

ARTICLE INFORMATION

Received: July 07, 2026

Revised: July 25, 2026

Available online: July 28, 2026

at: <https://e-jurnal.ipohrr.com/index.php/mchc>

Association between preoperative anxiety and postoperative pain intensity among women undergoing cesarean section

Komalasari, Umi Latifah*, Elsy Juni Andri Kariny, Riona Sanjaya

Universitas Aisyah Pringsewu

Corresponding author: *Email: latifah323@gmail.com

Abstract

Background: Preoperative anxiety is a common psychological response among women undergoing cesarean section and may increase postoperative pain perception through physiological and psychological stress responses. Identifying the relationship between anxiety and pain is essential for improving perioperative maternal care.

Purpose: To determine the relationship between preoperative anxiety levels and postoperative pain intensity among women undergoing cesarean section at RSIA Mutiara Hati.

Methods: This quantitative study employed an analytical cross-sectional design. A total of 74 post-cesarean section patients were recruited using purposive sampling. Preoperative anxiety was assessed using the Hamilton Anxiety Rating Scale (HARS), while postoperative pain intensity was measured using the Numeric Rating Scale (NRS). Data were analyzed using descriptive statistics and the Gamma correlation test with a significance level of $p < 0.05$.

Results: Most respondents experienced severe preoperative anxiety (54.1%) and severe postoperative pain (51.4%). Statistical analysis demonstrated a significant relationship between preoperative anxiety and postoperative pain intensity ($p = 0.015$). Women with higher preoperative anxiety were 4.09 times more likely to experience greater postoperative pain intensity (OR = 4.091; 95% CI = 1.315–12.728).

Conclusion: Preoperative anxiety was significantly associated with postoperative pain intensity among women undergoing cesarean section. Early identification and management of anxiety through preoperative education, therapeutic communication, and psychological support may help reduce postoperative pain and improve maternal recovery.

Keywords: Cesarean Section; Pain Intensity; Postoperative Pain; Preoperative Anxiety.

INTRODUCTION

Caesarean section (CS) is an alternative for women in choosing a delivery process in addition to medical and non-medical indications. Caesarean section operations with medical indications include pelvic contractures, a history of Caesarean section, an imbalance between the size of the head and pelvis, fetal distress, breech position, placental abruption, placenta previa, narrow pelvis, too large a fetus, heavy bleeding, eclampsia (high blood pressure that can cause cramps) and prolonged labor (Aprina & Puri, 2016).

Caesarean section can affect the mother's psychological condition, especially in the form of anxiety in the pre-anesthesia phase which arises due to the mother's fear of the surgical procedure and the anesthetic that will be administered, including concerns about the effects of anesthetic drugs, loss of consciousness, and the safety of herself and her baby during the operation. In addition, Caesarean sections also have various risks and complications such as surgical wound infections, bleeding, surgical failure, serious risk of death, and post-operative pain. Anxiety is an emotional condition in the form of

feelings of insecurity, tension, and worry about an unclear threat (Hayati & Sugiyanto, 2019).

According to the World Health Organization (WHO), in 2021, cesarean sections globally accounted for more than 1 in 5 births, or approximately 21% (World Health Organization, 2021). In 2020, the cesarean section rate in Indonesia was 20%. In 2021, it reached 24.6%, and in 2022, it increased to 28.2%. Meanwhile, in Indonesia, based on data from the 2023 Indonesian Health Survey (SKI), the prevalence of cesarean sections was 25.9% (Ministry of Health of the Republic of Indonesia, 2023). According to data from the Lampung Provincial Health Office, the number of cesarean deliveries in Lampung Province in 2020 was 15,679 out of 171,975 deliveries, or approximately 9.1%. The number of cesarean deliveries in Lampung Province increased in 2021 to 17,748 out of 173,446 deliveries, or approximately 10.2% (Lampung Provincial Health Office, 2023).

Anxiety is a vague feeling of fear that is not justified by the situation. Anxious individuals experience discomfort or fear but are unaware of the underlying cause. Anxiety lacks a clear, identifiable stimulus (Videback, 2018). Psychological impacts such as anxiety are closely related to mothers who will undergo a cesarean section. Feelings of worry and fear will trigger an anxiety reaction in the mother giving birth. Some strategies to reduce anxiety in mothers facing a CS include providing information and knowledge about CS deliveries so that families can provide psychological support to reduce this anxiety (Izzah et al., 2022).

