

---

## **Combination of Autogenic Relaxation Therapy with Instrumental Audiomusic to Reduce The Pain Scale of Patients After Caesarean Section**

**Dian Ayu Ningsih Ismi, Aprina\*, Purwati**

Nursing Department, Poltekkes Kemenkes Tanjung Karang, Bandar Lampung, Indonesia

---

### **ARTICLE INFO**

---

#### **Article history**

Received date  
07 Feb 2024

Revised date  
10 Mar 2024

Accepted date  
20 Mar 2024

---

#### **Keywords:**

Numerical Rating Scale;  
Non-pharmacological  
therapy;  
SC pain.

### **ABSTRACT**

Pain on the first day of cesarean section creates psychological anxiety and fear of pain after the drug reaction ends. One method of pain management is autogenic relaxation therapy using instrumental audiomusic media. This study aims to determine the effect of autogenic relaxation using instrumental audio music on the pain scale in post-cesarean section patients at RSUD Dr. H. Abdul Moeloek Lampung Province. This research uses a quantitative approach with a pre-experimental one-group pretest-posttest design. The research was conducted from February to March 2023. The population in this study consisted of patients after the cesarean section. The sampling method in this research used the Accidental Sampling technique and obtained a sample of 32 respondents. The instrument used to measure the pain scale is the Numerical Rating Scale (NRS), an observation sheet that records the pain scale before and after the procedure. Statistical tests use the Wilcoxon signed rank test. The research results showed that the average pain scale decreased from 7.28 to 6.21 before and after the intervention. Thus, a p-value of 0.000 was obtained ( $p\text{-value} < 0.05$ ), which means that there was an effect of autogenic relaxation using instrumental audio music on the pain scale in post-cesarean section patients at RSUD Dr. H. Abdul Moeloek, Lampung Province in 2023. Researchers suggest that nurses or midwives treat pain not only with pharmacological therapy but also with non-pharmacological therapy, namely autogenic relaxation with instrumental audio-music media.

---

#### **Corresponding author:**

#### **Aprina**

Nursing Department, Poltekkes Kemenkes Tanjung Karang, Bandar Lampung, Indonesia  
Email: [aprinamurhan@yahoo.co.id](mailto:aprinamurhan@yahoo.co.id)

---

## **INTRODUCTION**

Cesarean section is a birth that is made where the fetus is removed through an incision in the uterus and abdomen in one piece, and the fetal mass is above 500 grams (Ulandari et al., 2022).

According to the World Health Organization (WHO) in Mulyainuningsih et al., (2021), about 5-15% of births worldwide are performed via cesarean section. Data from the WHO's Global Survey on Maternal and Perinatal Health 2021 shows that 46.1% of all deliveries are by cesarean section. Based on the 2012 Indonesian Demographic and Health Survey (IDHS) results, 12% of deliveries were performed by cesarean section. The incidence rate was 7% higher in the 2012 IDHS compared to the 2007 IDHS results (Mulyainuningsih et al., 2021). Based on the 2018 Basic Health Survey results, the cesarean section rate in Indonesia exceeds the maximum WHO standard of 5-15%. The cesarean section rate in Indonesia

was 19.8% from a sample of 31,764 mothers who gave birth in the last five years and were surveyed from 33 provinces (Ministry of Health RI, 2018).

Based on previous research by Sukma & Sari (2020) about the Influence of Pregnancy Age Factors on the Type of Delivery at Dr. H. Abdul Moeloek Lampung Provincial Hospital, the number of deliveries was 1461. Of these data, 606 spontaneous births, 92 forceps extractions, 454 vacuum extractions, and 309 cesarean sections were performed.

Wounds in the abdominal wall and uterus cause pain (superficial pain) by severing nerve fibers and also by pressure of the sutures. (Morita et al., 2020). The pain associated with a cesarean section is 27.3% higher compared to standard delivery, which is only 9%. Pain on the first day of a cesarean section causes psychological anxiety and fear of pain after the drug reaction ends (Utami et al., 2016).

