



Effectiveness of Deep Breath Relaxation Technique to Reduce Acute Pain in Spontaneous Post Partum Patients

Revica Nur Fitriani^{1, *}, Ema Wahyu Ningrum²

^{1,2} Program Studi Profesi Ners Fakultas Kesehatan Universitas Harapan Bangsa Purwokerto, Banyumas, Indonesia

¹ revicanurfitriani989@gmail.com*; ²ema@uhb.ac.id

ABSTRACT

The puerperium phase refers to the period immediately after childbirth for 6 weeks or 42 days, in which case the reproductive organs will undergo subtle changes that resemble the changes that occurred before pregnancy. The main factor causing the high maternal mortality rate is the lack of care and attention given to postpartum women. The purpose of this case study is to assess the effectiveness of breathing relaxation techniques in reducing acute pain in postpartum patients. This study used case study methodology to investigate the patient's experience during the nursing process. The nursing process includes nursing assessment, nursing diagnosis, nursing intervention, nursing implementation, and nursing evaluation. The results showed that deep breath relaxation for 2x24 hours, before the intervention, the patient complained of pain in the birth canal with a pain scale of 5 (moderate). After the intervention, the patient's complaints of pain in the birth canal decreased with a pain scale of 3 (mild). In conclusion, deep breath relaxation is effective as an effort to reduce the intensity/level of pain in postpartum patients.

Keywords: *Acute Pain, Spontaneous Post Partum, Deep Breathing Relaxation*

1. INTRODUCTION

The puerperium or postpartum period refers to the period immediately after childbirth, which lasts up to 6 weeks in the puerperium phase the reproductive organs will undergo slight changes that are comparable to the changes that occurred before pregnancy. Indonesia has a high postpartum maternal mortality rate, so additional attention to the postpartum period needs to be given. This problem poses a major challenge to the growth of health in the country (Ningrum & Nurhoeriyah, 2018).

A major determinant of the high maternal mortality rate (MMR) according to the World

Health Organization (WHO) in 2020, is the lack of availability of services for postpartum women. The global maternal mortality rate (MMR) in 2020 reached 152 deaths per 100,000 live births. Meanwhile, the MMR incidence rate in Indonesia was 4,221 cases in 2019, increased to 4,667 cases in 2020, and increased to 6,865 cases in 2021 (Indonesian Ministry of Health, 2024).

The success of postpartum health services can be determined by assessing the extent of coverage of complete postpartum visits. This metric evaluates the government's efforts to deliver postpartum health services that adhere to established criteria and ensure high quality. In 2020, the Ministry of Health of the Republic

*Revica Nur Fitriani.

Tel.: -

revicanurfitriani989@gmail.com



of Indonesia reported a postpartum visit rate in Indonesia of 88.3%. The projected maternal mortality rate (MMR) in 2022 in Banyumas Regency is estimated at 105.57 deaths per 1,000 live births (Banyumas Health Office, 2022).

Discomfort in the early postpartum period usually arises from perineal injuries experienced during childbirth. The pain experienced by the mother can have adverse effects, such as pain when sitting, standing, walking, and doing daily activities. It can also affect the ability to urinate (Antika et al., 2023).

There are several approaches to acute pain management, which can be categorized into pharmacological and non-pharmacological. Pharmacological interventions for pain management are superior to non-pharmacological interventions. However, the provision of pharmaceutical interventions has the risk of causing adverse effects on the mother, such as the administration of mefenamic acid pain relievers that trigger abdominal discomfort. Pharmacological pain management has risks for the baby because the pain enters the bloodstream and accumulates in breast milk, potentially causing allergic responses and diarrhea (Fajriani et al., 2021).

Deep breathing relaxation technique is a non-drug approach used to reduce discomfort, a non-pharmacological technique namely deep breathing relaxation technique, an independent nursing intervention, helps patients relax muscles and reduce discomfort by performing deep breathing exercises, specifically by holding the breath for the maximum time and exhaling gently (Antika et al., 2023).

