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FACTORS RELATED TO PAIN INTENSITY POST-SC WITH SPINAL ANESTHESIA

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ABSTRACT
Pain is the most common complaint found in perioperative patients, so optimal pain management is needed. Proper pain management can be done if the officer is able to know the intensity of pain felt by the patient and what factors are related. The aim of this study was to determine the pain intensity of post-CS patients with spinal anesthesia.This quantitative correlation study with a cross-sectional approach will be conducted involving 87 respondents based on the Slovin Formula. Sampling was carried out using purposive sampling to determine the selected sample. This study will use univariate data analysis techniques (frequency distribution and percentage), and bivariate data analysis (chi-square test). The results of the data analysis showed that the majority of patients had postoperative pain intensity on a scale of <2 as many as 52 people (60%). Age factors, gravida status, BMI, preoperative analgesics, and preoperative pain intensity have p-values> 0.05, namely 0.623, 0.137, 0.341, 0.570, 0.620. It can be concluded that there is no relationship between age, BMI, pre-operative pain intensity, and pre-operative analgesic administration with post-operative pain intensity in CS patients with spinal anesthesia.

Keywords: pain; spinal anesthesia; sectio caesarea

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INTRODUCTION

Pain is a feeling of discomfort experienced by a person due to potential or actual tissue damage.(Nurhanifah & Sari, 2022). Pain is the main reason that makes someone come to the health care center. Complaints related to pain can be found in all health care services, including perioperative services. Acute postoperative pain is caused by local trauma as a result of surgical incision.(Raharjo et al., 2022). Effective pain management is essential to ensure optimal outcomes for patients undergoing surgery under anesthesia.(Chen et al., 2021).Pain management is needed not only to relieve pain, but can improve the quality of life of someone who suffers from pain. The need for health care for daily procedures, multi-modal analgesic techniques in the perioperative period with good extension of analgesia into the postoperative discharge period is very important.(Abebe et al., 2022). However, in real settings, perioperative pain management is not optimal. This is supported by the results of a study conducted by (Malikhah et al., 2021)who found that perioperative patient satisfaction with perioperative pain and discomfort indicators was found to be 13.11%.

The occurrence of pain during the perioperative period is still widely found. The results of a study conducted by(Pranata & Ekaprasetia, 2017)in Jember Regency showed that the characteristics of post-operative pain in clients with regional anesthesia (mean score = 18.1) were more severe than clients who received general anesthesia (mean score = 17.5). The results of the study conducted by(Vrancken et al., 2018)at Maastricht University Medical Center also found that out of a total of 1123 patients admitted, 182 patients experienced moderate pain (16.3%) and 136 patients experienced severe pain. The results of another study

conducted by(Lubis & Sitepu, 2021)at Delima General Hospital Medan found that in the first two hours after obstetric surgery, 52.7% experienced severe pain. However, the results of a study conducted by(Wiguna et al., 2020)at Sanglah General Hospital found different results. This study found that in patients after lower abdominal surgery who were given premedication and without premedication, the majority experienced mild pain as much as 74.7% and 50%. The differences in pain intensity found were certainly influenced by many factors.

Preoperative pain factors, anxiety and history of delayed recovery are associated with postoperative pain. This is supported by the results of a study conducted by(Hah et al., 2020)found that preoperative pain at the future surgical site (every 1-point increase in the Numeric Pain Rating Scale; HR 0.93; 95% CI 0.87–1.00; P=0.034), anxiety (every 10-point increase in the Trait Anxiety Inventory; HR 0.79; 95% CI 0.68–0.92; P=0.002), and a history of delayed recovery after injury (HR 0.62; 95% CI 0.40–0.96; P=0.034) were associated with delayed pain cessation. The results of another study conducted by(Yang et al., 2019)found different factors namely age, gender, smoking habit, Body Mass Index (BMI), and use of preoperative analgesia. The results of this study found that significant preoperative predictors of poor postoperative pain control included younger age (OR 1.18 [95% CI 1.05 to 1.32], n = 14), female gender (OR 1.29 [95% CI 1.17 to 1.43], n = 20), smoking (OR 1.33 [95% CI 1.09 to 1.61], n = 9), higher body mass index (OR 1.02 [95% CI 1.01 to 1.03], n = 2), and use of preoperative analgesia (OR 1.54 [95% CI 1.18 to 2.03], n = 6).

Caesarean section(CS) is one of the most frequent surgeries using spinal anesthesia and has a risk of post-operative pain. Based on the results of the Basic Health Research (Riskesdas) in 2013, the rate of CS deliveries is quite high in Indonesia, especially in big cities. The rate of CS deliveries in Indonesia is 9.8% with DKI Jakarta having the highest rate of CS deliveries, namely 19.9% followed by the Riau Islands (17.6%) and Bali (17.3%)(Satria et al., 2020). Buleleng Regency is a regency with a birth coverage rate in health facilities that reaches the target of above 100% and is ranked 5th.(Bali Provincial Health Office, 2019). Cases of CS delivery in Buleleng Regency occurred as many as 967 cases and ranked 4th in Bali Province.