For some women, effective and appropriate treatment is required to minimize

pain and not harm their health. During recovery, when the pain medication wears off, the client can still feel pain. There is evidence that many patients experience pain even after taking painkillers (Haryani et al., 2020). Medications and treatments commonly used in pharmacological and non-pharmacological pain management include stimulation and massage techniques, transcutaneous electrical nerve stimulation, distraction, and autogenic relaxation techniques (Syamsuddin & Modjo, 2014). Relaxation techniques are non-pharmacological pain management techniques that can be used to manage acute pain, especially pain due to diagnostic and surgical procedures.

Post-cesarean section patients are often afraid to move their limbs for fear of pain. Because of the pain, patients usually do not do independent activities and do not protect their environment. Pain management at Abdul Moeloek Hospital: administration of analgesics such as ketorolac, mefenamic acid, and paracetamol, as well as warm compresses and deep breath relaxation techniques. However, autogenic relaxation with instrumental audiomusic media has never been applied.

Autogenic relaxation comes from within through words, short phrases, or thoughts that can create peace. In autogenic relaxation, the self imagines a calm state and focuses on regulating breathing and heart rate. This relaxation helps increase parasympathetic nerve activity and further inhibits sympathetic nerve activity. The autogenic relaxation technique aims to bring the mind to an optimal mental state (Saunders, 2012).

Based on previous research conducted by Sonhaji et al. (2021), autogenic relaxation is a relaxation technique that can produce endorphins, which act as natural relaxants and are produced by the brain. This hormone creates a pleasant feeling and thus can relieve pain. According to Burhan et al. (2022) study, there is an increase in comfort status after autogenic relaxation therapy.

In addition to autogenic relaxation therapy that can be used in patients with pain after a cesarean section, there is another relaxation therapy that can relieve pain. This therapy is done by listening to instrumental music. Music therapy is a health therapy that uses music to treat problems related to various factors of individual psychological, cognitive, social, and physical needs (Mappagerang et al., 2017).

According to Smeltzer & Bare (2002), the purpose of music therapy is to improve mental and physical quality through sound stimulation

consisting of form and style, timbre, rhythm, harmony, and melody, which are adjusted to produce music that has benefits for mental and physical health (Bingan, 2020). Music can improve, heal, and maintain mental, social, physical, emotional, and spiritual health as a therapy. Music has many benefits; it is fun, soothing, relaxing, structured, and universal. Since human breathing, heart rhythm, and pulse are all rhythmic and repetitive, music can be a companion in restoring and preventing pain (Bingan, 2020). Based on research conducted by Mappagerang et al. (2017), music therapy relaxes patients and reduces pain levels.

Based on some of the descriptions above, the researcher combined relaxation with audiomusic instrumental media to reduce the pain scale in post-cesarean section patients. When these two procedures are combined, the results are very effective and efficient on the pain scale, namely through the production of endorphins by the brain, which function as a natural tranquilizer. In addition, both focus on breathing and heart rate to create a sense of well-being and reduce pain. So researchers are interested in researching autogenic relaxation with audiomusic instrumental media on pain scale in post sectio caesarea patients at Dr. H. Abdul Moeloek Lampung Hospital.

## **METHOD**

This type of research is quantitative with a pre-experimental design. The research design used pre- and post-tests of one group. The research was conducted in February-March 2023. The population of this study consisted only of post-cesarean section patients at Dr. H. Abdul Moeloek Hospital Lampung Province, with a sample size of 32 respondents according to the calculation using the Lameshow formula.

The sampling technique used accidental side and met the inclusion criteria consisting of patients with composmentis status, patients with conventional cesarean section after completion of surgery for more than 6 hours, patients aged 20-45 years, willing to undergo the procedure, patients with signed informed-consent; Exclusion criteria include patients with hearing loss, heart disease, diabetes mellitus, Covid-19 positive patients and hypertension patients. and patients who are not willing to be respondents.

An observational pain scale was used to collect data. Post-cesarean section patients received non-pharmacological treatment (autogenic relaxation with instrumental audio-

music media), and the pain scale was measured with a Numerical Rating Scale (NRS) pain meter.