Deep breathing relaxation techniques have been shown to reduce pain through a mechanism whereby the spasming muscles of the secler relax, as a result of an increase in prostaglandins. This relaxation allows for vasodilation of blood vessels supplying the brain, increasing blood flow to the brain. In addition, deep breathing relaxation techniques have been shown to stimulate the release of the body's endogenous opioids, including endorphins and enkephalins (Vitisabella et al., 2022).

According to the findings of Antika et al (2023) research shows that deep breath

relaxation techniques effectively reduce the pain scale from 7 (severe pain) to 0 (no pain) in individuals experiencing postpartum pain with perineal laceration.

2. METHODS

This study uses a case study technique to investigate the patient's experience during the nursing process with descriptive research. The sample selection in this study was post partum patients at Prof. Dr. Margono Soekarjo Hospital with the inclusion criteria that the patients were not in critical condition/special care and were able to communicate well. This study centered on Mrs. I, a woman who reported experiencing discomfort on the delivery path. The study was conducted in Flamboyan room of Prof. Dr. Margono Soekarjo Hospital. Data collection was done by interview, direct observation of the patient, and documentation analysis. The instruments used included subjective patient assessment data showing that the patient complained of birth canal pain with a pain scale of 5 (Moderate). Simultaneously, empirical evidence was collected indicating that the patient showed signs of discomfort when moving, showed restlessness, and had the following vital signs: blood pressure 123/86 mmHg, respiratory rate 20 beats per minute, pulse 104 beats per minute, a body temperature of 36.9 degrees Celsius, and an oxygen saturation level (Spo₂) of 99%. One of the disadvantages of this approach was that patients experienced pain in the birth canal, causing them to flinch when moving. Based on these findings, it was determined that the problem was acute discomfort caused by physical factors, such as perineal tension, episiotomy wound, or uterine involution. The study was conducted on postpartum patients who experienced spontaneous labor at RSUD dr. Soekardjo Purwokerto with a duration of 2 days on February 13 to February 14, 2023.

The deep breathing relaxation therapy intervention is done by taking a deep breath through the nostrils until you feel the abdomen and chest lift gradually for 4 seconds. Deep breath relaxation should be maintained for three seconds, after which the subject should exhale slowly through the mouth. This therapy is done for 5 to 10 minutes, with a frequency of 3 times

a day. To ascertain the pain scale, the researchers used the Numeric Rating Scale. Numeric Rating Scale (NRS) is a pain measurement tool with a value range of 0 to 10. Pain measurement according to the Numeric Rating Scale (NRS) has categories, namely no pain (scale 0), mild pain (scale 1-3), moderate pain (scale 4-6), and severe pain (scale 7-10). Participants were instructed to select the pain scale on the NRS that best represented their pain severity.

Data were collected from physical examinations, medical records, observations, interviews, and relevant internet literature sources. Evaluation is the final phase in the nursing process. It follows a subsequent nursing assessment process including the utilization of deep breath relaxation techniques to assess the level of improvement achieved.

3. RESULT AND DISCUSSION

3.1 Result

3.1.1 Assessment and Supporting Examination

Patient Mrs. I is a 28-year-old woman. The patient has completed junior high school and is currently working as a housewife. The patient's main complaint was birth canal irregularity experienced with P: discomfort on movement, Q: throbbing pain, and R: birth canal pain, with pain intensity level 5: Pain is intermittent. The patient's recent medical history showed they arrived from VK on February 13 at 1:00 am, with a general composition E: 4, V: 5, M: 6, normal internal vaginal bleeding, no signs of REEDA, no dizziness, no blurred vision. The patient's obstetric history includes the onset of menstruation at the age of 13 years, with the menstrual cycle lasting 28 days. The patient last menstruated on April 30, 2023. The user has a history of pregnancy, having previously delivered a puerperium G3P1A. They also had a history of pregnancy in 2014, with a gestational age of 12 weeks and difficulties related to curettage. In 2016 with a gestational age of 37 weeks there was no complication and spontaneous birth with the sex of a baby boy and weighing 2900 grams with a length of 53 cm. Whereas, this pregnancy was 40 weeks more than 5 days with spontaneous delivery of

the sex of the baby boy and the weight of the baby 2900 grams with a length of 50cm. The patient said pain in the birth canal and restless with vital signs blood pressure 123/86 MmHg, RR 20 x/min, Pulse 104 x/min, temperature 36.9 degrees Celsius, Spo2 99%.

