Analysis of the Effectiveness of Respiratory Relaxation Techniques on Pain Adaptation in Laboring Mothers At RSU Royal Prima

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ABSTRACT
Relaxation techniques are one of the non-pharmacological techniques that can increase patient comfort during labor and effectively influence the labor experience. This study aimed to analyze the effectiveness of respiratory relaxation techniques on pain adaptation in laboring mothers. This type of research is descriptive correlational, using a One Group Pretest-Postest approach conducted at RSU Royal Prima Medan, in January 2023. Population data of all mothers giving birth vaginally at RSU Royal Prima for the last three months, the average per month is ± 61 people. The sample used the Slovin formula and obtained a selection of 30 people, nonprobability sampling, namely consecutive sampling. After the respiratory relaxation technique, there were six people with no pain, 13 with moderate pain, and 11 with severe pain. It can be seen that there is an influence after respiratory relaxation, where after the intervention, there is a decrease in the level of pain, where previously the level of no pain was 0, to 6 women in labor. The results of the Wilcoxon test when tested pre-test, the mean value was 3.442; when tested post-test, the mean value was 3.175. So the results obtained Z value = -2.783, then the p-value is 0.002 <0.05, so Ho is rejected, and Ha accepts. Respiratory relaxation techniques are supposed to be effective on changes in pain in laboring mothers during stage I at Royal Prima Hospital in 2023, with a p-value of 0.002 <0.05.
Keywords: Effectiveness, relaxation techniques, pain.

I.   Background

Labor pain is a physiological, unpleasant feeling that occurs during labor. Labor pain begins in labor phase I, latent, and active phases. The longer the pain felt, the more substantial the peak pain occurs in the active phase, where the opening is complete up to 10 cm. Pain intensity during labor will affect the mother's psychological condition, labor process, and fetal well-being (1). Laboring mothers feel a high perception of pain, so most do not focus on the birth of their babies. Instead, they focus more on the labor pain they think (2). Feelings of fear and anxiety at the time of labor can cause the parasympathetic nervous system to increase the intensity of the pain it feels (3).

Relaxation, breathing techniques, movement and position changes, massage, hydrotherapy, hot/cold therapy, auditory (mutual), guided imagery, acupressure, and aromatherapy are some non-pharmacological techniques that can increase patient comfort during labor and have an effective influence on labor experience. According to research (5) at the Lawawoi Health Center, Wattang Pulu District, Sidenreng Rappang Regency in 2016, stated that the provision of breath relaxation techniques is effective for reducing pain levels in patients in part kala I active phase because there is a significant difference between before and after giving breath techniques. Siti Farida's research in 2015 at BPM Fajar Endrowati Boyolali stated that the breath relaxation technique effectively reduced pain during labor. Study (5) says that breathing relaxation techniques effectively lowers pain levels in patients in part kala I active phase at the Lawawoi Health Center, Wattang Pulu District, Sidrap Regency. This study aimed to analyze the effectiveness of respiratory relaxation techniques on pain adaptation in laboring mothers.

II.   Research Methods

This type of research is descriptive correlational, using the One Group Pretest-Postest approach conducted at RSU Royal Prima Medan in January 2023. Population data of all mothers giving birth vaginally at RSU Royal Prima for the last three months, the average per month is ± 61 people.

The number of samples using the Slovin formula:

$$n = \frac{N}{1 + Ne^2}$$

n = 61/1+61 (0,05)^2

n = 29,75 rounded up to 30 respondents, with a significance level of α =0,05.

Sample selection with nonprobability sampling, namely consecutive sampling.

Sample inclusion criteria, namely:

a.   Pregnant women who give birth in the KIA room at Royal Prima Hospital
b.   Vaginal delivery
c.   The vital patient's vital signs (blood pressure, pulse, temperature, and respiration) are stable.
d.   Patients who are willing to become respondents

Sample exclusion criteria, namely:

a.   Vital signs are not stable
b.   The patient has decreased consciousness.
c.   Mothers who received accelerated labor (SC, induction of labor)
d.   Not willing to be a respondent.

The data analysis used is the normality test using the Shapiro-Wilk test because of the number of samples < 50. Bivariate analysis if the data is usually distributed using the paired t-test, while if the data is not normally distributed using the Wilcoxon Signed Rank Test, with a significance limit of < 0.05.

III.   Research Results

Table 1. Frequency and Percentage Distribution of Pain Levels of Maternity Period I, Before Performing Breathing Relaxation Techniques at Royal Prima Medan Hospital in 2023

No	Pain Level	Sum (n)	Percentage
1	Nyeri Sedang	16	53,3
2	Nyeri Berat	14	46,7
	TOTAL	**30**	**100**

Based on Table 1. It is known that before the breathing relaxation technique was performed, the majority of respondents felt more moderate pain, as many as 17 people, while the minority of respondents experienced severe pain, as many as 13 people.

Table 2. Frequency and Percentage Distribution of Respiratory Relaxation Techniques for Maternity Period I at Royal Prima Medan Hospital in 2023

No	Respiratory Relaxation	Sum (n)	Percentage %
1	Can Do Well	17	56,7
2	Can't Perform Well	13	43,3
	TOTAL	**30**	**100**

Based on Table 2. it is known that the majority of respondents can do the Respiratory Relaxation Technique well while the minority cannot do well.

