



## Effect of Deep Breathing Techniques on Intensity of Labor Pain in The Active Phase



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### Keywords

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### Abstract

Every delivery will have a painful effect, and it is a physiological thing in the labour process. One of the things that can be done to reduce pain intensity is using deep breathing techniques. This technique is a safe non-pharmacological pain reduction method for maternity mothers. This study aimed to find out the influence of deep breathing techniques on the intensity of labour pain when Active Phase one at Oza Wakiah Clinic Batam city- Indonesia. The method carried out in this study was *quasi methods experimental* with one group pre and *post-test*. The population in this study was all mothers who were pregnant at the Oza Wakiah Clinic from September 2020 to July 2021. The sample of 23 people was taken using consecutive *sampling* techniques. For the entirety of labour, pain is recorded and measured using a numeric rating scale (NRS). The results showed an influence of deep breathing techniques on the decrease in pain intensity with a p-value = 0.000. The average pain intensity before being given deep breathing techniques was 2.15 and after being given deep breathing techniques was 1.56. The midwife who serves as Oza Wakiah Clinic is expected to motivate maternity mothers in using deep breathing techniques so that mothers are calmer and can reduce labour pain.

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## 1. Introduction

Every mother wants her labour to go smoothly, but because uterine contractions can cause the onset of labour pain that makes the mother anxious and exhausted and can have a negative impact on the labour process (Pratiwi et al. 1, 2019). In principle, this labour pain is needed in the delivery process for the decline of the fetus and the opening of the cervix. (Urjasmi, 2016).

Each individual will experience different pain intensities, depending on the individual's perceptual response in managing pain. In general, the peak intensity of pain occurs during the I active phase, where this phase of uterine contractions occurs more often, and the duration is getting longer (Bonny D, 2017). Many factors cause labour pain, among others due to uterine contractions, stretching of the pelvic area, and poor psychological conditions (Cunningham, F. Gary., Leveno., 2018).

Many techniques can be done in the management of labour pain. Some use pharmacological and non-pharmacological methods. Midwives widely use Non-pharmacological methods because they are considered more accessible and safer. One effective non-pharmacological pain management method is deep breathing techniques (Putranti, 2018).

In the process of delivery, midwives play a significant role. Midwives are expected to identify the best strategies in managing labour pain so that the mother can give birth typically (Istiarti, 2016).

## 2. Materials and Methods

The study uses a pre-experimental research design with one pretest-posttest group research (Andayani, 2018). Before and after being given intervention will be taken pain scale measurement with a numerical rating scale. The intervention given is by practising deep breathing techniques for 20 minutes. The population in this study was all mothers who were pregnant at the Oza Wakiah Clinic from September 2020 to July 2021. The sample of 23 people was taken using consecutive sampling techniques. Data processing and analysis techniques are carried out using bivariate analysis using Wilcoxon Match Paor Test analysis (Sugiyono, 2017).

## 3. Results and Discussions

From the results of the research conducted, it was obtained as a result are obtained:

Table 1.  
Frequency Distribution based on Respondent's Age  
at Oza Wakiah Clinic Batam city

Age	Frequency (f)	Percentage (%)
<20 Years	4	17,4
20-35 Years	17	73,9
>35 years	2	8,7
Total	23	100

The table above shows that the age of most respondents ranges from 20-30 years, amounting to 17 respondents (73.9%).

Table 2.  
Distribution of Fercurence Based on Respondent Parity  
at Oza Wakiah Clinic Batam city

Parity	Frequency (f)	Percentage (%)
Primipara	2	8,7
Multipara	14	60,9
Grandemultipara	7	30,4
Total	23	100

The table above shows that the study subjects with the most parity categories are multiparous, with 14 respondents (60.9).

Table 3.  
Frequency Distribution based on Respondent's Work  
at Oza Wakiah Clinic Batam city

Category	Frequency (f)	Percentage (%)
IRT	11	47,8
Private	7	30,4
Self-employed	5	21,8
Total	23	100

From the table above, it can be seen that most respondents' jobs are as housewives, with a total of 11 respondents (47.8%).

Table 4  
Frequency Distribution Based on Intensity of Labor Pain When I Active Phase Before and  
After Deep Breathing Technique Exercises  
at Oza Wakiah Clinic Batam city

Intensity Pain	Pre-test		Post-test	
	Frequency (f)	Percentage (%)	Frequency (f)	Percentage (%)
Mild Pain	2	8,7	12	52,2
Moderate Pain	16	69,6	9	39,1
Severe Pain	5	21,7	2	8,7
Sum	23	100	23	100

Based on the table above, it can be known that the intensity of pain before doing the most deep breathing technique exercise experienced moderate intensity with the number of 16 respondents (69.6%). Then after doing the deep breathing technique training, most respondents experienced labour pain with light intensity amounted to 12 respondents (52.1%).