3.1.2 Data Analysis and Nursing Diagnosis

The examination conducted on February 13, 2023, revealed subjective data indicating that the patient experienced discomfort in the birth canal. The pain was described as follows: P - occurring during movement, Q - pulsating, R - localized in the birth canal, S - rated 5 on the pain scale, and T - occurring intermittently. Although the objective data showed that the patient grimaced when moving and appeared restless. The patient's blood pressure was 123/86 mmHg, respiratory rate was 20x/minute, heart rate was 104x/minute, temperature was 36.9 degrees Celsius, and oxygen saturation was 99%. Subjective data: The patient reported experiencing pain in the birth canal.

Objective data: The patient showed signs of discomfort when moving and appeared restless. This results in a nursing problem of acute pain caused by physical damage factors such as perineal tension, episiotomy wounds, and uterine involution.

3.1.3 Nursing Interventions

The goal of the nursing diagnosis is to achieve a reduction in pain level within 2x24 hours of nursing care.

3.1.4 Nursing Implementation

Implementation refers to the execution of the nursing care plan with the aim of helping the patient achieve the expected outcomes. Therefore, the nurse must possess trust-building capacity, therapeutic communication skills, advocacy expertise, psychomotor talent, and evaluative competency. The implementation of deep breathing relaxation methods as a non-pharmacological intervention aims to reduce pain levels post-nursing care within 2x24 hours. The deep breathing relaxation technique is performed for 5 to 10 minutes with a frequency of 3 times/day. On the first day after the application of the deep breathing relaxation technique, the patient reported that pain was

still slightly felt, with a pain scale rating of 5 out of 10 (moderate pain). There was a change/reduction in pain intensity after the application of the deep breathing relaxation technique on the second day, with the patient reporting that the pain was beginning to subside, and the pain scale indicated 3 out of 10 (mild pain).

3.1.5 Evaluation

The result of the non-pharmacological deep breathing relaxation technique over 2x24 hours shows that, before the pain management intervention, the patient complained of pain in the birth canal with P: pain during movement, Q: pulsating, R: in the birth canal, S: pain scale 5, T: intermittent. After the application of the non-pharmacological deep breathing relaxation technique on the second day, the complaint of pain in the birth canal decreased with P: pain during movement, Q: pulsating, R: in the birth canal, S: pain scale 3, T: intermittent. These results provide evidence that the regular application of the deep breathing relaxation technique as a response to pain can effectively alleviate pain in the patient's birth canal.

3.2 Discussion

Prabawa et al. (2022) reported that the deep breathing relaxation technique is effective in relieving pain, with respondents' pain levels decreasing from a scale of 6 to a scale of 2. In this case study, initial moderate pain complaints decreased to mild pain, with results showing a reduction from 5 (moderate) to 3 (mild).

Deep breathing relaxation is a non-pharmacological pain management technique that instructs patients to relieve muscle tension causing discomfort by performing deep breathing exercises, specifically by holding the breath for a maximum duration during inhalation and exhaling gradually (Antika et al., 2023).

The application of deep breathing relaxation techniques has successfully reduced pain intensity through mechanisms involving muscle relaxation. This relaxation allows for vasodilation of blood vessels, increasing blood flow. Additionally, deep breathing relaxation techniques can stimulate the release of endogenous opioids in the body, including

endorphins and enkephalins (Susilawati et al., 2023).

Relaxation is an effective method for reducing pain in clients experiencing discomfort. Breathing exercises and relaxation techniques have been shown to reduce muscle tension, thereby alleviating pain from muscle tension. In practice, the nurse instructs the client to perform deep breathing exercises, breathe slowly (holding inspiration maximally), and exhale slowly. In addition to reducing pain intensity, deep breathing relaxation techniques have been shown to improve lung ventilation and increase blood oxygenation (Saputri et al., 2022).

