces the sensation of pain. According to Brunner & Suddarth (2002) in Rukmala [17], deep breathing relaxation techniques can control pain by minimizing sympathetic activity in the autonomic nervous system. Relaxation involves muscles and breathing and does not require any other tools, making it easy to do anytime or at any moment. The principle underlying relaxation techniques is based on the physiology of the autonomic nervous system, which is part of the peripheral nervous system that maintains the homeostasis of an individual's internal environment. At the time of the release of chemical mediators such as bradykinin, prostaglandins, and substances that stimulate the sympathetic nerves, this causes the sympathetic nerves to undergo vasoconstriction, ultimately increasing muscle tone, which leads to various muscle spasm effects that eventually compress blood vessels. Reducing blood flow and increasing the metabolic rate of muscles leads to the transmission of pain impulses from the spinal cord to the brain, which are perceived as pain.

Evaluation: "The mother is willing to try the recommended complementary therapy of deep breathing techniques."

- F. Providing counseling to the husband and family to offer support and encouragement, which includes prayers, motivation, and enthusiasm for the mother, and can help reduce pain from contractions by giving gentle massages on the back down to the lower waist.

Rationalization:

Psychological factors in facing childbirth are very influential in the labor process. The full support of family members is very important for a mother in labor, especially the support from her husband, as it provides moral support to the mother. The husband's support during labor is both physical and psychological assistance given to the mother as she faces childbirth. Childbirth is a tense moment that can stir emotions in the mother and family, or it can even be a painful and frightening experience for the mother. Efforts to address emotional disturbances and the stressful experiences should be carried out through loving maternal care by encouraging the husband and family to be present and provide support so that the delivery can proceed quickly and smoothly. (JNPK-KR, 2015).

- G. Continuing to observe the mother's vital signs, fetal heart rate, and progress of labor using a partograph.

Rationalization:

The condition of the mother and baby that must be assessed and recorded carefully includes:

- a. Fetal heart rate every half hour
  - b. Frequency and duration of uterine contractions every half hour
  - c. Pulse: every half hour
  - d. Cervical dilation: every 4 hours or as indicated
  - e. Descent of the presenting part of the fetus: every 4 hours
  - f. fBlood pressure and body temperature: every 4 hours
  - g. Urine production, acetone, and protein: every 2 to 4 hours (Prawiroharjo, 2015)
  - h. Fetal heart rate: assess and record the fetal heart rate every 30 minutes.
- H. Documenting the care provided in the register book and completing the data on the partograph sheet.

Rationalization:

Maternity documentation aims to identify the health status of clients in order to record their needs, plan, implement actions, and evaluate those actions. The partograph is a tool used to monitor the progress of the first stage of labor and provides information for making clinical decisions. In the partograph, aspects that can be used for clinical decision-making include monitoring the well-being of the mother and fetus, as well as the progress of labor. The routine use of partographs can ensure that mothers and their babies receive safe, adequate, and timely care, as well as help prevent complications. Complications during childbirth can endanger the safety of both the mother and the fetus.

Evaluation:

"Conducting observations that are documented in the register book and partograph sheet."

#### 4. CONCLUSIONS

After the author conducted midwifery care for a 24-year-old woman in physiological labor at the UPTD Puskesmas Pahandut, several conclusions were drawn as follows:

- [1] The assessment of the patient revealed subjective data indicating that the mother experienced lower back pain radiating to the lower abdomen, starting at 2:00 AM. The pain became more frequent and regular, with contractions occurring 3-4 times every 10 minutes, lasting about 40-45 seconds each. There was a small amount of mucus mixed with blood from the birth canal, but no amniotic fluid had yet been released. Despite the pain, she was still able to engage in light activities such as sitting and walking a little. This is the mother's second delivery, and she has never had a miscarriage. Mother gave birth on June 3, 2024, at 12:15 PM WIB, to a baby girl weighing 3000 grams, assisted by a midwife. My mother has no history of infectious or hereditary diseases. Objective data on Mrs. Ny. N, 24 years old, P1A0, indicates that her general condition is good with blood pressure: 110/70 mmHg, temperature: 37.1°C, pulse: 84 beats/minute, and respiration: 24 breaths/minute.
- [2] The interpretation of the data obtained from the obstetric diagnosis is G2P1A0, 39 weeks pregnant, in active labor phase I, with issues of pain in the lower back and abdomen during contractions and the need for information, education, and communication (IEC) regarding the mother's needs during delivery, as well as non-pharmacological therapies to reduce labor pain.

- [3] The management carried out includes IEC regarding the mother's needs during delivery and non-pharmacological therapies to reduce labor pain.
- [4] The evaluation and care provided to Mrs. N showed that she understood the explanations given and there were no potential issues that arose.

## 5. ACKNOWLEDGEMENTS

Thank you to the Chair of STIKES Eka Harap, the Chair of the LPPM STIKES Eka Harap, the Chair of the Bachelor of Midwifery Study Program, the clinical supervisors, and all parties involved in the creation of this case study research.

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