Considering that pain management is very important to improve the function of the affected body part and improve the quality of life and there has been no literature that specifically discusses pain in CS patients after spinal anesthesia, it is deemed necessary to find out more details about the factors related to pain intensity in CS patients with spinal anesthesia. The results of this study are expected to be used as a reference in carrying out pain management. This study can provide information about which patients have a higher risk of experiencing pain, so that appropriate treatment can certainly be prepared early. The aim of this study was to determine the pain intensity of post-CS patients with spinal anesthesia.

METHOD

This quantitative correlation study will use a cross-sectional design conducted in Bali Province in August - October 2023. The population of this study is all patients who will undergo surgery with spinal anesthesia at RSU Kertha Usada, a total of 675 people.(IBS Register of Kertha Usada Hospital, 2021). The sample size involved in this study was based on the Slovin Formula of 87 people. The eligibility criteria required that patients who underwent CS with spinal anesthesia, and were willing to be research respondents. Patients with mental disorders were excluded. Sampling with purposive sampling was carried out for the respondents involved.This research will use the methodquestionnaire, where respondents will answer questions given by the researcherthen the researcher will write it on a

questionnaire sheet and use the observation method with an observation sheet.This study will use a demographic questionnaire, anxiety questionnaire, and observation sheet. The demographic data questionnaire contains name (initials), gender, age, weight, and height. The anxiety questionnaire in this study uses the Hamilton Rating Scale for Anxiety (HRS-A) which consists of 14 symptoms, namely feelings of anxiety, tension, fear, sleep disturbances, intellectual disorders, feelings of depression, somatic symptoms, sensory symptoms, cardiovascular symptoms, respiratory symptoms, gastrointestinal symptoms, urogenital symptoms, vegetative symptoms, and behavior during the interview. The HRS-A on each observed item uses a 5-level Likert scale ranging from 0 (zero present) to 4 (severe) with a Chronbach Alpha value> 0.60(Kautsar et al., 2015). The observation sheet contains data on RM number, BMI, pre-operative pain intensity, pre-operative analgesic administration, and post-operative pain intensity.

The Statistical Product and Service Solution (SPSS) version 20 application is used for data entry and analysis. The data analysis techniques that will be used in this study are univariate analysis, bivariate analysis, and multivariate analysis. The univariate analysis that will be used is the frequency distribution with a percentage or proportion measure. The bivariate analysis that will be used is the chi-suare test, if it does not meet the requirements, the Fisher's Exact Test will be used. This study has been approved by the Bali ITEKES Research Ethics Commission (Number: 04.0334/KEPITEKES-BALI/VI/2023).

RESULT

General characteristics of CS patients with spinal anesthesia

Table 1.
General characteristics of CS patients with spinal anesthesia (n=87)

Characteristics General	f	%
Age (Years)		
< 33	47	54
≥ 33	40	46
Status of Gravidity		
Primipara	18	21
Multipara	69	79
BMI (Kg/m2)		
< 28	57	66
≥ 28	30	34

Based on Table 1, it can be explained that the majority of CS patients were aged <33 years, as many as 47 people (54%), had gravida multipara status, as many as 69 people (79%), and the majority of patients had a BMI <28 Kg/m2, as many as 57 people (66%).

Preoperative pain intensity, and preoperative analgesic use

Table 2.
Preoperative pain intensity and preoperative analgesic use (n=87)

Factor	f	%
Preoperative pain		
< 3	67	77
≥ 3	20	23
Preoperative analgesia		
Yes	38	44
No	49	56

Based on table 2, it can be explained that the majority of patients had a pre-operative pain scale <3, as many as 67 people (77%), and the majority of patients did not receive pre-

operative analgesic therapy, as many as 49 people (56%).

Postoperative pain intensity in CS patients with spinal anesthesia

Table 3.
Postoperative pain intensity in CS patients with spinal anesthesia (n=87)

Post-operative pain	f	%
< 2	52	60
≥ 2	35	40

Based on table 4, it can be explained that the majority of patients had post-operative pain intensity on a scale of <2, as many as 52 people (60%).

Factors related to post-operative pain intensity in CS patients with spinal anesthesia

Table 4.
Factors related to postoperative pain intensity in CS patients with spinal anesthesia (n=87)

Factor	Preoperative pain		*p-value*
	< 2 f (%)	≥ 2 f (%)	
Age (Years)			0.632
< 33	27 (57)	20 (43)	
≥ 33	25 (63)	15 (37)	
Status of Gravidity			0.137
Primipara	8 (44)	10 (56)	
Multipara	44 (64)	25 (36)	
BMI (Kg/m2)			0.341
< 28	32 (56)	25 (44)	
≥ 28	20 (67)	10 (33)	
Preoperative analgesia			0.570
Yes	24 (63)	14 (37)	
No	28 (57)	21 (43)	
Preoperative pain			0.620
< 3	41 (61)	26 (39)	
≥ 3	11 (55)	9 (45)	

Table 4.Based on the overall results of the statistical test, it was found that the variables of age, gravida status, BMI, preoperative analgesics, and preoperative pain intensity had a p-value> 0.05, namely 0.623, 0.137, 0.341, 0.570, 0.620. So it can be concluded that there is no relationship between age, BMI, preoperative pain intensity, and preoperative analgesics with postoperative pain intensity in CS patients with spinal anesthesia.