Data collection is carried out in 3 stages, the first stage is that the researcher identifies patients who meet the inclusion criteria, then explains the research procedure and the purpose and purpose of the research to be carried out, if the respondent is willing to participate in this study the research subject signs informed consent, the researcher makes an agreement with the respondent to get a relaxation technique that will be received for approximately 20 minutes, then explains the standard operating procedures of autogenic relaxation and instrumental music, then the researcher conducts a pre-test for pain assessment with a numeric rating scale, for the observation sheet will be filled in by the researcher; in the second stage, the researcher intervenes by giving mp3 and attaching earphones to the patient to listen to a combination of autogenic relaxation and instrumental music classic and the duration of the intervention is 20 minutes; and in the third stage the researcher conducts a post-test for pain assessment with a numeric rating scale after 20 minutes of intervention, after the data is collected, the researcher checks the completeness of filling in the observation sheet data, then processes the data obtained with a computer program, then after the statistical analysis is done, it is interpreted in the discussion and conclusions are compiled into the research report.

Data analysis used is univariate and bivariate analysis. Univariate analysis in this study is the independent variable (autogenic relaxation with instrumental audio music media) and the dependent variable (pain scale in post-sectio caesarea patients). The statistical test used was the Wilcoxon signed rank. This research has undergone an ethical review process and obtained an Ethical Exemption with number 015/KEPK-TJK/I/2023 by the Health Research Ethics Committee of the Poltekkes Kemenkes Tanjung Karang.

## RESULTS

Table 1 shows that most respondents are in early adulthood (26-35 years), as many as 17 people (53.1%). Most occupations as housewives were 23 people (71.9%). Most respondents came from the Javanese ethnic group, 20 people (62.5%). Most respondents, 24 (75%), had no previous surgical experience.

**Table 1. Respondent characteristics**

Respondent characteristics	n	%
<b>Age</b>		
Late adolescence (17-25)	7	21.9
Early adulthood (26-35)	17	53.1
Late adults (36-45)	8	25.0
<b>Jobs</b>		
Housewife	23	71.9
Civil servants	9	28.1
<b>Tribal Nation</b>		
Lampung	9	28.1
Jawa	20	62.5
Palembang	2	6.3
Sunda	1	3.1
<b>Operation Experience</b>		
Ever	8	25.0
Never	24	75.0

Table 2 shows the average measurement of the pain scale before intervention was 7.28. The standard deviation results were also obtained at .729; the lowest pain scale was 6, the highest pain scale was 8, and the average pain scale measurement after the intervention was 6.12. The standard deviation results were also obtained at .793; the lowest pain scale was 4, and the highest pain scale was 7.

**Table 2. Distribution of pain scale before and after autogenic relaxation with audiomusic media instrumental**

Pain Scale	Mean	Median	Std. Deviasi	Min - Max
Pre	7.28	7.00	.729	6-8
Post	6.12	6.00	.793	4-7

Table 3 concluded that the average difference in pain scale is 1.16 before and after intervention. The results of statistical tests with the Wilcoxon Signed Ranks test obtained a p-value of 0.000 ( $p\text{-value} < 0.001 < \alpha 0.05$ ); it was concluded that there was an effect of giving autogenic relaxation with instrumental audiomusic media on the pain scale in post sectio caesarea patients at Dr. H. Abdul Moeloek Hospital, Lampung Province in 2023.

**Table 3. Difference analysis test results pain measurement pre-test post-test autogenic relaxation with audiomusic media instrumental**

Pain Scale	n	Mean	Std. Deviasi	Sum of Ranks	p-value
Pre	32	7.28	.729	465.00	<0.001
Post	32	6.12	.793		

## **DISCUSSION**

### **Pain scale before autogenic relaxation with instrumental audiomusic media on pain scale**

The results of the average pain scale analysis test on 32 respondents found that the average pain before the autogenic relaxation intervention with instrumental audio-music media was 7.28.

The average results of the pain scale before intervention in post-sectio caesarea patients align with the research of Mappagerang et al. (2017), showing that the average value of pain levels before intervention was 8.33. Also supported by research by Amalia and Agustina (2020), they obtained the average pain scale results before intervention in post-sectio caesarea patients, namely 7.75.

According to the theory of Potter and Perry (2016), the elderly are at high risk of being in situations that cause them pain. The reason is that the elderly suffer from pathological diseases that lead to pain. Elderly people who suffer from pain can experience significant functional impairments such as mobilization, socialization in the home environment, self-care activities, and decreased activity tolerance.

In addition, Potter and Perry's theory (2016) also says that cultural beliefs and values can affect how a person deals with pain. Individuals learn what is expected and accepted in their culture, including how to respond to pain.