Anxiety arising from unmanaged anxiety can stimulate the HPA (hypothalamic-pituitary-adrenal) axis, which can lead to the release of stress hormones, including adrenocorticotrophic hormone (ACTH), cortisol, catecholamines, β -endorphin, growth hormone (GH), prolactin, and luteinizing hormone (LH)/follicle-stimulating hormone (FSH). These stress hormones can cause systemic vasoconstriction, including constriction of the uterine-placental vessels, which disrupts blood flow to the fetus, thus causing fetal distress. Furthermore, they can reduce maternal and fetal immunity by increasing plasma cortisol levels (Fatmawati & Pawestri, 2021).

The impact of preoperative anxiety is associated with increased postoperative pain, analgesic requirements, longer hospital stays, and the

incidence of postpartum depression (Rahmawati et al., 2017). Efforts to manage preoperative anxiety use pharmacological and nonpharmacological methods. Pharmacological treatment includes administering anti-anxiety medications, while nonpharmacological management includes relaxation, hypnosis, and distraction techniques such as listening to music (Hidayatullah et al., 2023).

Although previous studies have reported an association between preoperative anxiety and postoperative pain among patients undergoing cesarean section, most studies have focused on the effectiveness of anxiety-reduction interventions or pain management strategies rather than examining the direct relationship between anxiety levels and postoperative pain intensity. In addition, evidence from maternity hospitals in Indonesia, particularly in Lampung Province, remains limited. Differences in patient characteristics, healthcare settings, and perioperative care may influence anxiety and pain outcomes, making local evidence essential. Therefore, this study aimed to determine the relationship between preoperative anxiety levels and postoperative pain intensity among women undergoing cesarean section at RSIA Mutiara Hati.

RESEARCH METHOD

This study employed a quantitative analytical design using a cross-sectional approach to examine the relationship between preoperative anxiety levels and postoperative pain intensity among women undergoing cesarean section. The study was conducted at RSIA Mutiara Hati in January 2026.

The study population comprised all women who underwent cesarean section during the study period, totaling 92 patients. The required sample size was determined using the Krejcie and Morgan sample size table, resulting in 74 respondents. Participants were selected using a purposive sampling technique based on predetermined inclusion and exclusion criteria.

The inclusion criteria were women aged 16–60 years, undergoing cesarean section, fully conscious after surgery, hemodynamically stable, and willing to participate by providing informed consent. Patients with cognitive impairment, severe postoperative complications, communication difficulties, or incomplete data were excluded from the study.

Preoperative anxiety was measured using the Hamilton Anxiety Rating Scale (HARS), which

Komalasari, Umi Latifah*, Elsy Juni Andri Kariny, Riona Sanjaya

Universitas Aisyah Pringsewu

Corresponding author: *Email: latifah323@gmail.com

DOI: <https://doi.org/10.56922/mchc.v5i4.3698>

categorizes anxiety into mild, moderate, severe, and very severe levels. Postoperative pain intensity was assessed using the Numeric Rating Scale (NRS) after the patients regained full consciousness in the postoperative recovery period. The independent variable was preoperative anxiety level, while the dependent variable was postoperative pain intensity.

Data were collected through direct interviews and observation using structured questionnaires and observation sheets. Before data collection, respondents received an explanation regarding the study objectives and procedures, and written informed consent was obtained from all participants.

Confidentiality and anonymity of respondents were maintained throughout the study.

Data analysis consisted of univariate and bivariate analyses. Univariate analysis was performed to describe the frequency distribution of respondents' characteristics, preoperative anxiety levels, and postoperative pain intensity. Bivariate analysis was conducted using the Gamma correlation test because both study variables were measured on an ordinal scale. Statistical significance was determined at a p-value of <0.05. The strength of the association was presented using the Odds Ratio (OR) with a 95% Confidence Interval (95% CI).