CONCLUSION

The application of deep breathing relaxation techniques for Mrs. I, who was diagnosed with acute pain, showed a change or reduction in pain intensity after 2x24 hours. On the second day, the patient reported that the pain was beginning to subside, with the pain scale indicating 3 out of 10 (mild pain). It is recommended that future researchers investigate the effectiveness of other non-pharmacological therapies/techniques, such as aromatherapy, for managing acute pain in postpartum women.

REFERENCES

- Antika, F. Y., Ajiningtyas, E. S., & Astuti, D. (2023). Teknik Relaksasi Nafas Dalam Pada Ny. M Untuk Menurunkan Skala Nyeri Post Partum Dengan Laserasi Perineum di PKD Kedungjati. *Jurnal Ilmiah Multidisiplin*, 1(7), 13–19. <https://doi.org/10.5281/zenodo.8179958>
- Teknik
- Dinkes Banyumas. (2022). *Profil Kesehatan 2022* (Issue 1). [https://static.banyumaskab.go.id/website/documents/dinkes/2023/Profil Kesehatan Tahun 2022 Dinas Kesehatan Kab. Banyumas.pdf](https://static.banyumaskab.go.id/website/documents/dinkes/2023/Profil%20Kesehatan%20Tahun%202022%20Dinas%20Kesehatan%20Kab.%20Banyumas.pdf)
- Fajriani, F., Arif, Y., & Deswita, D. (2021). Analisis Faktor yang Berhubungan dengan Pelaksanaan Manajemen Nyeri

- Non Farmakologis Oleh Perawat Pelaksana di Irna Non Bedah RSUP Dr M Djamil Padang Tahun 2015. *Jurnal Ilmiah Universitas Batanghari Jambi*, 21(3), 1347.
<https://doi.org/10.33087/jiubj.v21i3.1746>
- Kemntrian Kesehatan RI. (2024). *Agar Ibu dan Bayi Selamat*.
<https://sehatnegeriku.kemkes.go.id/baca/blog/20240125/3944849/agar-ibu-dan-bayi-selamat/>
- Ningrum, E. W., & Nurhoeriyah. (2018). Hubungan Antara Riwayat Hipertensi Dengan Kejadian Preeklamsia Pada Ibu Bersalin di RSUD Prof. Dr. Margono Soekardjo Purwokerto. *Analytical Biochemistry*, 11(1), 1–5.
- Prabawa, R. S., Dami, M., & Purwaningsih, I. (2022). Implementasi Terapi Relaksasi Nafas Dalam Untuk Penurunan Nyeri Pada Pasien Fraktur Post Operasi. *Jurnal Keperawatan*, Vol.1, 384–394.
<https://jurnal.stikesbethesda.ac.id/index.php/p/article/view/297/203>
- Saputri, R., Ayubbana, S., & HS, S. A. S. (2022). Penerapan Relaksasi Nafas Dalam terhadap Nyeri Kepala Pasien Hipertensi di Ruang Jantung RSUD Jend. Ahmad Yani Kota Metro. *Jurnal Cendikia Muda*, 2(4), 506–513.
<https://jurnal.akperdharmawacana.ac.id/index.php/JWC/article/view/378/239>
- Susilawati, Utari Kartaatmadja, F. S., & Suherman, R. (2023). Pengaruh Teknik Relaksasi Nafas Dalam Terhadap Intensitas Nyeri Pasien Post Partum Sectio Caesarea Di Ruang Rawat Nifas Rsud Sekarwangi Sukabumi. *Media Informasi*, 19(1), 13–19.
<https://doi.org/10.37160/bmi.v19i1.53>
- Vitaisabella, Y., Maryati, S., Kesehatan, P., & Husada, K. (2022). Penerapan Teknik Relaksasi Tarik Nafas Dalam Pada Pasien Hipertensi Dengan Nyeri Kepala Akut Di Puskesmas Pajangan Bantul. *Jurnal STIKES Bethesda*, 3(6), 415–423.