This is also supported by the theory of Potter & Perry (2016) that when a person has experienced a series of pains that do not go away over some time, or when they experience severe pain, anxiety or even fear can arise. On the other hand, when a person experiences the same type of pain repeatedly but can be alleviated, they find it easier to interpret the pain sensation. They are more willing to accept the actions needed to relieve the pain.

This study aligns with the research of Febriaty and Anita (2021), who obtained data that ages 20 to 35 years (65.7%) feel pain more often than those over 35 and under 20 years. At the age of 20-35 years, a person is still learning to control his pain, so many patients at the age of 20-35 years experience pain.

In addition, in the research by Febriaty and Anita (2021), it was also found that most respondents were Javanese (54.1%). The customs taught by ethnic groups vary, as does the way culture teaches a person to feel pain.

Also supported in research by Febriaty & Anita (2021), it was found that most respondents

(65.5%) had no previous surgical experience. Respondents have no experience with surgery but are not familiar with pain and, therefore, do not know how to feel pain.

In the researcher's opinion, they are seen from the characteristics of respondents' age, ethnicity, and history of surgical experience, where in the age characteristics of most respondents, namely 17 people (53.1%) in the early adult category (26-35 years). Researchers assume that in early adulthood, a person will be more able to withstand and control pain. In early adulthood, cell function is still undergoing cell regeneration (formation), so a person's adaptive response to pain will be lower.

However, when viewed from ethnicity, most respondents were Javanese, as many as 20 people (62.5%). Researchers assume that respondents with Javanese ethnicity are more closed in responding to pain, while those with Lampung and Palembang ethnicity will express their pain response more.

Meanwhile, when viewed from the history of the respondents' surgical experience, most of the respondents had no previous history of surgery, as many as 24 people (75%). Researchers assume that respondents who have never had a history of surgery have a higher pain scale than respondents who have had surgery. Respondents who have never had surgery may be more anxious about the pain they feel, so their perception of the pain they feel increases. Meanwhile, someone who has experienced a history of surgery and feels prolonged pain will be more tolerant of pain.

### **Pain scale after autogenic relaxation with instrumental audiomusic media on pain scale**

The results of the analysis test of the average pain scale in 32 respondents found that the average pain after autogenic relaxation intervention with instrumental audio-music media was 6.12.

The decrease in pain scale is not the same between one individual and another. This study aligns with the theory of Potter and Perry (2006) that relatively small changes in value occur due to several factors. One of them is that due to subjectivity, there are no two occurrences of the same pain that cause the same response or feeling in individuals.

This research is in line with the research of Saputra et al. (2023), showing that the average autogenic respondent's head pain scale on a pain scale of 5 (range 0-10) before being given relaxation and the average respondent's head pain

on a scale of 3 (range 0-10) after being given autogenic relaxation.

Also supported was research by Mappagerang et al. (2017), who obtained the research results on the average pain scale after the intervention, namely 7.36, with an average difference of 0.98.

According to the researcher, the decrease in the average pain scale in respondents is due to autogenic relaxation combined with instrumental music, which can control blood pressure, respiratory function, blood flow in the body, and heart frequency becomes smooth so that it has a positive impact in the form of calmness for someone who listens to it, which can reduce a person's anxiety and pain.

### **Effect of autogenic relaxation with instrumental audiomusic media on pain scale in post-sectio caesarea patients**

Based on the study's results, there was a decrease in the average pain scale before and after autogenic relaxation with instrumental audiomusic media by as much as 1.16. The results obtained indicate that there is an effect of giving autogenic relaxation with instrumental audiomusic media on the pain scale in post-sectio caesarea patients at Dr. H. Abdul Moeloek Hospital, Lampung Province, in 2023.

This study aligns with the theory of Smeltzer and Bare (2002) that relaxation techniques can relieve pain by releasing muscle stiffness that makes pain.

Relaxation techniques allow for individual self-control in pain and physical and mental stress in times of illness. Autogenic relaxation allows individuals to control various bodily functions such as blood pressure, breathing, blood circulation, and heart rate to achieve a relaxed state. Autogenic training can train individuals for self-suggestion. The goal is for the individual to relax their muscles and control or reduce emotional responses (Asmadi, 2012).