Table 3. Frequency and Percentage Distribution of Pain Levels of Maternity Women in Period I After Performing Relaxation Breathing Techniques at Royal Prima Medan Hospital in 2023

No	Pain Level	Sum (n)	Percentage
1	No Pain	6	20,0
2	Moderate Pain	13	43,4
3	Severe Pain	11	36,6
	TOTAL	**30**	**30**

Table 3 shows that after the breathing relaxation technique is carried out, there are six people with no pain, 13 with moderate pain, and 11 with severe pain. It can be seen that there is an influence after respiratory relaxation, where after the intervention, there is a decrease in the level of pain, where previously the level of no pain was 0, to 6 women in labor.

Table 4.   Uji Normalitas Shapiro Wilk

	Shapiro Wilk		
	Statistic	df	Sig
Pre-Relaxation	0.627	30	0,001
Post-Relaxation	0.787	30	0,008

From Table 4. before the intervention of respiratory relaxation techniques obtained a Sig value of 0.001> 0.05, and after the respiratory relaxation techniques received a Sig value of 0.008> 0.05. If the data is not normally distributed, proceed with the Wilcoxon Signed Rank Test statistical test.

Table 5.   Descriptive Test Results Wilcoxon Signed Ranks Test Changes in Pain Levels Before and After Performing Respiratory Relaxation Techniques in Maternity Mothers Period I at Royal Prima Medan Hospital in 2023.

No	Pain Level	Sum (n)	Mean	Z	p-value
1	Respiratory Pre-Relaxation	30	3.442	-2.783[b]	0.002
2	Post- Respiratory Relaxation	30	3.175		

Based on Table 5. It is known that the score of changes in pain levels from the Wilcoxon test results when tested pre-test the mean value is 3.442; when tested post-test, the mean value is 3.175. So what is obtained is the result of the Z value = -2.783, the p-value is 0.002 <0.05, so it is concluded that Ho is rejected. Ha is accepted, which means that there is an effect of providing respiratory relaxation techniques on changes in pain in laboring women during stage I at Royal Prima Hospital in 2023.

Pain frustrates clients and health workers (Berkanis, Nubatonis, and Lastari, 2023). Pain is a highly individualized and subjective experience that can affect all people of all ages. Pain can occur in children and adults. The causes of pain are disease processes, injuries, procedures, and surgical interventions (7). Labor pain is caused by stretching the uterus's lower segment (8). The pain intensity is proportional to the strength of contractions and the pressure that occurs; the pain increases when the mouth of the uterus is in full dilation due to the baby's pressure on the pelvic structure, followed by stretching and tearing of the birth canal. Labor pain is unique and different in each individual because pain is not only associated with physical conditions but also related to the mother's psychological condition during labor. Based on the results of research on 30 respondents about the effect of providing Respiratory Relaxation Techniques on Period I Delivery Mothers at Royal Prima Medan Hospital in 2023, before the respiratory relaxation technique was performed, the majority of respondents felt more moderate pain while the minority of respondents experienced severe pain.

The results of the Wilcoxon Rank Test showed ρ-value = 0.002 <0.05; this means that H0 is rejected and Ha is accepted. there is an effect of giving Respiratory Relaxation Techniques on changes in pain in laboring mothers at Stage I in patients in the KIA room of Royal Prima Hospital in 2023. Pain during labor during the first stage is caused by contractions of the uterus, which are delivered by sympathetic surface fibers and thoracic nerve fibers 11 and 12. Pain in the opening period is caused by the opening of the mouth of the uterus; for example, stretching smooth muscles is sufficient stimulus to cause pain. there is a close relationship between the magnitude of the opening of the uterine mouth and the intensity of the pain (the more open, the more pain) (5). Pain during labor can cause blood pressure to increase and the mother's concentration during delivery to be disturbed, not infrequently. Pregnancy brings "stress" or worry/anxiety that impacts and influences physical and psychological. Excessive pressure also increases pain. Non-pharmacological therapy is used without drugs but by providing various techniques that can at least slightly reduce pain when labor arrives. Some things that can be done are distraction, self-hypnosis, cutaneous stimulation, massages, warm and cold therapy, and respiratory relaxation. Respiratory relaxation is a form of nursing care; in this case, the nurse teaches the client how to breathe, slow breathing (holding inspiration to the maximum), and exhale slowly. In addition to reducing pain, breathing relaxation techniques can also increase lung ventilation and improve blood oxygenation (9). The results of this study are supported by the results of Sukarta's research (2017), stating that there is an influence before being treated and after being treated has a significant change in pain in laboring women with a p-value ≤ 0.05 at the Lawawoi Health Center (5). Supported by Farida (2016) states that the breath relaxation technique is effective in reducing pain during the labor process at BPM Fajar Endrowati Boyolali (10),

IV.   Conclusion
The conclusion is that breathing relaxation techniques are effective in changes in pain in laboring mothers during stage I at Royal Prima Hospital in 2023, with a p-value of 0.002 <0.05..

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