DISCUSSION

The results of this study found that the majority of SC patients with spinal anesthesia had postoperative pain intensity on a scale of <2 as many as 52 people (60%), the analysis was carried out using pain assessment with the Numeric Rating Scale (NRS) method. The NRS scale is a scale designed to help assess the extent of pain experienced by a person and improve communication about pain with health care providers. Pain is an unpleasant sensory and emotional experience due to tissue damage that can vary in intensity (mild, moderate, severe), quality (dull, burning, sharp), duration (transient, intermittent, persistent), and distribution (superficial or deep, localized or diffuse)(Bahrudin, 2018). The intensity of postoperative pain on a scale of <2 means that the majority of post-SC patients with spinal anesthesia experience sensations towards the surgical wound on a mild scale, and can even be tolerated to be able to do minimal activities. This is supported by the results of a study conducted by(Zhang et al.,

2021)who found that female patients were perceived to be better able to control pain or to have less pain than male patients before controlling for other factors, t(196) = 3.27, P= 0.001. The results of this study are similar to the results of research conducted by(Metasari & Sianipar, 2018)who found that the level of pain for post-CS mothers at Raflessia Hospital Bengkulu was mostly on a scale of 2, as much as 35%. Different results were found by(Warsono et al., 2019)which found that the majority of post-SC patients in the Wijaya Kusuma Room of PKU Muhammadyah Cepu Hospital had a controlled severe pain scale of 21 people (70%). The difference in pain scale in post-SC patients with spinal anesthesia is certainly influenced by various factors. The results of this study revealed that age, BMI, pre-operative pain intensity, and pre-operative analgesic administration were not related to post-operative pain intensity in SC patients with spinal anesthesia.

Age factor is not associated with the intensity of post-operative pain in CS patients with spinal anesthesia. This is because the majority of patients are aged <33 years so that there has been no decline in the sensory system, especially somatosensory which is related to the mechanism of response formation to pain such as nociceptive stimulation, peripheral sensitization, and central sensitization. This is supported by research conducted by(Masloman et al., 2018)who found that there was a relationship between age and pain (p value = 0.000, R = 0.818), where the majority of patients were aged 56-65 years as much as 32.5%. The results of this study are in line with the results of the study conducted by(Maryuni, 2020)who found that there was no relationship between age and labor pain. However, different results were found by(Boggero et al., 2015)found that there was a significant interaction supporting the primary hypothesis that aging is associated with decreased distress at high levels of pain intensity.

The BMI factor is not associated with the intensity of post-operative pain in CS patients with spinal anesthesia. This is because the majority of patients have a BMI <28 Kg/m2, which means that patients have a nutritional status in the normal BMI category - obesity and not more than 40 Kg/m2. This is supported by(Astuti et al., 2019)who found that there was no relationship between BMI and complaints of lower back pain in garbage collectors in Bandung Wetan District. However, different results were found by(Higgins et al., 2020)found that there was a relationship between BMI and pain (nadir = 27 kg/m2), with the severely obese (BMI ≥ 40 kg/m2) more likely to report pain. The results of another study conducted by(Oktorika et al., 2020)also found that there was a significant relationship between BMI and the incidence of dysmenorrhea pain at SMA Negeri 2 Kampar.

Preoperative pain factors were not associated with postoperative pain intensity in CS patients with spinal anesthesia. This is because the preoperative pain scale described in this study cannot describe the real pain scale of the patient. The use of preoperative analgesics in almost half of the patients can certainly affect the patient's subjectivity to the pain they feel. Analgesics are drugs that selectively reduce pain by acting in the central nervous system or on peripheral pain mechanisms, without significantly changing consciousness. This is supported by(Ulya et al., 2023)which states that analgesic drugs inhibit the cyclooxygenase enzyme so that the conversion of arachidonic acid to prostaglandin-G2 is disrupted and is able to reduce pain. However, different results were found by(Hah et al., 2020)found that preoperative pain at the surgical site in the future (every 1-point increase in the Numeric Pain Rating Scale; HR 0.93; 95% CI 0.87–1.00; P=0.034).

The factor of preoperative analgesic use was also not associated with the intensity of postoperative pain in CS patients with spinal anesthesia. This is because the majority of post-

CS patients are still under the influence of anesthetic drugs while in the recovery room. This is supported by. However, different results were found by(Yang et al., 2019)found that the use of preoperative analgesia had a significant effect on postoperative pain control.

CONCLUSION

This study found that the majority of post-CS patients with spinal anesthesia experienced mild pain. Factors such as age, BMI, pre-operative pain intensity, and pre-operative analgesic administration were not related to post-operative pain intensity in CS patients with spinal anesthesia. Further research using other variables such as pre-anesthesia education, pre-anesthesia anxiety is needed, considering that pain is subjective and both of these things are very likely to influence the determination of the pain scale in pre-surgery.

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