RESEARCH RESULTS

Table Frequency of Anxiety Levels and Pain Levels (N=74)

Variable	Result	P-Value	OR	CI 95%
Preoperative Anxiety Level (n/%)		0.015	4.091	1.315-12.728
Mild	7/9.5			
Moderate	11/14.9			
Severe	40/54.1			
Very severe	16/21.6			
Pain Level (n/%)				
Mild	7/9.5			
Moderate	13/17.6			
Severe	38/51.4			
Very severe	16/21.6			

Based on Table above distribution frequency level anxiety pre-operative patients more high in category heavy. Pain level in post-cesarean section patients was higher in the severe category, as many as 38 people (51.4%) and respondents with mild anxiety tended to experience mild pain (9.5%). At moderate and severe levels of anxiety, the majority of respondents experienced severe pain (51.4% and 54.1%, respectively). Meanwhile, respondents with very severe anxiety mostly experienced very severe pain (21.6%). These results indicate a tendency for increased preoperative anxiety levels to be followed by increased pain levels in post-cesarean section patients.

DISCUSSION

Based on results study known that of the 74 respondents, some big experience anxiety heavy as many as 40 respondents (54.1%), followed by anxiety very heavy as many as 16 respondents (21.6%), were anxious currently as many as 11 respondents (14.9%), and anxiety light as many as 7 respondents (9.5%). This result show that majority pre-operative patients section Caesarea experience level high anxiety before undergo action operation.

Preoperative anxiety is response common emotions happen consequence concern to procedure surgery, anesthesia, possibility complications, as well as painful post operation. Condition the can cause response physiological in the form of improvement hormone stress that affects condition physical and psychological patient. Suspected factors contribute to

Komalasari, Umi Latifah*, Elsy Juni Andri Kariny, Riona Sanjaya

Universitas Aisyah Pringsewu

Corresponding author: *Email: latifah323@gmail.com

DOI: <https://doi.org/10.56922/mchc.v5i4.3698>

height anxiety in research This among others the lack of experience operation previously, limitations information about procedure operations, as well as concern to safety mother and baby.

Research result This in line with another study which show that pre -operative patients section Caesarea tend experience level anxiety high. Therefore that, is necessary education, communication therapeutic, and support psychological from power health for help lower anxiety patient before action operation (Suryani & Fitriani, 2017; Evriansari et al., 2019).

Based on Table is known that part big respondents experience degrees painful weight in post- section patients Caesarea that is as many as 38 respondents (51.4%). This result show that painful post operation Still become common problems experienced patient after action section caesarean section and can influence comfort and the recovery process patient.

section pain Caesarea happen consequence existence damage network during procedure surgery that causes response inflammation and stimulation receptors pain. Generally painful start felt more clear after effect anesthesia reduce or lost. Condition the can cause discomfort, limitations mobilization, disturbance rest, and influence condition emotional patient during the treatment period.

Research result This supported another theory stated that that post- section pain Caesarea appear after patient awareness and effects anesthesia start decrease so that the incision area becomes source main pain sensation. pain that appears not only nature physique but also can influence aspect psychological patient (Septyaningrum, 2021). Research result this is also in line with another studies which shows that patient with level more anxiety tall tend experience response more pain heavy after-action operation. According to assumptions researchers, the height degrees pain in post- section patients Caesarea influenced by the surgical process, response physiological body to injury network, as well as condition psychological patients who can increase perception to pain felt (Taba, 2016).

Based on bivariate analysis results in Table 4.3 obtained p-value = 0.015 (<0.05), so show there is a

meaningful relationship between level of preoperative anxiety with degrees of pain in post-section patients Caesarean section at Mutiara Hati Hospital. This result is supported by univariate analysis which shows a large share of respondents experience anxiety weight (54.1%) and degree of painful weight (51.4%). Findings indicate that the higher level of patient anxiety before surgery, so the higher tendency patients experience painful after-action caesarean section.

In theory, anxiety can increase painful perception through activation of the nervous system sympathy and release of stress hormones that causes increased muscle tension as well as decreased threshold pain. As a result, the patient becomes more sensitive to painful stimulation post operations and tends to feel more pain intensity.

Research results This is in line with another studies which shows the existence of a significant connection between level of anxiety and degrees of pain in post-section caesarean patients. According to researchers, the height anxiety before surgery can increase the patient's focus against the fear and pain that will be experienced so that aggravate painful perception after surgery. Therefore, it is necessary preoperative intervention such as education, therapeutic communication, relaxation, and psychological support to help lower anxiety and reduce painful degrees post operation (Suryani & Fitriani, 2017; Evriansari et al., 2019).

CONCLUSION

Higher preoperative anxiety was significantly associated with greater postoperative pain intensity among women undergoing cesarean section. Early anxiety management should therefore be incorporated into perioperative nursing care to improve postoperative recovery.