In autogenic relaxation, impulses are transmitted through non-nociceptive afferent nerve fibers, causing the substantia gelatinosa to close and thus preventing and reducing pain stimulation (Septiani et al., 2020). The two-gate control theory states that in the thalamus, another substantia gelatinosa regulates trigeminal nerve pain impulses. Upon relaxation, pain impulses

from the trigeminal nerve are inhibited and cause the substantia gelatinosa of the thalamus to close, stopping stimulation of the cerebral cortex and reducing pain intensity.

The effects of instrumental music can decrease sympathetic nervous system activity, reduce anxiety, heart rate, blood pressure, and respiratory rhythm, and have a calming effect on sleep and muscle relaxation (Septiani et al., 2020).

This research is in line with the research of Saputra et al. (2023) that the average respondent's head pain scale was on a pain scale of 5 (range 0-10) before being given autogenic relaxation, and the average autogenic respondent's head pain was on a scale of 3 (range 0-10) after being given relaxation. The results of the paired T-test showed that  $H_a$  was accepted, indicating an effect of autogenic relaxation on reducing hypertension pain ( $p$ -value  $0.000 < 0.05$ ).

It is also supported by the research of Mappagerang et al. (2017) obtained the results of the study of the average value of the pain scale 8.33 before intervention and after the intervention, namely the mean 7.36 with an average difference of 0.98, standard deviation 0.235 with a min value of 1 max 1 with a  $p$ -value=0.0001 with  $p < \alpha = (0.05)$  which is  $0.0001 < 0.05$ , it is concluded that there is an effect of music therapy on pain levels in fracture patients at Nene Mallomo Hospital, Sidrap Regency, which means  $H_0$  is rejected and  $H_a$  is accepted.

According to the researcher, the effect of autogenic relaxation with instrumental audiomusic media on the respondent's pain scale is because autogenic relaxation by breathing and closing the eyes can help a person become more relaxed and focused, allows the person to control respiratory function, blood pressure, blood circulation in the body and a stable heart rate. They were combined with the sound of instrumental music that provides positive effects for the listener in the form of calmness and coolness. This results in a relaxing effect that can ease a person's pain.

### **CONCLUSIONS**

Autogenic relaxation with instrumental audiomusic media affects the pain scale in post-section caesar patients at Dr. H. Abdul Moeloek Hospital, Lampung Province.