Table 5  
The difference in Intensity of Labor Pain When I Active Phase before and after the  
deep breathing technique at Oza Wakiah Clinic Batam city

Variable	Treatment	N	Mean	SD	p-value
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Intensity of Pain	Pre-test	23	2,15	0,54	0,000
	Post-test	23	1,56	0,65	

From the table above, it can be seen that from 23 respondents before being given respiratory training interventions in the average respondent experienced a pain scale of 2.15. And after deep breathing exercise intervention, the average pain scale that respondents felt was reduced to 1.56. Based on statistical tests conducted to obtain a p-value of 0.000, there is a difference in the intensity of the labour pain scale in the Kala I Active Phase in Oza Wakiah Clinic in Batam City.

The research results conducted parametric tests, analytical methods with small samples using *the sapphire-Wilk*. If the value  $p > 0.05$  means a normal distribution (Sugiono, 2017). Of the 23 respondents before being given a respiratory exercise intervention in the average respondent experienced a pain scale of 2.15. And after deep breathing exercise intervention, the average pain scale that respondents felt was reduced to 1.56. This showed a decrease in the scale of interested labour pain before and after the intervention of deep breathing exercises 0.59.

Some studies state that labour pain when I occur due to cervical dilation, stretching of the pelvic muscles, dilation of the victim, dilation of the lower uterine segment, with further distension, testing, and trauma to the muscle fibres and ligaments that support this structure (Yohana et al., 2019).

Labour pain is one of the most severe pains ever evaluated, and anxiety can cause pain to peak, causing women not to give birth naturally (Mohammad et al., 2019). Nerve stimulation of the neck of the uterine (cervix) and lower uterus can also cause pain in the labour process when I. Give deep breathing techniques can stimulate nerve fibres to relax and make the mother feel comfortable (Biswan et al., 2017).

The intensity of pain is the feeling of pain that an individual feels. Each individual will feel a different intensity of pain and its subjective nature. The pain intensity is also affected by the strength of contractions and uterine pressure. The pain will increase during cervical dilation, stretching the pelvic area caused by fetal push and tearing of the birth canal. Even sometimes, the physical and psychological barriers in the mother during labour will add to the race of pain that the mother feels. This condition makes mothers choose various ways to relieve pain, both pharmacologically and non-pharmacological, and the effort that a midwife can do is to train the birth mother in the first phase of active (Ozberk et al., 2021).

The deep breathing technique is one method that can help the mother during contractions. The early stages can relax the abdomen and abdominal cavity area muscles. This condition can cause a sense of comfort between the uterus and the abdominal wall. The deep breathing technique taught is to take a slow breath from the nose, hold for a few seconds in the stomach and then exhale slowly through the mouth. This technique is done without accompanying the pandering. Repeat this technique several times during contraction (Fritz et al., 2017). Respiratory relaxation techniques can help the mother to reduce fatigue and save energy and make it possible to maximize the flow of oxygen in the mother's womb (Mohammad et al., 2019).

Lela Aini research found that the sprinkling before and after the technique of relaxation of the breath in experiencing decreased pain, was obtained the level of moderate pain becomes mild, moderate pain level with the attitude of the respondent who grimaces, grins can show the location of pain, can describe it, and can follow commands well. In contrast, the intensity of mild pain after the relaxation technique of a deep breath in a manner The objective can communicate well, be active, smile, joke and cheerful and the patient looks more relaxed than she is. This is due to a deep breath, relaxation technique that stimulates the body to release endogenous opioids, namely endorphins and encarnalize. Endorphin hormone is a substance of morphine that serves as an

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inhibitor of the transmission of pain impulses to the brain. So that when pain neurons send signals to the brain, there is a synapse between peripheral neurons and neurons that go to the brain where the p substance will produce impulses. At that time, endorphins blocked the release of substance p from the sensory neurons (Lela Aini, 2018).

Sympathetic activity in the autonomic nervous system can minimize pain in maternity mothers by practising deep breathing techniques. This technique can also control the mother's reaction to pain, increase the mother's concentration and lower the hormone adrenaline, lower the cortisone hormone that both hormones can cause stress. After the mother Ursuline is given the exercise of breathing techniques, the mother will feel calm so that the mother can control her respiratory system and increase the oxygen levels in the blood (Nwanodi, 2016).

Relaxation is a technique that can make the body, mind, and a person feels comfortable, accepting the condition of hammering a process so that the mother who will give birth will release muscle tension. Relaxation techniques are very useful in various situations, such as when the body is in pain, anxiety, lack of rest, stress or emotions. Relaxation can also give the body a fight to flight reaction, lower blood pressure, and restore energy that has been wasted (Fritz et al., 2017).

#### 4. Conclusion

Based on research that has been done in Oza Wakiah Clinic Batam city to get results:

- a. Of the 23 respondents who had been given breathing technique training in assessment before being given breathing techniques in the average pain scale that respondents felt was 2.15, there was a decrease in the pain scale to 1.56 after being given deep relaxation technique exercises.
- b. Based on the Wilcoxon test conducted to obtain values ( $p$ -value = 0.000,  $\alpha$  = 0.05). This means a significant difference between before and after being given deep breathing techniques against the intensity of labour pain in patients.

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