SUGGESTION

Hospitals are encouraged to integrate structured preoperative counseling and relaxation interventions into standard perioperative care for women undergoing cesarean section.

Komalasari, Umi Latifah*, Elsy Juni Andri Kariny, Riona Sanjaya

Universitas Aisyah Pringsewu

Corresponding author: *Email: latifah323@gmail.com

DOI: <https://doi.org/10.56922/mchc.v5i4.3698>

REFERENCES

- Aprina, A., & Puri, A. (2016). Faktor-faktor yang Berhubungan dengan Persalinan Sectio Caesarea di RSUD dr. H. Abdul Moeloek Provinsi Lampung. *Jurnal Kesehatan*, 7(1), 90-96.
- Evrianasari, N., Yosaria, N., & Ermasari, A. (2019). Teknik Relaksasi Genggam Jari Terhadap Nyeri Post Sectio Caesarea. *Jurnal Kebidanan*, 5(1), 86-91.
- Fatmawati, L., & Pawestri, P. (2021). Penurunan Tingkat Kecemasan pada Pasien Pre Operasi Sectio Caesarea dengan Terapi Murotal dan Edukasi Pre Operasi. *Holistic Nursing Care Approach*, 1(1), 25.
- Hayati, Y. N., & Sugiyanto, E. P. (2019). Penerapan relaksasi autogenik untuk mengurangi kecemasan pada pasien diabetes melitus. *Jurnal manajemen asuhan keperawatan*, 3(2), 26-31.
- Hidayatullah, R., Suryani, R. L., & Dewi, P. (2023). The Overview of the Incidence of Hypotension After Spinal Anesthesia Induction in Sectio Caesarea Patients During Intra Anesthesia at Juanda Kuningan Hospital West Java: English. *Java Nursing Journal*, 1(2), 44-50.
- Izzah, U., Hariani, W. F., Winarna, N. B. A., & Kusumawati, D. (2022). Beberapa faktor yang dapat berpengaruh pada kecemasan ibu dalam menghadapi persalinan sectio caesarea (SC) di RSI Fatimah Banyuwangi. *Jurnal Penelitian Keperawatan*, 8(2), 146-153.
- Lampung Provincial Health Office. (2023). Profil Kesehatan Lampung Tahun 2022. Retrieved from: <https://dinkes.lampungprov.go.id/download/profil-kesehatan-provinsi-lampung-tahun-2022/>
- Ministry of Health of the Republic of Indonesia. (2023). Survei Kesehatan Indonesia (SKI) 2023. Retrieved from: <https://www.badankebijakan.kemkes.go.id/hasil-ski-2023/>
- Rahmawati, P. M., Widjajanto, E., & Astari, A. M. (2017). Pengaruh Progressive Muscle Relaxation terhadap Kecemasan Ibu Pre Operasi Sectio Secarea di Ruang Bersalin. *NurseLine Journal*, 2(2), 117-125.
- Septyaningrum, I. (2021). Asuhan Keperawatan Dengan Masalah Nyeri Akut Pada Pasien Post Sectio Caesarea (Doctoral dissertation, Stikes Bina Sehat Ppni).
- Suryani, S., & Fitriani, F. (2017). Pengaruh tindakan slow stroke back massage dengan virgin coconut oil terhadap penurunan skala nyeri pada pasien post sectio caesarea di ruang nakula rs. Permata bunda purwodadi. *The shine cahaya dunia d-iii keperawatan*, 2(2).
- Taba, K. (2016). Profil Penggunaan Obat Analgetik Tanpa Resep Dokter Pada Masyarakat Yang Berkunjung ke Puskesmas Garuda Kota Bandung
- Videbeck, S. L. (2018). *Mental Nursing Textbook* (Print 3). Jakarta: EGC Medical Book Publisher.
- World Health Organization. (2021). Caesarean section rates continue to rise, amid growing inequalities in access. Retrieved from: <https://www.who.int/News/Item/16-06-2021-Caesarean-Section-Rates-Continue-To-Rise-Amid-Growing-Inequalities-In-Access>

Komalasari, Umi Latifah*, Elsy Juni Andri Kariny, Riona Sanjaya

Universitas Aisyah Pringsewu

Corresponding author: *Email: latifah323@gmail.com

DOI: <https://doi.org/10.56922/mchc.v5i4.3698>