## REFERENCES

- Amalia, M., & Agustina, M. (2020). Pengaruh Teknik Relaksasi Abdomal Breathing terhadap Penurunan Nyeri pada Ibu Post Sectio Caesarea. *Jurnal Kampus STIKes YPIB Majalengka*, 8(2), 141–149. <https://doi.org/https://doi.org/10.51997/jk.v8i2.116>
- Asmadi. (2012). *Teknik Prosedural Keperawatan dan Aplikasi Kebutuhan Dasar Klien*. Jakarta: Salemba Medika.
- Bingan, E. C. S. (2020). Terapi Musik Instrumental Dayak Terhadap Pengurangan Nyeri Haid (Dismenorea) Pada Remaja Putri Kota Palangka Raya. *JPP (Jurnal Kesehatan Poltekkes Palembang)*, 15(1), 14–20. <https://doi.org/10.36086/jpp.v15i1.454>
- Burhan, S., Erika, K. A., & Said, S. (2022). Efektifitas Relaksasi Otot Progresif dalam Menurunkan Kecemasan: Tinjauan Literatur. *Jurnal Ilmiah Keperawatan (Scientific Journal of Nursing)*, 8(1), 33–40. <https://doi.org/10.33023/jikep.v8i1.802>
- Febriaty, S., & Anita. (2021). Kombinasi Teknik Tarik Napas Dalam dan Aromaterapi Lemon Terhadap Penurunan Intensitas Nyeri Pada Pasien Post Operasi Sectio Caesarea. *Jurnal Ilmu Keperawatan Indonesia (JIKPI) E-ISSN (Vol. 2, Issue 1)*. <https://doi.org/https://doi.org/10.57084/jikpi.v2i1.642>
- Haryani, F., Sulistyowati, P., & Sari Ajiningtiyas, E. (2020). Literature Review Pengaruh Teknik Relaksasi Napas Dalam Terhadap Intensitas Nyeri Pada Post Operasi Sectio Caesarea. *Journal of Nursing & Health*, 15–24. <http://jurnal.politeknikyakpermas.ac.id/index.php/jnh/article/view/142>
- Mappagerang, R., Tahir, M., & Mapped, F. (2017). Pengaruh Pemberian Terapi Musik Terhadap Penurunan Tingkat Nyeri Pada Pasien Fraktur. *Jurnal Ilmiah Kesehatan Pencerah*, 6, 91–97.
- Ministry of Health RI. (2018). *Laporan Riset Kesehatan Dasar*. Jakarta: Balitbangkes.
- Morita, K. M., Amelia, R., & Putri, D. (2020). Pengaruh Teknik Relaksasi Benson Terhadap Penurunan Nyeri Pada Pasien Post Operasi Sectio Caesarea di RSUD Dr. Achmad Mochtar Bukittinggi. *Jurnal Riset Hesti Medan Akper Kesdam I/BB Medan*, 5(2), 106. <https://doi.org/10.34008/jurhesti.v5i2.197>
- Mulyainuningsih, W. O. S., Mutmainna, A., & Kasim, J. (2021). Faktor Determinan Indikasi Sectio Caesarea. *JIMPK: Jurnal Ilmiah Mahasiswa & Penelitian Keperawatan*, 1(3), 400–407. <http://www.libnh.stikesnh.ac.id/index.php/jimpk/article/view/619>
- Potter, P. A., & Perry, A. G. (2006). *Fundamental Keperawatan*. Jakarta: EGC.
- Saputra, S., Anwar Huda, S., & Medika Suherman Jalan Raya Industri Pasir Gombang, U. (2023). Penurunan Nyeri Kepala Melalui Teknik Relaksasi Autogenic Pada Penderita Hipertensi. *Jurnal Ilmu Keperawatan Dan Kebidanan*, 14(1), 345–353.
- Saunders, S. (2012). *Autogenic Therapy: Short term therapy for long term gain*. British Autogenic Society, Chairman.
- Septiani, W., Puspanegara, A., & Hendriana, Y. (2020). Pengaruh Instrumental Therapy Music Terhadap Kualitas Tidur Pada Pasien Post Operasi Mayor Di Ruang Bougenville RSUD 45 Kuningan Tahun 2019. *National Nursing Conference (Vol. 1, No. 1, pp. 30–30)*. <https://doi.org/10.34305/nnc.v1i1.136>
- Smeltzer, S. C., & Bare, B. G. (2002). *Buku Ajar Keperawatan Medikal Bedah*. Jakarta: EGC.
- Sonhaji, S., Sawitry, S., & Siahaya, S. (2021). Penurunan Nyeri Sendi Pada Lansia Dengan Terapi Relaksasi Autogenik Dan Terapi Guided Imagery. *Jurnal Ilmiah Keperawatan*, 16(1), 93–100. <https://doi.org/10.30643/jiksh.v16i1.125>
- Sukma, D. R., & Sari, R. D. P. (2020). Pengaruh faktor usia ibu hamil terhadap jenis persalinan di RSUD DR. H. Abdul Moeloek Provinsi Lampung. *Majority*, 9(2), 16–20. <http://jurnalmajority.com/index.php/majority/article/view/38>
- Syamsuddin, F., & Modjo, D. (2021). Pengaruh Pemberian Teknik Relaksasi Autogenik Terhadap Penurunan Tingkat Nyeri Pada Pasien Post Operasi Appendiktomi. *Zaitun (Jurnal Ilmu Kesehatan)*, 3(1). <https://journal.umgo.ac.id/index.php/Zaitun/article/view/1252>
- Ulandari, S., Azizah, E. N., & Wulandari, R. F. (2022). Relationship Between Early Mobilization and The Wound Healing Process of Post Sectio Caesaria in The Maternity Room of RSUD Kabupaten Kediri. *Jurnal Ners dan Kebidanan (Journal of Ners and Midwifery)*, 9(2).
- Utami, S. (2016). Efektivitas aromaterapi bitter orange terhadap nyeri post partum sectio caesarea. *Unnes Journal of Public Health*, 5(4), 316–323. <http://journal.unnes.ac.id/sju/index.php/ujph>